CITY OF KINGSTON

Aerodrome Work Consultation Summary Report

Transport Canada
Canadian Aviation Regulations (CARS)
Part 307

October 2017, Version 1
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Executive Summary

The work being considered at the Kingston Norman Rogers Airport and subject to the Canadian Aviation Regulations (CARs) Aerodrome Work Consultations Parts 307.01 to 307.10 includes:

- extension of Runway 01-19 approximately 115m to the south and approximately 212m to the north;
- associated airfield lighting and markings; and
- select improvements to the existing runway to comply with the latest Transport Canada safety standards.

This work will enhance the local and regional economy by supporting a wider range of aircraft. Construction is expected to commence in the late fall of 2017 and be completed by the fall of 2018.

Kingston Airport connects travelers for business, studies and tourism, servicing those departing to or returning home from both domestic and international destinations through Toronto Pearson International Airport. An expanded Kingston Airport has the potential to act as a cornerstone for strategic economic development through the increased movement of goods and people and associated investment economic spinoff. With an economy that is increasingly global and knowledge/service-focused, facilitating the efficient movement of human capital is vital to our future growth, prosperity and the convenience of the traveling public.

Earlier this year, the City of Kingston was recognized as the number one small city in the Americas for foreign direct investment and the sixth best small city for human capital and lifestyle by United Kingdom-based Financial Times’ fDi Magazine. This distinction is representative of the successful paradigm shift in Kingston’s economic strategy. The City’s goal is to become a smart, livable, 21st century city. These objectives would be aided by the expansion of the airport to better facilitate the arrival and departures of critical individuals and economic groups to Kingston. Without the investment in airport infrastructure being proposed, the Kingston economy will be unable to take advantage of the opportunities presented by the regional air travel demand.

The City undertook public consultation for this work beginning in 2013 up to and including 2016. This public input was incorporated, considered and addressed as part of the Screening Level Environmental Assessment report that was received by Council in 2016. New regulations introduced by Transport Canada in 2017 allowed for an added opportunity to consult with the public on the runway extension work and has been
captured through compliance with regulatory requirements which includes the preparation of this report. This report will be made available to the Minister and other interested parties in accordance with the regulation and fulfills the obligations of the City of Kingston to consult with its neighbours and the regional community.

Through pre-consultations with Transport Canada in late 2016 and early 2017, The City was advised that the consultation requirements of the new regulation may have already been substantially addressed by work undertaken in previously completed stages of the work. However, upon further review and consideration, the City elected in 2017 to undertake the full regulatory consultation which is described in this report.

The decision to proceed with the work is both in accordance with the regulatory framework and in the best interests of the City, the regional economy and future of the region.
1.0 Introduction

1.1 General

The work being considered at the Kingston Norman Rogers Airport and subject to the Canadian Aviation Regulations (CARs) Aerodrome Work Consultations Parts 307.01 to 307.10 includes:

- extension of Runway 01-19 approximately 115m to the south and approximately 212m to the north;
- associated airfield lighting and markings; and
- select improvements to the existing runway to comply with the latest Transport Canada safety standards.

This work will enhance the local and regional economy by supporting a wider range of aircraft. Construction is expected to commence in the late fall of 2017 and be completed by the fall of 2018. Refer to Figure 1-1 for a general overview of the work proposed.
Kingston Airport connects travelers for business, studies and tourism, servicing those departing to or returning home from both domestic and international destinations through Toronto Pearson International Airport. An expanded Kingston Airport has the potential to act as a cornerstone for strategic economic development through the increased movement of goods and people and associated investment economic spinoff. With an economy that is increasingly global and knowledge/service-focused, facilitating the efficient movement of human capital is vital to our future growth, prosperity and the convenience of the traveling public.

Earlier this year, the City of Kingston was recognized as the number one small city in the Americas for foreign direct investment and the sixth best small city for human capital and lifestyle by United Kingdom-based Financial Times’ fDi Magazine. This distinction is representative of the successful paradigm shift in Kingston’s economic strategy. The City’s goal is to become a smart, livable, 21st century city. These objectives would be aided by the expansion of the airport to better facilitate the arrival and departures of critical individuals and economic groups to Kingston. Without the investment in airport infrastructure being proposed, the Kingston economy will be unable to take advantage of the opportunities presented by the regional air travel demand.

The proposed work is subject to the new Transport Canada Aerodrome Work Consultations described in the Canadian Aviation Regulations (CARs) Parts 307.01 to 307.10.

### 1.2 Canadian Aviation Regulations (CARS) Aerodrome Work Consultations

Changes to the Canadian Aviation Regulations (CARS), published in Canada Gazette, Part II, on October 19, 2016, and formally enacted on January 1, 2017 requires aerodrome proponents to consult with stakeholders before developing an aerodrome or significantly changing an existing one. Stakeholders could include local citizens, municipalities, local aerodrome operators, air navigation service providers, and Transport Canada.

In accordance with the new regulation, projects covered by this new requirement are defined as:

* **aerodrome work** means work, other than work necessary to comply with a new requirement imposed by or under the Act, carried out for any of the following purposes:
(a) building a new aerodrome; or
(b) at an existing aerodrome,
   o (i) building a new runway for aeroplanes, or
   o (ii) increasing the length of an existing runway for aeroplanes by 100 m or by 10%, whichever is greater.

The work proposed at the Kingston Airport includes a runway extension to 6,000 ft. from its currently published length of 4,929 ft. This represents a total extension exceeding both the 100m and 10% criteria above. As a result the consultation process applies to the work proposed at Kingston.

The full text of the regulation can be retrieved by following the links below:


and


This report documents how the requirements of Canadian Aviation Regulations Aerodrome Work Consultations Parts 307.01 to 307.10 have been met and has been generally organized in accordance with the Regulation Part 307.07 which requires the following order of presentation:

(a) a description of the proposed aerodrome work;

(b) a description of the measures taken by the proponent to comply with the requirements of this Subpart;

(c) the interested parties who were notified of the proposed aerodrome work; and

(d) a summary of the comments and objections received through this consultation process, the actions that the proponent proposes to take to address those comments and objections, and any objections that were not addressed, if applicable.

2013-2016 Consultations

The City completed a Screening Level Environmental Assessment (EA) in 2016 for the Airport expansion project. The study was documented in a final report which was presented to Council in June 2016. In response to the changes proposed to CARS, the City consulted with Transport Canada in late 2016, and undertook an analysis to identify gaps in compliance with these changes. The results of this analysis identified that the
changes to CARS in 2017 were substantially addressed by works previously completed by the City. However, upon further review and consideration, the City elected in 2017 to undertake the full regulatory consultation which is described in the following sections of this report. The history of consultations, including the 2013-2016 consultations with the public, and the pre-consultations with Transport Canada, are discussed in Sections 2.3 and 3.1 respectively.
2.0 Description of Proposed Aerodrome Work

2.1 Airport Expansion Background and Studies

The Kingston Airport was originally built in the 1940’s as a military flight training facility in support of the WWII effort. It consisted of three pairs of parallel runways forming a triangular pattern along with associated taxiways, an aircraft apron and three large hangars. In 1974 the City of Kingston purchased the airport from Transport Canada and has managed its operation ever since.

To date, a series of reports have been completed to develop and implement strategies to improve air services at the Kingston Airport. These reports have been summarized in Table 2-1 and are generally outlined below.

In 2007, the City completed an Airport Master Plan that set out the overall growth strategy for Kingston Airport. Recognizing that, to fulfill its potential, Kingston Airport must be able to offer comfortable and convenient low-cost flights to more destinations. The City has been working on an infrastructure expansion plan that will support ongoing efforts to develop air services and is one of the key components outlined in Kingston’s Strategic Plan 2015-2018 as council’s priority to invest in infrastructure.

In 2012, the City completed the Kingston Airport Business Case for Expansion which included a detailed market assessment and detailed recommended airport improvements including:

► extension of the runway from 4,929 feet to 6,000 feet; and
► expansion and reconfiguration of the terminal building.

In 2013, the City completed an Airport Infrastructure Project Definition Document (PDD) that sets out the design and construction requirements for the proposed expansion. The PDD also included Noise Exposure Forecast (NEF) contour plans to determine the potential of future noise levels around the airport based on aircraft type and flight path. The NEF forecast concluded that the proposed runway extension will not have any significant incremental noise impacts on adjacent lands situated around the Kingston Airport.

In June 2015, City Council approved the Infrastructure Expansion Project (IEP) as a component of the 2015-2018 term of Council priority to invest in infrastructure, and initiated a Screening Level EA Study to determine the environmental impact of the expansion and recommend mitigation measures.
In 2016, the City continued with updates to and completion of additional studies in response to community and technical recommendations of the previous reports and Council directions. In particular in 2016 the Project Definition Document (PDD) was updated to reflect current and updated airport design standards recently updated by Transport Canada along with a Screening Level Environmental Assessment (EA) that included updated noise and emissions modelling based on the updated PDD and aircraft mix projections.

All of this work has been published via the City’s website and can be found at the following links:


and


**Table 2-1: Reference Table of Kingston Airport Studies**

<table>
<thead>
<tr>
<th>Year</th>
<th>Ref. ID</th>
<th>Document</th>
<th>Consultant Team</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| 2007 | A      | Kingston Airport Master Plan Study  
[https://goo.gl/7bsJKM](https://goo.gl/7bsJKM) | MMM Group / InterVISTAS | Overall growth strategy                                                  |
| 2010 | B      | Kingston Airport 2009 Economic Impact Study  
[https://goo.gl/wwXg8G](https://goo.gl/wwXg8G) | Inside Canadian Airports | Sets out the total contribution made by the airport to the provincial economy during 2009. |
| 2012 | C      | Kingston Airport Business Case for Expansion  
[https://goo.gl/Ksg9EZ](https://goo.gl/Ksg9EZ) | LPS AVIA Consulting | Detailed market assessment and detailed recommended airport improvements including the runway and terminal building expansions. |
<p>| 2012 | D      | Kingston Airport Expansion Project | LPS AVIA Consulting | Provides project details, estimated costs, and |</p>
<table>
<thead>
<tr>
<th>Year</th>
<th>Ref. ID</th>
<th>Document</th>
<th>Consultant Team</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| 2013 | E       | Implementation Plan  
https://goo.gl/iQ4iqw | MMM Group Limited, Kirkland Engineering, Hanscomb, OTS, Colbourne & Kembel Architects Inc. and Houle Chevrier Engineering | next steps to implement the runway extension and building expansions. |
| 2016 | F       | Airport Infrastructure Expansion Project Definition Document (PDD)  
https://goo.gl/Cp5zDk | MMM/WSP | Sets out the design and construction requirements for the proposed expansion |
| 2016 | G       | Screening Level Environmental Assessment (EA) Study  
https://goo.gl/CyqkJ5  
& Information Report to Council  
https://goo.gl/JZxyx8 | MMM/WSP | While the expansion project is not designated under S84 (a) of the Canadian Environmental Assessment Act – and is therefore not subject to its requirements – the City completed this study to exercise due diligence and identify the environmental legislative requirements to be met during construction. |
| 2016 | G       | Updated Noise Exposure Forecast (NEF) study entitled Kingston Airport Noise Exposure Technical Report  
https://goo.gl/GpMM1v | MMM/WSP | Produce official noise contours, both for conditions in 2012 as well as those forecasted to 2026 based on the traffic data and airfield configuration presented during the Screening Level Environmental Assessment presentation on March 30, 2016. Use the most up to date |
<table>
<thead>
<tr>
<th>Year</th>
<th>Ref. ID</th>
<th>Document</th>
<th>Consultant Team</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>H</td>
<td>Kingston Airport: Air Quality Emissions Assessment Forecast</td>
<td>WSP</td>
<td>To establish an air quality emissions baseline and to project future 2026 emissions based on air traffic forecasts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="https://goo.gl/VYmp6B">https://goo.gl/VYmp6B</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>I</td>
<td>Airport Infrastructure Expansion Project Definition Document (PDD) – update</td>
<td>MMM/WSP</td>
<td>Update to the 2013 PDD to reflect updated regulations and design practices.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="https://goo.gl/1Pdvsw">https://goo.gl/1Pdvsw</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>J</td>
<td>Stage 2 Archaeological Assessment</td>
<td>Ministry of Tourism, Culture and Sport</td>
<td>Completed as part of recommendations of the EA study.</td>
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<tr>
<td></td>
<td></td>
<td><a href="https://goo.gl/wxYuTD">https://goo.gl/wxYuTD</a></td>
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<td></td>
</tr>
<tr>
<td>2017</td>
<td>K</td>
<td>Aerodrome Work Consultations</td>
<td>City of Kingston/WSP</td>
<td>This report documents how the requirements of</td>
</tr>
</tbody>
</table>
2.2 Runway 01-19 Work Description

The Airport has two runways (01-19 and 07-25) and two taxiways (Alpha and Bravo). The primary runway (01-19) which is proposed for expansion consists of 1,502 m (4,929 ft.) by 30.5 m (100 ft.) asphalt surfaced pavement. This runway will be extended to the south by approximately 115 m (377 ft.) and to the north by approximately 212 m (695 ft.) to provide a total new runway length of 1,829 m (6,000 ft.). The proposed width of the new runway will be 30 m (100 ft.).

The runway extensions will be designed for a Pavement Load Rating (PLR) to match the PLR capability of the existing runway. There will be a 75-m grass and graded area on each side of the paved runway with maximum 2.5% downward slopes. At each end of the runway there will be a 60m by 150m Runway End Safety Area (RESA).

Drainage of the new paved runway extensions will be by surface drainage to longitudinal ditches and swales located at the edge of the runway graded area. For both the north and south extensions, the new ditches will discharge into the existing ditches. Catch basins will be installed at the north and south runway thresholds. These catch basins will drain to the new ditches at the edges of the graded areas.

Drainage at the north extension will require the installation of a medium to large culvert across the end of the runway extension, to accommodate the existing drainage ditch/creek which traverses the site. Storm water management/control is not anticipated to be required for the extensions. Based on existing geotechnical information, including borehole investigations undertaken during the preparation of the Project Definition Document, it is not anticipated that any rock excavation will be required for the runway extensions.

Runway edge lighting will be added from the existing system at both the south and north extensions. All approach lighting will be replaced with new lighting systems compliant with the most up to date Transport Canada standards.
The runway will be designed to retain the existing landing thresholds as they currently are published today. The extensions of each end will become what are referred to as **displaced thresholds** that will guide pilots to land at the same position on the runway as they do today. This was a key recommendation of the noise studies completed to ensure that approaching aircraft do not arrive any lower over the community than they do today. Furthermore, the northern extension will be relocated further south and away from the built up areas including the Collins Bay Marina to further reduce noise for aircraft approaching from the north. This additional relocation could be as much as 92 metres (301 ft.) south of the existing landing threshold. Refer to the Reference Study G as shown in **Table 2-1** for additional background and diagrams related to the benefits of retaining or increasing the threshold displacements off both ends of the runway as related to noise impacts.

### 2.3 Previous Public Meetings & Consultations

Presentations of the 2012 Business Case and Implementation Plans were made to City Council and posted on the airport’s website. Additionally, the City of Kingston consulted with the community through 2013 to 2016 on this work. Beginning in 2015, the City undertook a Screening Level Environmental Assessment of the areas that will be under development as a result of the expansion project. The scope of work included compilation of background material, confirmation of all regulatory requirements, conducting a terrestrial/aquatic habitat assessment, completion of a land use/landscape review, completion of a Stage 1 Archaeological/Heritage Assessment, a Phase I Environmental Screening Assessment (ESA) and the completion of a Phase II ESA including the development of any remedial action plans or mitigation measures to be incorporated into the design requirements for the airport expansion, applying for any required permits from governments with jurisdiction. This was documented in a Final Screening Level Environmental Screening Report (Reference Document F in Table 2-1), which included a summary of the various consultations prior to and that formed part of this study, which were considered and considered as part of this assessment. These consultations are summarized generally as follows:

- A public information session was held in February 2013.

- A District Councillor’s District Meeting was also held which provided an update on the project, focusing on revised noise exposure forecasts and answering outstanding questions raised at the February 2013 public information session.

- Agency input into the Environmental Assessment Study in 2015/16 (including Noise Exposure Forecasts and Air Quality Assessments).
- A public information session was also held in March 2016 to present draft findings of the screening level Environmental Assessment and receive comments. Comments were received from this public meeting and written comments were received through to April 2016 which were considered, responded to and incorporated as an exhibit in the EA. This is available on the City’s website at the following link: https://goo.gl/CyqkJ5.

- Opportunities to provide written comments through an on-line project webpage and a project website containing various studies and details regarding the expansion, including public and other stakeholder comments and how we addressed the comments, which were also considered, responded to and incorporated as an exhibit in the EA, available on the City’s website at the following link (https://goo.gl/CyqkJ5).

- Presentations to City Council and therefore the public-at-large throughout the project were also made available to public with a summary of key City Council meetings where the work was discussed included below:
3.0 Measures Taken To Comply With Regulation CARS 307.01-10

3.1 Consultations and 2016 Screening Level Environmental Assessment

As identified in Section 2.3 of this report, the City undertook public consultation for the work beginning in 2013 up to and including 2016. This public input was incorporated, considered and addressed as part of an Environmental Assessment report that was completed in June 2016. An overview of the public consultations are listed in Section 2.3 of this report. Details of the consultations undertaken through the Screening Level Environmental Assessment, comments received and how they were addressed are documented in the June 2016 report, under Section 4.0 - Public Involvement and Consultation, Reference Document F in Table 2-1. This report is available on the City’s website at the following link: https://goo.gl/CyqkJ5.

3.2 Pre-consultation with Transport Canada

The City of Kingston has worked closely with Transport Canada officials throughout the development of the work. In particular, in November 2016 a formal meeting was held with the Regional Transport Canada office in Toronto to brief officials on the work and to outline the level of consultations completed to date. While Transport Canada recognized the significant level of community consultations to date, the City was advised that the new regulation would apply, but may be adjusted in scope to account for the consultations already completed. Upon the request of Transport Canada, the City prepared a letter outlining what parts of the new regulation had been addressed through previous actions taken by City and those not addressed. This letter provided a “gap analysis” from which Transport Canada advised they would review and offer advice to the City on what select gaps/actions would still need to be addressed by the City to comply with the regulation. The two gaps identified to Transport Canada by the City included the need to complete direct notification of operators of certified or registered aerodromes within a 30 nautical mile radius and posting of signs. The City of Kingston elected to extend the consultation process and fully comply with the new CARS Part 307 Aerodrome Work Consultations Regulation.
3.3 Compliance Confirmation

This section of the report demonstrates how the City of Kingston complied with the new Transport Canada Aerodrome Work Consultation Regulations Part 307.01 – 307.10. Table 3-1 below outlines the regulatory requirements and the actions taken by the City of Kingston.

Table 3-1: Regulation Compliance Matrix

<table>
<thead>
<tr>
<th>Regulation Section</th>
<th>Actions Taken by Operator (City of Kingston) to Comply</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subpart 7 — Aerodromes — Consultations Interpretation</strong></td>
<td>The City acknowledged that this Regulation applies to the work as described in Section 2.2 above since the runway extension will exceed both criteria in item 307.01 (b) (ii)</td>
</tr>
<tr>
<td>307.01 The following definitions apply in this Subpart.</td>
<td>The City acknowledged that it is the proponent per the definition given.</td>
</tr>
<tr>
<td><strong>aerodrome work</strong> means work, other than work necessary to comply with a new requirement imposed by or under the Act, carried out for any of the following purposes:</td>
<td>The City recognized the definition of “protected areas” as those covered under federal jurisdiction and has</td>
</tr>
<tr>
<td>(a) building a new aerodrome; or</td>
<td></td>
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<tr>
<td>(b) at an existing aerodrome,</td>
<td></td>
</tr>
<tr>
<td>o (i) building a new runway for aeroplanes, or</td>
<td></td>
</tr>
<tr>
<td>o (ii) increasing the length of an existing runway for aeroplanes by 100 m or by 10%, whichever is greater. (travaux d’aérodrome)</td>
<td></td>
</tr>
<tr>
<td><strong>proponent</strong> means a person who proposes to carry out aerodrome work. (promoteur)</td>
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<tr>
<td><strong>protected area</strong> means a natural area or habitat that is protected by or under</td>
<td></td>
</tr>
<tr>
<td>Regulation Section</td>
<td>Actions Taken by Operator (City of Kingston) to Comply</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------</td>
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<tr>
<td>federal legislation. (aire protégée)</td>
<td>circulated a notice to those affected by the regulation as outlined in Section 4.0 of this report.</td>
</tr>
</tbody>
</table>

**Application**

**307.02** This Subpart applies to existing and proposed aerodromes that are not

(a) military aerodromes;
(b) water aerodromes;
(c) aerodromes that are used primarily for agricultural operations;
(d) aerodromes, including heliports, that are used primarily for helicopter operations; and
(e) aerodromes that are used as temporary installations for the purpose of providing emergency services, such as forest fire suppression, law enforcement activities, and search and rescue operations, and responding to a medical emergency.

The City acknowledged that this section does not apply and that they are not exempt.

**Requirement — Consultations**

**307.03** The proponent shall consult with the interested parties in accordance with the requirements of this Subpart.

**Interested Parties**

**307.04 (1)** For the purposes of this Subpart, the interested parties are the following:

(a) if a built-up area of a city or town is located within a radius of 4 000 m from the location of the proposed aerodrome work,
   - (i) the Minister,
<table>
<thead>
<tr>
<th>Regulation Section</th>
<th>Actions Taken by Operator (City of Kingston) to Comply</th>
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<tbody>
<tr>
<td>▪ (ii) the providers of air navigation services,</td>
<td></td>
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<tr>
<td>▪ (iii) the operator of a certified or registered aerodrome located within a radius of 30 nautical miles from the location of the proposed aerodrome work,</td>
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<tr>
<td>▪ (iv) the authority responsible for a protected area located within the radius of 4 000 m from the location of the proposed aerodrome work,</td>
<td></td>
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<tr>
<td>▪ (v) any local land use authority where the proposed aerodrome work is to be carried out, and</td>
<td></td>
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<tr>
<td>▪ (vi) members of the public who are within the radius of 4 000 m from the location of the proposed aerodrome work; or</td>
<td></td>
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<tr>
<td>o (b) in any other case,</td>
<td></td>
</tr>
<tr>
<td>▪ (i) the Minister,</td>
<td></td>
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<tr>
<td>▪ (ii) the providers of air navigation services,</td>
<td></td>
</tr>
<tr>
<td>▪ (iii) the operator of a certified or registered aerodrome located within a radius of 30 nautical miles from the location of the proposed aerodrome work,</td>
<td></td>
</tr>
<tr>
<td>▪ (iv) the authority responsible for a protected area located within a radius of 4 000 m from the location of the proposed aerodrome work,</td>
<td></td>
</tr>
<tr>
<td>▪ (v) any local land use authority where the proposed aerodrome work is to be carried out, and</td>
<td></td>
</tr>
<tr>
<td>▪ (vi) the owner of any land bordering the land on which the proposed</td>
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</tr>
</tbody>
</table>

This section of the regulation does not apply to this work. Part (a) above applies.
<table>
<thead>
<tr>
<th>Regulation Section</th>
<th>Actions Taken by Operator (City of Kingston) to Comply</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) For the purposes of subsection (1), the radius of 4 000 m from the location of the proposed aerodrome work shall be measured from the outer perimeter of the site of that location.</td>
<td>The City acknowledged that this requirement must be met and the 4000 metre offset from the existing boundary was established as shown in Figure 3-1. The magenta coloured boundary represents the 4000 metre radius as defined by this clause.</td>
</tr>
<tr>
<td><strong>Notice and Sign</strong></td>
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<tr>
<td><strong>307.05</strong> The proponent shall, at least 75 days before the expected start date of the proposed aerodrome work,</td>
<td>The City developed a notification program to comply with the requirement outlined in 307.04(1)(a)(i) to (v). Refer to Section 4.0 of this report, which details the program and the actions taken to comply with this requirement.</td>
</tr>
<tr>
<td>(a) provide a notice of the proposed aerodrome work to the interested parties referred to in subparagraphs 307.04(1)(a)(i) to (v) or paragraph 307.04(1)(b), as applicable; and</td>
<td></td>
</tr>
<tr>
<td>(b) in the case referred to in paragraph 307.04(1)(a), place a sign, in plain view of the public, at the location where the proposed aerodrome work is to be carried out.</td>
<td>The City developed a notification program to comply with the requirement outlined in (b). Refer to Section 4.0 of this report, which details the program and the actions taken to comply with this requirement.</td>
</tr>
<tr>
<td><strong>Content of Notice and Sign</strong></td>
<td></td>
</tr>
<tr>
<td><strong>307.06</strong> The proponent shall include the following information on the notice and the sign:</td>
<td>The City developed a notification program to comply with this requirement. Refer to Section 4.0 of this report, which details the program and the actions taken to comply with this requirement. Refer also to Appendix A for a copy of the official notification that addresses each of these items.</td>
</tr>
<tr>
<td>(a) a drawing showing the location of the proposed aerodrome work;</td>
<td></td>
</tr>
<tr>
<td>(b) a description of the proposed aerodrome work and its purpose;</td>
<td></td>
</tr>
<tr>
<td>(c) the expected start date and completion</td>
<td></td>
</tr>
</tbody>
</table>
Regulation Section | Actions Taken by Operator (City of Kingston) to Comply

| date of the proposed aerodrome work; |  |
|  |  |
| (d) a statement that the interested parties may provide their comments or objections to the proponent with respect to the proposed aerodrome work; |  |
| (e) contact information, including the mailing address, phone number and email address, for the contact persons to whom the interested parties may provide their comments or objections; and |  |
| (f) the period, which shall be at least 45 days, during which the interested parties may provide their comments or objections. |  |

**Summary Report**

**307.07** At the end of the period referred to in paragraph 307.06(f), the proponent shall prepare a summary report that includes the following:

| (a) a description of the proposed aerodrome work; | The City has prepared this report to comply with this requirement. |
|  |  |
| (b) a description of the measures taken by the proponent to comply with the requirements of this Subpart; |  |
| (c) the interested parties who were notified of the proposed aerodrome work; and |  |
| (d) a summary of the comments and objections received, the actions that the proponent proposes to take to address those comments and objections, and any objections that were not addressed, if applicable. |  |

**Communication of Summary Report**

**307.08** The proponent shall, as soon as
### Regulation Section

**practicable after the end of the period referred to in paragraph 307.06(f), provide the summary report to the Minister and make it available to the interested parties.**

### Actions Taken by Operator (City of Kingston) to Comply

available to all interested parties. The interested parties as identified in Section 307.04(1)(a)(i) to (v) will also receive an email or mailed notice advising of the availability of the report by way of the City’s website. A copy of the report will also be made available for viewing at the City Clerk’s Office at Kingston’s City Hall.

### Availability of Summary Report

**307.09** The proponent shall ensure that the summary report is available to the interested parties for at least five years after the date on which it is made available to them.

The City will post the Summary Report on City website to make it available to the interested parties. A copy of the report will also be made available for viewing at the City Clerk’s Office at Kingston City Hall.

### Start of Aerodrome Work

**307.10 (1)** The proponent shall not start the proposed aerodrome work before the end of 30 days after the date on which the summary report is provided to the Minister.

The City will comply with this requirement and will not start construction until the end of 30 days after which the summary report is provided to the Minister.

**307.10 (2)** If the proponent does not start the proposed aerodrome work within five years after the date on which the summary report is provided to the Minister, the proponent shall once again comply with the requirements of this Subpart.
Figure 3-1: 4,000 m Offset from Airport Boundary  
(Boundary Shown in Magenta Colour)
4.0 List of Interested Parties Notified Of Project

4.1 Notice

Appendix A contains the official notice prepared by the City of Kingston that met all the requirements outlined in Section 3, Table 3-1, Regulation Part 307.06 and was applied to the project signage and email notices issued to those parties required by regulation Section 307.04(1)(a)(i) to (v).

4.2 Signage

The City of Kingston installed six (6) signs at the Airport and in the surrounding area. Figure 4-1 depicts the signage locations and photographs at time of installation. The signs were installed on July 31, 2017 and remained until the end of the consultation period on September 18, 2017. Appendix B contains a copy of the sign layout and information.

4.3 Local Newspaper

The City of Kingston published the notification in the local newspaper on two (2) occasions (August 3rd and August 24th, 2017). Appendix B contains copies of these notices.

4.4 The Minister

In accordance with Regulation Section 307.04 (1)(a)(i), the Minister of Transport was informed using the Transport Canada Ontario Region Aviation Safety email address tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca. A copy of the Email dated July 31, 2017 is attached in Appendix C along with a confirmation email receipt.

4.5 Air Navigation Services (NAV CANADA)

In accordance with Regulation Section 307.04 (1)(a)(ii), the provider of Air Navigation Services, NAV CANADA, was informed via email which included a copy of the notice. A copy of the email dated July 31, 2017 is attached in Appendix C along with an email acknowledgement of receipt.
4.6 Operators of a Certified or Registered Aerodrome

In accordance with Regulation Section 307.04 (1)(a)(iii), the following list of aerodrome operators within a radius of 30 nautical miles were sent the notice by mail on August 1, 2017. Below is a list of aerodromes notified. There were no responses received from these mail outs.

<table>
<thead>
<tr>
<th>Aerodrome Name</th>
<th>Distance (nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCE6 Camen East</td>
<td>10.4</td>
</tr>
<tr>
<td>CVL3 Varty Lake</td>
<td>14.2</td>
</tr>
<tr>
<td>CNN8 Gananoque</td>
<td>18.5</td>
</tr>
<tr>
<td>CGN4 Gananoque</td>
<td>19.6</td>
</tr>
<tr>
<td>CPU6 Tyendinaga (Mohawk)</td>
<td>22.2</td>
</tr>
<tr>
<td>CGB3 Picton (Greenbush)</td>
<td>24.6</td>
</tr>
<tr>
<td>CPE7 Picton (Prince Edward County)</td>
<td>26.6</td>
</tr>
<tr>
<td>CNT7 Picton</td>
<td>27.4</td>
</tr>
<tr>
<td>CRL2 Rideau Lakes</td>
<td>27.7</td>
</tr>
<tr>
<td>CNU4 Belleville</td>
<td>30.8</td>
</tr>
<tr>
<td>CPZ3 Mountain View</td>
<td>33.4</td>
</tr>
</tbody>
</table>

4.7 The Authority Responsible for a Protected Area

In accordance with Regulation Section 307.04 (1)(a)(iv) & (v), the following federal agencies were advised of the project via a mailed notice dated August 2, 2017. There were no responses received from these mail outs.

<table>
<thead>
<tr>
<th>Authority</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected Area Authority</td>
<td>Department of Fisheries and Oceans Canada (Central and Arctic Regions)</td>
</tr>
<tr>
<td>Protected Area Authority</td>
<td>Environment and Climate Change Canada's Canadian Wildlife Service (Ontario Region)</td>
</tr>
<tr>
<td>Land Use Authority</td>
<td>Ministry of Natural Resources and Forestry (Peterborough District)</td>
</tr>
<tr>
<td>Land Use Authority</td>
<td>Cataraqui Region Conservation Authority</td>
</tr>
<tr>
<td>City of Kingston</td>
<td>City of Kingston, Director of Planning, Building and Licensing Services</td>
</tr>
</tbody>
</table>
Figure 4-1: Installed Project Notice Signs
5.0 Summary of the Comments and Objections Received Through 2017 Aerodrome Work Consultation Program and Action Taken

5.1 General

The public consultation undertaken by the City of Kingston in accordance with the CARS Regulation 307, resulted in the receipt of a total of forty (40) submissions over the 49 day period beginning July 31, 2017 and ending September 18, 2017. This period exceeded the regulatory 45 day consultation period. Through this period, the City received twenty four (24) submissions in support of the project, two (2) submissions in conditional support of the project, and fourteen (14) submissions in objection to the project. The following sections summarize the responses along with the actions proposed by the City of Kingston.

The tables have included excerpts of the comments received along with a summary of the “Issue of Concern” to capture the overall theme of the comments. Full responses are contained in the appendices and can be referenced there in their entirety.

As identified in Section 2.3 of this report, the City undertook public consultation for the Expansion project from 2013 to 2016, which was incorporated, considered and addressed as part of the Screening Level Environmental Assessment report that was completed in June 2016. Details of the consultations, comments received and how they were addressed are included in this report, which is available on the City’s website at the following link: https://goo.gl/CygkJ5.

5.2 2017 Aerodrome Work Consultations – Comments of Support

Appendix D contains twenty-four (24) submissions made in support of the airport. There were no actions taken to these submissions. They are summarized in Table 5-1 for record purposes and to provide a general overview of the basis of support.

5.3 2017 Aerodrome Work Consultations – Comments of Conditional Support

Appendix E contains two (2) submissions that provided conditional support of the project. Table 5-2 summarizes these comments and the proposed responses and actions to be taken by the City of Kingston.
5.4 2017 Aerodrome Work Consultations – Comments of Objection

Appendix F contains fourteen (14) submission that objected to the project. Table 5-3 summarizes these comments and the proposed responses and actions to be taken by the City of Kingston.

6.0 In Closing

Prior to the new Transport Canada Regulation CARS 307 Aerodrome Work Consultations coming into effect on January 1, 2017, The City of Kingston completed public consultation for this work beginning in 2013 up to and including 2016. This public input was incorporated, considered and addressed as part of the Environmental Assessment report that was received by Council in 2016. The new CARS 307 regulation allowed for an added opportunity to consult with the public on the runway extension work which this report has addressed in compliance with Transport Canada’s regulatory requirements.
Table 5-1: Summary of Support Comments

<table>
<thead>
<tr>
<th>No.</th>
<th>Date / Form of Contact</th>
<th>Contact Name/Agency</th>
<th>Comments Received (Excerpts from Original Comments)</th>
<th>Issue of Concern</th>
<th>Actions to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Email July 31, 2017</td>
<td>Local Resident</td>
<td>Back when I was very active in the community, we were promoting conventions to Kingston with the promise that we would have sufficient service to allow Canadians from coast to coast to conveniently fly into Kingston, That was in the early 1970’s! Let’s do it!</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S2</td>
<td>Email July 31, 2017</td>
<td>Local Resident</td>
<td>As a sometime passenger in/out of YGK and have recently received my Ultra Flying permit I support the extension of the airport.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S3</td>
<td>Email July 31, 2017</td>
<td>Local Resident</td>
<td>I come from the US frequently and this would be very welcomed.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S4</td>
<td>Email August 1, 2017</td>
<td>Local Resident</td>
<td>I support the proposed extension at the Kingston Airport. This growing city needs efficient and growing access by air. Maintenance and expansion of our present growth is dependent upon increasingly efficient and effective air access.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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</tr>
<tr>
<td>S5</td>
<td>Email August 1, 2017</td>
<td>Local Resident</td>
<td>I am very happy to hear about this. I do firmly believe it will benefit Kingston and people in the area. Will create more business and jobs for Kingston. Also save the expense and time of traveling to other airports like Toronto. For me and my wife this would be great feature for Kingston for sure. I do hope you can get companies like Westjet that travel to places like Cuba or Mexico. Hope to see it completed soon.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S6</td>
<td>Email August 2, 2017</td>
<td>Local Resident</td>
<td>I think the runway extension is a good idea. In might bring in more airplane types, which could lead to more and different people / passengers. This provides more economic opportunity for the city. Doesn't mean it will definitely happen. But the odds are higher if you do the extension.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S7</td>
<td>Email August 3, 2017</td>
<td>Local Resident</td>
<td>I think the Norman Rogers airport renovation &amp; runway expansion is a long-overdue project for the City of</td>
<td>No issue of concern. Project</td>
<td>No actions required.</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Kingston. Please proceed. For the record, my home is located along the main runway flight path….</td>
<td>supported</td>
<td></td>
</tr>
<tr>
<td>S8</td>
<td>Email August 3, 2017</td>
<td>Local Resident</td>
<td>As a former two term City Councillor (2003-2010) for the City of Kingston, business owner in Downtown Kingston (Windmills Restaurant &amp; Catering), Downtown Kingston BIA board member and current chair, I am well informed regarding the history of the runway and terminal expansion the city is now embarking on and support it fully. Kingston is the hub of eastern Ontario, (outside Ottawa) with major employers like Queen's University, CFB Kingston, RMC, Empire Life, Kingston General/Hotel Dieu/Providence Care Hospitals, INVISTA, new international employers like Frulact from Portugal that just opened and Feihe from China that is opening a $225 million plant in 2019 and many others, all require up to date air transportation infrastructure to conduct their operations and compete in the competitive world environment. This runway expansion project fits that bill. I have no concerns that this expansion will</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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<tr>
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<td>adversely affect the surrounding area, including my enjoyment of Lemoines Point which I actively use or Collin Bay Marina where my partner and I keep our sail boat. Airplane noise levels generally are not a concern given the fact that an airport has operated here for decades. In my role as city councillor complaints about noise from train whistles were the only complaints that were ever brought to city council's attention (transportation related) and if the news reports are accurate issues with train whistles are still the only noise complaints coming to city council attention today.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S9</td>
<td>Email August 3, 2017</td>
<td>Local Resident</td>
<td>Yes please!.......as soon as you can........expand so that other airlines besides Air Canada can get in there and offer decent service!.......I am so sick and tired putting up with Air Canada flying the Kingston/Toronto route.........delays, poor service.....the list goes on.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S10</td>
<td>Email August 5, 2017</td>
<td>Local Resident</td>
<td>I submitted this letter below to the editor in response to a Whig article. I should also mention in regards to noise concerns re planes that the trains going through Kingston will always generate far</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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</tr>
<tr>
<td>S11</td>
<td>August 5, 2017</td>
<td>Local Resident</td>
<td>More noise but apparently people accept that.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="http://www.thewhig.com/2016/07/14/airports-turbulent-times-2">http://www.thewhig.com/2016/07/14/airports-turbulent-times-2</a></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>I wish council would move forward with confidence on this critical project as the home work has been done.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S12</td>
<td>Email August 9, 2017</td>
<td>Local Resident</td>
<td>More historic input regards to the airport expansion which we are greatly in favour of.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>As I'm sure you'll be receiving many emails from tree-hugging local residents (or business owners) that purchased land near an airport stating that airport expansion is bad, I for one am excited about the airport expansion for many reasons including…</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Promoting Kingston as a place to do business</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More opportunities for flight training and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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</tr>
</tbody>
</table>
| S13 | Email August 10, 2017  | Local Resident      | promotion of aviation in general  
.., hopefully you receive views from those on side with expansion and also a general airport review to update facilities and create more opportunities for business overall | No issue of concern. Project supported | No actions required. |
<p>| S14 | Email August 11, 2017  | Local Resident      | I support the investment in the airport, terminal, and lengthening of the runway. | No issue of concern. Project supported | No actions required. |
| S15 | Email August 13, 2017  | Local Resident      | I am a resident of Kingston and I am writing in support of the airport runway expansion project. I hope the longer runway allows for a new carrier to serve the airport, increasing competition and improving options available for passengers. | No issue of concern. Project supported | No actions required. |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Date / Form of Contact</th>
<th>Contact Name/Agency</th>
<th>Comments Received (Excerpts from Original Comments)</th>
<th>Issue of Concern</th>
<th>Actions to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>S16</td>
<td>Email August 14, 2017</td>
<td>Local Resident</td>
<td>I am a resident of Kingston and am in support of the runway expansion project. I am hoping this will create some healthy competition between airlines and make Kingston a more accessible city by air travel.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S17</td>
<td>Letter August 17, 2017</td>
<td>Local Resident</td>
<td>Couldn't agree more on the need for runway extensions to #19</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S18</td>
<td>Email August 21, 2017</td>
<td>Local Resident</td>
<td>Completely in favour of the runway expansion. Larger planes will remove monopoly from Air Canada I hope creating competitive pricing; hopefully be able to make direct flights to Ottawa, Montreal, New York City instead of always hubbing in Toronto. Per noise over residents, our last home was in the flight path of planes, and blocks from the train tracks. After a very short time we heard neither; the sound became part of the general landscape, just like the noise from the 401 penetrates for miles beyond it.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S19</td>
<td>Email</td>
<td>Local Resident</td>
<td>I would like to express my extreme support</td>
<td>No issue of concern</td>
<td>No actions required.</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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<td>------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td></td>
<td>August 21, 2017</td>
<td></td>
<td>of the runway extensions at the Norman Rogers Airport in Kingston. Myself and my family use the airport extensively and it is part of the reason that we moved here in 2014. I have a 90 year old father in Victoria and a 6 month old granddaughter in Halifax!! Nothing would please me more than to have larger aircraft and with them, greater and easier flight options available in Kingston. I regularly take VIA Rail to Toronto for business meetings but would prefer to fly as it is so much more time efficient and easier. Hopefully prices would become more competitive if the airport was able to accept larger planes.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S20</td>
<td>Email August 30, 2017</td>
<td>Local Resident</td>
<td>I say &quot;away with the nay sayers!&quot; The proposed runway extension at Kingston Airport is and will be a benefit for the entire community; business, economic &amp; Kingstonians alike. The extension is well over due as Kingston has the necessary capacity to accommodate larger aircraft. I live close by the airport and I love the city but we must capitalize on it's latent potential now! Due to our proximity to the US, there is no reason why kingston could not have international status as well. Just</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>look at what Ongensburg and Watertown, New York have accomplished with their airports. Kingston should not have to take a back seat to their facilities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S21</td>
<td>Email September 5, 2017</td>
<td>Local Resident</td>
<td>I write to give my enthusiastic and unequivocal support to the runway expansion at Kingston Airport. Improved transportation links are vital if the city's aspirations for a sustainable economy linked to innovation are to be realized and this project is critical to that objective.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S22</td>
<td>Email September 5, 2017</td>
<td>Local Resident</td>
<td>I'd like to provide my full and unequivocal support for the airport expansion. If Kingston is to thrive as a community we must have better air service to major hubs. Queen's is a major employer and expanded facilities will help us better serve the community and province.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>S23</td>
<td>Email September 9, 2017</td>
<td>Local Resident</td>
<td>I think this is great news as I see a lot of potential for growth at the Kingston Airport which would be great for the people of Kingston as well as an economic engine for the City itself.</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name/Agency</td>
<td>Comments Received (Excerpts from Original Comments)</td>
<td>Issue of Concern</td>
<td>Actions to be taken</td>
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<td>---------------------</td>
</tr>
<tr>
<td>S24</td>
<td>Email August 1, 2017</td>
<td>Local Resident</td>
<td>I would like to see runway 19 expansion for Voyager airways. Dash7. And also Air Ontario dash 8</td>
<td>No issue of concern. Project supported</td>
<td>No actions required.</td>
</tr>
</tbody>
</table>
### Table 5-2: Summary of Conditional Support Comments

<table>
<thead>
<tr>
<th>No.</th>
<th>Date / Form of Contact</th>
<th>Contact Name/ Agency</th>
<th>Comments Received (Excerpts from Original Comments)</th>
<th>Issue of Concern</th>
<th>Actions to be Taken</th>
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</thead>
<tbody>
<tr>
<td>C1</td>
<td>Email August 28, 2017</td>
<td>Local Resident</td>
<td>1a) There should be a Kingston airport “noise bylaw” that prohibits landings and take-offs between certain hours of the day; such as no take-offs or landings after 10:30 PM and before 7:00 AM. 1b) In an emergency situation, this condition in 1a) does not apply.</td>
<td>Aircraft Noise</td>
<td>Aircraft noise at source and aircraft noise impacts resulting from operational changes at an airport are regulated by federal government through Transport Canada and the Canadian Aviation Regulations (CARS) Section 602.105 - Noise Operating Criteria. The City of Kingston completed detailed Noise Studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study &quot;G&quot; in Table 2-1. Links to this study are found at <a href="https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates">https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates</a>. The NEF system penalizes night-time traffic by factoring those aircraft movements between 10 p.m. and 7 a.m. by 16.7 times to capture the nuisance of these events during the night-time hours. The NEF models developed for Kingston Airport have accounted for this as further described in Section 3.5 of the report.</td>
</tr>
</tbody>
</table>
In summary, by aeronautical regulation, the City would need to complete a detailed consultation process with its airport and air carrier stakeholders to assess the impacts of a proposed night-time curfew. These findings would be subject to further review and approval by Transport Canada before implementation of any flight restrictions. The more immediate action that can be taken by the City of Kingston is to implement voluntary noise mitigation options and communicate those to its users which is a common practice at many airports which has been recommended in the 2016 NEF report Reference Document “G” in Table 2-1.

2) There needs to be a Kingston airport "noise complaint" procedure to report unwarranted aircraft noise.

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<th>No.</th>
<th>Date / Form of Contact</th>
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<th>Issue of Concern</th>
<th>Actions to be Taken</th>
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</thead>
<tbody>
<tr>
<td>C2</td>
<td>Email August 3, Local Resident</td>
<td>1. I have no problem if takeoffs and landings on the lengthened Aircraft Safety</td>
<td></td>
<td></td>
<td>The airport is protected by way of a federally enacted airport zoning regulation which can be found online at this link</td>
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Complaints can be communicated at any time to the Airport Manager. The implementation of a dedicated noise complaint call-in number will be further evaluated by the City of Kingston.
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<th>Date / Form of Contact</th>
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<tr>
<td>2017</td>
<td></td>
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<td>Runways over the water to the South of the Airport. Otherwise there is a real safety and noise issue with large aircraft coming in low over an extensive residential neighbourhood. The horrendous crash in Buffalo 4 or 5 years ago is just one example.</td>
<td></td>
<td><a href="http://laws.justice.gc.ca/eng/regulations/sor-88-447/page-1.html">http://laws.justice.gc.ca/eng/regulations/sor-88-447/page-1.html</a>. This regulation ensures the airspace around the airport is protected for the safe operation of aircraft and for the general public. Additional background on these zoning regulations can be found in Section 3.5 of the 2007 Airport Master Plan Study Reference Document “A” in Table 2-1. Refer also to Figure 8.1 in this report which provides a graphical depiction of the zoning protection around the airport. Furthermore, the airport is a certified aerodrome which obligates the airport to operate in accordance with regulatory requirements which are outlined in TP312 Aerodromes Standards and Recommended Practices which can also be found at <a href="https://www.tc.gc.ca/eng/civilaviation/publications/tp312-menu-4765.htm">https://www.tc.gc.ca/eng/civilaviation/publications/tp312-menu-4765.htm</a>. The proposed work will be built in accordance with the latest standards which were updated in September 2015 ie. TP312 5th Edition.</td>
</tr>
</tbody>
</table>
2. There also be no landings or takeoffs after 11:00pm or earlier than 6:00am. Unless BOTH of these are complied with I am vehemently opposed to any Airport runway extension.

Aircraft Noise

Based on the above, aircraft operations off either end of the runway will be conducted within airspace that is protected for aviation safety.

Aircraft noise at source and aircraft noise impacts resulting from operational changes at an airport are regulated by federal government through Transport Canada and the Canadian Aviation Regulations (CARS) Section 602.105 - Noise Operating Criteria.

The City of Kingston completed detailed Noise Studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1. Links to this study are found at https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates.

The NEF system penalizes night-time traffic by factoring those aircraft movements between 10 p.m. and 7 a.m. by 16.7 times to capture the nuisance of these events during the night-time
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hours. The NEF models developed for Kingston Airport have accounted for this as further described in Section 3.5 of the report ie. Reference Document “G” in Table 2-1.

In summary, by aeronautical regulation, the City would need to complete a detailed consultation process with its airport and air carrier stakeholders to assess the impacts of a proposed night-time curfew. These findings would be subject to further review and approval by Transport Canada before implementation of any flight restrictions. The more immediate action that can be taken by the City of Kingston is to implement voluntary noise mitigation options and communicate those to its users which is a common practice at many airports and has been recommended in the 2016 NEF report Reference Document “G” in Table 2-1.
Table 5-3: Summary of Objection to the Project Comments

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<th>No.</th>
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<th>Contact Name/Agency</th>
<th>Comments Received</th>
<th>Issue of Concern</th>
<th>Actions to be Taken</th>
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</thead>
<tbody>
<tr>
<td>O1</td>
<td>Email July 31, 2017</td>
<td>Local Resident</td>
<td>I live in the west end and I hear commuter jets flying over my apartment on a regular basis. So to me the whole idea of airport expansion for bigger planes is in my opinion a bad idea.</td>
<td>Aircraft Noise</td>
<td>The business case developed for the airport targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft have been included in the noise studies completed by the City of Kingston. The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1 with links to this study at <a href="https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates">https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates</a>. This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional...</td>
</tr>
<tr>
<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name / Agency</td>
<td>Comments Received</td>
<td>Issue of Concern</td>
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<tr>
<td>O2</td>
<td>Email August 1, 2017</td>
<td>Local Resident</td>
<td>As a citizen who lives in Henderson place I object this extension as it is going to create much more noise for the area. It will lower the home values. There are currently many planes going over these homes per day, plus military jets, orange helicopters, etc. It’s enough as is.</td>
<td>Aircraft Noise</td>
<td>The business case developed for the airport targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft have been included in the noise studies completed by the City of Kingston. The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study &quot;G&quot; in Table 2-1 with links to this study at [<a href="https://www.cityofkingston.ca/city-hall/projects-construction/airport-">https://www.cityofkingston.ca/city-hall/projects-construction/airport-</a>][1].</td>
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<td>No.</td>
<td>Date / Form of Contact</td>
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<td>expansion/updates. This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional jets described above. It should be noted that the runway length and pavement loading capacity has significant limitations on larger aircraft from operating than those described in the noise study and identified in the Business Plan.</td>
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<td></td>
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<td></td>
<td>Kingston has more important ventures to take then an expansion. Fix our roads, our shorelines, etc. Maintain then expand.</td>
<td>Business Plan</td>
<td>The work proposed has been guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport”, Reference Document “C” in Table 2-1. This work has also been supported by the Screening Level Environment Assessment Reference Document “F” and the associated Noise and Air Quality Emissions Assessment, Reference Documents “G” and “H” in Table 2-1. Furthermore the work proposed is also consistent with the 2007 Airport Master Plan recommendations which are presented in Reference Document “A” Table 2-1. The Kingston Airport 2009 Economic Impact</td>
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| O3  | Email August 7, 2017  | Local Resident        | The Airport expansion has air quality impacts upon the low density residential areas surrounding the airport; | Air Quality | Study Reference Document “B” was also used to inform the City of Kingston as to the broader economic benefits of the airport locally and regionally. Finally, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”. Air quality and emissions were important considerations for the project. The City completed an Air Quality and Emissions Assessment Forecast in 2016, the results of which are summarized in the Reference Document “H” in Table 2-1. The findings of this report were presented to Council in June 2016. The study found that “Existing air quality in Kingston is very good, and the increase in exposure to air pollution in the vicinity of the airport with the increased activity in 2026 will
The Airport expansion has noise impacts for the low density residential areas surrounding and in 2016 the Airport Manager refused a formal request to establish an Airport Noise Committee; Aircraft Noise

The business case developed for airport targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft have been included in the noise studies completed by the City of Kingston.

The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1 with links to this study at https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates. This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional jets described above. It should be noted that be imperceptible.”
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- The runway length and pavement loading capacity has significant limitations on larger aircraft from operating than those described in the noise study and identified in the Business Plan.

- Aircraft noise at source and aircraft noise impacts resulting from operational changes at an airport are regulated by federal government through Transport Canada and the Canadian Aviation Regulations (CARS) Section 602.105 - Noise Operating Criteria.

- The City of Kingston completed detailed Noise Studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1. Links to this study are found at [https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates](https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates).

- The NEF system penalizes night-time traffic by factoring those aircraft movements between 10 p.m. and 7 a.m. by 16.7 times to capture the nuisance of these events during the night-time hours. The NEF models developed for Kingston Airport have accounted for this as
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<td>further described in Section 3.5 of the report ie. Reference Document “G” in Table 2-1.</td>
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<td></td>
<td>In summary, by aeronautical regulation, the City would need to complete a detailed consultation process with its airport and air carrier stakeholders to assess the impacts of a proposed night-time curfew. These findings would be subject to further review and approval by Transport Canada before implementation of any flight restrictions. The more immediate action that can be taken by the City of Kingston is to implement voluntary noise mitigation options and communicate those to its users which is a common practice at many airports and has been recommended in the 2016 NEF report Reference Document “G” in Table 2-1.</td>
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<td><strong>The airport expansion has the potential to negatively impact property values in the low-density residential areas surrounding the Airport;</strong></td>
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<td>Social Impacts (Land Values)</td>
<td>Concerns about land values were also noted and considered in the Screening Level Environmental Assessment Reference Document “F” in Table 2-1. Refer to Table 4-2: Summary of Public Comments where property values were expressed as a concern and noted in Reference Document “F” in Table</td>
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<td>No.</td>
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<td>Contact Name/Agency</td>
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2-1.
The Airport has also been recognized in the City of Kingston Official Plan which specifically designates and recognizes the lands for airport use. Refer to the 2007 Airport Master Plan Reference Document “A” Section 3.3 for additional details on how the City has designated the airport lands.

*The Airport expansion will displace wildlife and alter their habitat which sits adjacent to a protected conservation area and low-density housing;*  

Wildlife Impacts

The Screening Level Environmental Assessment Reference Document “F” in Table 2-1 found that “The aquatic and terrestrial ecology investigations undertaken as part of the study found that potential impacts to fish and wildlife habitat and to Species of Conservation Concern are anticipated to be mitigated using standard construction mitigation measures. In accordance with Ministry of Natural Resources and Forestry protocols, follow-up breeding bird, amphibian and vegetation surveys are to be completed prior to construction.”

The City of Kingston will follow the mitigation recommendations of this report as part of the
### Kingston Airport Runway 01-19 Extension, Aerodrome Work Consultation

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<td>There has been a lack of consideration of the larger aviation market across Ontario as well as regionally; and</td>
<td>Business Case</td>
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Kingston Airport Runway 01-19 Extension, Aerodrome Work Consultation
WSP Canada Inc. | October 2017 | 161-13548 | v1
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<td>subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”.</td>
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<td><strong>There is no evidence that consideration has been given to alternate parcels of land that would better suit aviation plans.</strong></td>
</tr>
<tr>
<td>O4</td>
<td>Email August 14, 2017</td>
<td>Local Resident</td>
<td><strong>I am writing because I oppose the airport expansion.</strong> <strong>My primary concern is about noise levels. I live about two kilometres from the airport, and the noise from the airplanes, especially warming up in the winter, is</strong></td>
<td>Aircraft Noise</td>
<td>The 2007 Kingston Airport Master Plan Reference Document “A” in Table 2-1 presents a comprehensive analysis optimizing the long-term plans for the Kingston Airport using existing lands. This plan continues to guide the long-term planning of the airport and ensures all of the land available is designated appropriately for both aviation and non-aviation uses. The proposed work follows the recommendation of this plan for the ultimate 6000 ft. runway.</td>
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<td>No.</td>
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<td>loud enough to disturb my sleep. I can’t imagine that a bigger runway would improve noise levels, and there is potential for it getting worse. Last year, I sent an email about this to Laura Turner, the city counselor for my area. The email was never acknowledged and the noise concern never addressed. I think that Kingston airport is too close to residential areas to support an expansion.</td>
<td>by the City of Kingston. The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1 with links to this study at <a href="https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates">https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion/updates</a>. This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional jets described above. It should be noted that the runway length and pavement loading capacity has significant limitations on larger aircraft from operating than those described in the noise study and identified in the Business Plan.</td>
<td>Business Case</td>
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The Kingston Airport 2009 Economic Impact Study Reference Document “B” was also used to inform the City of Kingston as to the broader economic benefits of the airport locally and regionally.

Finally, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”.

The airport is protected by way of a federally enacted airport zoning regulation which can...
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<td>2017</td>
<td>expansion plans but supports an airport in another location. These questions were raised with the Project Information Officer in Kingston: Does the expanded runway meet Transport Canada regulations for height clearances around nearby lands and buildings?</td>
<td></td>
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<td>be found online at this link <a href="http://laws.justice.gc.ca/eng/regulations/sor-88-447/page-1.html">http://laws.justice.gc.ca/eng/regulations/sor-88-447/page-1.html</a>. This regulation ensures the airspace around the airport is protected for the safe operation of aircraft and for the general public. Additional background on these zoning regulations can be found in Section 3.5 of the 2007 Airport Master Plan Study Reference Document “A” in Table 2-1. Refer also to Figure 8.1 in Reference Document “A” which provides a graphical depiction of the zoning protection around the airport. Furthermore, the airport is a certified aerodrome which obligates the airport to operate in accordance with regulatory requirements which are outlined in <em>TP312 Aerodromes Standards and Recommended Practices</em> which can also be found at <a href="https://www.tc.gc.ca/eng/civilaviation/publications/tp312-menu-4765.htm">https://www.tc.gc.ca/eng/civilaviation/publications/tp312-menu-4765.htm</a>. The work proposed will be built in accordance with the latest standards which were updated in September 2015 (TP312 5th Edition).</td>
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Many people who fly small Airspace | The licensing and regulatory requirements of |
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<td>planes from the Kingston Flying Club share planes. Will they have the required experience to fly safely if they are not flying as often as those who do not share planes? If there is an air crash, what are the time frames for rescue on land and water?</td>
<td>Safety</td>
<td>pilots, air carriers are covered under special Transport Canada rules and requirements. The Airport Operator in this case is obliged to provide a safe and certified airport facility where flight operations can occur safely. The City of Kingston Airport is a certified aerodrome which provides the safest possible facilities for aircraft operators. For pilot and air carrier licensing requirements refer to the Canadian Aviation Regulations (CARS) which identifies the minimum training and flight experience requirements. Refer to the following link for additional information related to this query <a href="http://www.tc.gc.ca/eng/civilaviation/opssvs/personneltraining-licensing-menu.htm">http://www.tc.gc.ca/eng/civilaviation/opssvs/personneltraining-licensing-menu.htm</a> In Canada, search and rescue (SAR) is a shared responsibility among federal, provincial/territorial and municipal organizations, as well as air, ground and maritime volunteer SAR organizations. In the case of Kingston, SAR services would be provided by a response from Trenton Air Base. The time for any response is dependent on a number factors including</td>
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<td>Date / Form of Contact</td>
<td>Contact Name / Agency</td>
<td>Comments Received</td>
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<tr>
<td>O6</td>
<td>Email August 29, Local Resident</td>
<td>As a member of Collins Bay Yacht Club located at Collins Bay Marina I am</td>
<td>No one is in the YGK control tower at night, but small planes often land at night. Are they permitted to do so? Do they land visually, or with instruments or radar?</td>
<td>Airspace Safety</td>
<td>The control tower at Kingston is not staffed 24 hours and is closed during certain hours of the day. During these periods, the airport continues to be available for aircraft operations and operates under the rules of Transport Canada Class “E” airspace. During these periods, aircraft can operate under visual or instrument conditions. Radar coverage is not available at low altitudes at Kingston and all instrument procedures are flown based on the publish procedures. Refer also to Sections 4.2.6 and 4.2.7 of the 2007 Airport Master Plan Study Reference Document “A” in Table 2-1.</td>
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<td>No.</td>
<td>Date / Form of Contact</td>
<td>Contact Name / Agency</td>
<td>Comments Received</td>
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<tr>
<td>2017</td>
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<td>writing to you to protest the extension of the runway of Kingston Municipal Airport. Even at this point in time, the noise created by incoming and outgoing aircraft and the dirt deposited by the exhaust of their engines is considerable. Increasing the capacity for departures and arrivals will worsen this situation. There is reason to fear that a considerable number of boats will relocate to other marinas and leave the Kingston area altogether. This will apply in particular to those boaters who live outside the Kingston area and use their boats as summer homes.</td>
<td>regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft have been included in the noise studies completed by the City of Kingston. The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study &quot;G&quot; in Table 2-1 with links to this study at <a href="https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansionUpdates">https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansionUpdates</a>. This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional jets described above. It should be noted that the runway length and pavement loading capacity has significant limitations on larger aircraft from operating than those described in the noise study and identified in the Business</td>
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<td>As a consequence, these boaters will no longer shop for groceries, parts for their boats etc. in the Kingston area. They will also be missed at local places of entertainment like theaters, concert halls and restaurants. In other words, the negative impact of a runway extension at Kingston Municipal Airport on various branches of Kingston’s economy will be considerable.</td>
<td>Plan.</td>
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<td>“……Even at this point in time, the noise created by incoming and outgoing aircraft and the dirt deposited by the exhaust of their engines is considerable. Increasing the capacity for departures and</td>
<td>Aircraft Emissions</td>
<td>Air quality and emissions were very important considerations for the project. The City completed an Air Quality and Emissions Assessment Forecast in 2016, the results of which are summarized in the Reference Document “H” in Table 2-1. The findings of this report were presented to Council in June</td>
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<td>07</td>
<td>Email-Letter</td>
<td>Local Resident</td>
<td>1. Several plans showing the noise impact to surrounding areas with several NEF profiles. These appear to have changed significantly from the initial study, though the City did appear to admit that the initial studies were done with tools that were outdated and not approved by Canadian authorities. This causes one to question the validity of the current data as presented by the City. In addition, Collins Bay Marina has undertaken a study of their own, which the City has not reviewed or</td>
<td>2016. The study found that “Existing air quality in Kingston is very good, and the increase in exposure to air pollution in the vicinity of the airport with the increased activity in 2026 will be imperceptible.”</td>
<td>The City of Kingston completed a number of noise studies beginning with the 2007 Airport Master Plan Reference Document “A” in Table 2-1. The NEF noise metric was used in that study and the findings were subsequently supported by an updated NEF study completed in 2016 Reference Document “G” in Table 2-1. Throughout the period outlined above, various planning-level aircraft noise studies were completed to better understand the potential impacts of the future airport operations on the surrounding noise environment and the sensitivity to changes in various inputs including aircraft mix and runway lengths. Both Transport Canada and FAA based noise models were used to further test changes in inputs and how the various models would react in terms of size and shape.</td>
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<td><em>discussed under the initial &quot;consultation&quot; period.</em></td>
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<td>of the noise contours. In all planning cases to date, while the noise contours did demonstrate change, the impacts of those changes were consistently observed not to be significant in terms of impacts on surrounding land use compatibility. However, the need for a more formal technical study based solely on the Canadian Transport Canada Noise Exposure Forecast (NEF) system was identified by the City. The findings of the 2016 NEF study confirmed that while changes in the noise environment are anticipated, they are not significant and the surrounding land will remain compatible with the aircraft operations. Refer to the Executive Summary contained in the 2016 NEF Report Reference Document “G” in Table 2-1.</td>
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<td>It should be noted that the referenced noise report completed by the Collins Bay Marina was received and reviewed by the City.</td>
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<td>2.</td>
<td><em>The Business Case as presented by the City of</em></td>
<td>Business</td>
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<td>The work proposed has been guided by the findings presented in the report entitle</td>
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<td>Kingston does not support the expansion of the runway; rather it presents the view that no current commercial carriers are requesting this runway extension. Per the City of Kingston's web site, over 70,000 passengers travelled through the airport, versus 168,000 that travelled by rail. In contrast to the planned cost to the city for the airport expansion, VIA Rail is also planning to increase rail connectivity to Montreal and Toronto. This has not been factored into the airport business case. This needs to be addressed and rationalized prior to the city taking on significant new debt to fund airport growth.</td>
<td>Case</td>
<td>“Business Case for Expansion Kingston Airport”, Reference Document “C” in Table 2-1. This was also supported by studies including the Screening Level Environment Assessment Reference Document “F” and the associated Noise and Air Quality Emissions Assessment, Reference Documents “G” and “H” in Table 2-1. Furthermore the work proposed is also consistent with the 2007 Airport Master Plan recommendations which are presented in Reference Document “A” Table 2-1. The Kingston Airport 2009 Economic Impact Study Reference Document “B” was also used to inform the City of Kingston as to the broader economic benefits of the airport locally and regionally. Finally, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference</td>
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<td>Document “F”.</td>
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<td>3.</td>
<td>Conflicting data presented by the city in that it claims only small increases in aircraft movements, yet claims to increase passenger use substantially. This also needs to be clarified before the city takes on additional debt to fund airport growth.</td>
<td>Business Case</td>
<td>The work proposed has been guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport’, Reference Document “C” in Table 2-1. The business case demonstrates the demand for larger turboprop aircraft like the Bombardier Q400 and medium sized regional jets that can have greater passenger capacity than the smaller commuter aircraft currently using the airport. The result of this transition to larger aircraft is a reduction in in the number of aircraft movements while passenger volumes begin to trend higher. This type of effect can be seen at many airports across Canada were traffic movements flatten or actually decline while passenger volumes increase due to changes in the aircraft fleet mix.</td>
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<td>4.</td>
<td>Conflicting data presented by the City of Kingston at the March 30 Information Presentation by the city at</td>
<td>Business Case</td>
<td>To date, a series of reports have been completed to develop and implement strategies to improve air services at the Kingston Airport. These reports have been</td>
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<td><em>St. Lawrence College. At this meeting Mr. David Snow articulated the position that the main driver for the runway expansion was in support of no one other than Queen's University and Invista, a position not documented in any of the city's published literature. This again questions the credibility of the information presented by the city.</em></td>
<td></td>
<td>summarized in in Table 2-1. These studies have been made available publically and again by way of this report. In particular, the work proposed has been guided by the findings presented in the report entitle “Business Case for Expansion Kingston Airport”, Reference Document “C” in Table 2-1 and furthermore, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”.</td>
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<td><em>In summary, my objections are based on the City of Kingston’s obfuscation of the required data to support a seemingly unpublished agenda. I strongly object to the city’s plan to increase debt for a program not clearly substantiated by a</em></td>
<td>Summary</td>
<td>We appreciate your comments and have provided you with our responses/actions above.</td>
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<td>O8</td>
<td>Email – Letter August 30, 2017</td>
<td>Local Resident</td>
<td>I continue to be concerned about the proposed extension of the runway at Norman Rogers Airport in both northerly and southerly directions. My understanding is that this is to facilitate the utilization of more and larger jet aircraft. I was one of hundreds of residents who attended a public meeting in March 2016 at St. Lawrence College, at which questions and concerns were raised.</td>
<td>Aircraft Noise</td>
<td>The business case developed for airport targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft have been included in the noise studies completed by the City of Kingston. The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1 with links to this study at <a href="https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion_updates">https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion_updates</a>. This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional jets described above. It should be noted that...</td>
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<td>the runway length and pavement loading capacity has significant limitations on larger aircraft from operating than those described in the noise study and identified in the Business Plan.</td>
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*We were also informed of the supposed economic benefits this expansion would bring to the City of Kingston, without noticeable environmental effects including noise pollution.*

Our comment above outlines the background work that was done related to aircraft noise pollution.

With respect to the economic benefits, the work proposed has been guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport”, Reference Document “C” in Table 2-1. This was also supported by studies including the Screening Level Environment Assessment Reference Document “F” and the associated Noise and Air Quality Emissions Assessment, Reference Documents “G” and “H” in Table 2-1. Furthermore the work proposed is also consistent with the 2007 Airport Master Plan recommendations which are presented in Reference Document “A” in Table 2-1.

The Kingston Airport 2009 Economic Impact
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<td>Study Reference Document “B” was also used to inform the City of Kingston as to the broader economic benefits of the airport locally and regionally.</td>
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<td>Finally, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”.</td>
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<td>O9</td>
<td>Email September 4, 2017</td>
<td>Local Resident</td>
<td><em>I object to the extension, and additional building, structural work, demolition work and all the sundry additional work proposed. Obviously I am a N.I.M.B.Y. But the area affected is wide and there are many of the residents of Kingston that will be adversely affected by the project.</em></td>
<td>Road Traffic Increase and Noise Building Footprint</td>
<td>The project will be constructed within the limits of the existing Airport property and will follow construction protocols to remain compliant with the findings of the Screening Level Environmental Assessment Reference Document “F” in Table 2-1. Construction access into the airport will be restricted to existing gates and access points from the south end of the airport. Additional technical details and constraints are outlined in Project Definition Document (PDD).</td>
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<td>We are already experiencing far more truck traffic than usual. And this is Before The Project has officially started.</td>
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<td>Reference Study “I” in Table 2-1. Construction activities will take place over a defined period of time estimated to be in the order of 10-12 months.</td>
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<td>O10</td>
<td>Letter September 4, 2017</td>
<td>Local Resident</td>
<td>I own a cruising sailboat at the Collins Bay Marina where my wife and I plus guests stay during the sailing season from May to the end of September. Overnight stays are regular and frequent. My enjoyment of Kingston will be harmed by an extension of the runway and the operation of larger aircraft including jets. I understand that regulations exist which prohibit the lengthening of runways in proximity of extant residential neighbourhoods it is not legitimate to deny that the</td>
<td>Aircraft Noise</td>
<td>The business case developed for airport targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft have been included in the noise studies completed by the City of Kingston. The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1 with links to this study at <a href="https://www.cityofkingston.ca/city-hall/projects-construction/airport-">https://www.cityofkingston.ca/city-hall/projects-construction/airport-</a></td>
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affected area of the runway extension is genuinely residential. Not only the marina owner and his family live here but a community of boat owners too. This must be recognized and acknowledged.

To sum up I am against the extension of the Airport Runway 01-19 for the reason that the noise would infringe on an existing residential neighbourhood. The residents will be harmed. The noise will be too much. I do not believe that the presentations by the Airport guys merit any weight as truthful and honest, indeed quite the opposite.

This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional jets described above. It should be noted that the runway length and pavement loading capacity has significant limitations on larger aircraft from operating than those described in the noise study and identified in the Business Plan.
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| 8, 2017 | Resident | case, made by either the airport authority or the City of Kingston, in support of the need for an extension of the runway. 
Do these numbers indicate that there is room or need for larger planes to service Kingston? Does it appear that Kingston’s passenger traffic could attract another airline to compete against or supplement the current provider? Where then is the need for a longer runway? Is it being promoted on an “if we build it they will come” hope? | Case | pollution. 
With respect to the economic benefits, the work proposed has been guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport”, Reference Document “C” in Table 2-1. This was also supported by studies including the Screening Level Environment Assessment Reference Document “F” and the associated Noise and Air Quality Emissions Assessment, Reference Documents “G” and “H” in Table 2-1. Furthermore the work proposed is also consistent with the 2007 Airport Master Plan recommendations which are presented in Reference Document “A” in Table 2-1. 
The Kingston Airport 2009 Economic Impact Study Reference Document “B” was also used to inform the City of Kingston as to the broader economic benefits of the airport locally and regionally. 
Finally, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. |
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<td>During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”.</td>
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Another concern is the proximity of Kingston Airport to the Lemoine Point Conservation Area. It is, in fact, right between the airport and Lake Ontario. This wilderness parkland is an oasis of trees, trails and wildlife with a closeness to the downtown that many cities in Canada would surely covet. Current airport traffic has a minimal impact (my opinion) on the peace and tranquility of Lemoine Point. Larger aircraft such as 737’s or A320’s for which a runway extension is needed will certainly have a

Aircraft Noise and Air Quality

The business case developed for airport targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft have been included in the noise studies completed by the City of Kingston.

The City of Kingston completed detailed noise studies using the Transport Canada approved NEF noise metric to demonstrate that the proposed project would remain compatible with surrounding land use. Refer to Reference Study “G” in Table 2-1 with links to this study at [https://www.cityofkingston.ca/city-hall/projects-construction/airport-](https://www.cityofkingston.ca/city-hall/projects-construction/airport-).
much greater environmental impact from both noise and air pollution.

**Issue of Concern**

This study was the latest report prepared and incorporated a projected aircraft mix consisting of small piston aircraft up to the larger turboprops and the regional jets described above. It should be noted that the runway length and pavement loading capacity has significant limitations on larger aircraft from operating than those described in the noise study and identified in the Business Plan.

Furthermore the Screening Level Environmental Assessment Reference Document “F” considered and assessed the impacts of the work on the Lemoine Point Conservation Area and found that “…Impacts to the natural environment were assessed as part of the Screening Level Environmental Assessment (EA) Study and were not considered to be significant. Mitigation measures have been developed to avoid or minimize any identified impacts, and are detailed in the final Screening Level EA report. Should revisions to the mitigation strategy be
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<tr>
<td>O12</td>
<td>Email September 17, 2017</td>
<td>Local Resident</td>
<td>Below is my list of questions and my request for information regarding the expansion plans for the airport. For example the signs located just outside of the airport indicated that this project will enhance the local and regional economy by supporting a wider range of aircraft. In order for me to better understand what this means the following</td>
<td>Business Case</td>
<td>With respect to the economic benefits, the work proposed has been guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport’, Reference Document “C” in Table 2-1. This was also supported by studies including the Screening Level Environment Assessment Reference Document “F” and the associated Noise and Air Quality Emissions Assessment, Reference Documents “G” and “H” in Table 2-1. Furthermore the work proposed is also consistent with the 2007 Airport Master Plan recommendations which are presented in Reference Document “A” in Table 2-1.</td>
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required following the completion of additional field surveys in Spring 2016, these revisions will be documented in an addendum to the Screening Level report.”

Refer also to Table 5-1 in Reference Document “F” that summarizes the anticipated environmental impacts and proposed mitigation measures which will be incorporated into the work.
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<td></td>
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<td>needs to be answered or explained by you.</td>
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<td>The Kingston Airport 2009 Economic Impact Study Reference Document “B” was also used to inform the City of Kingston as to the broader economic benefits of the airport locally and regionally.</td>
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<td>1 How will the expansion of the airport enhance the local and regional economy resulting in a positive return on investment including interest on borrowed monies as well as the inclusion of additional costs associated to an expanded operation. References to the 2007 business case must be supported by current data due to the age of the document.</td>
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<td>The business case developed for airport targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft represent the wider range of aircraft referenced in your question.</td>
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<td>2 What does a wider range of aircraft mean. Please provide a list of aircraft projected to use the airport including number of movements from the present to the required 20</td>
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<td>Finally, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”.</td>
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Below are the remaining questions I need answered to fully understand what the impact of this expansion will mean to me.

1.0 Business case

1. Norman Rogers Airport is to provide the current capacity plan for the airport as it is today. The capacity plan is to include all aspects of airport operations.

1.2 Norman Rogers Airport is to provide the projected capacity plan for the airport with the terminal expansion and the runway expansion implemented. Data is to include passenger levels and aircraft type. Please

Business Case

For the most part the questions raised in this section of the letter can be addressed through reference to the following studies completed by the City of Kingston including:

- 2007 Airport Master Plan, Reference Document “A”, in Table 2-1.
- This document specifically addressed the capacity issues referred to in terms of the number of aircraft movement, passengers etc.
- The document specifically addresses issues related to airfield and terminal capacity.
- These findings remain relevant since no major changes to the facilities have occurred since 2007 to affect capacity issues.

In addition to the 2007 Airport Master Plan, additional studies that looked at capacity improvements included the 2012 Kingston Airport Business Case and Implementation
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<td><em>keep in mind that the projections listed in the 2007 business case may not be applicable due to the age of the report. Any references made to this report need to be supported by current data.</em></td>
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<td>Plans, Reference Documents “C” and “D” in Table 2-1. These studies looked at accommodating growth in terms of passenger volumes and aircraft movements and made recommendations related to cost and infrastructure improvements. We would refer to you to these reports along with the updated Project Definition Document Reference Document “E” for more information related to updated capacity improvements proposed at the Airport.</td>
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<td>1.3 Norman Rogers is to provide an active Airport Operations Manual as well as the required future updates to address the expansion plans. Start up and annual costs associated for each of the requirements in the manual is to be broken out by item. Responses needed to Plans, Reference Documents “C” and “D” in Table 2-1. These studies looked at accommodating growth in terms of passenger volumes and aircraft movements and made recommendations related to cost and infrastructure improvements. We would refer to you to these reports along with the updated Project Definition Document Reference Document “E” for more information related to updated capacity improvements proposed at the Airport.</td>
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<td>While a copy of the Airport Operations Manual (AOM) cannot be provided, we can inform you that the airport is a certified aerodrome requiring it to comply with Transport Canada Regulations under Canadian Aviation Regulations (CARS) Part III — Aerodromes, Airports and Heliports. These regulations define how the airport shall operate and to which standards. The AOM is a mandatory document for airport certification.</td>
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</table>
address all requirements in the present and future Airport Operations Manuals, if not addressed within the manual, all applicable regulations and standards (latest versions) per Part III - Aerodromes, Airports and Heliports with associated costs of implementation and annual costs. All responses must separate current airport operations from the operations as a result of expansion and must be itemized.

1.4 Norman Rogers airport is to provide their safely plan for the following and all associated costs with the

The cost to maintain the airport to these standards is embodied in the airport operating budget which forms part of the overall City operating expenses. Operational costs were reviewed and considered in the development of the new work and can be found in the City’s Report Reference Document “F” Appendix B.

The Airport’s safety plan is embodied in the Airport Operations Manual (AOM) and forms an integral part of the overall Safety Management Systems (SMS) that all certified airports must follow. Though the specifics requested cannot be circulated, we inform you that the airport is a certified aerodrome requiring it to comply with Transport Canada Regulations under Canadian Aviation Regulations (CARS) Part III — Aerodromes, Airports and Heliports. These regulations define how the airport shall operate and to which standards. A Safety Management System (SMS) and its associated audit, management and compliance requirements are a mandatory component of being a
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<td><strong>terminal and runway expansions implemented verses current operations. Requirements to Part III - Aerodromes, Airports and Heliports, specifically Subpart 5 of the regulations and standards 323, as well as TP 312 5th Edition.</strong>&lt;br&gt;&lt;br&gt;1.4.1 Firefighting equipment both on and offsite&lt;br&gt;1.4.2 Foam&lt;br&gt;1.4.3 Annual Training&lt;br&gt;1.4.4 Specialty training, aircraft fire training&lt;br&gt;1.4.5 Staff numbers and titles (For privacy, staff names are not required)&lt;br&gt;1.4.6 Environmental</td>
<td>certified aerodrome.&lt;br&gt;It should be noted that these plans and systems identify specific equipment requirements and training programs to maintain compliance all of which the City of Kingston must adhere to remain certified. We refer to you to additional background on these topics at <a href="http://www.tc.gc.ca/eng/programs/airports-index.htm">http://www.tc.gc.ca/eng/programs/airports-index.htm</a>.&lt;br&gt;&lt;br&gt;The cost to maintain the airport to these standards is embodied in the airport operating budget which forms part of the overall City operating expenses. Operational costs were reviewed and considered in the development of the new work and can be found in the City’s Report Reference Document “F” Appendix B. For additional information, you may make a formal request for records pursuant to the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA). To do so, please refer to the following link: <a href="https://www.cityofkingston.ca/city-">https://www.cityofkingston.ca/city-</a></td>
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<td><em>monitoring and inspections</em>&lt;br&gt;1.4.7 Chemical costs and disposal costs&lt;br&gt;1.4.8 Equipment costs&lt;br&gt;1.4.9 Depreciation&lt;br&gt;1.4.10 First aid&lt;br&gt;1.4.11 Emergency procedures&lt;br&gt;1.4.12 Fuel containment and emergency measures&lt;br&gt;1.4.13 Spills and Spill containment equipment&lt;br&gt;1.4.14 Ground Water monitoring&lt;br&gt;1.4.15 Safety plan annual costs by item</td>
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<td><em>hall/freedom-of-information</em></td>
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<td>1.4.16 All other requirements per regulations, standards or TP</td>
<td>Business Case</td>
<td>With respect to the economic benefits, the work proposed has been guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport”, Reference Document “C” in Table 2-1. This was also supported by studies including the Screening Level Environment Assessment Reference Document “F” and the associated Noise and Air Quality Emissions Assessment, Reference Documents “G” and “H” in Table 2-1. Furthermore the work proposed is also consistent with the 2007 Airport Master Plan recommendations which are presented in Reference Document “A” in Table 2-1. The Kingston Airport 2009 Economic Impact Study Reference Document “B” was also used to inform the City of Kingston as to the broader economic benefits of the airport locally and regionally. The business case developed for airport...</td>
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<td>1.5 Kingston is to list all airport benefits to the community with a focus on the ROI (Return On Investment) to better understand the long term annual costs, time and interest costs to payback loans or profits of the proposed expansion. 1.6 Provide a list of companies, schools and organizations, stakeholders contacted 1.7 Provide or supply the questionnaire or information package used in the...</td>
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<td>targets larger turboprop aircraft like the Bombardier Q400 with some increase in regional commuter jets similar to the Canadair CRJ 705 or an Embraer 145. These aircraft represent the typical size of aircraft that the proposed 6,000 ft. runway and pavements could accommodate. These aircraft represent the wider range of aircraft referenced in your question.</td>
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Finally, in the late spring of 2015, at its strategic priority-setting sessions, Council identified the airport expansion as a priority. During its 2016 budget deliberations, Council subsequently approved the funding required for the airport expansion project. Refer to more details on these decisions in Reference Document “F”.

More specifically:

- The 2007 Airport Master Plan Reference Document “A” in Table 2-1 along with the Screening Level Environmental Assessment Reference Document “F” both capture the various agencies/persons etc. consulted on the work. We refer you to those documents.
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<td>include the following;</td>
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<td>where you will find a considerable history of stakeholder/public consultation.</td>
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<td>1.8.1 Increased tax revenue as a result of the airport expansion</td>
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<td>• With respect to questions related to ROI, capital cost and operational cost impacts we refer you to the following background studies:</td>
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<td>1.8.2 Increased tax base due to new construction, immigration to the city as a direct result of the airport expansion</td>
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<td>○ 2012 Airport Business Case, Reference Document “C” which first estimates the capital costs associated with the work in Sections 6.2.3-6.2.5. The report further explores and documents impacts on operational revenues and models the future scenarios in Section 7.</td>
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<td>1.8.3 Increased airport revenue due to the airport expansion.</td>
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<td>○ 2012 Project Implementation Plan Reference Document “D” in Table 2-1 presents more detailed capital costs on Page 4 and Exhibits A and B.</td>
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<td>1.8.4 The economic forecast is to address any impacts to train and bus operations as a result of the expanded airport.</td>
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<td>For additional information, you may make a formal request for records pursuant to the</td>
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<td><strong>costs for the years 2012 to present including passenger traffic and movements including aircraft types</strong>&lt;br&gt;1.9.1 Detail list of operating costs&lt;br&gt;1.9.2 Maintenance&lt;br&gt;1.9.3 Energy&lt;br&gt;1.9.4 Administration&lt;br&gt;1.9.5 Insurance&lt;br&gt;1.9.6 Nav Canada&lt;br&gt;1.9.7 Etc.&lt;br&gt;1.10 Norman Rogers is to provide projected detailed operating costs&lt;br&gt;1.10.1 Increased costs projected for the terminal</td>
<td>Municipal Freedom of Information and Protection of Privacy Act (MFIPPA). To do so, please refer to the following link: <a href="https://www.cityofkingston.ca/city-hall/freedom-of-information">https://www.cityofkingston.ca/city-hall/freedom-of-information</a></td>
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<td>expansion and runway expansion.</td>
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<td>1.10.2 Compare costs to the full capacity plan of expanded operations.</td>
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<td>1.10.3 Provide projected capacity plan to 2037 (20 year requirement) using existing aircraft plus Q400 with no jet traffic and compare the capacity plan to the projected passenger traffic.</td>
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<td>1.11 Expansion costs</td>
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<td>1.11.1 Total cost of the expansion in detail (itemized) by phase</td>
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<td>1.11.2 Risk amount in dollars beyond the approved</td>
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<td>budget by time for the items detailed in the above question</td>
<td>1.11.3 Debt costs and interest rates both short and long term</td>
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<td>1.11.4 Detail the annual cost to the taxpayer to maintain operations at Norman roger airport for both short and long term</td>
<td>ROI calculations versus capacity from the present to 2037 for the following;</td>
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<td>1.11.5 No changes to the airport</td>
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<td>1.11.6 Terminal Expansion only</td>
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<td>1.11.7 Terminal and</td>
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<td>Runway Expansion (no Jets)</td>
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<td>1.11.8 Terminal and Runway Expansion (with jets)</td>
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<td>2.0 Environmental Assessment (EA)</td>
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<td>2.1 Kingston held an information session for the public March 30th at St Lawrence College. During the question period it was asked by the public what area did the environmental assessment cover. The answer provided by the engineering consultant from MMM was the airport property only. As per the guidelines of regulation</td>
<td>Environmental Assessment</td>
<td>While the expansion project is not designated under S84 (a) of the Canadian Environmental Assessment Act (CEAA 2012) – and is therefore not subject to the requirements of the Act – the City completed this study as a best practice, to exercise due diligence. A public engagement program, including a project website, public notification and a Community Information Session, was undertaken as part of the study. The full Screening Level Environmental Assessment Report Reference Document “F” in Table 2-1 provides the full scope of the assessment and its findings. Table 5-1 of this report captures all of the identified environmental impacts and associated mitigation strategies proposed which shall form part of the project</td>
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307.04 part a)
A 4 kilometer area around the airport should be included in the environmental assessment

2.1.1 How is Kingston going to address the EA beyond the airport?

2.1.2 Provide a contact list to communicate with all individuals within 4km of the airport

2.1.3 Provide a checklist that communication was delivered.

2.1.4 Collins Bay has been identified as a sensitive wildlife environment how is Kingston going to manage

implementation planning and design.

It should also be highlighted that study included a comprehensive consultation process which was fully documented in Section 4.0 of the study. Table 4-1 and Appendix F of the report documents the consultation process and all of the comment received and associated responses and action to be taken by the City.

The Screening Level Environmental Assessment (EA) was presented to City Council in June 2016. The EA and the associated Council Report are included with links in Reference Document “F” in Table 2-1 of this report. The report also included the supplemental Air Quality and Emissions Study Reference Document “H” and the updated 2016 NEF Technical Report Reference Document “G”.

As a follow up to the recommendations in these studies, the City proceed with and
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<td>this sensitivity?</td>
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<td>completed the necessary clearances for a Stage 2 Archeological Assessment as presented in Reference Document “J” in Table 2-1.</td>
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<td>2.1.5 Kingston is to provide an Environment Assessment and impact analysis as a result of the airport expansion and increased movements by aircraft type. The EA and impact analysis is to be conducted for both runways 01 and 19 and is to include Collins Bay and the shoreline at runway 01. The EA and impact analysis must meet the following</td>
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<td>Based on the above, the City of Kingston has demonstrated their due diligence with respect to environmental impacts of the proposed work and will continue to implement the work with regard for the findings of these studies and their associated impact mitigation recommendations.</td>
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- TP 11500
- TP 13549
- Wildlife Management Plan
- Bird Strike Summary Report and risk analysis
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<td>Various noise modelling scenarios were explored throughout the work development period from 2007 through 2016. In the original 2007 Airport Master Plan Reference Document “A” in Table 2-1, Noise Exposure Forecast (NEF) modelling was completed and used in assessing the future aircraft noise compatibility with surrounding land uses. The findings concluded at that time that the airport could evolve within the master planning period with no significant impacts on land use compatibility. During the Screening Level Environmental Assessment process and public presentations, aircraft noise was identified as a significant public issue and as such more scenarios were developed and presented as referred to in the adjacent comments. Part of these scenarios, the introduction of Boeing 737 series aircraft were explored and shown at public meetings which generated considerable feedback and concern. The noise contours did change.</td>
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- **Wildlife control**

3.0 Conflicting noise data provided by Kingston

*It is of critical importance that the impact analysis be conducted in a worst case manner with fully loaded and fueled aircraft using the full length of the runway. The analysis must also include the targeted aircraft listed in the DEC PDD. For example the 737-800 was not part of the latest NEF contour calculations but are a part of the PDD as a design requirement. Please justify why the latest NEF contours do not take into account worst case scenarios of all aircraft.*

Aircraft Noise
Slide 18 (Aircraft Movements by Type) provided in the presentation at Saint Lawrence College March 30th is populated with movement data that is different from every other document publish by Kingston. MMM Group had indicated in the meeting that the noise contours were generated with only four 737-800 flights per day.

3.1 Did the noise contours include movements described in slide 18?

3.2 Did the noise contours take into account day or night flights?

considerably from previous studies and re-confirmed the objective of the 2012 Business Case Reference Document “B” in Table 2-1 that the focus should remain the larger turboprop Q400's and the smaller narrow body commuter/regional jets similar to the CRJ 705 and Embraer 145's. As a result, the City commissioned a comprehensive updated 2016 Updated Noise Exposure Forecast Study Reference Document “G” which formed part of the Screening Level Environmental Assessment Study Reference Document “F”, received by Council in June 2016.

The proposed runway expansion will maintain the existing pavement load rating (PLR), which will be suitable for current uses and those aircraft targeted in the Business Case and described above. Only limited use would be possible for an aircraft like the B737 in terms of frequency, weight and weather conditions of these new facilities due to the runway length and pavement load capacity. Further details on this are included in the Updated Project Definition Document Reference Document “I”.

including the 737-800.
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<td>3.3</td>
<td>What was the raw data used for the 737-800? (fully loaded or not)</td>
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<td>The NEF system is explained in the 2016 Updated Noise Exposure Forecast Report Reference Document “G” in Table 2-1. To answer some of the questions, the NEF system accounts for day and night aircraft operations. Night-time operations are penalized by 16.7 times due to their increased annoyance levels. The model also considers a busy average day at the airport also referred to as the 95th percentile day. This can be generally explained as not the absolute busiest day but “pretty close”. As such, the model considers a very high volume of expected traffic. Finally, all of the data inputs for the aircraft noise signatures were based on Transport Canada raw data profiles. It should also be noted that the current work will retain and thereby displace the runway thresholds (retain current threshold which will become displaced threshold following runway extension) Refer to Section 4.5 of the 2016 NEF Report Reference Document “G” to more detailed explanations of this noise mitigation.</td>
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<td>3.4</td>
<td>The blue noise contour of slide 16 comes within just a few meters of the end of runway 19. Mathematically describe how this is possible if the 737-800 aircraft was used to generate the noise curve and did not use displaced landings and takeoff.</td>
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<td>3.5</td>
<td>February 25 2013 Airport infrastructure expansion concepts -noise contours are over the marina, why did they change?</td>
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<td>plan.</td>
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<td>4.0 Consultations</td>
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<td>4.1 Once all the comments or objections, questions have been received from the public and prior to them being complied into a summary report for submission to Transport Canada, will Kingston complete the consultation process to answer and discuss the comments, objections and questions with the public until fully satisfied.</td>
<td>Consultations</td>
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<td>4.2 How will this consultation process work?</td>
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Through pre-consultations with Transport Canada in late 2016 and early 2017, The City was advised that the consultation requirement of the new regulation may have already been substantially addressed by work undertaken in previously completed stages of the work. However, upon further review and consideration, the City decided in 2017 to undertake the full regulatory consultation which is described in this report.

These consultations have proceeded in accordance with the regulatory framework.


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<td>O13</td>
<td>Email September Local Resident</td>
<td>I oppose the proposed extension of runway 01-19, as I believe the Aircraft Aircraft</td>
<td>Community. Copies of the report will be available both on the City’s website and for viewing at City Hall at the Clerk’s Office.</td>
<td>The noise modelling considered a wide variety of aircraft types to best represent the aircraft noise environment project to 2026 at the</td>
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<td>17</td>
<td>17, 2017</td>
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<td>environmental impact studies have greatly underestimated the impact of this extension on the environment and neighbourhood surrounding Kingston Airport. In particular:</td>
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<td>Noise</td>
<td>Kingston Airport. More specifically, in Table 3-1 of the 2016 NEF Study Reference Document “G” in Table 2-1, the list of aircraft considered ranged from small single and twin engine piston which are generally older (Beech Baron, C172) to medium sized turboprops like the Cessna 441 and B1900 which are slightly newer to the modern Bombardier Q400 (DHC-8) and commuter jets modelled (CL601). This mix provided a reasonable cross-section of older and newer technology aircraft for modeling purposes.</td>
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<td>Aircraft Noise</td>
<td>The work proposed has been guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport’, Reference Document “C” in Table 2-1. The business case demonstrates the demand for larger turboprop aircraft like the Bombardier Q400 and medium sized regional jets that can have greater passenger capacity than the smaller commuter aircraft currently using the airport. The result of this transition</td>
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Kingston Airport Runway 01-19 Extension, Aerodrome Work Consultation
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<td>advocates claim it will.</td>
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<td>to larger aircraft is a reduction in in the number of aircraft movements while passenger volumes begin to trend higher. This type of effect can be seen at many airports across Canada were traffic movements flatten or actually decline while passenger volumes increase due to changes in the aircraft fleet mix.</td>
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- the runway extension is part of a plan to increase the overall use of Kingston airport, by attracting new aviation-industrial enterprises to the airport. These new enterprises would also have an environmental impact. The cumulative environmental impact will be considerably greater than that of just the runway extension, but only part of the impact is being |

Business Case

As noted above the work was guided by the findings presented in the report entitled “Business Case for Expansion Kingston Airport”, Reference Document “C” in Table 2-1. Furthermore the Screening Level Environmental Assessment Reference Document “F” considered and assessed the impacts of the work on the Lemoine Point Conservation Area and found that “…Impacts to the natural environment were assessed as part of the Screening Level Environmental Assessment (EA) Study and were not considered to be significant. Mitigation measures have been developed to avoid or minimize any identified impacts, and are detailed in the final Screening Level EA report.”
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<td>O14</td>
<td>Parcel Submitted September 18, 2017</td>
<td>Collins Bay Marina</td>
<td>Collins Bay Marina Inc. is seriously threatened and will be adversely affected by the above-mentioned runway extension. Its lands, buildings and marina operations lie directly at the northerly end of the airport lands. The flight path of all incoming aircraft from the North and all outgoing aircraft to the North is directly over the centre of the CBM lands and docks.</td>
<td>Aircraft Noise and Safety</td>
<td>Should revisions to the mitigation strategy be required following the completion of additional field surveys in Spring 2016, these revisions will be documented in an addendum to the Screening Level report.” Refer also to Table 5-1 in Reference Document “F” that summarizes the anticipated environmental impacts and proposed mitigation measures which will be incorporated into the work.</td>
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<td>What is particularly incredulous on the part of the City is its failure to admit that the real reason for the runway extension is to accommodate future jet aircraft traffic for passengers. On top of that the City uses 1.3 jet movements per day as its future traffic projection for the calculation of noise contours in order to minimize the noise contours on CBM. In the Airport Infrastructure Expansion Project Definition Summary and the Screening Level Environmental Assessment there were 8 movements of 737-800 jets. 1.3 movements of the smaller CRJ705 is not the worst case scenario for the required 20 year projection of air traffic. All information provided or available to the public is unreliable based on this change.</td>
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The primary adverse effect is the expected noise levels from new jet aircraft traffic which will be able to use YGK because of the subject extended runway. While much emphasis has been placed on its own NEF contours by the City, it is the impact of single event jet aircraft noise upon the inhabitants of CBM which is crucially important. We refer to table 5.1 (of the Amec Foster Wheeler Final Report Noise Modelling Study dated June 2016) calculation of the Boeing 737-800 aircraft taking off where CBM is at the 91.6 dB level and arrival at 96.0 dB as an illustration of potential impact of the expanded runway on CBM inhabitants. This noise level will have serious impacts on humans.

Aircraft Noise

Various noise modelling scenarios were explored throughout the work development period from 2007 through 2016. In the original 2007 Airport Master Plan Reference Document “A” in Table 2-1, Noise Exposure Forecast (NEF) modelling was completed and used in assessing the future aircraft noise compatibility with surrounding land uses. The findings concluded at that time that the airport could evolve within the master planning period with no significant impacts on land use compatibility.

During the Screening Level Environmental Assessment process and public presentations, aircraft noise was identified as a significant public issue and as such more scenarios were developed and presented as referred to in the adjacent comments. Part of these scenarios, the introduction of Boeing 737 series aircraft were explored and shown at public meetings which generated considerable feedback and concern. The noise contours did change considerably from previous studies and re-confirmed the objective of the 2012 Business
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Case Reference Document “B” in Table 2-1 that the focus should remain the larger turboprop Q400’s and the smaller narrow body commuter/regional jets like the CRJ 705 and Embraer 145’s. As a result, the City commissioned a comprehensive updated 2016 Updated Noise Exposure Forecast Study Reference Document “G” which formed part of the Screening Level Environmental Assessment Study Reference Document “F”, received by Council in June 2016.

The proposed runway expansion will maintain the existing pavement load rating (PLR), which will be suitable for current uses and those aircraft targeted in the Business Case and described above. Only limited use would be possible for an aircraft like the B737 in terms of frequency, weight and weather conditions of these new facilities due to the runway length and pavement load capacity. Further details on this are included in the Updated Project Definition Document Reference Document “I”.

It should also be noted that the proposed extension will retain the existing landing
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<td>threshold positions (and thereby displace the runway thresholds in consideration of the extended runway) as part of the work. Refer to Section 4.5 of the 2016 NEF Report Reference Document “G” to more detailed explanations of this mitigation plan. In addition, the report states “…Through future noise management consultations with air-operators, additional noise mitigations can be considered including reduced-thrust takeoffs due to the increased runway length.”</td>
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<td>Lori, Gerry and their daughters live in their residential premises at 1270 Coverdale Drive, Kingston, ON, K7M 8X7. This house is over 40 years old and has none of the building technology currently recommended to deal with adverse noise from airport operations. There has been no offer from the City of Kingston to provide or subsidize any upgrades to this residence to deal with adverse noise from the Aircraft Noise</td>
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<td>The 2007 Airport Master Plan Reference Document “A” and the Updated 2016 NEF Study Reference Document “G” demonstrated that the 30 NEF contour remains within the airport boundary with only a small projection off airport lands to the south. These contours demonstrate that the impacts on residential development are not significant and that the airport remains compatible with surrounding residential land uses. Should residents in the area wish to upgrade their noise insulation in their homes as part of any renovations or new construction, guidelines are provided by the</td>
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When the Master Airport Plan of 2007 was being prepared by the consultants’ MMM Group, the previous marina owner raised objections and was ignored. However, the City and its consultants had been notified and have been aware of issues at CBM since before 2007. The City has never discussed recommended noise attenuation measures for our residence.

National Research Council of Canada (NRC) in their document entitled IBANA - insulating buildings against noise from aircraft.

The concerns of the CBM has been documented, received and considered as part of the airport development plans and this project. In particular, the City has continued to balance the regional benefits of the airport and the concerns and needs of the adjacent residents and businesses. These actions include: mitigating noise impacts through design and operational procedures including implementing displaced thresholds, retaining existing pavement load capacity, permitting crane operations in the marina with appropriate safety measures which would not normally be permitted in such close proximity to an airport, and demonstrating through technical studies that the airport will continue to operate safely and within acceptable noise levels to ensure computability of both the airport and the marina well into the future.
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<td>CBM’s operations are mainly related to sailboats rather than motor boats, and it is the sailboat use during the sailing season that will also be adversely affected by increased noise levels from new jet aircraft landing and taking off the extended runway of YGK.</td>
<td>Aircraft Noise.</td>
<td>The studies completed by the City of Kingston have always considered the adjacent land uses and the airport’s compatibility with respect to aircraft noise. This includes not only the CBM but other adjacent residential land uses. The 2007 Airport Master Plan Reference Document “A” and the Updated 2016 NEF Study Reference Document “G” demonstrated that the 30 NEF contour remains within the airport boundary with only a small projection off airport lands to the south. These contours demonstrate that the impacts on residential development are not significant and that the airport remains compatible with surrounding residential land uses and in this case, the CBM. Although the CBM is zoned commercial, the City was sensitive to the nature of the use as described and was able to demonstrate through the NEF modeling, that the marina and other residential land uses around the airport would remain below the 30 NEF thus confirming that the work would not have a significant impact on the noise sensitive uses. Transport Canada recommendations show that marinas are</td>
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Currently sailboat owners use their boats for overnight sleeping, in the same manner as people use campgrounds to pitch their tents and sleep overnight. We refer you to our recent informal Collins Bay Client Profile their boats while parked in CBM.

The City of Kingston and its consultants have repeatedly ignored this aspect of the CBM operations, namely for overnight camping, and have refused to classify the CBM land use in the same category as campgrounds,
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<td>for purposes of noise sensitivity.</td>
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<td>compatible with aircraft noise levels exceeding 30 NEF but the models and City’s directives were to demonstrate that the marina would not experience levels above 30 NEF. Refer to Section 5.0 of the 2016 Technical Report Reference Document “G” for additional background on marina’s and NEF compatibility. On the basis of the 2016 NEF Study Reference Document “G” and the various noise mitigation strategies proposes, the CBM should not experience any significant aircraft noise impacts and the marina will remain a compatible land use with the airport.</td>
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<td>If people cannot get a good night’s sleep in their sailboats while docked at CBM, it is likely that they will simply not return to rent dock space the next season.</td>
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<td>CBM’s future existence is threatened by the higher noise levels from new jet aircraft traffic at YGK. Loss of rentals of dock spaces by disgruntled overnight</td>
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<td>This will affect the winter storage of boats on CBM lands, which represents a significant portion of annual revenues of CBM. Not to mention the craning services to lift boats in and out of the water in spring and fall respectively, another significant portion of annual revenues of CBM.</td>
<td></td>
<td>Refer to previous comment. On the basis of the 2016 NEF Study Reference Document “G” and the various noise mitigation strategies proposes, the CBM should not experience any significant aircraft noise impacts and the marina will remain a compatible land use with the airport.</td>
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<td>boaters will have a downward spiraling effect on revenues of CBM. At some future point CBM would have to close. The Buzzi’s investment would be worthless, and their retirement as paupers would be guaranteed. The loss of CBM as a viable marina attracting considerable annual tourist dollar revenues would be a boon to the City which operates its own marinas. This conflict of interest for the City of Kingston has never been admitted, although it is real, and we feel should be taken into account when assessing the decision making by the City with respect to its other owned facilities and operations at YGK. How can the City do this to CBM?</td>
<td>Aircraft</td>
<td>Refer to previous comment.</td>
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The right path for the City of Kingston is to admit it has a noise impacts and the marina will remain a compatible land use with the airport.
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<td>conflict of interest, that it is only extending the runway to attract future jet traffic, and that the increased noise from future jet aircraft traffic will cause serious effects upon, and seriously threaten, the inhabitants and visitors at CBM. If the City wants to run roughshod over its neighbours at CBM, it should step up to the plate and purchase CBM. That way the City would bear the burden of its decision to expand the airport runway, not private citizens.</td>
<td>Noise.</td>
<td>On the basis of the 2016 NEF Study Reference Document “G” and the various noise mitigation strategies proposes, the CBM should not experience any significant aircraft noise impacts and the marina will remain a compatible land use with the airport.</td>
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<td>However, because the City will not be responsible for all the affects of its decision to expand the runway, it has manipulated its projections of future aircraft traffic, especially underestimating the number of jet flights (1.3 movements per day), in order to contain the projected 30 db NEF noise</td>
<td>Aircraft Noise</td>
<td>Various noise modelling scenarios were explored throughout the work development period from 2007 through 2016. In the original 2007 Airport Master Plan Reference Document “A” in Table 2-1, Noise Exposure Forecast (NEF) modelling was completed and used in assessing the future aircraft noise compatibility with surrounding land uses. The findings concluded at that time that the airport</td>
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<td><strong>contours within the airport lands. Using false NEF contours in its Noise Exposure Technical Report dated June 6, 2016, the City states that it has “consulted” with the public during 2016, prior to City Council approving the runway extension and funding the project. How can a “consultation” by the City using false premises be a true consultation with the public?</strong></td>
<td>could evolve within the master planning period with no significant impacts on land use compatibility. During the Screening Level Environmental Assessment process and public presentations, aircraft noise was identified as a significant public issue and as such more scenarios were developed and presented as referred to in the adjacent comments. Part of these scenarios, the introduction of Boeing 737 series aircraft were explored and shown at public meetings which generated considerable feedback and concern. The noise contours did change considerably from previous studies and re-confirmed the objective of the 2012 Business Case Reference Document “B” in Table 2-1 that the focus should remain the larger turboprop Q400’s and the smaller narrow body commuter/regional jets like the commuter regional jets. As a result, the City commissioned a comprehensive updated 2016 Updated Noise Exposure Forecast Study Reference Document “G” which formed part of the Screening Level Environmental</td>
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The proposed runway expansion will maintain the existing pavement load rating (PLR), which will be suitable for current uses and those aircraft targeted in the Business Case and described above. Only limited use would be possible for an aircraft like the B737 in terms of frequency, weight and weather conditions of these new facilities due to the runway length and pavement load capacity. Further details on this are included in the Updated Project Definition Document Reference Document “I”. The NEF system is explained in the 2016 Updated Noise Exposure Forecast Report Reference Document “G” in Table 2-1. To answer some of the questions, the NEF system accounts for day and night aircraft operations. Night-time operations are penalized by 16.7 times due to their increased annoyance levels. The model also considers a busy average day at the airport also referred to as the 95th percentile day. This can be generally explained as not the absolute
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<td>busiest day but “pretty close”. As such, the model considers a very high volume of expected traffic. Finally, all of the data inputs for the aircraft noise signatures were based on Transport Canada raw data profiles. It should also be noted that City of Kingston chose to retain and displace the runway thresholds as part of the work to further mitigate noise impacts on adjacent properties a direct result of completing the noise studies for the project. Refer to Section 4.5 of the 2016 NEF Report Reference Document “G” to more detailed explanations of this mitigation plan. Moreover the Collins Bay Marina engaged the engineering consulting firm of Amec Foster Wheeler Environment &amp; Infrastructure UK Limited for two reports (Peer Review of the Kingston Airport Infrastructure Expansion Report related to Airport Noise - March 14, 2016, and Collins Bay Marina Noise Aircraft Noise)</td>
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Modelling Study Final Report - June 2016) which were given to the City as it “consulted” with the public. The March report pointed out that the City had used improper noise modelling program from USA (INM) instead of the Canadian standard NEFCALC software used by Transport Canada. That forced the City to redo its NEF contour projections with the proper Canadian software and come out with a new report as noted above on June 6, 2016. In the meantime, Amec Foster Wheeler had been preparing its June 2016 Noise Modelling Report, which had different more adverse results for CBM. CBM pointed out to the City the different expert calculations/opinions and offered to bring Amec Foster Wheeler to Kingston to meet with the City’s MMM Group consultants for technical validation. Reference to this is found in the 2016 City Council Report Reference Document “F”, page 8.
purposes of discussion of the two reports. The City flatly refused to have the two sets of consultants meet, and proclaimed that its own noise study was the only one it could rely upon in making its decision to extend the runway. More importantly to CBM, Amec Foster Wheeler had demonstrated that the City did NO single event noise studies which are far more relevant to show the adverse effects on CBM and its inhabitants of increased jet aircraft traffic at YGK.

As a side note, CBM feels that it has spent considerable dollars to demonstrate that the City has unreliable information to make a decision on the runway expansion, and the City should be forced to go back and do the correct studies based upon realistic expectations of future jet
In addition CBM has engaged Valcoustics Canada Ltd. to conduct a Peer Review of Noise Reports dated May 4, 2017. Section 5.0 of the attached Report entitled “Overall Conclusions” points out deficiencies in the City’s noise studies, especially the failure to reference the aircraft noise policies and guidelines of the Ontario government, which would be relevant in land use planning for a city in Ontario. The City of Kingston has forgotten that it is a creature of an Ontario statute bound to abide by the laws of Ontario, and its role as a decision maker involving land use conflicts to be truthful, independent, fair and unbiased.

Aircraft Noise

The Ontario Provincial Policy Statement (PPS) is interested in the protection of the long-term operational and economic role of airport by ensuring the compatibility land use planning. Refer to Section 1.6.9 of the 2014 PPS. The City has demonstrated that they have been guided by the PPS through the development of an appropriate Airport Master Plan Reference Document “A”, Business Cases Reference Document “C”. Screening Level Environmental Assessment including noise and air quality studies Reference Document “F”, “G” and “H”. All of these show that the airport will remain compatible with the surrounding land uses while also ensuring it long-term operational and economic benefits are protected.

What kind of “consultations” Consult- As noted in Table 2-1, a series of reports have
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<td><strong>was the City carrying on in 2016? The City would not have any meaningful discussions with CBM about its objections to the runway extension. CBM can only conclude that the word “consultation” means “pretend to listen and then ignore” to the City of Kingston.</strong></td>
<td></td>
<td>This has been completed to develop and implement strategies to improve air services at the Kingston Airport. All of the above responses and references to specific studies and in particular aircraft noise mitigation strategies developed as part of the project are a result of and/or form part of the consultations completed to date on the project. These actions include: mitigating noise impacts through design and operational procedures including implementing displaced thresholds, retaining existing pavement load capacity, permitting crane operations in the marina with appropriate safety measures which would not normally be permitted in such close proximity to an airport, and demonstrating through technical studies that the airport will continue to operate safely and within acceptable noise levels to ensure computability of both the airport and the marina well into the future. The City of Kingston has received and has acted on the inputs received. The previous consultations (2013-2016) are discussed in section 2.3 of this report.</td>
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That same attitude about “consultation” has been carried over by the City to the present consultation under new section 307 of the Canadian Aviation Regulations. As a matter of fact, CBM had to start an application in Federal Court in Toronto (T-857-17) to force the City to carry out this consultation. The City is doing what CBM feels is the minimum amount of notice to the public by posting signs around the airport and inviting submissions such as this one. The residents next
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<td>to the airport should have received mailed notices of this consultation and there should have been public meetings to consider the latest document produced by the City on December 19, 2016 entitled Project Definition Document. CBM is limited to submitting comments by this submission, and the public will never find out as they would in a public meeting process. Another point is that the CAR consultation by Kingston is being done over the summer holiday period when most members of the public are preoccupied with enjoying their summer holidays and weather; either the time should have been extended or the consultation held in the fall after schools have resumed and people might have better opportunity to become aware of the consultation.</td>
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<td>The additional public consultation undertaken by the City of Kingston in 2017 is in full compliance with CARS Regulation 307. This report documents the process and all actions taken. Additional details on the regulatory requirements which will be met by the City can be found at <a href="http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-433/page-39.html#h-259">http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-433/page-39.html#h-259</a>.</td>
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<td>CBM respectfully requests that the City of Kingston carry out a full and complete consultation with the public pursuant to section 307 of the CARS. CBM wants the City to engage in discussions and meetings with CBM over the points raised in this submission. CBM is prepared to bring an engineering consultant to discuss noise calculations. CBM requests a meaningful consultation.</td>
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<td>Pursuant to Section 4.31 of the Aeronautics Act (R.S.C., 1985, c. A-2, Collins Bay Marina respectfully requests that the Minister make an order prohibiting the expansion of YGK by extending Runway 01-19 on grounds that said expansion is likely to adversely affect aviation safety or is not in the public interest.</td>
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<td>Summary</td>
<td>Your comments are appreciated. The City believes that the project does not adversely affect aviation safety and will benefit the region with no significant impact on surrounding land use compatibility.</td>
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Appendix A

Project Notice
Kingston (Norman Rogers) Airport
Runway 01-19 Extension Project
Aerodrome Work Consultation Notification of Community per Canadian Aviation Regulations Part III, Subpart 307

This work includes
• extension of Runway 01-19 approximately 115m to the south and 212m to the north as shown in the Map;
• associated airfield lighting and markings; and
• select improvements to the existing runway to comply with the latest Transport Canada safety standards.

This project will enhance the local and regional economy by supporting a wider range of aircraft. Construction is expected to commence in late fall 2017 and be completed in fall 2018.

The City undertook public consultation for this work in 2013-2016. This public input was incorporated, considered and addressed as part of the Environmental Assessment report that was received by Council in 2016. New regulations introduced by Transport Canada in 2017 allow for an added opportunity to consult with the public on the runway extension work.

The City of Kingston invites the community to provide their comments or objections with respect to the runway extension to the Project Information Officer at: kingstonairport@wsp.com OR by mail to WSP Canada Inc.
920 Princess St., Suite 101
Kingston, ON    K7L 1H1
(Tel: 613-546-2227)

Submissions are welcomed from August 1, 2017 until September 18, 2017.

Additional information related to the project can be found on the City’s website at https://www.cityofkingston.ca/airport

Additional information related to the Aerodrome Work Consultation process can be found at Transport Canada’s website at: https://www.tc.gc.ca/eng/programs/aerodromes-regulations-2981.html
Appendix B

Project Notice Sign and Newspaper Advertisements
Offer input on the City's Multi-Year Accessibility Plan at the public input session on Tuesday, August 8 from 6 p.m. to 8 p.m. Presentation at 6 p.m. Isabel Turner Public Library, 935 Gardiners Road

Comment on proposed runway extension at Kingston Airport

The City intends to start work on the extension of the runway at Kingston’s Norman Rogers Airport this fall.

The City conducted public consultation on this project which formed part of an Environmental Assessment process completed in 2016. New regulations introduced by Transport Canada in 2017 allow for an added opportunity to consult with the public on the runway extension:

- Review the project map and plans at CityofKingston.ca/Airport
- Send your comments by Sept. 18 to kingstonairport@wsp.com or to WSP Canada Inc., 920 Princess St., Suite 101, Kingston, ON, K7L 1H1 (613-546-2227)
Ministry Decision

On Aug. 8, 2017 the Ministry of Municipal Affairs and the Ministry of Housing provided a Notice of Decision on the City’s Official Plan Update (OP Amendment No. 50). The 20-day appeal period associated with the City’s Official Plan Update will end on Aug. 28, 2017.

To view the correspondence received from the Ministry please visit:

CityofKingston.ca/OPupdate

Kingston’s waterfronts plays a vital part in this region’s story.

Kingston is at the heart of Canada's story – shaping our past and building our future.

CityofKingston.ca/Kingston150

Comment on proposed runway extension at Kingston Airport

The City intends to start work on the extension of the runway at Kingston’s Norman Rogers Airport this fall.

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Appendix C

Minister and NAV CANADA Notifications
Hello Jackie/Aleksandar:

Since we have been actively engaged with your group on this project, we wish to share this notification with you.

In accordance with CARS Part III Subpart 307 (Aerodrome Work Consultations Regulations), please find attached a Notice as required under the Regulations, section 307.05 (a). This Notice is being sent to all Interested Parties as outlined in 307.04 (1) (a) (i) to (v).

Under this new regulation the Airport is obligated to inform you as “(ii) the providers of air navigation services” about the project as part of their consultation process.

This process was introduce by Transport Canada effective January 1, 2017. We encourage you to review the attached notification.

Bernhard Schropp, P. Eng.
Director, Aviation Eastern Canada

Aviation

T+ 1 519-389-4343 #230
M+ 1 519-832-0551

311 Goderich Street
Port Elgin, Ontario
N0H 2C0 Canada

wsp.com
Thank you for contacting Transport Canada, Civil Aviation.

Your email has been received and was automatically sent to our new Civil Aviation Services mailbox at tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca<mailto:tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca>. In future, please use our new email address when contacting us. If you have used our new email address in this inquiry, thank you for your cooperation.

Your request will be processed in the order in which it was received and in accordance with Civil Aviation’s Service Standards found on our website at http://www.tc.gc.ca/eng/civilaviation/opssvs/servicestandards-549.htm.

To speak with a staff member regarding your request, please call 1-800-305-2059 (fee payments can also be made via telephone at this number).

To provide feedback, lodge a complaint and/or give us a compliment about our services, please write us at services@tc.gc.ca<mailto:services@tc.gc.ca>.

Did you know you could pay for a service online? Visit the Online Payment System at http://www.canada.ca/payments-air.

Merci d’avoir contacté l’Aviation civile de Transports Canada.

Votre courriel a été reçu et a été envoyé automatiquement à notre nouvelle boîte de réception des services de l’Aviation civile à tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca<mailto:tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca>. À l’avenir, veuillez utiliser notre nouvelle adresse courriel pour communiquer avec nous. Si vous avez utilisé notre nouvelle adresse courriel dans cette enquête, nous vous remercions de votre coopération.


Pour parler à un membre du personnel au sujet de votre demande, composez le 1-800-305-2059 (les paiements de droits peuvent également être effectués par téléphone à ce numéro).
Dear Bernhard,

Thanks for the notice.

Cheers

Aleksandar Trandafilovski/Land Use Specialist
Aeronautical Information Management (AIM)
tel (613) 248-4009 / toll-free (866) 577-0247
tax (613) 248-4094
e-mail: aleksandar.trandafilovski@navcanada.ca

From: Schropp, Bernhard [mailto:Bernhard.Schropp@wsp.com]
Sent: July-31-17 4:06 PM
To: McCarthy, Jackie; Trandafilovski, Aleksandar
Cc: Snow, David; Mascaro, Marissa
Subject: 17-2285 Notification

Hello Jackie/Aleksandar,

Since we have been actively engaged with your group on this project, we wish to share this notification with you.

In accordance with CARS Part III Subpart 307 (Aerodrome Work Consultations Regulations), please find attached a Notice as required under the Regulations, section 307.05 (a). This Notice is being sent to all interested Parties as outlined in 307.04 (1) (a) (i) to (v).

Under this new regulation the Airport is obligated to inform you as "(ii) the providers of air navigation services" about the project as part of their consultation process.

This process was introduce by Transport Canada effective January 1, 2017. We encourage you to review the attached notification.

Bernhard Schropp, P. Eng.
Director, Aviation Eastern Canada
Aviation
APPENDIX D

Submissions of Support
Back when I was very active in the community, we were promoting conventions to Kingston with the promise that we would have sufficient service to allow Canadians from coast to coast to conveniently fly into Kingston.
That was in the early 1970's!
Let's do it!
w
Hello,

As a sometime passenger in/out of YGK and have recently received my Ultra Flying permit I support the extension of the airport.

Thanks,
I come from the US frequently and this would be very welcomed.
Proposed runway extension at Kingston Airport
I support the proposed extension at the Kingston Airport.
This growing city needs efficient and growing access by air.
Maintenance and expansion of our present growth is dependent
upon increasingly efficient and effective air access.
Thanks
Hello

I am very happy to hear about this. I do firmly believe it will benefit Kingston and people in the area. Will create more business and jobs for Kingston. Also save the expense and time of traveling to other airports like Toronto.

For me and my wife this would be great feature for Kingston for sure.

I do hope you can get companies like WestJet that travel to places like Cuba or Mexico.

Hope to see it completed soon.
I think the runway extension is a good idea. It might bring in more airplane types, which could lead to more and different people / passengers. This provides more economic opportunity for the city. Doesn't mean it will definitely happen. But the odds are higher if you do the extension.
To whom it may concern,

I think the Norman Rogers airport renovation & runway expansion is a long-overdue project for the City of Kingston. Please proceed.

For the record, my home is located along the main runway flight path, at

Best regards.

Sent from my Samsung Galaxy smartphone.
Kingston Airport Runway Expansion Feedback

As a former two term City Councillor (2003-2010) for the City of Kingston, business owner in Downtown Kingston (Windmills Restaurant & Catering), Downtown Kingston BIA board member and current chair, I am well informed regarding the history of the runway and terminal expansion the city is now embarking on and support it fully.

Kingston is the hub of eastern Ontario, (outside Ottawa) with major employers like Queen’s University, CFB Kingston, RMC, Empire Life, Kingston General/Hotel Dieu/Providence Care Hospitals, INVISTA, new international employers like Frulact from Portugal that just opened and Feihe from China that is opening a $225 million plant in 2019 and many others, all require up to date air transportation infrastructure to conduct their operations and compete in the competitive world environment. This runway expansion project fits that bill.

On the leisure side, Kingstonians, myself and my family included, want more and better options. Only new infrastructure, like this runway expansion project will give Kingston the opportunity to attract more carriers and more choice for it’s citizens.

Kingston is becoming better known across Ontario, across Canada, in the world as a great place to work, live and invest in. In the decades to come a growing Kingston can take some of the pressure off the GTA by attracting more businesses, workers and families and helping to grow Ontario in a sustainable and healthy way. This runway expansion project is an important element in the future success of Kingston’s economy and Kingston generally.

I have no concerns that this expansion will adversely affect the surrounding area, including my enjoyment of Lemoines Point which I actively use or Collin Bay Marina where my partner and I keep our sail boat. Airplane noise levels generally are not a concern given the fact that an airport has operated here for decades. In my role as city councillor complaints about noise from train whistles were the only complaints that were ever brought to city council's attention (transportation related) and if the news reports are accurate issues with train whistles are still the only noise complaints coming to city council attention today.

In conclusion I fully support the Kingston runway expansion.

Regards,
Yes please!........as soon as you can........expand so that other airlines besides Air Canada can get in there and offer decent service!.......I am so sick and tired putting up with Air Canada flying the Kingston/Toronto route........delays, poor service.....the list goes on.

Make it happen!      Sincerely,
I submitted this letter below to the editor in response to a Whig article.

I should also mention in regards to noise concerns re planes that the trains going through Kingston will always generate far more noise but apparently people accept that.

http://www.thewhig.com/2016/07/14/airports-turbulent-times-2

Move ahead on airport plan

Re: "Airport's turbulent times," July 15, 2016

Amazing how much traction the Buzzi's get pushing their negative viewpoint in all the media. Because of their unique business concern, they continue to unfairly skew opinion against the runway expansion. For all they know, the net impact may be positive by exposing and making their business available to a larger market. What about the viewpoint of the average Kingston resident and the positive impact on Kingston and area? My experience of the current airport services is dismal after trying it a few times. It's all about exorbitant prices and no destination options. I recently checked the Air Canada website and typically it's $1,121 for two adults return to Toronto leaving next Friday and returning a week from the following Sunday. I have also found the other option of taking your chances on Highway 401 getting to Toronto during the winter to be risky.

I'm very disappointed with council's backtracking on their support for this vital upgrade. I thought their support was unanimous so what happened? The 2012 report by LPS AVIA Consulting was unequivocal in recommending runway extension and terminal upgrade. The proposed expansion has passed two different noise models, air quality emissions assessment, screening level environmental assessment, and all other regulatory requirements. By virtue of the city's own due diligence it even complies with the Canadian Environmental Assessment Act which is not required.

The City of Kingston's own web link has all the info https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion

There is no new argument on this issue only more supporting data for the unfulfilled need of decent airport services for Kingston and area. I don't want to drive in the winter to Toronto, Syracuse or Ottawa to then fly somewhere. I am also tired of being gouged for just flying to Toronto from Kingston.

I wish council would move forward with confidence on this critical project as the home work has been done.

Kingston
More historic input in regards to the airport expansion which we are greatly in favour of.

Cheers,

--------- Forwarded message ----------
From:
Date: Sat, Apr 9, 2016 at 6:20 PM
Subject: The airport meeting mentioned in the Whig 01Apr2016
To: Lisa Osanic <losanic@cityofkingston.ca>
Cc:

Hi Lisa:
I was quite concerned about the unbalanced response at the meeting you attended (chaired). If I knew there was such a vocal minority I would have attended and voiced my positive opinion as I did 4 years ago in the email below. I am part of the silent majority that want a functional airport not a rip off ride ($450) that just gets you to Toronto. I dream of a decent airport in Kingston that will take me somewhere. Recently 45 people including my wife and I did a no fly cruise Kingston to New Jersey just to skip the torturous Kingston through Toronto junket. I could tell you horror stories about getting to Toronto and back to catch winter flights but you probably have your own.
I don't trust a business person's vested opinion to denigrate a decent airport (meeting). I would like to have a functional practical airport in Kington while I still have my health to travel.

Please and FTLOG
but
Sincerely,

******************************************************************************

Jeff Garrah
President
KEDCO

David Snow
Manager
Hi Jeff and David:

I read both your comments with great interest in the Saturday 18 Feb 2012 Whig about the upcoming Norman Rogers Airport expansion. Like many airport users my family and I have reluctantly used the airport on several occasions to fly only to Toronto for the purpose of catching connector flights to some where else. My dream is to drive 10 minutes to our airport like usual but then get on a plane which takes me directly to the Caribbean. Another flight to Toronto isn't going to be a game changer but a 6800 foot runway would be. Sudbury, Sault Ste Marie, and Sept Iles with runways 5991-6600 feet long have service to the Caribbean so we should definitely pursue a 6800 foot runway. I'm only proposing something that many of us have already considered so what's holding us back? A number of people I know including our family have skipped the winter fly down South this winter largely because of the unpleasant Toronto Airport logistics and the cost to get there. The catchment area for people wanting charters from Kingston to just the Caribbean is huge I believe, and would justify the expense for a suitable runway and terminal. It would be another great reason for regional tourists to come to Kingston and perhaps replace some of the lost business from absent Americans that used to come.

The city has spent lots of tax money on things that don't really excite me, but this does. Kingston and area has the right demographic profile and population to go big now or maybe save the money until we can.

Sincerely,
No worries (sorry to offend the tree-hugger!) Guess I was on a rant!

From: Schropp, Bernhard [mailto:Bernhard.Schropp@wsp.com]
Sent: August 9, 2017 9:06 AM
To: 
Subject: RE: Airport Work

Thank you for your comments

Bernhard Schropp, P.Eng.  
T+ 1 519-389-4343 #230

From:  
Sent: August-08-17 10:53 AM  
To: Schropp, Bernhard <Bernhard.Schropp@wsp.com>  
Subject: Airport Work  

Hi there,

As I’m sure you’ll be receiving many emails from tree-hugging local residents (or business owners) that purchased land near an airport stating that airport expansion is bad, I for one an excited about the airport expansion for many reasons including...

1. Promoting Kingston as a place to do business
   a. The Kingston airport is a disgrace compared to Peterborough. What Peterborough has, Kingston should have or even better (flight services, restaurant, flight schools, nice facilities)
   b. A longer runway isn’t enough, but a good start, there’s needs to be a focus on servicing the airport better through making the airport friendly for general aviation, commercial flights, and the general public.
   c. Offer new hangar space (the ones you have now were build in the 1940’s!) to attract revenue and general aviation and possibly more business.
   d. I’m sure if you surveyed local pilots and flight schools you’d have lots of ideas on how to attract business & increase revenues

2. More opportunities for flight training and promotion of aviation in general
a. With a longer runway, it could mean better training facilities for pilots wishing to move onto commercial ratings

Wish I had time to write more, and sorry for the quick notes, but add them to your pile and I'm sure that the most emails you will receive are from the NIMBY people complaining about noise and the odd tree cut down, hopefully you receive views from those on side with expansion and also a general airport review to update facilities and create more opportunities for business overall.

All the best,
I support the investment in the airport, terminal, and lengthening of the runway.

Regards,

Sent from my Samsung Galaxy smartphone.
WSP/MMM Group,
Just saw you are asking for input about our airport expansion.
Please Please Please get going with it!! We use the our Kingston Airport for leisure trips/vacation and appreciate it very much.
The monopoly of choice at our airport will be solved once more/bigger aircraft can utilize or facility. That will make the flights to Toronto, and elsewhere, better all round and have a positive effect on our community!
Thank you for your efforts, and best of luck getting this project on the go!!
Sincerely,

Sent from my iPad
Hello,

I am a resident of Kingston and I am writing in support of the airport runway expansion project. I hope the longer runway allows for a new carrier to serve the airport, increasing competition and improving options available for passengers.

Thank you,
Hello,

I am a resident of Kingston and am in support of the runway expansion project. I am hoping this will create some healthy competition between airlines and make Kingston a more accessible city by air travel.
Hi Bernhard,

Please see attached a hard-copy comment received at our office. Envelope included on second page for contact information if needed.

Emily Sangster, MCIP, RPP
Project Planner
Planning, Landscape Architecture & Urban Design

T+ 1 613-690-1119

920 Princess Street, Suite 101 1145 Hunt Club Road, Suite 200
Kingston, Ontario K7L 1H1 Canada Ottawa, Ontario K1V 0Y3 Canada

wsp.com
Dear Sirs et Mesdames,

Couldn't agree with you more on the need for runway extensions to #19. To my way of thinking, the extensions could be even greater, even if it meant the removal of some tall trees which should die of natural causes soon anyway.

I appreciate this chance to sound off.

Yours Truly,
Completely in favour of the runway expansion. Larger planes will remove monopoly from Air Canada I hope creating competitive pricing; hopefully be able to make direct flights to Ottawa, Montreal, New York City instead of always hubbing in Toronto.

Per noise over residents, our last home was in the flight path of planes, and blocks from the train tracks. After a very short time we heard neither; the sound became part of the general landscape, just like the noise from the 401 penetrates for miles beyond it.

Please move forward with this project.
Good evening,

I would like to express my extreme support of the runway extensions at the Norman Rogers Airport in Kingston. Myself and my family use the airport extensively and it is part of the reason that we moved here in 2014. I have a 90 year old father in Victoria and a 6 month old granddaughter in Halifax!! Nothing would please me more than to have larger aircraft and with them, greater and easier flight options available in Kingston. I regularly take VIA Rail to Toronto for business meetings but would prefer to fly as it is so much more time efficient and easier. Hopefully prices would become more competitive if the airport was able to accept larger planes.

I am aware of the negative opinions of Kingston residents living in proximity to the airport. However, such opinions are, unfortunately, not valid as all airports in all major centres fly over residential and commercial areas. Kingston, in my opinion, is a major centre and needs an airport to support its growth, its future and its citizens.

Onwards and upwards!
To Whom It May Concern:

I say "away with the nay sayers!" The proposed runway extension at Kingston Airport is and will be a benefit for the entire community; business, economic & Kingstonians alike. The extension is well over due as Kingston has the necessary capacity to accommodate larger aircraft. I live close by the airport and I love the city but we must capitalize on it's latent potential now! Due to our proximity to the US, there is no reason why Kingston could not have international status as well. Just look at what Ogdensburg and Watertown, New York have accomplished with their airports. Kingston should not have to take a back seat to their facilities.

I say, "Let's make Kingston a hub" before we are flying out of Belleville or Brockville to international and domestic destinations.

And to those business owners (Collins Bay Marina) and residents who complain about the noise and/or pollution associated with an airport I ask, "did you not know the airport & the CNR main rail line was close by when you purchased your home or business?"

Let's get on with the extension and perhaps one day soon I can drive to the Kingston Airport for my direct flight to Florida. That would be a dream come true.

Yours Sincerely,
I write to give my enthusiastic and unequivocal support to the runway expansion at Kingston Airport.

Improved transportation links are vital if the city's aspirations for a sustainable economy linked to innovation are to be realized and this project is critical to that objective.
I'd like to provide my full and unequivocal support for the airport expansion. If Kingston is to thrive as a community we must have better air service to major hubs. Queen's is a major employer and expanded facilities will help us better serve the community and province.

Sincerely
Hello, while at the airport recently I noticed the signage indicating the plan to extend Runway 01/19 here in Kingston.

I think this is great news as I see a lot of potential for growth at the Kingston Airport which would be great for the people of Kingston as well as an economic engine for the City itself.

I noticed that the plan includes the runway extensions and the necessary changes to the runway markings and associated runway lighting.

One item that was not mentioned was moving the Instrument Landing System (ILS) to account for the increased landing distance once the extension is completed.

Is the ILS part of the project?
Sent from my iPad

I would like to see runway 19 expansion for Voyager airways. Dash 7. And also air Ontario dash 8

Air Canada DC 9. And also Canadian airlines Boeing 747. Canadian regional airlines ATR 42

Appendix E

Submissions of Conditional Support
Gentlemen:

I would like to take this opportunity to introduce two requests:

1a) There should be a Kingston airport "noise bylaw" that prohibits landings and take-offs between certain hours of the day; such as no take-offs or landings after 10:30 PM and before 7:00 AM.

1b) In an emergency situation, this condition in 1a) does not apply.

2) There needs to be a Kingston airport "noise complaint" procedure to report unwarranted aircraft noise.

Background

We recently moved to Kingston. The S.T.O.L. aircraft operating out of Kingston airport are excellent corporate citizens. Their final approach is almost directly over our new house. The STOL is quiet and lands quickly.

In Whitby, our home was in the area of the Oshawa airport. When the pilot training moved from Buttonville Airport to Oshawa airport, the aircraft noise was appreciable.

The worst offender was a Harvard and other pilots practicing very noisy "step-on-the-ball" turns.

We did not move from Whitby due to aircraft/airport noise, but it was a contributing factor.

With the lengthened Kingston airport runways, heavier aircraft will operate from/to Kingston airport. The "noise envelope" from these heavier aircraft has to be strictly enforced.

Regards,

Kingston, Ontario
1. I have no problem if takeoffs and landings on the lengthened Runways over the water to the South of the Airport. Otherwise there is a real safety and noise issue with large aircraft coming in low over an extensive residential neighbourhood. The horrendous crash in Buffalo 4 or 5 years ago is just one example.

2. There also be no landings or takeoffs after 11:00pm or earlier than 6:00am.

Unless BOTH of these are complied with I am vehemently opposed to any Airport runway extension.

If these suggestions are ignored and the construction goes I assume City Council ( including the Mayor ) will lower our Taxes as the value of our homes will decline.

Sent from my iPhone
Appendix F

Submissions of Objection
I live in the west end and I hear commuter jets flying over my apartment on a regular basis. So to me the whole idea of airport expansion for bigger planes is in my opinion a bad idea.

Signed,
As a citizen who lives in Henderson place I object this extension as it is going to create much more noise for the area. It will lower the home values. There are currently many planes going over these homes per day, plus military jets, orange helicopters, etc. It's enough as is.

Kingston has more important ventures to take then an expansion. Fix our roads, our shorelines, etc. Maintain then expand.

I object this expansion.
August 7, 2017

Dear Sir or Madame,

I am writing related to the notices posted in Kingston about the Kingston (YGK) Norman Rogers Airport expansion. In the past, I have written letters to Mr. David Snow, Airport Manager (at the time), Mayor Patterson, Sophie Kwala (MPP) and Mark Gerretsen (MP). Regrettably, each official has downplayed, ignored and overlooked concerns expressed. A petition to stop the airport expansion was presented to the Kingston City Council and Mr. Snow on June 21, 2016. The petition included ~194 signatures and was accompanied a presentation to ask City Council to stop plans for the airport expansion (https://www.change.org/p/mayor-cityofkingston-ca-stop-the-kingston-ygk-airport-expansion?recruiter=410328866&utm_source=share_petition&utm_medium=email&utm_campaign=share_email_responsive). In this letter, I will summarize some of the concerns expressed and ask once again for intervention to stop the airport expansion before it is too late.

Instead of directly answering or responding to our concerns, the Airport Manager, Mr. David Snow has recommended reading the following reports and documents (found at https://www.cityofkingston.ca/city-hall/projects-construction/airport-expansion):

1. 2007 Master Plan;

2. 2009 Economic Impact Study;

3. 2012 Business Case;

4. 2013 Expansion Project; and

5. 2015 Report to Kingston City Council.

Mr. Snow indicated that all questions and concerns would be addressed through the reports. Unfortunately, that is not the case and upon subsequently contacting Mr. Snow he did not reply. In 2016, it was necessary to engage the Ombudsman to get any response. The response received, as a directive from the Ombudsman’s office, was dismissive and did not address the concerns raised.
The ongoing concerns are as follows:

- The Airport expansion has air quality impacts upon the low density residential areas surrounding the airport;
- The Airport expansion has noise impacts for the low density residential areas surrounding and in 2016 the Airport Manager refused a formal request to establish an Airport Noise Committee;
- The airport expansion has the potential to negatively impact property values in the low density residential areas surrounding the Airport;
- The Airport expansion will displace wildlife and alter their habitat which sits adjacent to a protected conservation area and low density housing;
- There has been a lack of consideration of the larger aviation market across Ontario as well as regionally; and
- There is no evidence that consideration has been given to alternate parcels of land that would better suit aviation plans.

I have lived in West Park, a low density residential area adjacent to the Airport since July of 2007. Almost without exception, when commercial flights take off or land at YGK there is an odour of (what we can only assume is) jet fuel off-gassing. The prevailing winds consistently push the emissions into our residential area. As an avid outdoor family, we have noticed the odour as far as the areas of Bayridge subdivision, including the recreational areas of Bayridge Park. It has been implied that through expansion this would be ameliorated with newer, larger aircraft with better emissions control. We feel it is essential to carry out air quality testing to ensure that the humans and animals in the area are not being exposed to emissions that will result in more serious health complications. None of the reports we have reviewed have addressed this in any way. It was raised by a gentleman at a community meeting in October 2015, but not acknowledged by the City officials and consultants present at the meeting.

As a homeowner, our home is a considerable personal investment. Mr. Snow, as well as City representatives and consultants, have not been forthcoming in how the airport expansion will affect our personal investment. We are not alone in this, there are presumably hundreds (if not thousands) of low-density homes in the West Park, Auden Park, Conservatory, Bayridge, Collins Bay and surrounding areas that would be impacted. None of the reports publically available or referenced by Mr. Snow, including those investigating economic impact, report on this. Ignoring this is irresponsible and violates the City of Kingston’s own 2007 Master Plan study that states the mission to be “socially and fiscally responsible”. The report extends the concept of being socially and financially responsible to Airport Property as well as property that surrounds the Airport.

Through attending a community meeting in October 2015, it was learned that the City of Kingston and the Airport Manager consider the Airport property between the runways and West Park as underutilized vacant land that is primed for development including commercial and aviation businesses. Unfortunately, what has been overlooked is the fact that this land serves as habitat for wildlife of various species and acts as a buffer for the surrounding low-density residential areas with respect to noise and air pollution currently generated from the Airport property. Media reports in 2017 indicate that the Airport Manager ordered the destruction of nesting bird (swallow) habitats in an abandoned hanger on the airport property. This type of behaviour should not be tolerated and demonstrates an egregious act on behalf of the City of Kingston and the airport. Expanding the airport and destroying greenspace is socially irresponsible and in reading all of the reports there is no evidence of market need for the property, in fact quite the opposite is true, as indicated below from the 2012 report by LPS Aviation Inc.:

- “They have not scaled-back expansion or considered leaving the area because of deficient air services. They will not expand just because air services are improved.” (p.28)
- “Current industry dynamics do not readily support a general expansion of scheduled services at Kingston. In fact,
some forces could threaten the existing Air Canada service.” (p.45)

* "The Kingston air market area will continue to be fragmented due to the attraction of alternative travel products at airports within a 2 hour driving time for passengers.” (p.93)

* "The business case for airport investment cannot be made on a purely financial basis. The improved incremental revenues generated by expanded infrastructure are unlikely to recoup the capital costs of all improvements.” (p.93)

It is understood that a regional Airport, in Peterborough Ontario, recently underwent an expansion. If Kingston is going to be fiscally and socially responsible it is essential to consider lessons learned from that expansion. How that expansion will impact Kingston and update the aviation market analysis based upon what services exist regionally and provincially. The Master Plan, Business Case and Expansion Plan may all be irrelevant and outdated on the basis of expansions at other airports, including Peterborough. In addition to this, the reports for the Kingston Airport have never detailed a specific plan to expand aviation service, there is a suggestion that “Kingston Airport should make as their priority the retention of Air Canada’s existing service. The city should not seek additional carriers who might damage the financial viability of the existing services.” (LPS Aviation, 2012, p.62) Despite this clear recommendation, the 2013 expansion plan makes notes of various air carriers, including Porter Airlines, West Jet, Bearskin and Cape Air.

I am left to ask:

* why the City of Kingston is proceeding with a plan that is not supported by a business plan;
* why they have not considered alternate land for an airport (i.e. land that would have easy access to the MacDonald Cartier Highway 401, allow the airport to draw better upon the catchment area that they describe, would not negatively impact people living in the communities surrounding the Airport);
* why they have been permitted to expand next to residential and conservation areas;
* why the City permitted developers to build residential neighbourhoods adjacent to the airport property if there was a plan for eventual expansion; and
* why serious consideration is not being given to Kingston’s greenspace ratios and whether or not it meets with provincial and national standards?

As socially responsible, concerned citizen, I am asking for:

* A full stop cessation of any development plans, including overturn of Kingston City Council to fund the Norman Rogers (YKG) Airport;
* Consideration for NEP predictions and health considerations (refer to Appendix 1);
* Air quality testing carried out before, during and after take-off and landings at the airport;
* A comprehensive review of Kingston’s greenspace, considering if it meets with standards;
* A comprehensive review of land utilization in the Kingston area with other options for an airport; and
* A conservation plan for all animals that would lose their habitat through any expansion.

I sincerely hope that the invitation for input is sincere and that these concerns are not ignored, as they have been thus far.

Respectfully,
Appendix 1

Transport Canada does not support or advocate incompatible land use (especially residential housing) in areas affected by aircraft noise. These areas may begin as low as NEF 25. At NEF 30, speech interference and annoyance caused by aircraft noise are, on average, established and growing. By NEF 35 these effects are very significant. New residential development is therefore not compatible with NEF 30 and above, and recommends that it not be undertaken. (https://www.tc.gc.ca/eng/CivilAviation/publications/np1247-part4-1436.htm)

Part IV - Aircraft Noise - Transport Canada

4.1 General An assessment of the annoyance resulting from exposure to aircraft noise is often essential to both aviation planners and those responsible for

Table 1 - Community Response Prediction

Response Area Response Prediction *

1 (over 40 NEF) Repeated and vigorous individual complaints are likely. Concerted group and legal action might be expected.

2 (35-40 NEF) Individual complaints may be vigorous. Possible group action and appeals to authorities.

3 (30-35 NEF) Sporadic to repeated individual complaints. Group action is possible.

4 (below 30 NEF Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident.

* It should be noted that the above community response predictions are generalizations based upon experience resulting from the evolutionary development of various noise exposure units used by other countries. For specific locations, the above response areas may vary somewhat in accordance with existing ambient or background noise levels and prevailing social, economic and political conditions.

* Where an aerodrome is already surrounded by residential or other noise sensitive land uses, the intent of land use planning guidelines is to prevent any increases in incompatible land use.

* Annoyance caused by aircraft noise may begin as low as NEF 25. It is recommended that developers be made aware of this fact and that they undertake to so inform all prospective tenants or purchasers of residential units. In addition, it is suggested that development should not proceed until the responsible authority is satisfied that acoustic insulation features, if required, have been considered in the building design.

Scientists have raised concerns about the health effects of aircraft noise for two main reasons:

* There are studies that link excess noise exposure to increased stress levels.

* Some studies suggest that chronic stress might lead to an increased risk of high blood pressure (hypertension) and heart disease for some people.

To Whom it May Concern,

I am writing because I oppose the airport expansion.

My primary concern is about noise levels. I live about two kilometres from the airport, and the noise from the airplanes, especially warming up in the winter, is loud enough to disturb my sleep. I can’t imagine that a bigger runway would improve noise levels, and there is potential for it getting worse. Last year, I sent an email about this to Laura Turner, the city counselor for my area. The email was never acknowledged and the noise concern never addressed. I think that Kingston airport is too close to residential areas to support an expansion.

I also feel that it is a poor business decision to expand the airport when airlines haven’t committed to using it. It’s a huge expense to the taxpayers without a guarantee that it will lead to an increase in revenue for the city.

Thank you for this opportunity to express my concerns. I hope they are addressed before the project is finalized.

Sincerely,
Hi Bernhard,

came to see me today in person to explain some concerns she had regarding the airport. She also provided a letter and photos, which I’ve scanned and attached.

Overall, she does not support the airport expansion and had some specific questions I cannot answer in detail. I provided some preliminary answers and indicated I’d follow up.

1. Does the expanded runway meet Transport Canada regulations for height clearances around nearby lands and buildings? (The short answer I provided is yes, but I’m not as familiar with the relevant details and standards.)

2. Many people who fly small planes from the Kingston Flying Club share planes. Will they have the required experience to fly safely if they are not flying as often as those who do not share planes? (I indicated that they would be required to meet licensing standards, but again, I’ll need your help for the details.)

3. If there is an air crash, what are the time frames for rescue on land and water?

4. No one is in the YGK control tower at night, but small planes frequently land at night. Are they permitted to do so? Do they land visually, or with instruments or radar? (I indicated that I believe small planes are permitted to land at un-staffed airstrips, but again, as a pilot, you will know the details.)

Feel free to call if you would like to discuss. If you are able to review her comments and give her a call, that may be easiest.

Emily Sangster, MCIP, RPP
Project Planner
Planning, Landscape Architecture & Urban Design

T: 1 613-690-1119

920 Princess Street, Suite 101
Kingston, Ontario K7L 1H1 Canada

wsp.com
August 28 2017

To: WSP Canada Inc.
920 Princess Street Suite 101
Kingston Ontario
K7L 1H1

RE: Norman Rogers Airport
Kingston, Ontario

Dear Sir/Madam:

My name is [name redacted], moved to Kingston, from Toronto 2016. No one mentioned that my newly purchased house is under a flight path. I was surprised on the first day of the deep grumbling noise when I heard it. I suddenly got scared, since the second world war had similar noises from above, unconsciously the past came back. But this feeling was only at the first time.

I would like to share some of my concerns with you. Since more accidents are happening at landing a plane then at take off, I am not comfortable when only a few hundred feet is between my roof and the descending plane. The streets are on hilly areas, and where I live it is located fairly high.

The location of the existing air port must of been there for decades. It served the purpose, but now Kingston wants to grow. Expansion of this outdated location will be a band aid treatment, and not practical. There will be some investors coming from another country, which is wonderful but more plane traffic, cargo shipment will be in the future. Norman Rogers Airport located on the south side of Kingston at the Lake Ontario (St. Lawrence River). 3 Industrial Parks are on the north side of the city. Possibly another industrial area will be built for the new Company planning to move to Kingston from China. Which way the cargo shipment will go with the 18 wheeler trucks from the south end to the north end of Kingston? Only residential areas existing now between these two points.

My biggest concern is safety. Since the weather is so unpredictable, sometimes with violent winds. If there is an accident, I would like to know the time frame of the rescuers to get to the scene day time, night time, for land rescue or water rescue. Is there 24 hours attendance in the tower for guidance?

The weather also do not give me a comfortable feelings. Micro burst - strong shifting wind direction could be side ways, above, Plane might be uncontrollable.

Windsheer - plane can drop 400-500 feet within minutes. Just hope no plane is above the houses if this occur.

My other concerns are:
1. If two people purchasing one small plane, how much knowledge they have in case of an emergency in the cockpit since they are part time pilots only?
2. Turbo plane's propellers wrong position brought the plane down.

3. Incorrect flap position, alarm was malfunctioning.

4. Air bus 320 Can's lift under 100 feet. Engines don't respond fast enough, when the plane could be already in trouble.

5. Boeing 737 (Trans Peru) very bad weather, rain, hail was pounding the cockpits window which became opaque. Pilot had to make visual landing but could not see through the damaged acrylic windshield because of the hail damage. Down draft was also in effect. They crashed.

There are several other examples what can go wrong mechanically, pilot error etc.

I am not against the airport in a more adequate location the north side of Kingston where the industrial parks are located. There is highway 401 also adds to the convenience. The city's 16 Million Dollars is lots of money to use it for an airport which might be outgrow it's purpose in a few years.

Thank you for your time,
Where I live on ____________, it curves and the elevation changes. My house is at ____________ across from ____________ Section of ____________ is higher so as the corner house across from me on the picture. It is unfortunate, that the flight path goes through the highest area of the streets.
At the back yard, the terrain drops drastically. From my second floor window I see the roof of the houses on ________. Topography measurement should be street by street. But for safety reasons, as I stated in my letter, I rather see a new airport north of highway 401 away from residential area.
Madam/Sir,

as a member of Collins Bay Yacht Club located at Collins Bay Marina I am writing to you to protest the extension of the runway of Kingston Municipal Airport.

Even at this point in time, the noise created by incoming and outgoing aircraft and the dirt deposited by the exhaust of their engines is considerable. Increasing the capacity for departures and arrivals will worsen this situation.

There is reason to fear that a considerable number of boats will relocate to other marinas and leave the Kingston area altogether. This will apply in particular to those boaters who live outside the Kingston area and use their boats as summer homes.

As a consequence, these boaters will no longer shop for groceries, parts for their boats etc. in the Kingston area. They will also be missed at local places of entertainment like theaters, concert halls and restaurants.

In other words, the negative impact of a runway extension at Kingston Municipal Airport on various branches of Kingston’s economy will be considerable.

Sincerely,
Dear Sir / Madam,

Please find attached my letter of objection to the proposed expansion of Kingston Airport Runway 01-19.

Kind Regards,
August 30, 2017

Project information Officer, Airport
City of Kingston,
City Hall
216 Ontario Street
Kingston ON K7L 2Z3

Re: Concerns Regarding Planned Airport Runway and Facilities Expansion
Project to Norman Rogers Airport

As a resident of Kingston I wish to raise my objections to the proposed expansion
to Runway 01-19.

The City of Kingston over the past few years has provided contradictory and
erroneous data in support of their bid to push through the planned airport
expansion. This has included:

1. Several plans showing the noise impact to surrounding areas with several
NEP profiles. These appear to have changed significantly from the initial
study, though the City did appear to admit that the initial studies were
done with tools that were outdated and not approved by Canadian
authorities. This causes one to question the validity of the current data as
presented by the City. In addition, Collins Bay Marina has undertaken a
study of their own, which the City has not reviewed or discussed under the
initial “consultation” period.

2. The Business Case as presented by the City of Kingston does not support
the expansion of the runway; rather it presents the view that no current
commercial carriers are requesting this runway extension. Per the City of
Kingston’s web site, over 70,000 passengers travelled through the airport,
versus 168,000 that travelled by rail. In contrast to the planned cost to the
city for the airport expansion, VIA Rail is also planning to increase rail
connectivity to Montreal and Toronto. This has not been factored into the
airport business case. This needs to be addressed and rationalized prior
to the city taking on significant new debt to fund airport growth.

3. Conflicting data presented by the city in that it claims only small increases
in aircraft movements, yet claims to increase passenger use substantially.
This also needs to be clarified before the city takes on additional debt to
fund airport growth.

4. Conflicting data presented by the City of Kingston at the March 30
Information Presentation by the city at St. Lawrence College. At this
meeting Mr. David Snow articulated the position that the main driver for
the runway expansion was in support of no one other than Queen’s
University and Invista, a position not documented in any of the city’s
published literature. This again questions the credibility of the information presented by the city.

In summary, my objections to the runway expansion are based on the City of Kingston’s obfuscation of the required data to support a seemingly unpublished agenda. I strongly object to the city’s plan to increase debt for a program not clearly substantiated by a sound business case.

Regards

Kingston,
Ontario
Please open the attached letter. Thank you.
August 30, 2017

To Whom It May Concern:

Re: Norman Rogers Airport Expansion and Noise Pollution

I started writing this message while I enjoyed Dunham Park on a recent Sunday morning, when a descending jet roared over us on its way to Norman Rogers Airport. A few minutes later, a propeller aircraft, flew over, further disturbing the idyllic peace and quiet. We live in Westwood and our house is directly on the flight path, most often for arriving aircraft but increasingly for departing aircraft so this is not an unusual occurrence.

I continue to be concerned about the proposed extension of the runway at Norman Rogers Airport in both northerly and southerly directions. My understanding is that this is to facilitate the utilization of more and larger jet aircraft.

I was one of hundreds of residents who attended a public meeting in March 2016 at St. Lawrence College, at which questions and concerns were raised. We were also informed of the supposed economic benefits this expansion would bring to the City of Kingston, without noticeable environmental effects including noise pollution.

Contrary to assurances at that meeting, I can attest that jet aircraft are every bit as disruptive and intrusive as propeller plans. Due to a life threatening medical emergency I was unable to follow the process further but remain vitally interested and continue to have questions.

I also have concerns that our neighbourhood is home to a cluster of elementary and secondary schools as well as a child care centre and several well-utilized parks. At any given time, there are many children gathered at those locations and it seems a curious choice to direct air traffic over such an area.

As a resident, a community supporter and a taxpayer, I feel we deserve more consideration as this project moves forward. I would be pleased to discuss my concerns further in hopes of finding solutions. I can be reached at or by telephone at .

“signed”
Hello,

I live at , exactly opposite the Kingston Airport.

I object to the extension, and additional building, structural work, demolition work and all the sundry additional work proposed. Obviously I am a N.I.M.B.Y. But the area affected is wide and there are many of the residents of Kingston that will be adversely affected by the project.

We are already experiencing far more truck traffic than usual. And this is before the Project has officially started.

I respectfully ask that this letter be responded to and that its receipt be acknowledged.

I have also copied the letter to myself and my partner Wendy Stewart, for our records.

I appreciate your attention to my concerns.

Thank You,
Hi Bernhard,

Please see attached the scan of a comment (opposition) that was hand-delivered to the Kingston office today.

Emily Sangster, MCIP, RPP
Project Planner
Planning, Landscape Architecture & Urban Design

T+ 1 613-590-1119

820 Princess Street, Suite 101
Kingston, Ontario K7L 1H1 Canada

1145 Hunt Club Road, Suite 200
Ottawa, Ontario K1V 0Y3 Canada

wsp.com
Sept 4, 2017

Project Information Officer, WSP Canada Inc.
920 Princess St., Suite 101
Kingston ON K7L 1H1

Subject-- Against the Runway Extension - Runway 01-19 extension project at Norman Rogers Airport.

Gentlemen,

I am a member of the Kingston community. I spent on a five year average about $8700 annually in Kingston and close vicinity including all purchases, including a used car and for services, restaurant meals, boat docking and storage and so on. I was a university student here and graduated from Queen's. I own a cruising sailboat at the Collins Bay Marina where my wife and I plus guests stay during the sailing season from May to the end of September. Overnight stays are regular and frequent.

My enjoyment of Kingston will be harmed by an extension of the runway and the operation of larger aircraft including jets.

The entire area of the Collins Bay Marina is residential in my view. Why? I reside here and so do many more. There we have dwellings.

I understand that regulations exist which prohibit the lengthening of runways in proximity of extant residential neighbourhoods. It is not legitimate to deny that the affected area of the runway extension is genuinely residential. Not only the marina owner and his family live here but a community of boat owners too. This must be recognized and acknowledged.

The current fleet of aircraft is noisy but I have learned to tolerate them by mitigation measures including heavy duty earplugs for sleeping. I need to curtail any conversation going on during the passage of most of the Kingston Airport aircraft overhead.

I attended the March 2016 presentation and spoke with the Engineer who supervised those who made up the noise map presented there. He was responsible for this map.

I do not believe in the noise study results prepared by the Engineer hired by the airport. In my opinion it does not include any proper representation of the aircraft fleet which will come to Kingston. Moreover the airplane selected by the airport folks for which the Engineer produced a noise map is one which it is said had no cargo and less than half full fuel tanks, making for less throttle needed to take off and therefore very much less noise than one can expect in an everyday airport experience. Furthermore it seems that the aircraft is one which does not form part of any Canadian airline's fleet. (see notes from Boeing Aircraft does attached)

The aircraft noise modelling software system employed by the Engineer includes a suite of noise patterns drawn one supposes from measurements of noise during takeoff of a variety of aircraft. It seems reprehensible to me to select an example where the noise pattern is the result of a takeoff which is not going to happen here.
I understand that once the noise map was built into the study that afterwards all the benefits and such were shown using as an example another quite different airplane.

To sum up I am against the extension of the Airport Runway 01-19 for the reason that the noise would infringe on an existing residential neighbourhood. The residents will be harmed. The noise will be too much. I do not believe that the presentations by the Airport guys merit any weight as truthful and honest, indeed quite the opposite.

My argument here has purposely ignored the weak business case for the capital and operation expenditure on the runway extension. Others may be better placed to provide in depth commentary on what appears to be dreaming in colour. Same with genuine environmental concerns due to volumes of jet exhaust and de-icing chemicals.

Yours truly.

Attached
- Boeing Aircraft document for 737 Family and related copies.
6.2 Airport and Community Noise

Airport noise is a major concern to the airport and community planner. The airport is a major element in the community’s transportation system and, as such, is vital to its growth. However, the airport must also be a good neighbor, and this can be accomplished only with proper planning. Since aircraft noise extends beyond the boundaries of the airport, it is vital to consider the impact on surrounding communities. Many means have been devised to provide the planner with a tool to estimate the impact of airport operations. Too often, they oversimplify noise to the point where the results become erroneous. Noise is not a simple subject, therefore, there are no simple answers. The cumulative noise contour is an effective tool. However, care must be exercised to ensure that the contours, used correctly, estimate the noise resulting from aircraft operations conducted at an airport.

The size and shape of the single-event contours, which are inputs into the cumulative noise contours, are dependent upon numerous factors. They include the following:

1. Operational Factors
   (a) Aircraft Weight
      Aircraft weight is dependent on distance to be traveled, en route winds, payload, and anticipated aircraft delay upon reaching the destination.
   (b) Engine Power Settings
      The rates of ascent and descent and the noise levels emitted at the source are influenced by the power setting used.
   (c) Airport Altitude
      Higher airport altitude will affect engine performance and thus can influence noise.

2. Atmospheric Conditions - Sound Propagation
   (a) Wind
      With stronger headwinds, the aircraft can take off and climb more rapidly relative to the ground. Also, winds can influence the distribution of noise in surrounding communities.
   (b) Temperature and Relative Humidity
      The absorption of noise in the atmosphere along the transmission path between the aircraft and the ground observer varies with both temperature and relative humidity.

3. Surface Condition - Shielding, Extra Ground Attenuation (EGA)
   (a) Terrain
      If the ground slopes down after takeoff or before landing, noise will be reduced since the aircraft will be at a higher altitude above ground. Additionally, hills, shrubs, trees, and large buildings can act as sound buffers.

All these factors can alter the shape and size of the contours appreciably. To demonstrate the effect of some of these factors, estimated noise level contours for two different operating conditions are shown below:

These contours reflect a given noise level upon a ground level plane at runway elevation.

"Condition 1" - more demanding of the aircraft and hence more noise and engine power needed.

Landing at Maximum Structural Landing Weight
10-knot Headwind
3 degree Approach
84 degree F
Humidity 15%

Takeoff at Maximum Gross Takeoff Weight
Zero Wind
84 degree F
Humidity 15%

and “Condition 2” shows more favourable weather and plane loading lighter so a
different pattern of noise impact, but still quite severe for neighbours.

Seen on the Boeing document:
A small contour plan view map shows no numbers or db-metric noise at all.
It is surprisingly vague and hides a lot. Shame on Boeing, their engineers know
a lot more than management is willing to publish.

Boeing -- continued
As indicated from these data, the contour size varies substantially with operating and atmospheric
conditions.
Most aircraft operations are, of course, conducted at less than
maximum gross weights because average flight distances are much shorter than maximum aircraft range capability
and
average load factors are less than 100%. Therefore, in developing cumulative contours for planning
purposes, it is recommended that the airlines serving a particular city be contacted to provide
operational information.

(Was this done for the Kingston proposal? - No such claim was made)
In addition, there are no universally accepted methods for developing aircraft noise contours or for
relating the acceptability of specific zones to specific land uses. It is therefore expected that noise
contour data for particular aircraft and the impact assessment methodology will be changing. To
ensure that the best currently available information of this type is used in any planning study, it is
recommended that it be obtained directly from the Office of Environmental Quality in the Federal
Aviation Administration in Washington, D.C.
It should be noted that the contours shown herein are only for illustrating the impact of operating and
atmospheric conditions and do not represent the single-event contour of the family of aircraft
described in this document. It is expected that the cumulative contours will be developed as required
by planners using the data and methodology applicable to their specific study.

BOEING 737-800/700/800/900 ... "Next Generation" Boeing 737 models
re the Toronto Harbour Island Airport - noise levels
The Next Generation series does not meet the noise levels established within the Tripartite Agreement.
Similarly the Airbus A320 family does not meet the noise levels established within the Tripartite Agreement.
Both the above manufacturers tout new models to appear in future and these are said to make less noise.
These would have the long-promised high bypass geared turbofan jet engines.
None are on order by Canadian carriers.

One suspects that the noise pattern which may have been used/shown by Kingston is that of the
future high bypass geared turbofan jet equipped Boeing 737 which seems not to exist as a
production aircraft and is not on order in this country.

What aircraft might appear at Kingston - why not these two? they are already in AC's fleet.

Air Canada Express - Jazz
Bombardier: CRJ705 (CRA)
10 Business plus 65 economy
Number of Aircraft 16
Manufacturer Canadair
Engines 2 GE CF34-8C5 Turbofans

Air Canada Express
Bombardier CRJ100/200ER (CRJ) 50 seats
Number of Aircraft 30
Manufacturer Canadair
Engines 100: 2 GE CF34-3A1
200: 2 GE CF34-3B1
Cruise Speed 788 km/h (490 m/h)
Range 1,574 km (978 miles)

CRJ700 Its first flight took place on 27 May 1999
CRJ705 sales includes
2 November 2015 CRJ705 Jazz Air 5 0 18 Five CRJ705
CRJ700 from Bombardier technical website literature freely available
Take off run at MTOW (ISA)
CRJ705 1,778 m (5,833 ft)
  ER: 1,851 m (6,086 ft) extended range version
  LR: 1,944 m (6,378 ft)
Takeoff Field Length
  (ISA, SL, MTCW)
CRJ700 4,975 ft 1,516 m
Landing Field Length (ISA, SL, ML)
CRJ700 5,040 ft 1,533 m
NOISE LEVEL
Flyover 82.0 EPNdB
Lateral 89.6 EPNdB
Approach
Margin to Stage 4
92.6 EPNdB  6.8 EPNdB
NOISE LEVEL
Flyover Lateral
82.0 EPNdB  89.6 EPN
Approach Margin to Stage 4
92.6 EPNdB  8.8 EPNd

Beechcraft multi engine passenger aircraft
Very frequent and common at Kingston and very noisy. Not represented by
any Kingston airport document in their presentation.
Hi Bernhard,

Attached is a scan of an additional hard-copy submission from

Emily

From: Sangster, Emily
Sent: September-06-17 10:49 AM
To:
Cc: Schropp, Bernhard <Bernhard.Schropp@wsp.com>
Subject: Kingston Airport Expansion - consultation process

Good morning

Thank you for your call yesterday. I've checked into your inquiry and can confirm that the City of Kingston is following the process outlined by Transport Canada, which can be found by following this web link: https://www.tc.gc.ca/eng/programs/aerodromes-regulations-2981.html. Subpart 7 discusses consultation in detail.

Best regards,

Emily Sangster, MCIP, RPP
Project Planner
Planning, Landscape Architecture & Urban Design

T+ 1 613-690-1119
920 Princess Street, Suite 101
Kingston, Ontario K7L 1H1 Canada

wsp.com
Comments on proposed runway extension at Kingston Airport.

This submission is in accordance with the new regulations introduced by Transport Canada in 2017.

The land on which my home is located is separated from one of the airport runways by a treed area and a grass/shrub plot. In summer the runway is barely visible from my house; in winter it is quite easy to see the planes taxi and then turn to get set to begin takeoff. I have no problem with this, in fact I bought my house in 2013 well aware of the runway’s proximity.

My concern is primarily centred on the total lack of a case, made by either the airport authority or the City of Kingston, in support of the need for an extension of the runway.

Currently the passenger needs of the airport are served by Air Canada Express using the 37 or 50 passenger Dash-8 aircraft. There are 5 daily arrivals from Toronto and 5 departures to Toronto. Up until mid-2016 there were 7 arrivals and 7 departures with an 18 passenger Beechcraft the principal aircraft used. Why the change? Well, the Dash-8 is a more comfortable plane, but the key reason is that 5 Dash-8’s easily handle the passenger demand with two fewer arrivals and two fewer departures each day. Are there any scheduled flights to
Montreal which is about the same distance from Kingston as is Toronto? No. There is no demand. Air Canada and indeed all airlines are in the business of making a profit. If passenger volumes to and from Kingston required a larger plane than the Dash-8, then the 74 passenger Q400 could be accommodated by the current runway. Air Canada would not likely leave any extra passenger demand unserved, nor would the airline stand by and watch a competitor come in and meet that demand.

Scheduled flights out of Kingston serve between 70,000 and 75,000 passengers annually. Assuming the larger number, and 60 flights a week for 50 weeks a year, it leads to 25 passengers per flight...or about 67% capacity of a Dash-8 (100).

Do these numbers indicate that there is room or need for larger planes to service Kingston? Does it appear that Kingston's passenger traffic could attract another airline to compete against or supplement the current provider? Where then is the need for a longer runway? Is it being promoted on an "if we build it they will come" hope?

Large expenditures have been made by companies or cities without proper research being done to provide a indication of the real need or demand for the product or service. Some examples are Ford's Edsel, New Coke, Target stores, Montreal's Mirabel airport. Does Kingston have to join that group?
Another concern is the proximity of Kingston Airport to the Lemoine Point Conservation Area. It is, in fact, right between the airport and Lake Ontario. This wilderness parkland is an oasis of trees, trails and wildlife with a closeness to the downtown that many cities in Canada would surely covet. Current airport traffic has a minimal impact (my opinion) on the peace and tranquility of Lemoine Point. Larger aircraft such as 737’s or A320’s for which a runway extension is needed will certainly have a much greater environmental impact from both noise and air pollution.

In conclusion, I think the business case for a runway extension at the Kingston airport can be said to be nonexistent. In addition, at a time when many efforts are being made to drastically diminish carbon emissions, accommodating large jet passenger planes when smaller aircraft are more than capable of meeting the demand is indefensible.

September 6, 2017
Project Information Officer

Below is my list of questions and my request for information regarding the expansion plans for the airport.

For example the signs located just outside of the airport indicated that this project will enhance the local and regional economy by supporting a wider range of aircraft. In order for me to better understand what this means the following needs to be answered or explained by you.

1. How will the expansion of the airport enhance the local and regional economy resulting in a positive return on investment including interest on borrowed monies as well as the inclusion of additional costs associated to an expanded operation. References to the 2007 business case must be supported by current data due to the age of the document.

2. What does a wider range of aircraft mean. Please provide a list of aircraft projected to use the airport including number of movements from the present to the required 20 year projection.

Below are the remaining questions I need answered to fully understand what the impact of this expansion will mean to me.

1.0 Business case

1.1 Norman Rogers Airport is to provide the current capacity plan for the airport as it is today. The capacity plan is to include all aspects of airport operations.

1.2 Norman Rogers Airport is to provide the projected capacity plan for the airport with the terminal expansion and the runway expansion implemented. Data is to include passenger levels and aircraft type. Please keep in mind that the projections listed in the 2007 business case may not be applicable due to the age of the report. Any references made to this report need to be supported by current data.

1.3 Norman Rogers is to provide an active Airport Operations Manual as well as the required future updates to address the expansion plans. Start up and annual costs associated for each of the requirements in the manual is to be broken out by item. Responses needed to address all requirements in the present and future Airport Operations Manuals, if not addressed within the manual, all applicable regulations and standards (latest versions) per Part III - Aerodromes, Airports and Heliports with associated costs of implementation and annual costs. All responses must separate current airport operations from the operations as a
result of expansion and must be itemized.

1.4 Norman Rogers airport is to provide their safety plan for the following and all associated costs with the terminal and runway expansions implemented verses current operations. Requirements to Part III - Aerodromes, Airports and Heliports, specifically Subpart 5 of the regulations and standards 323, as well as TP 312 5th Edition.

1.4.1 Firefighting equipment both on and offsite
1.4.2 Foam
1.4.3 Annual Training
1.4.4 Specialty training, aircraft fire training
1.4.5 Staff numbers and titles (For privacy, staff names are not required)
1.4.6 Environmental monitoring and inspections
1.4.7 Chemical costs and disposal costs
1.4.8 Equipment costs
1.4.9 Depreciation
1.4.10 First aid
1.4.11 Emergency procedures
1.4.12 Fuel containment and emergency measures
1.4.13 Spills and Spill containment equipment
1.4.14 Ground Water monitoring
1.4.15 Safety plan annual costs by item
1.4.16 All other requirements per regulations, standards or TP

1.5 Kingston is to list all airport benefits to the community with a focus on the ROI (Return On Investment) to better understand the long term annual costs, time and interest costs to payback loans or profits of the proposed expansion.

1.6 Provide a list of companies, schools and organizations, stakeholders contacted
1.7 Provide or supply the questionnaire or information package used in the contacts

1.7.1 Dates when the contacts were made
1.7.2 Responses provided
1.7.3 List of contacts who did not provide a response

1.8 Provide a current economic forecast in dollars based on the responses from the above contacts (please do not refer to the 2007 business case report as it is no longer viable due to its age.) If references to this document are made please justify is a supportive current analysis explaining why it is still relevant.

The economic forecast must include the following;

1.8.1 Increased tax revenue as a result of the airport expansion
1.8.2 Increased tax base due to new construction, immigration to the city as a direct result of the airport expansion
1.8.3 Increased airport revenues due to the airport expansion.
1.8.4 The economic forecast is to address any impacts to train and bus operations as a result of the expanded airport.
1.9  Norman Rogers is to provide detailed operating costs for the years 2012 to present including passenger traffic and movements including aircraft types

1.9.1  Detail list of operating costs
1.9.2  Maintenance
1.9.3  Energy
1.9.4  Administration
1.9.5  Insurance
1.9.6  Nav Canada
1.9.7  Etc.

1.10  Norman Rogers is to provide projected detailed operating costs

1.10.1  Increased costs projected for the terminal expansion and runway expansion.
1.10.2  Compare costs to the full capacity plan of expanded operations.
1.10.3  Provide projected capacity plan to 2037 (20 year requirement) using existing aircraft plus Q400 with no jet traffic and compare the capacity plan to the projected passenger traffic.

1.11  Expansion costs

1.11.1  Total cost of the expansion in detail (itemized) by phase
1.11.2  Risk amount in dollars beyond the approved budget by time for the items detailed in the above question
1.11.3  Debt costs and interest rates both short and long term
1.11.4  Detail the annual cost to the taxpayer to maintain operations at Norman Roger airport for both short and long term

ROI calculations verses capacity from the present to 2037 for the following;

1.11.5  No changes to the airport
1.11.6  Terminal Expansion only
1.11.7  Terminal and Runway Expansion (no Jets)
1.11.8  Terminal and Runway Expansion (with jets)

2.0  Environmental Assessment (EA)

2.1  Kingston held an information session for the public March 30th at St Lawrence College. During the question period it was asked by the public what area did the environmental assessment cover. The answer provided by the engineering consultant from MMM was the airport property only. As per the guidelines of regulation 307.04 part a)

A 4 kilometer area around the airport should be included in the environmental assessment

2.1.1  How is Kingston going to address the EA beyond the airport?
2.1.2  Provide a contact list to communicate with all individuals within 4km of the airport
2.1.3 Provide a checklist that communication was delivered.
2.1.4 Collins Bay has been identified as a sensitive wildlife environment how is Kingston going to manage this sensitivity?
2.1.5 Kingston is to provide an Environment Assessment and impact analysis as a result of the airport expansion and increased movements by aircraft-type. The EA and impact analysis is to be conducted for both runways 01 and 19 and is to include Collins Bay and the shoreline at runway 01. The EA and impact analysis must meet the following:

TP 11500
TP 13549
Wildlife Management Plan
Bird Strike Summary Report and risk analysis
Wildlife control

It is of critical importance that the impact analysis be conducted in a worst case manner with fully loaded and fueled aircraft using the full length of the runway. The analysis must also include the targeted aircraft listed in the DEC PDD. For example the 737-800 was not part of the latest NEF contour calculations but are a part of the PDD as a design requirement. Please justify why the latest NEF contours do not take into account worst case scenarios of all aircraft including the 737-800.

3.0 Conflicting noise data provided by Kingston

Slide 18 (Aircraft Movements by Type) provided in the presentation at Saint Lawrence College March 30th is populated with movement data that is different from every other document publish by Kingston. MMM Group had indicated in the meeting that the noise contours were generated with only four 737-800 flights per day.

3.1 Did the noise contours include movements described in slide 18?
3.2 Did the noise contours take into account day or night flights?
3.3 What was the raw data used for the 737-800? (fully loaded or not)
3.4 The blue noise contour of slide 16 comes within just a few meters of the end of runway 19. Mathematically describe how this is possible if the 737-800 aircraft was used to generate the noise curve and did not use displaced landings and takeoff.
3.5 February 25 2013 Airport infrastructure expansion concepts – noise contours are over the marina, why did they change?

4.0 Consultations

4.1 Once all the comments or objections, questions have been received from the
public and prior to them being complied into a summary report for submission to Transport Canada, will Kingston complete the consultation process to answer and discuss the comments, objections and questions with the public until fully satisfied.

4.2 How will this consultation process work?
4.3 Does Kingston have a procedure in place to manage the consultation process so all parties can work to the same process?
4.4 How much time will Kingston allocate to the consultation process including working with the public?
4.5 How will Kingston document the consultation process to provide evidence to Transport Canada that the process was conducted in a meaningful way?

Thanks very much
I oppose the proposed extension of runway 01-19, as I believe the environmental impact studies have greatly underestimated the impact of this extension on the environment and neighbourhood surrounding Kingston Airport.

In particular:
- in modelling the environmental impact, the study used new types of aircraft, not those most likely to use Kingston airport
- the number of aircraft movements assumed in the environmental impact study, seems much too low if the runway extension is to enhance the local and regional economy in the way the extension advocates claim it will
- the runway extension is part of a plan to increase the overall use of Kingston airport, by attracting new aviation-industrial enterprises to the airport. These new enterprises would also have an environmental impact. The cumulative environmental impact will be considerably greater than that of just the runway extension, but only part of the impact is being considered.

Please confirm receipt of these objections.
Good morning everyone.

The documents submitted by the Marina yesterday morning are accessible at the link below, using the username and password provided. The full submission includes the following documents, many of which I believe have been presented before:

- Submission dated September 18, 2017
- Appendix A – Chronology
- Appendix B – Amec Foster Wheeler peer review (March 14, 2016)
- Appendix C – Amec Foster Wheeler Noise Modelling Study (June 2016)
- Appendix D – Valacoustics Peer Review (May 4, 2017)
- Appendix E – Excerpt from WSP Noise Exposure Forecast Report (June 2016)
- Appendix F – Financial Responsibility
- Appendix G – Collins Bay Client Profile Survey

Please let me know if you have any issues accessing these files. I will be able to provide the hard copies to Marissa at the end of the day.

Best,

Emily Sangster, MCIP, RPP
Project Planner
Planning, Landscape Architecture & Urban Design

T+ 1 613-690-1119

920 Princess Street, Suite 101 1145 Hunt Club Road, Suite 200
Kingston, Ontario K7L 1H1 Canada Ottawa, Ontario K1V 0Y3 Canada

wsp.com
September 18, 2017

Collins Bay Marina Inc.
1270 Coverdale Drive
Kingston, ON K7M 8X7
Phone: 613-389-4455
Email: helm@collinsbaymarina.com; lgbuzzi1@hotmail.com

BY PERSONAL DELIVERY

WSP Canada Inc.
920 Princess St. Suite 101
Kingston, Ontario K7L 1H1

Re: Runway 01-19 Extension Project, City of Kingston, Norman Rogers Airport (YGK), Consultation pursuant to Canadian Aviation Regulations

Dear Ladies & Gentlemen,

1) Collins Bay Marina Inc. (CBM) with lands and buildings including a personal residence, and marina operations on leased lands, is located at 1270 Coverdale Drive, Kingston, ON, K7M 8X7. Lori Buzzi and Gerry Buzzi are the directors and officers of CBM, and are duly authorized to present the views of CBM in this consultation. In addition CBM has engaged the services of Rene Larson of Larson Lawyers Professional Corporation, and he is authorized to be contacted on our behalf in the consultation process.
2) Collins Bay Marina Inc. is seriously threatened and will be adversely affected by the above-mentioned runway extension. Its lands, buildings and marina operations lie directly at the northerly end of the airport lands. The flight path of all incoming aircraft from the North and all outgoing aircraft to the North is directly over the centre of the CBM lands and docks.

3) What is particularly incredulous on the part of the City is its failure to admit that the real reason for the runway extension is to accommodate future jet aircraft traffic for passengers. On top of that the City uses 1.3 jet movements per day as its future traffic projection for the calculation of noise contours in order to minimize the noise contours on CBM. In the Airport Infrastructure Expansion Project Definition Summary and the Screening Level Environmental Assessment there were 8 movements of 737-800 jets. 1.3 movements of the smaller CRJ705 is not the worst case scenario for the required 20 year projection of air traffic. All information provided or available to the public is unreliable based on this change.

4) The primary adverse effect is the expected noise levels from new jet aircraft traffic which will be able to use YGK because of the subject extended runway. While much emphasis has been placed on its own NEF contours by the City, it is the impact of single event jet aircraft noise upon the inhabitants of CBM which is crucially important. We refer to table 5.1 (of the Amec Foster Wheeler Final Report Noise Modelling Study dated June 2016) calculation of the Boeing 737-800 aircraft taking off where CBM is at the 91.6 dB level and arrival at 96.0 dB as an illustration of potential impact of the expanded runway on CBM inhabitants. This noise level will have serious impacts on humans.

5) Lori, Gerry and their daughters live in their residential premises at 1270 Coverdale Drive, Kingston, ON, K7M 8X7. This house is over 40 years old and has none of the building technology currently recommended to deal with adverse noise from airport operations. There has been no offer from the City of Kingston to provide or subsidize any upgrades to this residence to deal with adverse noise from the extended runway.
When the Master Airport Plan of 2007 was being prepared by the consultants' MMM Group, the previous marina owner raised objections and was ignored. However, the City and its consultants had been notified and have been aware of issues at CBM since before 2007. The City has never discussed recommended noise attenuation measures for our residence.

6) CBM's operations are mainly related to sailboats rather than motorboats, and it is the sailboat use during the sailing season that will also be adversely affected by increased noise levels from new jet aircraft landing and taking off the extended runway of YGK.

7) Currently sailboat owners use their boats for overnight sleeping, in the same manner as people use campgrounds to pitch their tents and sleep overnight. We refer you to our recent informal Collins Bay Client Profile Survey attached where 73.27% of the respondents sleep overnight on their boats while parked in CBM.

8) The City of Kingston and its consultants have repeatedly ignored this aspect of the CBM operations, namely for overnight camping, and have refused to classify the CBM land use in the same category as campgrounds, for purposes of noise sensitivity.

9) If people cannot get a good night's sleep in their sailboats while docked at CBM, it is likely that they will simply not return to rent dock space the next season.

10) This will affect the winter storage of boats on CBM lands, which represents a significant portion of annual revenues of CBM. Not to mention the craning services to lift boats in and out of the water in spring and fall respectively, another significant portion of annual revenues of CBM.

11) CBM's future existence is threatened by the higher noise levels from new jet aircraft traffic at YGK. Loss of rentals of dock spaces by
disgruntled overnight boaters will have a downward spiraling effect on revenues of CBM. At some future point CBM would have to close. The Buzzi's investment would be worthless, and their retirement as paupers would be guaranteed.

12) The loss of CBM as a viable marina attracting considerable annual tourist dollar revenues would be a boon to the City which operates its own marinas. This conflict of interest for the City of Kingston has never been admitted, although it is real, and we feel should be taken into account when assessing the decision making by the City with respect to its other owned facilities and operations at YGK. How can the City do this to CBM?

13) The right path for the City of Kingston is to admit it has a conflict of interest, that it is only extending the runway to attract future jet traffic, and that the increased noise from future jet aircraft traffic will cause serious effects upon, and seriously threaten, the inhabitants and visitors at CBM. If the City wants to run roughshod over its neighbours at CBM, it should step up to the plate and purchase CBM. That way the City would bear the burden of its decision to expand the airport runway, not private citizens.

14) However, because the City will not be responsible for all the affects of its decision to expand the runway, it has manipulated its projections of future aircraft traffic, especially underestimating the number of jet flights (1.3 movements per day), in order to contain the projected 30 db NEF noise contours within the airport lands. Using false NEF contours in its Noise Exposure Technical Report dated June 6, 2016, the City states that it has "consulted" with the public during 2016, prior to City Council approving the runway extension and funding the project. How can a "consultation" by the City using false premises be a true consultation with the public?

15) Moreover the Collins Bay Marina engaged the engineering consulting firm of Amec Foster Wheeler Environment & Infrastructure UK Limited
for two reports (Peer Review of the Kingston Airport Infrastructure Expansion Report related to Airport Noise - March 14, 2016, and Collins Bay Marina Noise Modelling Study Final Report - June 2016) which were given to the City as it "consulted" with the public. The March report pointed out that the City had used improper noise modelling program from USA (INM) instead of the Canadian standard NEFCALC software used by Transport Canada. That forced the City to redo is NEF contour projections with the proper Canadian software and come out with a new report as noted above on June 6, 2016. In the meantime, Amec Foster Wheeler had been preparing its June 2016 Noise Modelling Report, which had different more adverse results for CBM.

16) CBM pointed out to the City the different expert calculations/opinions and offered to bring Amec Foster Wheeler to Kingston to meet with the City's MMM Group consultants for purposes of discussion of the two reports. The City flatly refused to have the two sets of consultants meet, and proclaimed that its own noise study was the only one it could rely upon in making its decision to extend the runway. More importantly to CBM, Amec Foster Wheeler had demonstrated that the City did NO single event noise studies which are far more relevant to show the adverse effects on CBM and its inhabitants of increased jet aircraft traffic at YGK.

17) As a side note, CBM feels that it has spent considerable dollars to demonstrate that the City has unreliable information to make a decision on the runway expansion, and the City should be forced to go back and do the correct studies based upon realistic expectations of future jet aircraft usage of YGK.

18) In addition CBM has engaged Valcoustics Canada Ltd. to conduct a Peer Review of Noise Reports dated May 4, 2017. Section 5.0 of the attached Report entitled "Overall Conclusions" points out deficiencies in the City's noise studies, especially the failure to reference the aircraft noise policies and guidelines of the Ontario government, which would be relevant in land use planning for a city in Ontario. The City of Kingston
has forgotten that it is a creature of an Ontario statute bound to abide by the laws of Ontario, and its role as a decision maker involving land use conflicts to be truthful, independent, fair and unbiased.

19) What kind of "consultations" was the City carrying on in 2016? The City would not have any meaningful discussions with CBM about its objections to the runway extension. CBM can only conclude that the word "consultation" means "pretend to listen and then ignore" to the City of Kingston.

20) That same attitude about "consultation" has been carried over by the City to the present consultation under new section 307 of the Canadian Aviation Regulations. As a matter of fact, CBM had to start an application in Federal Court in Toronto (T-857-17) to force the City to carry out this consultation. The City is doing what CBM feels is the minimum amount of notice to the public by posting signs around the airport and inviting submissions such as this one. The residents next to the airport should have received mailed notices of this consultation and there should have been public meetings to consider the latest document produced by the City on December 19, 2016 entitled Project Definition Document. CBM is limited to submitting comments by this submission, and the public will never find out as they would in a public meeting process. Another point is that the CAR consultation by Kingston is being done over the summer holiday period when most members of the public are preoccupied with enjoying their summer holidays and weather; either the time should have been extended or the consultation held in the fall after schools have resumed and people might have better opportunity to become aware of the consultation.

21) CBM respectfully requests that the City of Kingston carry out a full and complete consultation with the public pursuant to section 307 of the CARS. CBM wants the City to engage in discussions and meetings with CBM over the points raised in this submission. CBM is prepared to bring an engineering consultant to discuss noise calculations. CBM
requests a meaningful consultation.

22) Pursuant to Section 4.31 of the Aeronautics Act (R.S.C., 1985, c. A-2, Collins Bay Marina respectfully requests that the Minister make an order prohibiting the expansion of YGK by extending Runway 01-19 on grounds that said expansion is likely to adversely affect aviation safety or is not in the public interest.

23) We are attaching several relevant documents to our submission as follows:
   a) Chronology City of Kingston Norman Rogers Airport 2017 Proposed Expansion.

   b) Amec Foster Wheeler report May 14, 2016

   c) Amec Foster Wheeler Noise Modelling Study June 2016.

   d) Valcoustics Canada Ltd. Peer Review of Noise Reports May 4, 2017

   e) Kingston Airport Noise Exposure Forecast Report, June 6, 2016; Page 7 & 8

   f) Questions titled Financial Responsibility

   g) Collins Bay Client Profile Survey

Yours very truly,

Collins Bay Marina Inc.

Per

Gerry Buzzi - President

Lori Buzzi - Secretary
Chronology
City of Kingston
Norman Rogers Airport
2017 Proposed Expansion

Introduction

The Kingston Airport occupies over 3.23 square kilometres of flat terrain, approximately eight kilometres west of Kingston's downtown core. It occupies 275 hectares (679.6 acres) of land.

Originally constructed in 1940 as part of the British Air Training Plan, the military activity and pilot training undertaken at Kingston during World War II paved the way for the future of aviation in the region.

In 1974, the airport was transferred to the City of Kingston, which assumed full responsibility for airport operations and development.

In 2006, the City of Kingston ("City" or "Kingston") proposed to expand the City owned airport, (Norman Rogers). The City hired MMM Group to produce a master plan to review all aspects of airport operations with an expansion in mind. This study reviewed infrastructure, current business levels, future growth and impact to surrounding land use, zoning and stakeholders adjacent to the airport.

The airport expansion plan produced by MMM was then adopted by the City of Kingston as the official "2007 Master Plan Study", dated August 2007. There was a previous Airport Master Plan, 1997, CRCA (Cataraqui Region Conservation Authority), 1999. Kingston has not produced a new airport master plan since 2007.

In 2007 the Kingston Airport served a catchment area population of more than 557,000. The airport is the principle gateway between Kingston and Toronto, eight (8) times daily.

In 2007 the following facilities and services were provided at Kingston Airport:
• Two operational runways:
  5,000 x 100
  3,933 x 100
• Air Canada JAZZ scheduled passenger service
• Flight Service Station
• Aircraft maintenance
• Aircraft refuelling
• Aircraft storage
• Flying club
• Flying school (fixed wing)
• Fixed-base operator
• Medivac service
• R.C.A.F. Association
• Computer Kiosk
• ATM
• Vending machines
• Car rentals
• Taxi service
• Golf course and Driving range

This was the airport layout in 2007:

A comprehensive Airport Master Plan prepared by the MMM Group/InterVISTAS Project Team was approved and adopted by Committee and Council on October 2, 2007. The Master Plan provides the framework to guide the expansion and development of the Kingston Airport to meet the needs of the community through the year 2026.

As part of the study conducted by MMM Group for the 2007 Master Plan there was a community involvement program portion of the study done which included adjacent landowners. Concerns by the owner of Collins Bay Marina, (located at the end of runway 01-19) at the time indicated that the 1000' runway extension would attract more jet airplanes with its associated increase in noise levels which would further disrupt marina operations and put an end to recreational boating in this location. (see page 10-3 of the 2007 Master Plan)

Although no mention was made of a letter dated April 12, 2007, the Collins Bay Yacht Club which operates out of the Collins Bay Marina (at that time for over 25 years),

2017-02-20
expressed its concerns that airport runway expansion would threaten the viability of Collins Bay Marina.

Since the preparation of the 2007 Kingston Airport Master Plan, a number of studies of noise factors have been prepared and the information used to assess the existing and future noise environment around the airport.

These studies contracted by an engineering firm with the City of Kingston have produced results not in conjunction with the City of Kingston’s Business Plan and fall short in accurate reporting. Collins Bay Marina has also contracted a technical noise study done by Amec Foster Wheeler and will show the many differences in both technical data as well as various misconceptions put forth to misled the taxpaying citizens who reside in the City of Kingston.

This document will outline the following:

**Kingston Airport Expansion Studies**

The City of Kingston hired the MMM Group to conduct the following studies for the Kingston airport expansion

- Business case for Expansion (Dec 14, 2011)
- Airport Infrastructure Expansion Project Definition Document Summary (July 4, 2013)
- Screening Level Environmental Assessment (Mar 30, 2016)

**Collins Bay Marina’s Studies**

Technical peer review of the Airport Infrastructure Expansion report (March 14, 2016)
  - Amec Foster Wheeler Environment And Infrastructure UK Limited

- Noise Modeling Study (June 27, 2016)
  - Amec Foster Wheeler Environment And Infrastructure UK Limited
Collins Bay Marina (CMB) Correspondence and meetings with the City of Kingston

- CBM attended Kingston Public Information Session 25, 2013
- CBM Airport Meeting with the Kingston Mayor 20, 2013
- CBM request for review letter to Kingston Mayor 20, 2013
- CMB Attended Kingston presentation for Airport Infrastructure Expansion (Jul 4, 2013) Project Definition Document Summary
- CBM Impact letter to the Honourable Marc Garneau (Jan 11, 2016)
- CBM presented at the special council meeting (Feb 23, 2016)
- Collins Bay Yacht Club request for review letter to Kingston Mayor (Mar 6, 2016)
- CBM Attended Airport Community Information Session (Mar 30, 2016)
- CBM presented an impact statement at the Information Session (Mar 30, 2016)
- CBM Public Questions Report RPT-1000 submitted to Kingston (Apr 14, 2016)
- CBM meeting with airport, Kingston wrt RPT-1000 (Apr, 2016)
- CBM attended 2016Official Plan Update, Special Council Meeting (May 19, 2016)
- CBM Presentation to Kingston (Jun 21, 2016)
- CBM presentation to council, Official Plan (Nov 17, 2016)

Collins Bay Marina Review of technical Data supplied by Kingston

Amec Foster Wheeler Environment and Infrastructure (AFW) were retained by Collins Bay Marina (CBM) on to conduct a technical peer review of the Airport Infrastructure Expansion Project Definition Document Jul 4, 2013.

The following concerns were identified.

The runway extension could have a number of adverse effects from noise during aircraft events and as well as overall exposure and response to noise.

The noise assessment provided to date, was not robust enough to come to the conclusion that there are no adverse effects (as stated by MMM Group in their report, Airport Infrastructure Expansion Project Definition Document Summary, Section 3.6).
The noise assessment must be completed with more detail including additional NEF contours (down to at least 25).

- Kingston Airport Master Plan (the 2007 Masterplan);
- City of Kingston Council Reports;
- Business Case for Expansion Kingston Airport;
- City of Kingston Airport Expansion;
- Kingston Airport – Airport Infrastructure Expansion Public Information Session
- Kingston Airport Original 2007 Noise Contours (Figure 1); and
- Aircraft Runway Lengths Requirements
- Collins Bay Marina Handbook;
- Ministry of Environment and Climate Change (MOECC) Environmental Noise Guideline NPC-300, "Noise Assessment Criteria for Stationary Sources and for Land Use Planning", August 2013; and
- Transport Canada, “Aircraft Noise and Land Use Management in Canada”, April 26 2001;
- J.S. Bradley, “NEF Validation Study: (1) Issues Related to the Calculation of Airport Noise Contours”, A1505.3, December 1996;
- J.S. Bradley, “NEF Validation Study: (2) Review of Aircraft Noise and Its Effects”, A-1505.5, December 1996; and

Order of Events

1) 2007 Master Plan Study; Community Involvement Program (Aug 2007)

www.cityofkingston.ca/documents/10180/14295/Airport+Master+Plan/b9729bf8-b1f7-491d-8df2-c43c3396a671

As part of the 2007 Master Plan study to lengthen runway 01-19 by 1000' (25%) for use by jets (see page 8-5), thereby creating new routes, MMM Group studied over ten new destinations a day for use by jets. There was a community involvement program portion of the study completed which included adjacent landowners. Concerns by the owner of Collins Bay Marina at the time indicated that the extension of runway 01-19 would attract more jet airplanes with its associated increase in noise levels which would further disrupt marina operations and put an end to recreational boating in this location. Although the issues of increases in jet aircraft and associated increased noise
levels were reported in the last paragraph of section 10.4 (see page 10-3), they were not addressed at the time of this study.

2) Kingston (Norman Rogers) Airport 2007 Economic Impact Study Final Report
July 14, 2008 Prepared by: Jocelyn Purcell, Executive Director Inside Canadian Airports


The Kingston Metropolitan area includes the City of Kingston and the townships of South Frontenac, Loyalist and Frontenac Islands. At our most recent census, the total population in 2006 was 152,358, an increase of 3.8% since 2001.

Today, the Kingston Airport serves a catchment area population of more than 557,000. The airport is the principle gateway between Kingston and Toronto, eight (8) times daily.

Total aircraft movements at the Kingston Airport for 2007 = 34,139 (Itinerant 20,541, Local 13,598)

In 2007, a total of 79,890 passengers were served at the Kingston Airport (Arrivals 40,127, Departures 79,890).

During 2007, Kingston Airport supported an estimated 332 person years of employment.

In 2007, the airport handled a total of 92 large aircraft movements. According to the economic impact model, Kingston Airport generated approximately $42.8 million for the provincial economy during 2007. This figure represents the sum of direct, indirect and induced gross revenues.

3) Business Case for Airport Expansion (Dec 2011 LPS AVIA Consulting)

https://www.cityofkingston.ca/documents/10180/15060/Business+Case+for+Expansion/69a80ba1-9fd8-46cc-9c4f-1c3225a15156

Dec 14, 2011, the city contracted LPS AVIA Consulting to develop the Business Case for Expansion business plan. The study was structured: to assess the air passenger market; to develop a market strategy for air service development; to examine the infrastructure required for the marketing strategy to succeed; and to determine the business case for airport investment. The study also includes technical data such as the Forecast for Annual Aircraft Movements.
Most persons flying to and from Kingston use other airports, particularly Toronto, Ottawa and Syracuse. Their behaviour deprives the airport of revenue and complicates efforts to attract new scheduled services. The longest runway 01-19 at 5,000 feet, cannot support commercial jet aircraft.

The Business case leaves you with the feeling in the future the choice is Jets or nothing.

[Study Recommendations

Market Initiatives The study recommends that the City of Kingston undertake a vigorous air service improvement initiative with Air Canada. Some of the objectives of this initiative would be to: serve as a catalyst for strengthening Air Canada's presence and product offering to the City of Kingston and the region; and increase the profile of both Air Canada and the Kingston Airport in the wider community. In addition, the study recommends that the City of Kingston pursue other air service opportunities which will not detract from the viability of the incumbent carrier's current operations at the airport.

Infrastructure Improvements The study recommends that the City of Kingston undertakes modest improvements in the airport’s infrastructure including a runway extension from 1,502 m (4,929') to 1,829 m (6,000'), introduction of runway end safety areas, and air terminal update, reconfiguration and expansion.

These infrastructure investments will improve the capability of Kingston’s Airport and specifically will: enable the airport to accommodate larger regional jet and turboprop aircraft which are increasingly replacing smaller and more costly turboprop aircraft; accommodate newer narrow body jets if necessary; and enable the air terminal building to handle newer and larger regional aircraft types.

The business case for airport investment cannot be made on a purely financial basis. The improved incremental revenues generated by expanded infrastructure are unlikely to match the capital costs of all improvements.

The 70-seat CRJ-705 is the smallest regional jet in production by Bombardier. Air Canada recently began purchasing the DH8-400 (Q400) 70-seat turboprop airliner from Bombardier.

In 2009, the airport was responsible for the direct employment of 117 persons, direct/indirect/induced employment of 336 persons, and had an economic impact of $49.5 million on the area.]

1) Public Information Session Feb 25, 2013

www.cityofkingston.ca/documents/10180/15060/Infrastructure+Expansion+Plans/f2d548d9-6ba4-48a1-a95b-78e782b09f0c

On February 25, 2013 a Public Information Session was held at the airport for Airport Infrastructure Expansion. During this information session noise modelling mapping contours were presented to the public with the contour directly over the marina. Up to
here the noise modeling was still based on the 2007 master plan and the business case.

2) Meeting the Former Mayor Mark Gerretsen March 20, 2013

On March 20, 2013 a meeting was held with the former Mayor of Kingston. During this meeting the topic of airport expansion was discussed and issues were brought to the attention of the mayor by the owners of Collins Bay Marina.

The issue of noise mapping contours directly over the marina was of significant concern as this would have present and future impacts on the marina and surrounding area. The MMM Group's Maps indicating these issues were presented to the mayor at the time which had little to no effect.

3) Airport Infrastructure Expansion Project Definition Document Summary July 2013


Roughly 3 months after the meeting with the former Mayor the 4th of July 2013 Airport Infrastructure Expansion Project Definition Document Summary was produced. 2012 flight volumes were updated but the report never updated the projection dates from the 2007 master plan the projection dates remained 2026. A sensitivity of the NEF30 contour was modeled by incorporating an additional eight movement (four landings and four take-offs) by a 737-800 in this document two changes were made both having the effect of reducing the noise contours. The airplane traffic amounts were reduced and the wrong software was used to calculate the Noise Exposure Forecast (NEF) contours. Single events were not studied. At this point the City of Kingston is basing their decisions on inaccurate and misleading information.

4) Employment Land Strategy Review 2015

This document agrees with the Business Case for Airport Expansion that smaller aircraft will be phased out in the 12 to 15 year time frame. The Airport expansion will allow the Airport to accommodate planes which are larger and faster. The Business Case report identified the fact that rising fuel prices and crew expenses have greatly reduced the profitability of smaller airplanes (less than 70 seats), so airlines are gradually phasing out smaller aircraft in favour of larger planes that operate at less frequency. In order to accommodate the shift to larger aircraft the basic infrastructure, adequate runway length and air terminal capacity to serve larger planes that
carry more passengers will need to be provided for the Kingston Airport. It is noted that until the runway length is extended by a minimum additional 1,000 feet, the Airport will likely be restricted to smaller regional aircraft, primarily turbo-prop aircraft.

A runway length of 1,829 m (6,000') can accommodate 70 seat jet aircraft such as the EMB170 and CRJ700, however it would constrain the 150 seat jet aircraft.

"7.3.4 Kingston Norman Rogers Airport 2007 Master Plan
The Kingston (Norman Rogers) Airport has been owned, maintained and operated by the City of Kingston since 1974. The Airport’s long-term vision is to provide the residents and businesses of the City of Kingston and the surrounding communities with access to convenient and cost-effective air transportation services in a socially and fiscally responsible manner, while being progressive in its efforts to promote, develop and upgrade the Airport’s lands and facilities.

The majority of lands are designated Airport and the predominant use of the lands is for the landing, taking off and servicing of aircraft. The Master Plan identifies three general areas, totalling 42 Ha (104 acres) within the existing Airport for non-aviation industrial/commercial development.

The Master Plan identifies short-term, mid-term and long-term improvements for the Airport. Among these planned improvements, the City is to develop leased building lots for Business Park use which includes phasing over the short, mid and long term.

### 7.3.5 Kingston Airport Expansion Studies

The City of Kingston is in the final stages of concept development for the potential expansion of the runway and terminal for the Kingston Norman Rogers Airport. A series of studies were completed by consultants and the City that outlined infrastructure plans for the Airport expansion and that also examined the cost and economic impact of the expansion. The Airport expansion will allow the Airport to accommodate planes which are larger and faster. The Business Case report identified the fact that rising fuel prices and crew expenses have greatly reduced the profitability of smaller airplanes (less than 70 seats), so airlines are gradually phasing out smaller aircraft in favour of larger planes that operate at less frequency. In order to accommodate the shift to larger aircraft the basic infrastructure, adequate runway length and air terminal capacity to serve larger planes that carry more passengers will need to be provided for the Kingston Airport. It is noted that until the runway length is extended by a minimum additional 1,000 feet, the Airport will likely be restricted to smaller regional aircraft, primarily turbo-prop aircraft.

2 Airport Infrastructure Expansion, Concepts for Public Information Session, prepared by the City of Kingston, February 25, 2013.

The Airport currently handles about 180 trips (started or ended) daily, over 65,000 passengers annually and provides direct employment of 117 jobs and supports an indirect employment of 339 jobs in the City. It is estimated that with the expansion of the Airport, passenger traffic by 2026 using the medium forecast (representing the mostly likely scenario) would grow to 116,000. Benefits of the Airport expansion include supporting Kingston's growth as a centre for innovation and knowledge by enhancing the City as a destination choice for business and tourism, as well as supporting Queen's
University (a growing institution in the City) and its need for connectivity within Canada and the U.S.
The expansion of the Airport is expected to have a minimal impact on cargo service. It is noted that major national/global logistics companies have designed their networks, with hubs in the Toronto/Hamilton area, to maximize reliability and minimize costs and there is limited opportunity given the capacity of the Airport to expand its air cargo service to other companies.

5) Screening Level Environmental Assessment March 2016

March 30, 2016 The City held a Community Information Session and presented the Screening Level Environmental Assessment the aircraft modeling was reduced the same as the Airport Infrastructure Expansion Project Definition Document Summary. 2012 flight volumes were still used but the report never updated the projection dates from the 2007 master plan the projection dates remained 2026. Now instead of 20 years it’s only looking 9 years ahead. And the eight movements by a 737-800 (four landings and four take-offs) were still included using the wrong software and single events were still not studied. AMEC Foster Wheel’s Peer Review was presented at the Community Information Session, during this meeting the City of Kingston learned from CBM that the noise modelling software that was used was incorrect. The next day Lisa Osanic a Kingston ward counsellor was quoted in the Whig Standard, Kingston’s local newspaper as saying “We rely as councillors on the city data," she said. "Hearing people say we used American software and that’s why there are contour differences, to hear that is troubling. It puts that doubt in our mind and we don’t know who to believe.”


Roughly 2 months after the March 30th meeting on June 6, 2016 the City released the Noise Exposure Technical Report by MMM Group for the first time in all these reports the four jets a day were removed. Single events are still not studied. The 2012 flight volumes were still used but the report still never updated the projection dates from the 2007 master plan the projection dates remained 2026. This study has 1.3 jet movements as the worst case scenario in the year 2026, reducing the noise contours enough to remain inside the Airport property. The year 2037 would be the Noise Exposure Projection date set by Transport Canada. In the business case the year 2029 is where jets are said to be prevalent by reducing the projection date below the year 2029 the City is manipulating this report.
7) Noise Modelling Study
2016

June 2016 CBM had a noise modelling study done by Amec Foster Wheeler. In this study all single event noise levels by jets were over the limits set by Transport Canada and the National Research Council Canada. The noise modeling including the four jets were also bad news the 30NEF contour was over houses to the east, south and the marina to the north.

8) June 21st 2016 meeting Re Norman Rogers Airport Expansion
2016

In this presentation we asked to be considered and have both sets of experts meet to see if there was common ground. The City refused stating they believe their experts.

9) Official plan update, Special public council Meeting Nov 2016

Our first point is that these NEF boundaries are incorrect - Collins Bay Marina (CBM) hired its own experts at considerable expense but the City of Kingston refused to have its experts meet with CBM experts to determine if there is common ground for agreement. On this point, the OMB can be the arbiter and will listen to both sets of experts before making a decision. It is unfortunate that the City is in the position of being the owner of the airport and proponent of airport expansion, while at the same time the City is the decision maker for planning policies that will shape the City's future land uses, including the airport. In the City's haste to move ahead with proposed airport runway expansions, it decided not to listen to our experts, not to give fair hearing to our experts. This was a denial of natural justice as a decision maker, not even considering the obvious conflict of interest position of the City. On top of this, the City owns competing marina operations which can benefit from the weakening and/or failure of CBM. Most people view these as conflicts of interest, and wonder how the City can put itself in that position?

10) December 19, 2016 Kingston Airport Runway 01-19 Extension PDD

In the Airport Infrastructure Expansion Project Definition Document Summary - July 2013 and also in the Screening Level Environmental Assessment - March 2016 There were eight movements by a 737-800 (four landings and four take-offs) BUT they were removed from Noise Exposure Technical Report from June 2016 The 737-800 have reappeared in the latest Project Definition Document as shown below

2017-02-20
Infrequent (i.e. once per month) use by the B737-800 under 80% and 100% MTOW.

Notwithstanding the above, airside structures and underground infrastructure shall be designed to withstand B737-800 loading.

If the 737-800 aircraft is in the PDD it must be in the noise modeling.

**Correspondence with City Staff and other Agencies**

Kingston City planner Greg Newman, has failed to explain the cities position as to conforming to the new regulations as set out by Transport Canada. This was addressed by the Collins Bay marina owners in an email to Mr. Newman and his response was stated as such:

The NEF contours have been verified by the City’s consulting engineers and Transport Canada as part of the review of forecasted airport operations and are reflected in Schedule 11-A to the OP. The associated Official Plan policies (3.7.4) provide that new residential development and other sensitive uses will be prohibited within NEF contours above 30; this is a limitation consistent with industry standards identified by Transport Canada. It’s important to note that this policy limitation is also consistent with that used by other municipalities in Ontario (e.g., Hamilton, Windsor, London, Ottawa, etc.).

The final version of the Official Plan is to be presented to the City’s Planning Committee, along with a recommendation report, on February 16, 2017. If you would like to arrange another meeting to discuss the above comments please let me know as soon as possible.

Regards,

Greg

Greg Newman, MCIP, RPP
Manager, Policy Planning
City of Kingston

After this email was received from Mr. Newman, Transport Canada was queried as to their input on the regulations and actions of the City of Kingston, an email from Transport Canada:

"Thank you for contacting Transport Canada and providing us with your comments regarding the proposed Kingston Airport Expansion."
As mentioned in our previous correspondence, the department has not been officially approached by the Kingston Airport to discuss any expansion plans, therefore we cannot comment further on the matter at this time. In reference to the Noise Exposure Forecast (NEF) system, this is used by municipalities for planning purposes and is the responsibility of the airport operator. **Transport Canada does not produce or verify NEFs.**

Your comments will be kept on file for future reference as applicable.

Once again, thank you for writing.

Regards, Civil Aviation

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**Norman Rodgers Airport Primary Expansion Intent**

An appropriate business review of the airport operations was conducted on Dec 2011 to better understand the future of the airport. This is a best practice approach that looks at the current and future financial path that the airport must take to survive and not be a burden to the Kingston tax payers in the form of losses.

The Business Case for Expansion Kingston Airport, Dec 14, 2011 in the introduction of section 1 page 1 looked at a number of deficiencies that contributes to the constraints to growth of the airport, such as:

- Deregulation
- Competition
- Hub and Spoke airline operations
- Etc.

One of the constraints listed was:

- Inability to accommodate regional jets (operated by legacy carriers) or narrow body jets (operated by low cost and charter carriers)

Section 5.1

- The short runway at Kingston Airport excludes airlines with regional jets or larger jet aircraft. The airport is limited to turboprop aircraft for scheduled services. Apart from the large 77 seat DH8-400, these aircraft are gradually being removed from scheduled services. **The runway constraint greatly limits the number of airlines that could physically serve Kingston in the future.** We believe that this constraint is one of the fundamental reasons for expansion and the most logical and simplest way to achieve airport growth in the Kingston market. To support this conclusion under the Kingston (Norman Rodgers) Airport – 2007 Master Plan Study, section 6.6.5 page 18, the following jet traffic is forecasted;
Kingston — Vancouver (2,204 air miles)
- Target Carrier: Air Canada
- Alternate Carrier(s): n/a
- Suggested Aircraft Type: Embraer 190 (93 seats)
- Aircraft Range: 2,200 air miles
- Suggested Frequency: 1x/day
- Local market size: 23,090 per year (31.6 passengers per day, each way (PPDEW)

Kingston — Calgary (1,789 air miles)
- Target Carrier: Air Canada Jazz
- Alternate Carrier(s): Westjet
- Suggested Aircraft Type: Canadair CRJ-705 (75 seats) or Embraer 175 (73 seats)
- Aircraft Range: 2,000 air miles
- Suggested Frequency: 1x/day
- Local market size: 10,440 per year (14.3 PPDEW)

Kingston — Edmonton (1,778 air miles)
- Target Carrier: Air Canada Jazz
- Alternate Carrier(s): n/a
- Suggested Aircraft Type: Canadair CRJ-705 (75 seats) or Embraer 175 (73 seats)
- Aircraft Range: 2,000 air miles
- Suggested Frequency: 1x/day
- Local market size: 11,580 per year (15.9 PPDEW)

Kingston — Orlando (1,120 air miles)
- Target Carrier: Air Canada Jazz
- Alternate Carrier(s): Delta Connection E75
- Suggested Aircraft Type: Canadair CRJ-705 (75 seats) or Embraer 175 (73 seats)
- Aircraft Range: 2,000 air miles
- Suggested Frequency: 1-2x/week, possibly seasonal
- Local market size: 9,640 per year (13.2 PPDEW)

Kingston — Halifax (647 air miles)
- Target Carrier: Air Canada Jazz
- Suggested Aircraft Type: Canadair CRJ (50 seats)
- Aircraft Range: 978 air miles
- Suggested Frequency: 1x/day
Local market size: 8,150 per year (11.2 PPDEW)

Kingston – New York (276 air miles)
• Target Carrier: Air Canada Jazz
• Alternate Carrier(s): Continental Express, USAirways, Delta Connection, American Eagle
• Suggested Aircraft Type: Canadair CRJ (50 seats) or Embraer 135 (37 seats)
• Aircraft Range: 978 air miles
• Suggested Frequency: 2x/day
• Local market size: 7,920 per year (10.8 PPDEW)

Kingston – Winnipeg (1,046 air miles)
• Target Carrier: Air Canada Jazz
• Alternate Carrier(s): n/a
• Suggested Aircraft Type: Canadair CRJ-705 (75 seats) or Embraer 175 (73 seats)
• Aircraft Range: 2,000 air miles
• Suggested Frequency: 1x/day
• Local market size: 6,140 per year (8.4 PPDEW)

Kingston – Montreal (155 air miles)
• Target Carrier: Air Canada
• Alternate Carrier(s): n/a
• Suggested Aircraft Type: de Havilland Dash 8-100 (37 seats)
• Aircraft Range: 805 air miles
• Suggested Frequency: 1x/day
• Local market size: 400 per year (0.5 PPDEW)

As stated by the Kingston Airport Noise Exposure Technical Report, Jun 6, 2016, section 1.2, page 2 Aircraft Movements by Type table the only regional jet listed is the CRJ705 with a peak panning day movement of 1.34. This projection of 1.34 movements is in direct contradiction of the potential jet traffic analyzed and listed above. If the above flights were added up it would translate to a daily jet traffic of 16 movements not including the seasonal or business traffic.

Conclusion

The purpose of producing NEF and NEP contours is to provide information to stakeholders as to what the noise impact will be as a result of the proposed expansion. When a noise contour is calculated it is important to forecast a worst case scenario or a scenario that would represent successful growth after 20 years.

2017-02-20
The current projection of 1.34 movements per day does not meet this noise projection but instead reflects the current air traffic. This represents a disservice to those who are making decisions at the city as well as the surrounding stake holders as to what the future noise levels may be.

In conclusion, a recalculation of the noise contours must be completed with a worse case projection of jet traffic included.
From Amec Foster Wheeler's peer Review it is noted that the Transport Canada Aviation Land Use Document suggests that the Marina development is acceptable against all levels of NEF. It would be worthwhile to understand what the definition of Marina is under this guidance. Our interpretation is that this is definition considers only commercial use of the Marina, and does not consider residential uses (e.g. sleeping quarters) at the Marina. Our understanding of the Collins Bay Marina, as set out against Ministry of Environment guidance is that there are extended periods of time where the Marina could be considered residential, as boat operators typically sleep on their boats in a context that could be construed as a ‘second residence’. Furthermore, the owner/operator at Collins Bay Marina resides there full time, making it a residential dwelling;

iv. Under Ministry of Environment NPC-300, a noise sensitive receptor is characterized as

"...a property of a person that accommodates a dwelling and includes a legal nonconforming residential use; or a property of a person that accommodates a building used for a noise sensitive commercial purpose" and that a "noise-sensitive space" includes the living and sleeping quarters of dwellings. Under these definitions, Collins Bay Marina is a noise-sensitive receptor; as the operation clearly has people on the boats that are there for residential use (sleeping on their boats), as well as the owner/operator of the Marina also lives there. On this basis, any assessment must consider and make reference to the effects on the Marina as a noise sensitive receptor.

The City of Kingston’s study has ignored the NRC and Transport Canada that the worst case scenarios have been studied. Planning should be based on a worst case or worst year set of contours. These could be calculated for the maximum capacity of the airport or some other definition of a worst case. From the calculated worst case contours, practical land use planning areas should be determined similar to the Airport Vicinity Protection Areas used in Alberta. In this way airports and nearby communities could grow in a harmonious planned manner.

Transport Canada has set out guidelines and recommendations over the years to establish a standard by which cities and/or municipalities can develop existing or future infrastructure. These standards have many aspects to them which when done competently can achieve results.

From Transport Canada 4.6.1 New Aerodromes and Community Response to Noise

For the purposes of this section, "New Aerodrome" means any land designated by the Governor in Council as an "Airport Site" under the Aeronautics Act after January 1, 2001.
Where an aerodrome is already surrounded by residential or other noise sensitive land uses, the intent of land use planning guidelines is to prevent any increases in incompatible land use. As urbanization increases, any new aerodrome would, by necessity, be planned for and built in non-urban areas. Therefore, where a new aerodrome is planned on land designated as an airport site, an opportunity exists to establish appropriate land use planning guidelines that recognize the unique noise environment of a non-urban area and preserve the balance between the integrity of the future aerodrome and the quality of life of the community that it will serve.

The encroachment of incompatible, sensitive land uses is clearly a vital factor in planning and establishing appropriate protection criteria for new aerodromes. The best and often only opportunity to establish a sufficient buffer zone to control noise sensitive development around a new aerodrome is in the initial planning stage of that new aerodrome. This opportunity diminishes quickly as the aerodrome develops and community land use patterns become established.

In addition to the traditional approach of defining land use planning guidelines, pertinent factors considered in a study of land use guidelines for new aerodromes included not only individual activity interference (speech and sleep) criteria, but also habituation to noise, the type of environment (non-urban versus urban environment), community attitudes toward the noise source, the extent of prior exposure to the noise source, and the type of flight operations causing the noise.

For new aerodromes, Transport Canada recommends that no new noise sensitive land uses be permitted above 25 NEF/NEP, Reference TP1247, Section 4.6.1. Noise sensitive land uses include residential, schools, day care centres, nursing homes and hospitals. This approach is the single most practical for reasons of ease of implementation and administration since below this threshold, all noise-sensitive land uses would be permitted without restrictions or limitations. The guidelines for all other land uses remain unchanged from Table 2 of TP1247. This buffer would also offer protection against the long term uncertainties inherent in planning for a new aerodrome. To implement this NEF 25 criterion, NEF and NEP maps for new aerodromes must depict the 25 contour as a solid line in addition to the noise contour requirements set out in Section 4.5.

Clearly there is a difference of opinion as to how the process is supposed to work. So far three different maps have been produced by the City each time with new data and NEF contours as shown below.
The first map from the 2007 Master Plan, shows the contour lines of NEF 30 directly over the marina NEF 25 is not displayed.
Figure 2: MMM Group Noise Exposure Forecast, February 2013 Public Information Session

2007 Airport Master Plan study of New Route Opportunities
6.6.5 New Route Opportunities

1) Kingston — Vancouver (2,204 air miles)
   - Target Carrier: Air Canada
   - Alternate Carrier(s): n/a
   - Suggested Aircraft Type: Embraer 190 (93 seats)
   - Aircraft Range: 2,200 air miles
   - Suggested Frequency: 1x/day
   - Local market size: 23,090 per year (31.6 passengers per day, each way (PPOEW))

   Comments:
   - Kingston — Vancouver is Kingston's largest O&D market. A non-stop service could be attractive, and such an operation could be performed by an aircraft such as Air Canada's Embraer 190, subject to certain westbound weight restrictions. (Note: YGK-YVR is 2,204 nonstop air miles, and Air Canada is currently offering non-stop service on both YYZ-SEA (2,060 air miles) and YYZ-YXX (Abbotsford) (2,049 air miles).
   - Air Canada is by far the most logical and likely airline to target for this service, even if it is unlikely in the near term.
   - Connection opportunities beyond YVR are limited due to Vancouver's location on the west coast, and Kingston generates very little traffic from Asia. Connections would exist to major cities along the western coastline of the United States.
   - Another alternative could include operating one-stop Kingston — Vancouver via an intermediate point, such as Winnipeg, Calgary, or Edmonton, thereby benefiting from the strength of attracting two or more markets.

2) Kingston — Calgary (1,789 air miles)
   - Target Carrier: Air Canada Jazz
   - Alternate Carrier(s): WestJet
   - Suggested Aircraft Type: Canair CRJ-705 (75 seats) or Embraer 175 (73 seats)
   - Aircraft Range: 2,000 air miles
   - Suggested Frequency: 1x/day
   - Local market size: 10,440 per year (14.1 PPOEW)
6.6.5 New Route Opportunities

1) Kingston — Vancouver (2,204 air miles)
   - Target Carrier: Air Canada
   - Alternate Carrier(s): n/a
   - Suggested Aircraft Type: Embraer 190 (93 seats)
   - Aircraft Range: 2,300 air miles
   - Suggested Frequency: 1x/day
   - Local market size: 23,000 per year (31.6 passengers per day, each way)

Comments:
- Kingston — Vancouver is Kingston’s largest O&D market. A non-stop service could be attractive, and such an operation could be performed by an aircraft such as Air Canada’s Embraer 190, subject to certain westbound weight restrictions. (Note: YGK-YVR is 2,204 nonstop air miles, and Air Canada is currently offering non-stop service on both YVZ-SEA (2,060 air miles) and YYZ-YXX (Abbotsford) (2,049 air miles).
- Air Canada is by far the most logical and likely airline to target for this service, even if 6 is unlikely in the near-term.
- Connection opportunities beyond YVR are limited due to Vancouver’s location on the west coast, and Kingston generates very little traffic from Asia. Connections would exist to major cities along the western coastline of the United States.
- Another alternative could include operating one-stop Kingston — Vancouver via an intermediate point, such as Winnipeg, Calgary or Edmonton, thereby benefiting from the strength of attracting two or more markets.

2) Kingston — Calgary (1,789 air miles)
   - Target Carrier: Air Canada Jazz
   - Alternate Carrier(s): WestJet
   - Suggested Aircraft Type: Canadair CRJ-705 (75 seats) or Embraer 175 (73 seats)
   - Aircraft Range: 2,000 air miles
   - Suggested Frequency: 1x/day
   - Local market size: 10,440 per year (14.3 PPDEW)
Comments:

- Kingston — Calgary is Kingston's third-largest O&D market. A non-stop service would be attractive, but such an operation would need to be flown by longer-haul regional jet aircraft, such as the CRJ-705 or EMB 175, both of which would incur payload penalties on the westbound flights departing from Kingston. WestJet could be an alternative carrier, but the smallest aircraft in their fleet is the Boeing 737-600, which could not operate non-stop from Kingston to Calgary.

- YYC is a hub for WestJet and a focus city for Air Canada.

- Service to YYC would provide additional connecting opportunities to/from other points in western Canada and the western United States.

3) Kingston — Edmonton (1,778 air miles)

- Target Carrier: Air Canada Jazz
- Alternate Carrier(s): n/a
- Suggested Aircraft Type: Canadair CRJ-705 (78 seats) or Embraer 175 (73 seats)
- Aircraft Range: 2,000 air miles
- Suggested Frequency: 1x/day
- Local market size: 11,580 per year (15.9 PPDEW)

Comments:

- Kingston — Edmonton is Kingston's second-largest O&D market. A non-stop service would be attractive, but such an operation would need to be flown by longer-haul regional jet aircraft, such as the CRJ-705 or EMB 175, both of which might incur payload penalties on the westbound flights departing from Kingston.

- Air Canada is by far the most logical and likely airline to target for this service, even if it is unlikely in the near-term.

- Kingston — Edmonton could also be served on a one-stop basis, via either Winnipeg or Calgary. Such a routing would increase the flight's drawing pool of potential passengers.

- Service to YEG would provide additional connecting opportunities to/from other points in western Canada.
4) Kingston — Orlando (1,120 air miles)

- Target Carrier: Air Canada Jazz
- Alternate Carrier(s): Delta Connection E75
- Suggested Aircraft Type: Canadair CRJ-705 (75 seats) or Embraer 175 (73 seats)
- Aircraft Range: 2,000 air miles
- Suggested Frequency: 1-2x/week, possibly seasonal
- Local market size: 9,640 per year (13.2 PPDEW)

Comments:
- Kingston — Orlando is Kingston's fourth-largest O&D market. A non-stop service would be attractive, but such an operation would need to be flown by longer-haul regional jet aircraft, such as the CRJ-705 or EMB 175, both of which would incur payload penalties on the southbound flights departing from Kingston.
- Air Canada is by far the most logical and likely airline to target for this service, even if it is unlikely in the near-term.
- Kingston — Orlando could also be a viable charter market, again pending runway lengthening.
- Note: JetBlue commenced daily non-stop Airbus A320 (150 seats) service between SYR and MCO in July 2006. The relative proximity of Syracuse to Kingston (127 miles), coupled with JetBlue's reputation as a quality low-cost carrier, will likely further erode Kingston's true Orlando O&D as a segment of YGK's natural market will be drawn to this new SYR-MCO service.

5) Kingston — Halifax (647 air miles)

- Target Carrier: Air Canada Jazz
- Suggested Aircraft Type: Canadair CRJ (50 seats)
- Aircraft Range: 978 air miles
- Suggested Frequency: 1x/day
- Local market size: 8,150 per year (11.2 PPDEW)

Comments:
- Kingston — Halifax is Kingston's sixth-largest O&D market. A non-stop service would be attractive, and a CRJ regional jet should be able to fly the route from the current runway, subject to verification.
- Air Canada is by far the most logical and likely airline to target for this service, even if it is unlikely in the near-term.
6) Kingston – New York (276 air miles)
   - Target Carrier: Air Canada Jazz
   - Alternate Carrier(s): Continental Express, USAirways, Delta Connection, American Eagle
   - Suggested Aircraft Type: Canadair CRJ (50 seats) or Embraer 190 (37 seats)
   - Aircraft Range: 978 air miles
   - Suggested Frequency: 2x/day
   - Local market size: 7,920 per year (10.8 PPDEW)

   Comments:
   - Kingston – New York is Kingston’s seventh-largest O&D market. A non-stop service would be attractive, and a CRJ or ERJ regional jet should be able to fly the route from the current runway without payload penalty, subject to verification.
   - Air Canada is by far the most logical and likely airline to target for this service, even if it is unlikely in the near-term.
   - Given YGK’s lack of U.S. Customs pre-clearance facilities, coupled with LaGuardia’s slot restrictions and severe congestion problems, this service is unlikely to ever materialize, based on known parameters. Most likely service would be Continental Express turboprop service to Newark (EWR). Note that the smallest aircraft currently operating at Continental’s EWR hub is the Embraer ERJ regional jet.

7) Kingston – Winnipeg (1,046 air miles)
   - Target Carrier: Air Canada Jazz
   - Alternate Carrier(s): n/a
   - Suggested Aircraft Type: Canadair CRJ-705 (75 seats) or Embraer 175 (73 seats)
   - Aircraft Range: 2,000 air miles
   - Suggested Frequency: 1x/day
   - Local market size: 6,140 per year (8.4 PPDEW)

   Comments:
   - Kingston – Winnipeg is Kingston’s eighth-largest O&D market.
   - Winnipeg could serve as a logical intermediate stop for direct flights between Kingston and western Canada (Vancouver, Edmonton, Calgary, etc.), thereby enabling the operating carrier to capitalize on multiple market demand synergies.
Air Canada is by far the most logical and likely airline to target for this service, even if it is unlikely in the near-term.

8) Kingston — Montreal (165 air miles)

- Target Carrier: Air Canada
- Alternate Carrier(s): n/a
- Suggested Aircraft Type: de Havilland Dash 8-100 (37 seats)
- Aircraft Range: 805 air miles
- Suggested Frequency: 1x/day
- Local market size: 400 per year (0.5 PPDEW)

Comments:
- Kingston — Montreal was flown by Air Canada during 2003, but the service was discontinued. Given the increased traffic congestion, as well as high operating costs at Toronto Pearson International Airport, coupled with the connection opportunities available via Montreal Trudeau International Airport to points in eastern Canada and beyond, reinstatement of this non-stop service deserves consideration.
- Air Canada is by far the most logical and likely airline to target for this service.
- Montreal Trudeau is a growing hub for Air Canada. It is likely that Air Canada would find it more cost-effective to funnel certain YGK passengers via YUL rather than via the current YGK-YYZ flights.

9) Other U.S. Hubs

Based on the existing air traffic demand in Section 5 of this report, with consideration to Kingston's geographic position and an effort to minimize connecting flight circuitry, the most beneficial service to the YGK catchment community would be non-stop service by Continental Connection from Continental's international hub at Newark Liberty International Airport. A twice-daily YGK-EWR non-stop link, using Embraer ERJ aircraft, would provide YGK passengers with a variety of beyond connecting opportunities, both in the United States and beyond. Other hub options in the northeastern United States include Northwest Airlink service to Northwest's Detroit (DTW) hub, using Saab SF3 turboprop equipment, as well as non-stop service to United's hub at Washington Dulles.

6.7 AIR CHARTERS

This chapter examines the potential for air charter service to meet a portion of the air service demand at Kingston (Norman Rogers) Airport. Air charter focuses on higher volume, lower-yield routes that are generally seasonal and/or cannot sustain scheduled service. Charter services are usually provided in conjunction with one or more tour
### 6.6.2 Air Service Development Timeline

As mentioned in Section 5.2, Market Assessment Criteria, significant planning is required before an airline commences service on a new route. Table 6-9 highlights the typical planning process. This timeline is simplified, and assumes that the airline has the available aircraft in their fleet to perform the services outlined, and that no other constraints (crew scheduling, airfield/runway conditions, obtaining route authorities) prevent commencement of such services. It is also important to note that there is no guarantee that a targeted service will commence within the 12-month timeframe suggested. The actual timeline from market prioritization to service commencement can vary greatly, depending on the market and airline(s) involved.

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</table>

This is the second map from the Airport Infrastructure Expansion Project Definition Document Summary dated July 4 2013. It shows the NEF 30 contour lines not being on Collins Bay Marina, however the wrong software was used to come up with the calculations. NEF25 is not displayed.
For the 2\textsuperscript{nd} and 3\textsuperscript{rd} map Itinerant aircraft movements for 2012 were provided by city for various classes of aircraft. The 2026 movements for itinerant aircraft were established by taking the growth rates in the Business Case for Expansion, Kingston Airport, December 2011 and applying them to the 2012 flight volumes. The 2026 local flight volumes were established similarly.

In order to establish aircraft movement in each direction on the runway at peak hour, runway data and peaking factors establish in the 2007 master plan were applied to the various classes of aircraft.

This recipe of noise exposure projections is an inadequate assessment in time as 9 years is just under half the Transport Canada Noise Exposure Projection which is up to twenty years into the future and includes aircraft types and runway configurations that may materize within this period.

The air service timeline from the Master Plan was twelve months. The third map from the Exposure Technical Report dated June 6th 2016. shows both NEF contour lines for the past as well as the future. Up to 2026 the 20 year forecast for the master plan.

Clearly the intent of the 2007 Master Plan was to allow jets. Its projections were up to 2026. This is supported by section 7 of the Master Plan.

The Business Case from 2011 predicts to 2030 and states in 2029 jets will be prevalent.
• Master Plan projects to 2026 because that was its 20 year forecast
• Master Plan opportunities showed regional jets in 9 cities across North America
• Business case anticipates jet traffic in 2029 to be significant
• Both studies agree the extension of the runway is for jets
• Where it gets confusing – Master Plan expires in 2026
  • 2012 flight volumes were added
  • 2011 Business Case predicts the jets in 2029
  • The progression of jets in 2029 in the Business Case is beyond the Master Plan 2026 prediction period.
  • In 2025 the business case has 37 seat and 74 seat DH8 until 2029 then jets for high growth and 2030 for medium growth
• In the city's last report, June 6, 2016 it says "the information required to produce NEP must, at least, be contained in an airport Master Plan."

This was copied from the city's own Noise Exposure Technical Report

. ► Noise Exposure Forecasts (NEFs)
Traffic volume and aircraft type and mix used in calculating the noise contours are normally forecast
For a period of between five to ten years into the future. Runway geometry must be the current layout Except that new and approved projects involving changes in the runways may be included, when the Completion date of the project lies within the forecast period.

► Noise Exposure Projections (NEPs) it is recognized that much land use planning involves projections beyond five years into the future, when aircraft fleet mixes and runway configurations are most likely to be different from the known conditions of today. To provide provincial and municipal authorities with long range guidance in land use planning, Transport Canada introduced the Noise Exposure Projection (NEP). The NEP is based on a projection of aircraft movements for up to 20 years into the future and includes aircraft types and runway configurations that may materialize within this period. NEPs are official contours and Transport Canada will support them to the level of accuracy of the input data. The information required to produce an NEP must, at least, be contained in an Airport Master Plan.

The City of Kingston's Airport Master Plan is old and only forecasts to 2026

The recommendation of the Business Case is to accommodate Jet aircraft

Business Case Executive Summary 2017-02-20
Areas in which Kingston Airport may be perceived to be out-of-date include: an inability to accommodate regional jets operated by legacy airlines, or larger jet aircraft operated by low cost and charter airlines;

The newer 75 seat EBM-175 regional jet is popular with Air Canada and US trans-border operators such as United

6.2.3 Runway Expansion Concept

The analysis of aircraft performance reveals that the runway length of 2,084 m (6,836 feet) can adequately accommodate the most likely future jet aircraft types. A runway length of 1,829 m (6,000') can accommodate 70 seat jet aircraft such as the EMB170 and CRJ700, however it would constrain the 150 seat jet aircraft.

All three types are significantly constrained at the current 1,524 m (5,000') runway length. Table 6-2 illustrates the performance of select jet Aircraft for Runway 01-19. Extending the runway to 1,829 m (6,000 ft) or 2,084 m (6,836 ft) will require that the runway code classification be upgraded to a Code 4C. Transport Canada TP 312 recommends that a Code 4 runway have a width of 45m, however this is not a mandatory requirement.

This map from the Noise exposure Technical Report has less than one jet per day at 1.3 movements in 2026
Business Case

6.2.3 Runway Expansion Concept

The analysis of aircraft performance reveals that the runway length of 2,084 m (6,836 feet) can adequately accommodate the most likely future jet aircraft types.
Table 6-2 – Runway 01-19 Performance Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Boeing 737-700</th>
<th>Embraer 170</th>
<th>CRJ700</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ax Max Takeoff Weight</td>
<td>70,080 Kg</td>
<td>38,790 Kg</td>
<td>37,421 Kg</td>
</tr>
<tr>
<td>Ax Max Aircraft Load Rating</td>
<td>10.1</td>
<td>7.6</td>
<td>7.2</td>
</tr>
<tr>
<td>Runway Length 1,524 m (5,000 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievable Takeoff Weight SA + 15</td>
<td>63,500 Kg</td>
<td>35,500 Kg</td>
<td>31,297 Kg</td>
</tr>
<tr>
<td>Runway Length 1,829 m (6,000 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievable Takeoff Weight SA + 15</td>
<td>68,038 Kg</td>
<td>38,790 Kg</td>
<td>37,421 Kg</td>
</tr>
<tr>
<td>Runway Length 2,084 m (6,835 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievable Takeoff Weight SA + 15</td>
<td>70,080 Kg</td>
<td>38,790 Kg</td>
<td>37,421 Kg</td>
</tr>
</tbody>
</table>

Source: Manufacturer’s data

**Direction From the draft Official Plan**

“Provide For increased air transportation and associated services”

**3.7 Airport**

The Norman Rogers Airport is a municipally owned and operated regional airport certified by Transport Canada, with strategic importance to the City. The Airport designated lands are shown Future development of the Airport designated lands on Schedule 3-A to this Plan. The potential for future development of the Airport designated lands, including expansions to airport facilities, has been identified in the “Kingston Norman Rogers Airport 2007 Master Plan Study” and the “City of Kingston, Employment Land Strategy Review, 2015; highest and best use analyses have also been undertaken to evaluate opportunities for growth and development at Norman Rogers Airport.

The long term operation and economic viability of Norman Rogers Airport relies on the advancement of land uses that provide for increased air transportation and associated services; optimize aviation-related revenues; introduce new, and support existing, employment opportunities; can be adequately serviced by the City; and achieve compatible land use and development. provides the opportunity to introduce new employment opportunities while maintaining airport operations and providing a buffer to
sensitive uses.

In James Bradly’s final report the buffer mentioned above is NEF 25 but NEF 25 is already on houses and the marina. Keep in mind these findings from the City have less than one Jet per day.

The City of Kingston,

7.3.4 Kingston Norman Rogers Airport 2007 Master Plan
The Kingston (Norman Rogers) Airport has been owned, maintained and operated by the City of Kingston since 1974. The Airport’s long-term vision is to provide the residents and businesses of the City of Kingston and the surrounding communities with access to convenient and cost-effective air transportation services in a socially and fiscally responsible manner, while being progressive in its efforts to promote, develop and upgrade the Airport’s lands and facilities.

The majority of lands are designated Airport and the predominate use of the lands is for the landing, taking off and servicing of aircraft. The Master Plan identifies three general areas, totalling 42 Ha (104 acres) within the existing Airport for non-aviation industrial/commercial development. The Master Plan identifies short-term, mid-term and long-term improvements for the Airport. Among these planned improvements, the City is to develop leased building lots for Business Park use which includes phasing over the short, mid and long term.

7.3.5 Kingston Airport Expansion Studies
The City of Kingston is in the final stages of concept development for the potential expansion of the runway and terminal for the Kingston Norman Rogers Airport. A series of studies were completed by consultants and the City that outlined infrastructure plans for the Airport expansion and that also examined the cost and economic impact of the expansion. The Airport expansion will allow the Airport to accommodate planes which are larger and faster. The Business Case report identified the fact that rising fuel prices and crew expenses have greatly reduced the profitability of smaller airplanes (less than 70 seats), so airlines are gradually phasing out smaller aircraft in favour of larger planes that operate at less frequency. In order to accommodate the shift to larger aircraft the basic infrastructure, adequate runway length and air terminal capacity to serve larger planes that carry more passengers will need to be provided for the Kingston Airport. It is noted that until the runway length is extended by a minimum additional 1,000 feet, the Airport will likely be restricted to smaller regional aircraft, primarily turbo-prop aircraft.1


2 Airport Infrastructure Expansion, Concepts for Public Information Session, prepared by the City of Kingston, February 25, 2013.

The Airport currently handles about 180 trips (started or ended) daily, over 65,000 passengers annually and provides direct employment of 117 jobs and supports an indirect employment of 339 jobs in the City.2 It is estimated that with the expansion of the Airport, passenger traffic by 2026 using the medium forecast (representing the mostly likely scenario) would grow to 116,000. Benefits of the Airport expansion include supporting Kingston’s growth as a centre for innovation and knowledge by enhancing the City as a destination choice for business and tourism, as well as supporting Queen’s
University (a growing institution in the City) and its need for connectivity within Canada and the U.S.1
The expansion of the Airport is expected to have a minimal impact on cargo service. It is noted that major national/global logistics companies have designed their networks, with hubs in the Toronto/Hamilton area, to maximize reliability and minimize costs and there is limited opportunity given the capacity of the Airport to expand its air cargo service to other companies.3

7.3.6 City of Kingston Transportation Master Plan
This map by Amec Foster Wheeler uses the same set of circumstances as the City's third map but includes four 737-800s and the NEF 30 contour is on houses to the east, south and the Marina to the north. NEF25 are dotted lines.
The image below provided by the city shows the approach flightpath using the original flightpath for the unexpanded runway. What is not shown in the image are the masts on the sailboats at the marina as well as the residential area behind the inset image.

Exhibit D (All Aircraft) – The displaced threshold at the north end helps mitigate noise at the north end by resulting in higher approach profiles vs. a non-displaced threshold. If the landing point was at the new runway end, aircraft would be about 11m (36 ft.) lower to the ground making them louder at ground level. All aircraft would follow this profile including piston, jet and turbine type aircraft.
Two Tables were produced for Peak Planning Day Aircraft by Aircraft type. The 2007 Airport Master Plan has one, as well as the Noise Exposure Technical Report.

Table 11-1 From the Airport Master Plan shows a total of 350 peak Planning Day Movements in 2026:

<table>
<thead>
<tr>
<th>Aircraft Type and NEFCAL Equivalent Type</th>
<th>2005 PPD Movements (Existing Runways)</th>
<th>2026 PPD Movements (Existing Runways)</th>
<th>2026 PPD Movements (Extended 01/19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHC8 (represents Dash8's plus twin turbine helicopters)</td>
<td>10 ¹)</td>
<td>19 ²)</td>
<td>19 ³)</td>
</tr>
<tr>
<td>Jetstream31 (represents 19-seat aircraft plus single turbine helicopters)</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Cessna CNA441 (represents twin turbine 5 to 8 seat aircraft)</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Beech BEC58P Baron (represents twin piston General Aviation aircraft)</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Cessna C-172 (represents single piston General Aviation aircraft)</td>
<td>179.75</td>
<td>318.75</td>
<td>314.75</td>
</tr>
<tr>
<td>Lockheed C-130 Hercules (represents military aircraft)</td>
<td>0.25</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>CL601 (represents CRJ705 Regional Jet)</td>
<td>0</td>
<td>0</td>
<td>4 ³)</td>
</tr>
<tr>
<td>Total</td>
<td>198</td>
<td>350</td>
<td>350</td>
</tr>
</tbody>
</table>

2017-02-20
This second Table from the Noise Exposure Technical Report, shows 222 Peak Planning Day Movements in 2026:

### AIRCRAFT MOVEMENTS BY TYPE

<table>
<thead>
<tr>
<th>Aircraft Type and INM Equivalent</th>
<th>2012 Average Daily Movements</th>
<th>2012 Peak Planning Day Movements</th>
<th>2026 Average Daily Movements</th>
<th>2026 Peak Planning Day Movements</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHC-6 (represents Dash8 &amp; C406)</td>
<td>7.09</td>
<td>14.54</td>
<td>10.21</td>
<td>21.17</td>
</tr>
<tr>
<td>Beech B1900 (represents 19-seat aircraft)</td>
<td>7.34</td>
<td>15.34</td>
<td>9.23</td>
<td>19.15</td>
</tr>
<tr>
<td>Cessna C172 (represents twin-turbine single-engine aircraft)</td>
<td>3.26</td>
<td>6.69</td>
<td>3.24</td>
<td>6.72</td>
</tr>
<tr>
<td>Beech SE280 (represents twin-engine General Aviation aircraft)</td>
<td>2.06</td>
<td>4.22</td>
<td>2.05</td>
<td>4.26</td>
</tr>
<tr>
<td>Cessna C-172 (represents single-engine General Aviation aircraft)</td>
<td>77.46</td>
<td>156.77</td>
<td>82.35</td>
<td>168.80</td>
</tr>
<tr>
<td>Lockheed C-130 Hercules (represents military aircraft)</td>
<td>6.25</td>
<td>0.60</td>
<td>0.27</td>
<td>0.56</td>
</tr>
<tr>
<td>C1801 (represents CRJ705 Regional Jet)</td>
<td>0.45</td>
<td>0.92</td>
<td>0.85</td>
<td>1.34</td>
</tr>
<tr>
<td>Total</td>
<td>97.93</td>
<td>200.67</td>
<td>103.00</td>
<td>222.00</td>
</tr>
</tbody>
</table>
In December 1996 J.S. Bradley published a report entitled: NEF Validation Study: (3) Report

This report was jointly funded by the Institute for Research in Construction, National Research Council and Transport Canada. This is a thorough report which highlights the complexities of Noise Exposure. In this report he discusses relevant Aircraft Noise Level Criteria: From NEF Validation study (3) Final Report

Almost all of the thresholds of negative effects included in Figure 6.1 start in the NEF\textsubscript{25} to NEF\textsubscript{30} range. Most of the planning limits also start in this same range. Thus, it is only below this range that one can avoid the negative effects of aircraft noise. **NEF 25 should be regarded as the threshold of negative effects of aircraft noise:**

intentionally blank
6.0 AIRCRAFT NOISE LEVEL CRITERIA

6.1 Limits in Terms of NEF Values

Early estimates of acceptable levels of aircraft noise were determined from consulting experiences with limited case studies of various types of community noise. These early limits have been discussed in Chapter 2. Both Transport Canada[1] and Canada Mortgage and Housing Corporation[2] have used these early limits as recommended land use planning guidelines.

Acceptable limits can be set in terms of the onset of various unwanted negative effects of aircraft noise. Information on each of these unwanted effects was extensively reviewed in a previous report[3]. Such unwanted effects would include hearing impairment, sleep disturbance, medical effects, speech interference, and annoyance responses. In addition, acceptable land use planning limits from other countries can be considered for comparison purposes.

All criteria are expressed in terms of NEF_{CAN} values. These are the NEF values calculated by the Transport Canada NEF_1.7 program. Comparisons in an earlier report [4] showed that NEF values calculated by the Transport Canada NEF_1.7 program could be different than calculations by other programs. It was estimated that the NEF_{CAN} values were approximately 4 dB higher than corresponding average measured values.

Figure 6.1 summarizes the approximate aircraft noise level thresholds at which the various undesirable effects commence. The methods of obtaining each of these results and the techniques for converting critical levels to NEF_{CAN} values will be explained for each bar in the figure.

The first horizontal bar of Figure 6.1 summarizes the range of planning limits from various countries. These were taken from Table 6.1 of reference[3] and represent the

![Figure 6.1](image-url)
6.2 Limits in Terms of Single Event Noise Measures

In some cases, disturbance is related to the intensity of each noise event and not directly to long term average measures such as NEF. This is true for sleep and speech disturbance by aircraft noise. Thus, it is not completely satisfactory to consider only integrated measures such as NEF values. This becomes particularly true in some more extreme cases such as for relatively small numbers of quite noisy events. For these cases, speech or sleep could be quite severely disturbed even though NEF values are quite low.

It is therefore necessary to consider acceptable single event limits in addition to those given in Figure 6.2 in terms of NEF values. It is suggested that single event limits should restrict maximum levels at smaller airports and other special situations so that they do not exceed single event levels experienced near larger airports. From the analysis of indoor sleep disturbance studies, maximum outdoor nighttime levels should not exceed 80 dBA to avoid disturbance of sleep. Analyses of indoor speech interference suggest a limit of 90 dBA for the outdoor SEL of individual aircraft fly-overs to avoid significant disruption of speech communication.

The use of these single event limits in addition to the NEF limits should ensure that the general noise environment, including particular worst case situations, is acceptable and that the negative effects of aircraft noise on people are minimal.
The City of Kingston’s study has not considered the NRC and Transport Canada recommendations that the worst case scenarios have been studied. Planning should be based on a worst case or worst year set of contours. These could be calculated for the maximum capacity of the airport or some other definition of a worst case. From the calculated worst case contours, practical land use planning areas should be determined similar to the Airport Vicinity Protection Areas used in Alberta. In this way airports and nearby communities could grow in a harmonious planned manner.

The problem with trying to forecast reasonable NEF / NEP noise levels for an airport is what is the definition of “Worst Case”. In the case of the Kingston airport, the aircraft with the greatest impact to noise levels are Jets. Kingston has provided forecasts for jet traffic at approximately 1.34 in 2026 peak planning day.

This does not amount to a significant traffic level, however nor does it represent the worst case scenario. Kingston’s definition of a worst case is based on opinions of traffic levels as opposed to the reasonable maximum capacity of the airport once expanded.

A reasonable expectation with the ability to service aircraft and passengers at the Kingston airport would be one aircraft per hour. That changes the ??

**Noise modeling study**

A noise modelling study done by Amec Foster Wheeler also with the 4- 737800s a day.

Single event levels for the 737-800 would be Departure 91.6dbs Arrival 96.0dbs

Single event levels for the C130 would be Departure 98.9dbs Arrival 97.1dbs

Single event levels for the CL601 would be Departure 94.1dbs Arrival 88.2dbs

The NRC Publication NEF Validation study (3) Final Report cited above clearly states on page ??:

“Outdoor noise peaks above 80db would cause awakenings”

“Single event limit of greater than 90db will cause significant speech interference inside the home.”

2017-02-20
As the decision maker not considering the information from our experts which was a **Breach of Natural Justice.** For the continuation of that council meeting on Thursday, transportation commissioner Denis Leger returned with a response to the Buzzi’s’ report from the city’s consultants.

"We feel very comfortable in terms of the credibility of our consultants," Leger told councillors.

* After learning they used the wrong software from CBM for the first time removing the four Jets a day from their studies in a deliberate attempt to reduce the noise contours.

. The City will have 737-800s and similar aircraft at 200 feet and descending as they cross my yard. This will be disruptive to my customers and I will suffer lost business .

**Full Reference and Article section**
The peak planning day movements were then split between daytime (0700 to 2200 hrs) and night time (2200 to 0700 hrs) operations. Local movements were assumed to only occur during the daytime period. Based on actual 2005 aircraft movement records obtained from the Kingston FSS, the overall daytime / night time distribution of aircraft movements at the airport is 95 percent / 5 percent under existing 2005 conditions and is forecast to be 96 percent / 4 percent under 2026 conditions.

The breakdown of aircraft movements by type of aircraft was determined on the basis of the type of aircraft recorded in the Kingston Airport tower logs during the peak day of the peak month (i.e. July 3rd, 2005). These aircraft types were then aggregated into aircraft classification types included in the NEFCAL aircraft database. Table 11-1 summarizes the 2005 and 2026 peak planning day aircraft movements aggregated by aircraft type.

It should be noted that helicopters are not included in the NEFCAL database. Consequently, twin turbine helicopters were modelled by using Dash8 aircraft, which have a larger engine power rating than these helicopters, in order to compensate for the additional rotor noise of the helicopter. Similarly single turbine helicopters were modelled by using Jetstream31 aircraft.

<table>
<thead>
<tr>
<th>Aircraft Type and NEFCAL Equivalent Type</th>
<th>2005 PPD Movements (Existing Runways)</th>
<th>2026 PPD Movements (Existing Runways)</th>
<th>2026 PPD Movements (Extended 01/19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHC8 (represents Dash8’s plus twin turbine helicopters)</td>
<td>10 1)</td>
<td>19 2)</td>
<td>19 2)</td>
</tr>
<tr>
<td>Jetstream31 (represents 19-seat aircraft plus single turbine helicopters)</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Cessna C441 (represents twin turbine 6 to 8 seat aircraft)</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Beech BEC58P Baron (represents twin piston General Aviation aircraft)</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
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<td>179.75</td>
<td>318.75</td>
<td>314.75</td>
</tr>
<tr>
<td>Lockheed C-130 Hercules (represents military aircraft)</td>
<td>0.25</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>CL601 (represents CRJ705 Regional Jet)</td>
<td>0</td>
<td>0</td>
<td>4 3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>198</strong></td>
<td><strong>350</strong></td>
<td><strong>350</strong></td>
</tr>
</tbody>
</table>

1) Dash 8s kept constant at 4-arrivals and 4-departures per day. Six (3-arrivals and 3-departures) twin turbine helicopters included.
### Aircraft Movements by Type

<table>
<thead>
<tr>
<th>Aircraft Type and IEM Equivalent</th>
<th>2012 Average Daily Movements</th>
<th>2012 Peak Planning Day Movements</th>
<th>2026 Average Daily Movements</th>
<th>2026 Peak Planning Day Movements</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHC8 (represents Dash8 &amp; Q400)</td>
<td>7.09</td>
<td>14.50</td>
<td>10.21</td>
<td>21.17</td>
</tr>
<tr>
<td>Beech 91X00 (represents 19-seat aircraft)</td>
<td>7.34</td>
<td>15.34</td>
<td>9.23</td>
<td>19.15</td>
</tr>
<tr>
<td>Cessna C9044 (represents twin-turbine 6-to-9-seat aircraft)</td>
<td>3.26</td>
<td>6.69</td>
<td>3.24</td>
<td>6.72</td>
</tr>
<tr>
<td>Beech DLCSHP Baron (represents twin-piston General Aviation aircraft)</td>
<td>2.06</td>
<td>4.22</td>
<td>2.06</td>
<td>4.26</td>
</tr>
<tr>
<td>Cessna C-172 (represents single-piston General Aviation aircraft)</td>
<td>77.45</td>
<td>198.77</td>
<td>82.35</td>
<td>166.80                          <strong>See Note</strong></td>
</tr>
<tr>
<td>Lockheed C-130 Hercules (represents military aircraft)</td>
<td>0.25</td>
<td>0.50</td>
<td>0.27</td>
<td>0.56</td>
</tr>
<tr>
<td>Cl D01 (represents CRJ705 Regional Jet)</td>
<td>0.45</td>
<td>0.92</td>
<td>0.85</td>
<td>1.34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>97.00</strong></td>
<td><strong>200.67</strong></td>
<td><strong>106.00</strong></td>
<td><strong>222.00</strong></td>
</tr>
</tbody>
</table>
## Business Case for Expansion

### Table 1-2: Forecasted Annual Aircraft Movements 2017-2050

<table>
<thead>
<tr>
<th>Year</th>
<th>Carrier Intl</th>
<th>Carrier Local</th>
<th>Other Commercial</th>
<th>Private</th>
<th>Government</th>
<th>Military</th>
<th>Local</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>4,975</td>
<td>7,719</td>
<td>6,032</td>
<td>3,570</td>
<td>580</td>
<td>335</td>
<td>18,206</td>
<td>20,617</td>
</tr>
<tr>
<td>2018</td>
<td>3,959</td>
<td>12,689</td>
<td>2,387</td>
<td>5,566</td>
<td>581</td>
<td>248</td>
<td>17,834</td>
<td>20,628</td>
</tr>
<tr>
<td>2019</td>
<td>3,067</td>
<td>15,212</td>
<td>3,073</td>
<td>5,690</td>
<td>607</td>
<td>1,314</td>
<td>20,508</td>
<td>24,702</td>
</tr>
<tr>
<td>2020</td>
<td>7,073</td>
<td>16,075</td>
<td>2,661</td>
<td>2,417</td>
<td>520</td>
<td>631</td>
<td>18,520</td>
<td>21,151</td>
</tr>
<tr>
<td>2021</td>
<td>5,402</td>
<td>13,624</td>
<td>2,949</td>
<td>5,900</td>
<td>599</td>
<td>762</td>
<td>16,011</td>
<td>18,837</td>
</tr>
<tr>
<td>2022</td>
<td>6,480</td>
<td>13,116</td>
<td>4,203</td>
<td>4,753</td>
<td>480</td>
<td>481</td>
<td>19,027</td>
<td>21,840</td>
</tr>
<tr>
<td>2023</td>
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2017-02-20
This Forecast for annual aircraft movements were from the Aircraft business case for expansion January 20th 2012

### Airport Infrastructure Expansion Project Definition Document

#### Summary

Explanation for reduction in aircraft traffic and use of wrong software

#### 3.6 Noise Exposure Forecast (NEF) Assessment

Noise Exposure Forecast (NEF) Contour Plans have been developed for the proposed Runway 01-19 extension at Kingston Airport. These NEF Contour Plans have been prepared for both the Peak Planning Day and the Average Day under existing (2012) conditions, 2026 conditions with no changes to existing runway, and 2026 conditions with an extended Runway 01/19. The NEF contours were developed using the FAA Integrated Noise Model (INM 7.0). This program determines the noise levels around the airport based on each aircraft type operating at the airport on each flight path, and sums these values for all aircraft types and flight paths. The July 4, 2013 Kingston Airport Expansion—Summary Report results are presented as a noise contour map. In order to establish aircraft movements in each direction on the runway at peak hour, runway usage data and movements for itinerant aircraft were established by taking the growth rates established in the Business Case for Expansion, Kingston Airport, December 2011, and applying them to the 2012 flight volumes. The 2026 local flight itinerant aircraft movements for 2012 were provided by the city for various classes of aircraft. The 2026 volumes were established similarly, peaking factors established in the 2006 Master Plan were applied to the various classes of aircraft. The data was input into the INM model along with the runway Cartesian co-ordinates and the flight path arrival and departure profiles. These flight path profiles were obtained from the current departure and arrival flight paths for Kingston Airport. The resultant NEF contours were produced for Kingston Airport for the following scenarios under both the Average Day and the Peak Planning Day: 2012 existing; 2026 projected without Runway 01-19 extension; and 2026 projected with Runway 01-19 extension. Drawing NC-1 illustrates the contours for the average day, while Drawing NC-2 illustrates the contours for the Peak Planning Day. The contour plans show the NEF 30 contour for all three scenarios for both planning days. The NEF 30 contour

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2017-02-20
was selected, since this delineates the zone where housing is not allowed due to the potential for noise impacts from airport operations. The NEF 30 contour is approximately equivalent to an average 24-hour sound level of 61 dBA, which is representative of the sound levels associated with a two-lane minor arterial road (25 m away) or a rail line with about seven trains per day (40 m away).

As seen in Drawings NC-1 and NC-2, the NEF 30 contour lines under all three scenarios and both planning days remain well within the airport lands, and are in close proximity to Runway 01-19. The extension of Runway 01-19 results in the NEF 30 contour extending approximately 100 m to the north and south, when compared to the contours for the existing runway. However, there is no movement of the noise contour to the east or west under the runway extension scenario.

With the extended runway, the sensitivity of the NEF 30 contour was modeled by incorporating an additional eight movements (four landings and four take-offs) by 737-800 aircraft. This sensitivity analysis demonstrated minimal shift to the NEF contour, which remained well within the runway environment. Accordingly, based on the results of the NEF analysis, it can be concluded that the proposed extension of Runway 01-19 will not have any noise impact on nearby noise-sensitive stakeholders situated around Kingston.
Airport Infrastructure Expansion Summary Map

By Paul Schliesmann, Kingston Whig-Standard

A city councillor says she was taken aback by the large turnout of people at a public meeting this week opposing a plan to extend the runway at Kingston’s airport to accommodate jets.

"I'm worried. I'm the politician representing them," said Lisa Osanic, the representative for Collins-Bayridge District. "I wasn’t getting much feedback. It was a surprise to see 400 people. Most of them were opposed."

As part of budget deliberations last November, council approved a plan to spend $7 million on expanding the terminal at Norman Rogers Airport and $9 million to extend one of the runways to accommodate passenger jets.

The public meeting to present the expansion study findings on Wednesday evening drew about 400 people -- most of them, Osanic said, concerned about jet noise.

"People had a lot of questions and question the validity of the noise study," she said.

Two of the most vocal critics of the plan were Gerry and Lori Buzzi, owners of Collins Bay Marina, which would sit just half a kilometre from the end of the runway once it is extended to 6,000 feet.

They fear the introduction of jets to the regular service at the airport will hurt their business and disrupt the entire neighbourhood.

"We have boaters who come from all over and they use it as their summer cottage. We don't want to jeopardize our clientele," Gerry Buzzi said. "We live here as well. It's our family home."

The couple even hired a consulting company to conduct a peer review of the study completed for the city by MMM Group.

The review by Amec Foster Wheeler concluded the city’s MMM study was "not robust enough to come to the conclusion that there are no adverse effects."

They are also awaiting the results of a "contour" study, which will create new models of the anticipated noise from jets taking off and landing from the extended runway.

MMM Group used U.S. software to create the noise models, not software preferred by Transport Canada.
The Buzzis said the bill for their private studies will come to about $20,000.

"We estimated 10,000 people would be affected from the jet," Gerry Buzzi said. "I want the city to be honest, to show the true impacts and admit they shouldn't do it."

The Buzzis live in Lakeside District and have sent all of their reports and concerns to their councillor, Laura Turner, who they say hasn't returned their messages.

"She's in support of the airport expansion. That's been her feedback and she's not going to help us with it," he said.

Turner told the Whig-Standard she is aware of the business owners' issues and that she "took their concerns to the city and asked how I should respond to them. I do need to speak to them and I will."

Turner said jets are already using Norman Rogers Airport.

"Jets are sustainable. They're quieter. I think people need more information," Turner said. "It's airport modernization. They will make Kingston a better place economically. If people can get here more easily, it will improve the economy. ... We need to think positively to the future. This is good for Kingston."

Turner described Collins Bay Marina as "a great place and I hope it stays there."

Osanic said she can understand why Turner has a more positive view of the airport expansion.

"Not all of her people are under the runway. All of my district is," she said. "I'm definitely concerned."

She said it was "not right" that the Buzzis are paying $20,000 to disprove a city-commissioned report.

"We rely as councillors on the city data," she said. "Hearing people say we used American software and that's why there are contour differences, to hear that is troubling. It puts that doubt in our mind and we don't know who to believe."

Osanic said council's endorsement of the project last year probably isn't reversible at this stage, even though councillors still have to approve a request for proposals for detailed design work at the airport.

Construction is expected to start in the spring of 2017 and take a year to complete.

"How do you get seven votes to stop it when the other districts will see only benefits?" Osanic asked.
The Buzzis said there's no need to extend the runway for jet service, particularly after it was revealed by the Whig-Standard this week that Air Canada will be sending larger prop planes in and out of Kingston this summer.

That will reduce the amount of air traffic while increasing overall passenger capacity.

There is also a possibility that an even larger, 77-passenger prop plane will be deployed by WestJet in the future.

"From our point of view it's better," Gerry Buzzi said. "We are not fighting existing use. Logic doesn't dictate we need a plane that will hold over 150 people."

Instruction is expected to start in the spring of 2017 and take a year to complete.

From the Whig-standard
Council support for a plan to extend the runway at Norman Rogers Airport has taken a distinct nosedive in recent weeks.

At Tuesday's council meeting, a motion to hire a consulting firm to oversee the $16 million expansion of the terminal and lengthening of the main runway passed by a close 7-6 vote.

Construction is expected to start in the summer of 2017, but many of the dissenting councillors expressed concern that the approval process had been fast-tracked.

"I don't remember us delegating to staff the direction to request an RFP [request for proposal]," Coun. Jim Neill said.

"If we build it they will come -- I'm just not convinced that's the case."

However, city CAO Gerard Hunt assured council "this is not an unusual process."

To further clarify the point, Mayor Bryan Paterson pointedly asked staff whether the city budget passed by council last fall stipulated money for the terminal and the runway.

"Yes," commissioner Denis Leger replied.

Other councillors were critical of the lack of a business plan to support the expansion, particularly the extension of the main runway by 1,000 feet to attract larger planes, including chartered jet flights -- the so-called build-it-and-they-will-come approach referenced by Neill.

"The water is muddy. There is no business case," Coun. Mary Rita Holland said.

As the discussion around the motion evolved, it was clear there is full support for expanding the terminal -- but not the runway with its potential for increased noise effects on the neighbourhoods surrounding the airport.

Coun. Peter Stroud noted the "significant public backlash to the runway" that has developed.

"That has changed my thinking on this file," Stroud said.

* 

Sitting behind Stroud during the debate were Gerry and Lori Buzzi, owners of Collins Bay Marina, who say their business, which sits at the northern end of the main runway, will be adversely affected by any increase in airplane noise levels.

Gerry Buzzi found the vote in favour of hiring the consultant disheartening.
"My wife and I bought this marina with everything we had. It doesn't seem to matter," he told the Whig-Standard the day after the meeting.

The Buzzis have raised a new argument against the Kingston airport expansion, citing the plan by the airport at Ogdensburg, N.Y., to lengthen its runway and bring in a chartered airline company to make destination vacation flights to Florida starting this fall.

The little airport hopes to draw a significant number of Canadian travellers, and news stories have had officials with the Ottawa airport expressing concern.

"If Ottawa views it as a threat, and they already have charter service, it just adds more doubt to the [Kingston] business case," Gerry Buzzi said. "Norman Rogers absolutely cannot compete with Ogdensburg. Ottawa's being threatened, and in the face of that, Kingston's expanding its airport. ... It's not a business argument and it's not a reality. Ogdensburg erodes any illusion we can compete with that charter service."

* The Ogdensburg airport is located 75 minutes east of Kingston along Highway 401 and across the international bridge that bears travellers over the St. Lawrence River.

The international crossing, the nearby port, industrial parks, 50 kilometres of railway line and the airport are all the property of the Ogdensburg Bridge and Port Authority, which executive director Wade Davis describes as a U.S. version of a Canadian Crown corporation.

The authority has $5 million in annual costs offset by $5 million in revenues, plus $75 million in assets -- not counting the $500 million replacement value of the bridge.

"We do a lot with a little," Davis said in a recent telephone interview.

Like Kingston, Ogdensburg has been grappling with airport expansion -- trying to get the timing just right between enlarging the terminal, lengthening the runway and bringing in expanded air service.

"We're an airport and we need to grow," he said.

In 2014, the authority announced it was bringing in Allegiant Air, a low-cost air carrier running limited charter flights to Florida, and that Allegiant would contribute $1 million towards the terminal expansion. (The total costs are $7.5 million for the terminal and $18 million for the runway, taxiway and nearby road relocation.)

The longer runway was key to bringing in Allegiant with its 177-seat Airbus jets.

"It's kind of like the chicken and the egg. We got the chicken the same time we were building the coop," Davis said.

2017-02-20
For a number of years, a small airline, Cape Air, has been flying nine-seater Cessnas regularly to Albany, for $99 round-trip, and to Boston, for $129.

It's been popular with upstate New Yorkers and Canadians for years and includes, Davis said, "a nice, scenic trip over the Adirondacks."

"Probably about 20 per cent of the parking lot has Canadian licence plates at a given time," he said.

The flights are a cheap way to get to sports events and medical appointments in Boston.

"No. 1, it's the price," Davis said. "I fly out of Ottawa frequently myself for business. The price is quite expensive, especially when you layer in the parking."

Davis expects an increase in Canadian cross-border traffic with the Allegiant flights to Florida.

"Five million Canadians come across the border to fly out of U.S. airports. Five million Canadians can't be wrong," he said.

But he questioned the Kingston model of trying to entice new airlines or expanded service by expanding the airport.

"I'm not a big fan of build-it-and-they-will-come," Davis said. "Make sure you've got the business deal. If you use the build-it-and-they-will-come and no one comes, you're not doing people a service."

*

Kingston airport manager David Snow told the Whig-Standard, via email, that all Canadian airports near the U.S. border must contend with American competition.

Kingston's competition, he pointed out, comes from the airports at Watertown and Syracuse, N.Y.

"Ogdensburg's recent investment in both runway and terminal expansion is designed to divert service from, primarily, Ottawa airport," Snow wrote. "Despite the long drive and border-crossing time, this may be attractive for a number of travellers able to use this limited service. Kingstonians do travel to Florida, however the vast majority of us are destined for other Canadian cities or world destinations in Europe, Asia, South America and so forth. Ogdensburg's Allegiance flights are not likely to service these points."

pschliesmann@postmedia.com
Report refutes airport noise concerns

By Paul Schliesmann, Kingston Whig-Standard

Friday, June 24, 2016 4:30:06 EDT PM

City staff will explore the expansion of the runways and terminal of Norman Rogers Airport (Whig-Standard file photo)

City staff are standing behind a consultants' report that shows little increase in noise or air pollution from the proposed expansion at Norman Rogers Airport.
Some neighbours of the airport, and in particular the owners of Collins Bay Marina, Gerry and Lori Buzzi, contend that extending the main runway from 5,000 to 6,000 feet will affect their lifestyle, health and their business.

The Buzzis commissioned their own noise contour study and presented the findings at council on Tuesday night.

For the continuation of that council meeting on Thursday, transportation commissioner Denis Leger returned with a response to the Buzzis' report from the city's consultants.

"We feel very comfortable in terms of the credibility of our consultants," Leger told councillors.

The response refutes claims that there would be a significant expansion of noise around the airport or that the city-commissioned report failed to incorporate all air traffic figures in its calculations.

It also says the Buzzis' report overestimated the potential for the number of 737 jet flights in and out of Norman Rogers.

The response noted, "the proposed 6,000-foot runway does not support a viable air carrier business at this frequency of flights for these aircraft. Simply, these are not reasonable scenarios for this proposal."

The Buzzis argued that their business would be hurt because many of the boaters at their facility sleep onboard and would be subjected to increased noise from the runway extension.

The city report pointed out, however, that marinas are not considered a noise-sensitive land use under Transport Canada regulations.

There was also concern that the tall marina crane that lifts boats in and out of the water would have to be removed.

The report said "there will be no impact on the crane and it can remain as it does today."

It concluded: "The expansion of the airport as proposed will have no significant impact on land use compatibility around the airport with respect to aircraft noise."

The Buzzis were not at Thursday's council meeting but say they will continue to fight the expansion and that they have the support of many surrounding neighbours.

"There'll be bigger jets with more noise and that will have an impact," said Lori Buzzi. "It will kill our business."
The city has refused to have the two sets of consultants meet, so Gerry Buzzi said they plan to call their own public meeting to analyze the different reports "We want to expose the discrepancies between the noise modelling and the business case," he said. "The neighbours started the petition opposing it. They're as worried as we are."

pschliesmann@postmedia.co
AIRCRAFT MOVEMENTS BY TYPE

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Noise modeling study

We had a noise modelling study done by amec foster wheeler also with the 4-737800s a day.

Single event levels for the 737800 would be
- Departure 91.6dbS
- Arrival 96.0dbS

Single event levels for the C130 would be
- Departure 98.9dbS
- Arrival 97.1dbS

Single event levels for the CL601 would be
- Departure 94.1dbS
- Arrival 88.2dbS

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The NRC Publication NEF Validation study (3) Final Report clearly states

“Outdoor noise peaks above 80db would cause awakenings”

“Single event limit of greater than 90db will cause significant speech interference inside the home.”

6.2 Limits in Terms of Single Event Noise Measures

In some cases, disturbance is related to the intensity of each noise event and not directly to long term average measures such as NEF. This is true for sleep and speech disturbance by aircraft noise. Thus, it is not completely satisfactory to consider only integrated measures such as NEF values. This becomes particularly true in some more extreme cases such as for relatively small numbers of quite noisy events. For these cases, speech or sleep could be quite severely disturbed even though NEF values are quite low.

It is therefore necessary to consider acceptable single event limits in addition to those given in Figure 6.2 in terms of NEF values. It is suggested that single event limits should restrict maximum levels at smaller airports and other special situations so that they do not exceed single event levels experienced near larger airports. From the analysis of indoor sleep disturbance studies, maximum outdoor night-time levels should not exceed 80 dBA to avoid disturbance of sleep. Analyses of indoor speech interference suggest a limit of 90 dBA for the outdoor SEL of individual aircraft fly-overs to avoid significant disruption of speech communication.

The use of these single event limits in addition to the NEF limits should ensure that the general noise environment, including particular worst case situations, is acceptable and that the negative effects of aircraft noise on people are minimal.
Noise Modeling Study

This map by Amec Foster Wheeler also showed the NEF 30 contour will be over houses to the east and south also over the marina to the north using the City’s projections and including four jets for 2026!
This map by Amec Foster Wheeler shows continued growth in noise in the year 2036 due to the City’s projected growth in activity at the airport!

The airport would have the capacity to have one flight per hour!

The city also has competing marinas that would benefit from the weakening of CBM and all marinas in Collins bay. This is a conflict of interest.
When planes fly over now at between 60 and 71 meters or about 200 feet they cast a shadow. When the Hercules flies over it is intimating and frightening. More planes of this size and noise will be unnerving and disrupt my customer’s peace and my business. I can tell you everything stops until it has past and there is always comments about how big it was and how close to us it was. Frequent interruptions of this nature will be devastating to my business.

Lockheed C-130 Hercules
Aircraft model
The Lockheed C-130 Hercules is a four-engine turboprop military transport aircraft designed and built originally by Lockheed. Wikipedia
Wingspan: 40 m
Length: 30 m
Top speed: 593 km/h
Exhibit D (All Aircraft) - The displaced threshold at the north end helps mitigate noise at the north end by resulting in higher approach profiles vs. a non-displaced threshold. If the landing point was at the new runway end, aircraft would be about 11m (36 ft.) lower to the ground making them louder at ground level. All aircraft would follow this profile including piston, jet and turbine type aircraft.
C2.1 Noise from Aircraft

The requirements for noise impact studies are generally identified in the policies of the land use planning authorities. Detailed noise studies may be required for new noise sensitive land use proposals that are located at or above Noise Exposure Forecast/Noise Exposure Projection 25 (NEF/NEP 25) contours. It should be noted that certain airport facilities and activities such as mechanical systems serving terminals are considered as stationary sources of noise.

https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-menu-1418.htm

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Registration

SOR/2016-261 September 30, 2016

AERONAUTICS ACT

Regulations Amending the Canadian Aviation Regulations (Aerodrome Work Consultations)

P.C. 2016-844 September 30, 2016

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 4.9 (see footnote a) and subsection 7.6(1) (see footnote b) of the Aeronautics Act (see footnote c), makes the annexed Regulations Amending the Canadian Aviation Regulations (Aerodrome Work Consultations).

Regulations Amending the Canadian Aviation Regulations (Aerodrome Work Consultations)

Amendments
1 Part III of Schedule II to Subpart 3 of Part I of the *Canadian Aviation Regulations* (see footnote 1) is amended by adding the following after the reference “Section 305.57”:

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
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<tbody>
<tr>
<td>Designated Provision</td>
<td>Maximum Amount of Penalty ($)</td>
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<td></td>
<td></td>
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<tr>
<td>SUBPART 7 — AERODROMES – CONSULTATIONS</td>
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<tr>
<td>Section 307.03</td>
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<tr>
<td>Section 307.05</td>
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<td>Section 307.06</td>
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<td>Section 307.09</td>
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<tr>
<td>Subsection 307.10(1)</td>
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</tbody>
</table>

2 (1) Section 302.02 of the Regulations is amended by adding the following after subsection (1):

(1.1) The applicant shall include in the application proof that the applicant has consulted with the interested parties in accordance with the requirements of Subpart 7.

(2) Subsection 302.02(2) of the Regulations is replaced by the following:

(2) The application shall be signed in ink by the applicant and shall be in the form set out in the aerodrome standards and recommended practices publications.

3 Subpart 7 of Part III of the Regulations is replaced by the following:

Subpart 7 — Aerodromes — Consultations

*Interpretation*

**307.01** The following definitions apply in this Subpart.

*aerodrome work* means work, other than work necessary to comply with a new requirement imposed by or under the Act, carried out for any of the following purposes:

- (a) building a new aerodrome; or
- (b) at an existing aerodrome,
  - (i) building a new runway for aeroplanes, or
  - (ii) increasing the length of an existing runway for aeroplanes by 100 m or by 10%, whichever is greater. *(travaux d’aérodrome)*

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proponent means a person who proposes to carry out aerodrome work. (promoteur)

protected area means a natural area or habitat that is protected by or under federal legislation. (aire protégée)

Application

307.02 This Subpart applies to existing and proposed aerodromes that are not

- (a) military aerodromes;
- (b) water aerodromes;
- (c) aerodromes that are used primarily for agricultural operations;
- (d) aerodromes, including heliports, that are used primarily for helicopter operations; and
- (e) aerodromes that are used as temporary installations for the purpose of providing emergency services, such as forest fire suppression, law enforcement activities, and search and rescue operations, and responding to a medical emergency.

Requirement — Consultations

307.03 The proponent shall consult with the interested parties in accordance with the requirements of this Subpart.

Interested Parties

307.04 (1) For the purposes of this Subpart, the interested parties are the following:

- (a) if a built-up area of a city or town is located within a radius of 4 000 m from the location of the proposed aerodrome work,
  - (i) the Minister,
  - (ii) the providers of air navigation services,
  - (iii) the operator of a certified or registered aerodrome located within a radius of 30 nautical miles from the location of the proposed aerodrome work,
  - (iv) the authority responsible for a protected area located within the radius of 4 000 m from the location of the proposed aerodrome work,
  - (v) any local land use authority where the proposed aerodrome work is to be carried out, and
  - (vi) members of the public who are within the radius of 4 000 m from the location of the proposed aerodrome work; or

- (b) in any other case,
  - (i) the Minister,
  - (ii) the providers of air navigation services,
  - (iii) the operator of a certified or registered aerodrome located within a radius of 30 nautical miles from the location of the proposed aerodrome work,
  - (iv) the authority responsible for a protected area located within a radius of 4 000 m from the location of the proposed aerodrome work,
(v) any local land use authority where the proposed aerodrome work is to be carried out, and
(vi) the owner of any land bordering the land on which the proposed aerodrome work is to be carried out.

(2) For the purposes of subsection (1), the radius of 4 000 m from the location of the proposed aerodrome work shall be measured from the outer perimeter of the site of that location.

Notice and Sign

307.05 The proponent shall, at least 75 days before the expected start date of the proposed aerodrome work,

- (a) provide a notice of the proposed aerodrome work to the interested parties referred to in subparagraphs 307.04(1)(a)(i) to (v) or paragraph 307.04(1)(b), as applicable; and
- (b) in the case referred to in paragraph 307.04(1)(a), place a sign, in plain view of the public, at the location where the proposed aerodrome work is to be carried out.

Content of Notice and Sign

307.06 The proponent shall include the following information on the notice and the sign:

- (a) a drawing showing the location of the proposed aerodrome work;
- (b) a description of the proposed aerodrome work and its purpose;
- (c) the expected start date and completion date of the proposed aerodrome work;
- (d) a statement that the interested parties may provide their comments or objections to the proponent with respect to the proposed aerodrome work;
- (e) contact information, including the mailing address, phone number and email address, for the contact persons to whom the interested parties may provide their comments or objections; and
- (f) the period, which shall be at least 45 days, during which the interested parties may provide their comments or objections.

Summary Report

307.07 At the end of the period referred to in paragraph 307.06(f), the proponent shall prepare a summary report that includes the following:

- (a) a description of the proposed aerodrome work;
- (b) a description of the measures taken by the proponent to comply with the requirements of this Subpart;
- (c) the interested parties who were notified of the proposed aerodrome work; and
- (d) a summary of the comments and objections received, the actions that the proponent proposes to take to address those comments and objections, and any objections that were not addressed, if applicable.

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Communication of Summary Report

307.08 The proponent shall, as soon as practicable after the end of the period referred to in paragraph 307.06(f), provide the summary report to the Minister and make it available to the interested parties.

Availability of Summary Report

307.09 The proponent shall ensure that the summary report is available to the interested parties for at least five years after the date on which it is made available to them.

Start of Aerodrome Work

307.10 (1) The proponent shall not start the proposed aerodrome work before the end of 30 days after the date on which the summary report is provided to the Minister.

(2) If the proponent does not start the proposed aerodrome work within five years after the date on which the summary report is provided to the Minister, the proponent shall once again comply with the requirements of this Subpart.

Coming into Force

4 These Regulations come into force on January 1, 2017.

REGULATORY IMPACT ANALYSIS STATEMENT

(This statement is not part of the Regulations.)

Issues

Operators wishing to develop a new aerodrome or to significantly modify an existing aerodrome, whether certified or not, are not currently required to conduct consultations with affected stakeholders. Matters integral to aviation fall under federal jurisdiction, including aerodromes. However, the federal authority, unlike municipal and provincial authorities that have consultation processes in place for significant changes to land use likely to have an impact on the community, do not have a public engagement requirement to identify and mitigate stakeholder concerns in advance of aerodrome development. The municipal and provincial stakeholders do not necessarily have to be consulted prior to the development of a non-certified aerodrome within their own jurisdiction. As a result, the lack of coordinated development planning can lead, for example, to inefficient land use and increased complaints from local constituents due to the impact of unexpected development.

Operators and stakeholders seeking aerodrome certification are required to have a consultation process, but do not have a federal standard to guide them on what constitutes meaningful consultation. The implications for industry and other stakeholders include inconsistent approaches to consultation, insufficient information shared with affected stakeholders, and costs...
and delays for proponents/operators who — upon completing what they deem to have been an appropriate level of stakeholder engagement — find themselves caught in legal disputes over the validity of their process instead of commencing with their development.

Background

The Government of Canada has exclusive jurisdiction over aeronautics in Canada and has established a legal framework through the Aeronautics Act (the Act) and the Canadian Aviation Regulations (CARs), which sets robust safety requirements for the civil aviation industry. Under this legislation, the Minister of Transport is responsible for the promotion of aeronautics and the Governor in Council has the authority to make regulations respecting activities at aerodromes, including the location, inspection, certification, registration, licensing and operations. The definition of an aerodrome encompasses both certified and non-certified aerodromes, both of which can be either registered or non-registered aerodromes. Aerodromes that are registered appear in the Canada Flight Supplement.

There are approximately 2,000 registered aerodromes, of which 547 are certified, and there are an estimated 5,000 unregistered aerodromes.

It is understood and recognized that aerodromes are engines for nearby communities and are vital to the growth of a number of Canadian industries, and that the current legislative framework for activities at aerodromes has generally worked well, particularly during the initial growth of aviation in Canada. However, the dynamics of aerodrome development and operations, as well as the needs and expectations of Canadians, have evolved considerably due to economic and socio-political factors, including increased urbanization and densification around aerodromes.

These factors, coupled with the need for a strong aviation transportation system, illustrate the need for increased communication in advance of aerodrome development to help understand and mitigate public concern, promote Canada’s aviation sector, and satisfy the growing need to keep moving people and goods.

A common concern raised by stakeholders to the Minister is the absence of a regulatory requirement for proponents of aerodromes to notify affected stakeholders prior to aerodrome development, including the establishment of new aerodromes and expansion at existing aerodromes. To address the concern, the Economic Action Plan 2014 Act, No. 2 amended the Aeronautics Act to provide the Minister of Transport with the authority and necessary tools to effectively respond to an increasing number of aerodrome issues pertaining to development, location, land-use and consultation. The amendment provided the Governor in Council with the authority to make regulations to prohibit the development or expansion of aerodromes or a change to the operation of aerodromes, as well as the authority to make regulations to require proponents and operators of aerodromes to consult prior to the development or expansion of an aerodrome or a change to its operations.
Objectives

The objectives of the amendment are as follows:

1. To encourage responsible aerodrome development and operation by requiring proponents to consult with affected stakeholders in advance of undertaking aerodrome work by following a structured notification process.
2. To strengthen the consultation process for aerodrome work by providing details within the CARs that will introduce greater clarity and predictability around developments, compel increased communication to identify and mitigate concerns in advance of development, reduce post-construction complaints from affected stakeholders, reduce the chance of delay and costs associated with process-related challenges brought on by affected stakeholders and allow for better coordination of land use by all interested stakeholders.

Description

The amendments to the Canadian Aviation Regulations were born out of the concerns raised by interested parties adversely affected by aerodrome developments, by proponents frustrated by costly administrative and legal delay, and by the general aviation community concerned for their future in Canada. The nature of the concerns centre on improved communication in advance of construction between proponents of aerodrome developments and those most likely to be affected by the development. Requiring consultation in advance of commencing construction will allow for many concerns to be proactively raised and mitigated.

The current regulatory requirement to consult is limited to those seeking to certify an aerodrome as an airport or a heliport and, even then, they are only required to consult with local land use authorities [as per paragraphs 302.03(1)(a) and 305.08(1)(d)]. The CARs do not define what constitutes meaningful consultation, which has lead to inconsistent approaches and uncertainty around whether the requirement has been met. The amendment broadens the requirement to consult to include anyone seeking to undertake a prescribed aerodrome work at a certified or non-certified aerodrome, whether it is the creation of a new aerodrome or making a significant change at an existing one. The amendment also provides minimum expectations for how the consultation should be conducted, including timelines, who to notify and under what circumstances.

Recognizing that developments with the greatest possibility of impact on nearby stakeholders warrant the need for consultation, the Department of Transport (Transport Canada) identified that only those seeking to build new aerodromes and/or undertake significant aeronautical changes at existing aerodromes will be required to consult.

The amendments define aerodrome work as the construction of a new aerodrome and building a new runway at an existing aerodrome. Lengthening an existing runway has also been included. However, in recognition of differences between small and large aerodromes and so as not to capture all extensions, and to focus primarily on those extensions likely to lead to an increase in
level of service, only extensions in excess of 100 m or 10% of overall length (whichever is greater) are subject to the amendments.

To ensure that those most likely to be affected by a proposed work receive information about the proposed work and have an opportunity to share comments and concerns, proponents of aerodrome work will be required to notify interested parties prior to undertaking the prescribed aerodrome work. The amendments outline a list of interested parties to be notified which is geographically determined as follows:

If a built-up area of a city or town is located within a radius of 4 000 m from the location of the proposed aerodrome work, notice must be given to:

- the provider of air navigation services;
- the Minister;
- the operator of a certified or registered aerodrome within 30 nautical miles of the aerodrome work;
- the authority responsible for a protected area within 4 000 m of the aerodrome work;
- the local land use authority for the land on which the aerodrome work is being undertaken; and
- the public within 4 000 m of the aerodrome work.

In any other case,

- the provider of air navigation services;
- the Minister;
- the operator of a certified or registered aerodrome within 30 nautical miles of the aerodrome work;
- the authority responsible for a protected area within 4 000 m of the aerodrome work;
- the local land use authority for the land on which the aerodrome work is being undertaken; and
- any owner of land immediately bordering land on which the aerodrome work would be conducted.

The amendments prescribe minimum requirements for consultation. Although flexible enough to accommodate the differing complexities of projects that could be undertaken at Canada’s 7 000-plus aerodromes, the requirements are prescriptive enough to introduce certainty for proponents and for stakeholders alike so that engagement is conducted in a transparent and meaningful manner. The amendments allow all parties to understand under what circumstances consultation is required, what information about the aerodrome work must be shared and the manner in which it is shared, what the opportunities are for affected stakeholders to provide feedback. It is anticipated that, by increasing the amount of information shared in advance of construction, most concerns can be heard and addressed proactively with the goal of mitigating negative impacts to the greatest extent possible.

The amendments require a minimum of 75 days between the notification and the commencement of the aerodrome work, notwithstanding any time required to prepare the summary report.

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Transport Canada recognizes that more than 75 days may be required for more complex works or for works in built-up areas and the amendments allow for the proponent to extend the length of consultation to reflect the complexity of the development.

The proponent is required to notify all interested parties by way of a notice and by placing a sign in plain view of the public where the aerodrome work will be undertaken. The notice and the sign must include a drawing and description of the proposed works, the estimated start and completion date, contact information of the proponent, and by what day comments must be received, which must be at least 45 days from the initial date of notice.

The proponent will be required, as proof of having consulted, to prepare a summary report of the consultation and submit it to the Minister as soon as practicable. It must contain a description of the proposed work, a description of the measures taken by the proponent to comply with the requirements, the persons who were notified, a summary of the comments and objections received and how the comments have been disposed of; and any objections that were not or could not be addressed. The report must also be available to anyone that requests it for a period of at least five years.

The proponent cannot start the proposed aerodrome work before the end of 30 days after the date on which the summary report is provided to the Minister. Proponents must start the aerodrome work within five years of the submission of the summary report. If more than five years passes, the proponent or operator will be required to undertake a new consultation.

Transport Canada is cognizant there are some circumstances when these amendments should not apply and the following exemptions are provided:

1. Heliports and aerodromes primarily used for helicopter operations;
2. Temporary aerodromes for the provision of emergency services such as forest fire suppression, medical necessity, law enforcement activities and search and rescue;
3. Aerodromes used primarily for agricultural operations;
4. Water aerodromes; and
5. Military aerodromes, which are currently exempt and will remain exempt.

Finally, the amendment revises CARs section 302.03, “Issuance of Airport Certificate,” so that this consultation process will satisfy the requirement to consult as a condition of certification.

“One-for-One” Rule

The “One-for-One” Rule applies to this amendment and will result in an “IN” for the purposes of the “One-for-One” Rule. The amendment increases the administrative burden on industry because it requires proponents to prepare a report summarizing consultation activities, submit the report to the Minister and keep the summary report for a period not less than five years from the date of its completion.

For the purposes of the “One-for-One” Rule, only the administrative burden on a business is estimated. “Business” means a person or entity that engages in commercial activities in Canada.

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other than for a public purpose. Aerodromes owned by the federal government, municipalities, provinces or not-for-profit entities (such as airport authorities) and personal use aerodromes would not be considered businesses.

The majority of the annual aerodrome work will be undertaken at smaller aerodromes and not at the major international airports. It is estimated that of the 547 certified aerodromes in Canada, approximately 3–5 projects per year could be initiated. In addition, of the approximately 2 000 registered aerodromes, perhaps 200 could potentially be candidates for an aerodrome work project.

For the purposes of illustrating a worst case administrative burden, the highest possible number of aerodrome work in a single year is 205.

Of those 205 aerodromes, it is assumed that at most 10% of the smaller aerodromes would be considered businesses and none of the larger aerodromes would be considered a business. It is assumed that it will take 8 hours to prepare the notification summary report for the estimated 20 small aerodrome work per year. It is assumed that to submit the summary report to the Minister and file the report, it will take 0.3 hour of a manager’s time. Thus, the combined annualized administrative burden for all possible proponents affected is estimated to be $6,048.

Small business lens

The small business lens does not apply to the amendment as the nationwide cost impact is expected to be less than $1 million annually.

In addition, the amendments offer alternative notification requirements if a built-up area of a city or town is not located within a radius of 4 000 m from the location of the proposed aerodrome work, which is expected to have less of a cost impact on smaller rural aerodromes.

Consultation

Through its principal means of reaching out to industry — the Canadian Aviation Regulation Advisory Council (CARAC) Web site and by way of email to 525 stakeholders — Transport Canada posted a preliminary assessment document to determine how best to proceed with the creation of the amended Regulations. Based on the significant feedback received from stakeholders, a focus group was established. The primary purpose of the aerodrome focus group was to discuss the regulatory proposal that would require an aerodrome proponent or operator to notify affected stakeholders prior to undertaking prescribed aerodrome work. Transport Canada held its first focus group meeting in June 2014 to have a policy level discussion on the regulatory proposal. The focus group made a number of recommendations, including the following:

- Consultation requirements should be limited only to new aerodromes;
- Proponents should respond to the concerns of affected stakeholders and the public using available information during the identified consultation period;
- Transport Canada should improve information sharing to avoid duplication of effort by proponents;
- Transport Canada should establish clear and well defined criteria for the review and assessment of unresolved objections in a timely manner;
- Transport Canada should research and review consultation processes to determine whether they could be applied in the context of aerodrome development; and
- Transport Canada should consider the development of Regulations for obstacle development in proximity to aerodromes.

Following this meeting, Transport Canada prepared a Notice of Proposed Amendment (NPA) in February 2015 that was based on the outcome of the focus group meeting, the analysis by Transport Canada of other consultation processes, and the premise that material impact — whether from a new aerodrome or changes at an existing one — is the same for those affected by the development. Transport Canada received feedback on the NPA via the CARAC Web site from a broad range of stakeholders. Although the various consulted parties highlighted their individual concerns, there were some concerns that were raised by multiple parties, such as the following:

Association groups, provincial and municipal governments, the public (general aviation) and proponents of aerodrome work

- highlighted the need for a clear definition of what is “aerodrome work” and under which circumstances consultation would be required; and
- questioned what criteria would be used in determining public interest in regards to aerodrome development.

Association groups, provincial and municipal governments and the public (general aviation)

- raised concerns that the impact of the proposed Regulations on smaller aerodromes, whether certified or not, would cause them undue financial hardship, the reason being that the notification process proposed in the NPA was perceived as comprehensive and expensive and would not be applied proportionally to small businesses; and
- raised concerns about the subjective nature of the NPA wording including the lack of definition of certain terms such as “reasonable” and “acceptable.”

Both association groups and the municipal governments highlighted an issue about the definition of an “ad hoc aerodrome,” stating that there is no outlined responsibility for tracking the 30-day period, which would cause issues with enforcement. Individual organizational comments are highlighted below.

Associations:

- Stakeholders with no employees (those that function with volunteers) or private air strips felt that they were not included in the triage impact analysis as it was defined in the NPA.

Municipalities:
• Municipalities want to be captured in the consultation process even if the aerodrome is proposed in a neighbouring non-built-up area, i.e. they want the radius to be increased;
• The duration of consultation process is too short; and
• The protected area criterion in the NPA would not allow new hang-gliding or paragliding launch or landing zones to be built in many municipal, provincial or national parks. A multi-year effort has resulted in recent changes to the National Parks Act and Parks Canada regulations expressly to permit hang-gliding or paragliding operations in those areas. The proposed NPA undermines those efforts.

Provincial governments:

• Transport Canada should require land owners adjacent to aerodromes to consult with operators before any new land use activity commences to assess the impact on aviation safety and aerodrome operations.
• On the adherence to local building and fire codes, the provinces oppose any attempt to off-load current federal oversight of airport and aerodrome issues to other jurisdictions leaving the aviation community to battle over parties with self-prescribed interests and agendas.
• There are concerns about the compatibility of timelines and parameters of the duty to consult process with First Nations.
• Large aerodromes already have consultation processes in place and this proposed amendment would be a duplication of work.

Public (non-aviation):

• Submissions were received from private citizens who were concerned that airports could be built in their backyards and were supportive of the requirement to consult. They had hopes the Regulations could be retroactively applied and would lead to the shutdown of recent unpopular aerodrome developments.

Proponents of aerodrome work (including national and provincial airports):

• Proponents expressed concern that added costs of consultation could prove prohibitive to initiating any improvement to an airport.
• They requested clarification on the consultation requirements.
• They wanted to modify the definition of ad hoc from 30 days per calendar year to 180 days and sought more time to consult on the proposed Regulations.
• In addition, there was concern that the estimated cost could only be validated once the nature of development and changes are defined, which added ambiguity to the cost for proponents.
• Some referenced obstacles surrounding airports (e.g. cell towers) being built and the absence of their requirement to consult.

A second focus group meeting was held at the end of March 2015 to modify the proposed Regulations in response to industry concerns regarding the scope, applicability and the prescriptive nature of the requirements. Transport Canada addressed these concerns by clarifying
the intention of the amendment and working with focus group participants to make changes to the scope and applicability and the level of prescriptive nature found in the NPA. For example, the kinds of developments or changes at existing aerodromes that would trigger the notification process were defined and the requirement to have a community meeting as part of the process were dropped, since it was felt that the result of sharing information and soliciting feedback could be achieved without it. To address the concerns raised by provincial officials and Canadians relating to aerodrome work in or near protected areas, notification to nearby federally protected area authorities was added.

The amendments built on the progress of the working group. With post-meeting comments received from focus group members on the revised proposal, and upon further analysis by Transport Canada officials and subject matter experts, additional modifications were made. The description of works that would trigger notification was further simplified. Added was the requirement to notify landowners bordering the property of a proposed aerodrome work located outside of 4 000 m of a built-up area of a city or town, ensuring that the most affected stakeholders are given information and the opportunity to engage proponents in advance of construction. Determination of what constitutes a public interest matter will rest with the Minister and will be made in accordance with the circumstances of each case and within the jurisdictional limits of the *Aeronautics Act*. The matter of obstacle development on land adjacent to aerodromes will be addressed in the next phase of the multi-year review of responsible aerodrome development, which commenced in late 2015.

Focus group membership consisted of representatives from the following organizations:

- Air Transport Association of Canada;
- Regional Community Airports of Canada; (see note 1*)
- Canadian Airports Council;
- Helicopter Association of Canada;
- Northern Air Transport Association;
- Canadian Owners and Pilots Association;
- The Ultralight Pilots Association of Canada;
- Ontario Seaplane Association; (see note 2*)
- Airport Management Council of Ontario;
- Aviateurs et pilotes de brousse du Québec;
- NAV CANADA;
- Canadian Business Aviation Association;
- Canada Wind Energy Association; (see note 3*) and
- Experimental Aircraft Association — Canadian Council. (see note 4*)

- **Note 1**
  Not in attendance at both meetings.
- **Note 2**
  Not in attendance at both meetings.
- **Note 3**
  Not in attendance at both meetings.

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Note 4*
Not in attendance at both meetings.

The proposed amendments were published in the *Canada Gazette*, Part I, on July 11, 2015, followed by a 60-day comment period. Thirty-one comments were submitted from across Canada representing a cross section of stakeholders including general aviation enthusiasts, pilots, aerodrome operators, provincial and municipal governments, and citizens affected by or having an interest in aerodrome developments and operations.

Transport Canada (TC) reviewed all of the comments and proposes a combination of minor amendments to the regulatory text as presented, the generation of guidance material on what constitutes “public interest” and the preparation of standards and processes within the Department to ensure successful implementation of the amendments. The disposition of comments and the resultant amendments are not considered to have changed the intent of the Regulations as published in the *Canada Gazette*, Part I, or increased the impact to stakeholders.

**Minor changes to the Regulations**

Mandate that the local land use authority (municipality) is notified regardless of the location of the aerodrome works (in, within or outside of 4 000 m of a built-up area) — Residents and municipalities, including the Federation of Canadian Municipalities (FCM), have expressed that the municipality, regardless of where an aerodrome is located, should be consulted in advance of aerodrome works. Municipalities have the responsibility for planning and development decisions for their entire municipality and not being notified of a major development such as an aerodrome work undermines their ability to effectively carry out that mandate. In addition, municipal planners will be in a better position to advise developers of obstacles around aerodromes if they know of (plan for) their existence. TC has determined that their inclusion is neither onerous nor a potential obstacle to development — consultation is conducted by way of notification and comments are received and addressed, as are any other comments.

Except water aerodromes — TC is currently preparing proposed Regulations on water aerodromes that contain a requirement to consult if the aerodrome is to be certified. The challenge of applying the aerodrome work criteria to water aerodromes was raised by the Canadian Owners and Pilots Association and the Ontario Seaplane Association, since there are no runways to build or extend. Furthermore, landing on a body of water created a challenge with consultation and giving notice to property owners bordering on the site of the aerodrome, since technically all property owners on a lake could be deemed interested parties. The draft Regulations initially remained silent on the matter, but in light of the questions raised by industry and the pending certified water airports proposed amendments, these Regulations will not apply to water aerodromes.

Remove the exception of “low volume aerodromes” (where take-offs and landings occur no more than 90 days per year) — A number of private citizen respondents requested the 90-day use limit be raised to 120 or 180 days to better accommodate private aerodromes. The low volume aerodrome exception was intended to exclude aerodromes related to seasonal operations that often engage float planes and helicopters and was not intended to accommodate permanent aerodromes, regardless of their size or use. However, following the publication in the *Canada
Gazette, Part I, the recommendation to except water aerodromes due to separate proposed Regulations makes the “low volume aerodromes” exception redundant. Furthermore, in reviewing this matter, a potential loophole for new aerodrome development without consultation was discovered: an operator could develop a permanent low volume aerodrome and then expand operations beyond 90 days per year with impunity because there is no requirement to consult in the event of operational changes.

The requirement to provide the summary report within 30 days following the end of the notification period is replaced with as “soon as practicable” to allow for a range of complexity of aerodrome works.

Preparation of guidance material

Determining public interest relating to aerodrome works — Stakeholders repeated the comment made at the focus group regarding the criteria that they would like to know what is considered in determining public interest in regards to aerodrome development. TC is developing guidance material that will pertain specifically to the concept of public interest with respect to section 4.31 of the Aeronautics Act. In addition, guidance material will be prepared on noise management at aerodromes and what is meant by “built-up area.” These materials will be made available to the public.

Notice from the Minister

The requirement for the proponent to receive a notice from the Minister within 30 days of submission of the summary report was removed. This was changed so that the Regulations are in line with other regulations where compliance is expected and subject to penalty if it is found the proponent is not in compliance. Proponents are still required to wait 30 days after submitting the summary report before commencing an aerodrome work.

Existing noise complaints — Many of the comments received during the NPA and Canada Gazette, Part I, periods included complaints about the increase in noise that often accompanies a change in operations. Although noise is outside the scope of this amendment, TC is reviewing how noise concerns may be better managed, particularly at smaller aerodromes.

Rationale

Benefits

The amendment would address the current identified gap in regulatory requirements by ensuring that there is a consistently applied notification process in advance of aerodrome work. It introduces clarity, predictability and increased communication for all stakeholders. The amendment is expected to provide an overall benefit to Canadians directly impacted by aerodrome work, as it would compel proponents to engage stakeholders and solicit and address their concerns in advance of construction. Industry will experience greater planning and cost certainty. A consequential benefit is an increase in coordinated land use between proponents and land use authorities.
Costs

Proponents who choose to undertake a new aerodrome work at an aerodrome in or within 4,000 m of a built-up area of a city or town and who have already undergone a certification process and have achieved certification for that aerodrome may incur a cost related to the notification process. These proponents already have statutory consultation processes in place as part of industry best practice. If their existing process does not already include all elements of the notification process as part of their normal practices, it is assumed that there will be a cost. The range of the cost for these aerodrome work proponents to undertake the public notification as part of the larger development process is estimated as a one-time cost per project of between $10,000 and $25,000. The assumption is that these costs are related to notification to all affected public stakeholders within the 4,000 m radius. It is assumed that any steps that are not already part of their current consultation plan will be conducted in parallel to other preliminary planning work and will not cause delay.

The majority of the annual aerodrome work will be undertaken at smaller aerodromes, not at the major international airports. Of the 13 major international airports in Canada, only 3 have planned future development expected to take place over the next 15 years.

For proponents of aerodrome work at smaller certified airports or registered aerodromes outside of 4,000 m of a built-up area of a city or town, the costs are estimated at a one-time cost per project of approximately $2,000, attributed to printing and delivering the public notification package, posting of signage, and for management to respond in writing to comments and prepare a summary report. Some of these proponents may already undertake some consultation as part of their own business practices.

It is assumed that there will be no costs for proponents of very small aerodromes either unregistered or registered because it is assumed unlikely these very small aerodromes would undertake a prescribed aerodrome work as described in this proposed amendment.

Implementation, enforcement and service standards

These amendments will be enforced through the assessment of monetary penalties imposed under sections 7.6 to 8.2 of the Aeronautics Act, which carry a maximum fine of $5,000 for individuals and $25,000 for corporations, through suspension or cancellation of a Canadian aviation document, or through judicial action introduced by way of summary conviction, as per section 7.3 of the Aeronautics Act.

Contact

Chief
Regulatory Affairs (AARBH)
Civil Aviation
Safety and Security Group
Transport Canada
Place de Ville, Tower C
Ottawa, Ontario
K1A 0N5
Telephone: 613-993-7284 or 1-800-305-2059
Fax: 613-990-1198
Web site: www.tc.gc.ca

- **Footnote a**
  S.C. 2014, c. 39, s. 144
- **Footnote b**
  S.C. 2004, c. 15, s. 18
- **Footnote c**
  R.S., c. A-2
- **Footnote 1**
  SOR/96-433

Date modified:
2016-10-19
Schedule of Fees

As approved by Kingston City Council, effective January 1, 2016, the following fee structure is in effect at Kingston Airport.

Bylaw No. 2005-10 "Fees and Charges", as amended

**Aircraft landing charges** (in excess of 2,270 kg or 5,000 pounds)

<table>
<thead>
<tr>
<th></th>
<th>Domestic / Int’l</th>
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</thead>
<tbody>
<tr>
<td>a. Minimum charge for jet and turbine aircraft</td>
<td>$21.18 / $30.51</td>
</tr>
<tr>
<td>b. Minimum fee for Commercial Rotary Wing</td>
<td>$12.23 / $18.22</td>
</tr>
<tr>
<td>c. Charge per 1,000 kg or fraction thereof for jet aircraft</td>
<td></td>
</tr>
<tr>
<td>i. Not more than 21,000 kg</td>
<td>$6.62 / $9.28</td>
</tr>
<tr>
<td>ii. More than 21,000 kg but not more than 45,000 kg</td>
<td>$8.61 / $12.06</td>
</tr>
<tr>
<td>iii. More than 45,000 kg</td>
<td>$10.04 / $14.06</td>
</tr>
<tr>
<td>d. Charge per 1,000 kg or fraction thereof for Turbine/Piston powered aircraft</td>
<td></td>
</tr>
<tr>
<td>i. Not more than 21,000 kg</td>
<td>$6.03 / $8.24</td>
</tr>
<tr>
<td>ii. More than 21,000 kg but not more than 45,000 kg</td>
<td>$7.32 / $10.29</td>
</tr>
<tr>
<td>iii. More than 45,000 kg</td>
<td>$8.77 / $12.25</td>
</tr>
<tr>
<td>e. Where any Canadian air carrier licensed pursuant to Part II of the National Transportation Act, 1987, of an aircraft on a flight conducted exclusively for the purpose of improving the skill and knowledge of the aircrew personnel of the air carrier, and where arrangements are made in advance with the Airport Manager, the landing charge for each such landing is 20% of the applicable charge prescribed.</td>
<td></td>
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<tr>
<td>f. Exemptions for Landing Fees only: All Military aircraft and any aircraft used for Search &amp; Rescue missions will be exempt.</td>
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</table>

**Air Terminal Facility Fees, Passenger Fees, Ground Power**

<table>
<thead>
<tr>
<th></th>
<th>Domestic / Int’l</th>
</tr>
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<tbody>
<tr>
<td>a. Air Terminal Facility Fee per incoming flight</td>
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</tr>
<tr>
<td>i. Scheduled Passenger Aircraft 1 - 9 seats</td>
<td>$15.00 / $34.51</td>
</tr>
<tr>
<td>ii. Scheduled Passenger Aircraft 10 - 15 seats</td>
<td>$25.72 / $56.25</td>
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<tr>
<td>iii. Scheduled Passenger Aircraft 16 - 19 seats</td>
<td>$39.39 / $88.78</td>
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<tr>
<td>iv. Scheduled Passenger Aircraft 20 - 25 seats</td>
<td>$58.02 / $74.22</td>
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<tr>
<td>v. Scheduled Passenger Aircraft 26 - 45 seats</td>
<td>$86.39 / $113.57</td>
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<tr>
<td>vi. Scheduled Passenger Aircraft 46 - 60 seats</td>
<td>$117.52 / $237.18</td>
</tr>
<tr>
<td>vii. Scheduled Passenger Aircraft 61 - 89 seats</td>
<td>$179.60 / $369.11</td>
</tr>
<tr>
<td>viii. Scheduled Passenger Aircraft 90 - 125 seats</td>
<td>$242.46 / $500.59</td>
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<tr>
<td>ix. Scheduled Passenger Aircraft &gt; 125 seats</td>
<td>$284.07 / $589.85</td>
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<tr>
<td>b. Passenger Fee, enplaning</td>
<td>$15.91 / $15.91</td>
</tr>
<tr>
<td>c. Ground Power and heating per start</td>
<td>$7.70 / $7.70</td>
</tr>
</tbody>
</table>

City of Kingston
216 Ontario St, Kingston, ON K7L 2Z3
613-546-0000 / contactus@CityofKingston.ca

2017-02-20
March 14, 2016

TC160802

Collins Bay Marina
1270 Coverdale Drive
Kingston, Ontario
K7M 8X7

Attention: Mr. Gerry Buzzi

Dear Mr. Buzzi:

Re: Peer Review of the Kingston Airport Infrastructure Expansion Report related to Airport Noise

Amec Foster Wheeler Environment & Infrastructure (AFW), was retained by Collins Bay Marina (CBM) to conduct a technical peer review of the Airport Infrastructure Expansion Report related to Airport Noise. This is related to the proposed expansion project a Kingston Airport (YGK) (the Airport). The noise impact assessment documentation provided for this review has been completed by MMM Group, and they are currently engaged to complete the environmental impact assessment.

From the peer review presented below, we have concluded that the noise assessment provided to date is not robust enough to come to the conclusion that there are no adverse effects. This is contrary to the conclusions put forth by MMM Group in their documentation thus far. We recommend that the environmental assessment, with respect to noise, as currently undertaken by MMM Group include the additional technical noise descriptors and additional NEF contours for technical peer review, before acceptance of the noise impact for the Airport can be completed.

The following documents have been reviewed as part of this peer review:

- Kingston Airport Master Plan (the 2007 Masterplan);
- City of Kingston Council Reports;
- Business Case for Expansion Kingston Airport;
- City of Kingston Airport Expansion;
- Kingston Airport – Airport Infrastructure Expansion Public Information Session Presentation (the 2013 Expansion Presentation);
- Collins Bay Marina Handbook;

Amec Foster Wheeler Environment & Infrastructure
160 Traders Blvd. East, Suite 110
Mississauga, Ontario
Canada L4Z 3K7
Tel (905) 568-2929
Fax (905) 568-1686

Amec Foster Wheeler
The Renaissance Centre
601 Faraday Street, Birchwood Park
Warrington, WA3 6GN, United Kingdom
Tel +44 (0)1925 675035
www.amecfw.com
• Kingston Airport Original 2007 Noise Contours (Figure 1); and
• Aircraft Runway Lengths Requirements.

In addition, the following regulatory and guideline documents have also been reviewed as part of this peer review:
• Ministry of Environment and Climate Change (MOECC) Environmental Noise Guideline NPC-300, “Noise Assessment Criteria for Stationary Sources and for Land Use Planning”, August 2013; and
• Transport Canada, “Aviation Land Use in Vicinity of Airports”, TP1247E, 2005 (the TC Aviation Land Use Document).

Lastly, the following supplementary technical documentation was considered as part of this peer review:
• Transport Canada, “Aircraft Noise and Land Use Management in Canada”, April 26 2001;
• J.S. Bradley, “NEF Validation Study: (1) Issues Related to the Calculation of Airport Noise Contours”, A1505.3, December 1996;
• J.S. Bradley, “NEF Validation Study: (2) Review of Aircraft Noise and Its Effects”, A-1505.5, December 1996; and

From the peer review of the supporting documentation noted above, we identify the following general observations:

a) The runway extension proposals entail the extension of the main runway 01/19 by around 200m to the north and 100m to the south;

b) The implications of the extension were considered in the 2007 Masterplan and subsequent documents;

c) By extending the runway length, this enables the airport to accommodate aircraft such as regional jets as well as some narrow body ‘Code C’ aircraft including the Boeing 737-800 albeit not at Maximum Take Off Weight (MTOW);

d) Runway 01/19 is the most utilized runway at the Airport. The 2007 Masterplan indicates that all of the regional jet aircraft would utilize Runway 01/19 with other General Aviation (GA) aircraft such as the C172 split across both runways;

e) On average, information presented in the 2007 Masterplan indicates that Collins Bay Marina is exposed to more departure noise events than arrival noise events, however the split towards departures appears to be slight;

f) The 2007 Masterplan indicated that between 2005 and 2026 in the absence of the runway extension, peak day traffic would grow from 198 to 350 movements. With the runway extension in 2026, the forecast is for 350 movements but with a slightly different mix
including 4 regional jet aircraft movements at the expense of 4 GA aircraft movements. NEF\(^1\) contours were prepared as part of the 2007 Masterplan using the NEFCALC\(^2\) software;

g) The 2013 Expansion Presentation indicates that a similar passenger growth projection is forecast compared to the 2007 Masterplan. It would appear that a different modelling exercise has been undertaken for the 2013 Expansion presentation as a sensitivity test including Boeing 737-800 movements has been undertaken. The calculations for this exercise appear to have been conducted using INM\(^3\) rather than NEFCAL;

h) In neither the 2007 nor 2013 documents is a detailed modelling report provided. Though we acknowledge that the environmental assessment is still underway (ref: https://www.cityofkingston.ca/residents/airport as of March 10 2016), this should be a fundamental requirement of any assessment related to airport noise impact;

i) In both the 2007 and 2013 documents, the effect of the runway extension in 2026 is not to increase traffic but rather to enable larger aircraft to operate out of the airport;

j) What is important to note is that the fleet assumptions underpinning the forecasts suggest only a limited number of movements by jet and 'Code C' aircraft and movements that are identical in total for 2026. The business case shows increasing passenger throughput beyond 2026 which, when coupled to the terminal improvements, indicates that the capacity of the airport in terms of aircraft availability would be increased by both the runway extension and terminal improvements. This does pose the question whether an assessment based on a forecast in 2026 is appropriate or not for an environmental assessment;

k) Likewise, if no conditions or restrictions are proposed for Code C jet aircraft, then a) what is an appropriate assumption or forecast for aircraft movements of these types, and b) is it appropriate to assess against 2026 if beyond this date the effect of the development is possibly more profound;

l) The assumptions and forecasts are critical to any aircraft noise assessment, and likewise the assessment year. The Airport can grow to the anticipated 350 movements with its current infrastructure and there is no permission required for it do so. Indeed the forecasts indicate that there will be 'more of the same'. The environmental assessment of the development proposals must consider what the implications of the development are on noise. For example, changes in noise due to changes in infrastructure and airspace, increases in movements and changes in fleet;

m) In the 2007 Masterplan, Figure 11-1 mentioned on page 11-6 of this study is missing;

n) The original 2007 noise contours (Figure 1) are not reflected in the 2007 Masterplan. This figure shows impacts to the Collins Bay Marina location; and

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\(^1\) Noise Exposure Forecast (NEF)

\(^2\) NEFCALC refers to the Transport Canada NEF program for aircraft noise prediction.

\(^3\) Integrated Noise Model (INM) for aircraft noise impacts in the vicinity of airports.
o) In the 2013 Public Information Session, noise contours prepared by MMM Group (Figure 2) show impacts to the Collins Bay Marina location.

Further to these general observations, Amec Foster Wheeler considers what are the potential effects on Collins Bay and are they addressed by existing information, as follows:

i. For both the 2007 Masterplan and the 2013 Expansion Presentation documents, the detail and assumptions used to support the contouring exercises is not prescriptive. Likewise, the noise assessment contained within these documents is not what should constitute a full environmental assessment or be used to engage or explain the effects of a proposal to community stakeholders;

ii. Clearly all work undertaken to date has relied on the production of NEF contours. The 30 NEF, which is equivalent to 60-61 dB L_{dn}^4, is used in Canada as a measure of acceptability for the development of new noise-sensitive residential development in the context of outdoor areas. It effectively constitutes policy. Assessment of effects using this measure on existing noise sensitive receptors is not ideal and is somewhat misguided. Reliance on a single metric to describe effects is strongly advised against when attempting to explain how existing receptors may be affected by changes in aircraft noise unless supplementary information can also be provided alongside this;

iii. It is noted that the TC Aviation Land Use Document suggests that the Marina development is acceptable against all levels of NEF. It would be worthwhile to understand what the definition of Marina is under this guidance. Our interpretation is that this is definition considers only commercial use of the Marina, and does not consider residential uses (e.g. sleeping quarters) at the Marina. Our understanding of the Collins Bay Marina, as set out against Ministry of Environment guidance is that there are extended periods of time where the Marina could be considered residential, as boat operators typically sleep on their boats in a context that could be construed as a 'second residence'. Furthermore, the owner/operator at Collins Bay Marina resides there full time, making it a residential dwelling;

iv. Under Ministry of Environment NPC-300, a noise sensitive receptor is characterized as "...a property of a person that accommodates a dwelling and includes a legal nonconforming residential use; or a property of a person that accommodates a building used for a noise sensitive commercial purpose" and that a "noise-sensitive space" includes the living and sleeping quarters of dwellings. Under these definitions, Collins Bay Marina is a noise-sensitive receptor; as the operation clearly has people on the boats that are there for residential use (sleeping on their boats), as well as the owner/operator of the Marina also lives there. On this basis, any assessment must consider and make reference to the effects on the Marina as a noise sensitive receptor;

---

4 L_{dn} – day/night noise level
v. It is important to note that there are some deficient statements within the 2007 Masterplan\textsuperscript{5} and 2013 proposal documents\textsuperscript{6} regarding the effect of the proposals on existing noise sensitive receptors. The 2007 Masterplan citing the findings from the 1997 Masterplan suggests that as existing receptors are outside the 30 NEF are "unaffected" by aircraft noise. The 2013 document states "...based on the results of the NEF analysis, it can be concluded that the proposed extension of Runway 01-19 will not have any impact on nearby noise-sensitive stakeholders situated around Kingston Airport."

vi. Again, the selection of the 30 NEF in the 2013 document is based on unacceptability of new residential development. This ignores what is said within TC Aviation Land Use Document which states for Table 2 that below 30 NEF "Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident" and the explanatory notes for Table 3 which states that "Annoyance caused by aircraft noise may begin as low as 25 NEF...". This would indicate that as a minimum, the lowest contour that should be presented is 25 NEF in any study where existing noise-sensitive receptors are potentially subject to new or changing aircraft noise;

vii. This is further supported by research from the National Research Council by J. Bradley in the "NEF Validation Study: (2) Review of Aircraft Noise and Its Effects" where it states "significant negative effects to aircraft noise start at NEFCAN 25 and higher." (pg.136). This statement indicates that effects on existing noise-sensitive receptors are possible outside of the 30 NEF contour, and therefore adverse effects from aircraft noise could occur;

viii. It is also unclear in the 2013 document by making this conclusion, whether or not Collins Bay Marina was given due regard as a noise-sensitive receptor;

ix. Indeed, the noise contours presented in the 2013 Expansion Presentation documents illustrate parts of Collins Bay Marina to be within the 30 NEF contour and that more of the Marina would fall inside this contour with expansion. It is appropriate to assume that the majority of the marina would fall within the 25 NEF contour and that regardless of NEF value, aircraft noise exposure would increase as a result of the expansion;

x. In short, for both the 2007 Masterplan and 2013 documents, no contours above or below the 30 NEF are presented and there is arguable uncertainty as to what was considered a noise-sensitive receptor in these documents. This is a major short-coming of the work to date as it does not indicate what noise exposure levels are for receptors beyond the airport boundary, how this may change, or whether by measure of policy and guidance whether adverse effects could occur from the expansion. On this basis, the conclusion drawn from the 2013 document that "the proposed extension of Runway 01-19 will not have any impact on nearby noise-sensitive stakeholders situated around Kingston Airport" must be questioned and at best is founded upon an insufficient evidence base;

\textsuperscript{5} Kingston Norman Rogers Airport, 2007 Master Plan Study, August 2007
\textsuperscript{6} Document 12-12033 RI 'The Corporation of the City of Kingston – Airport Infrastructure Expansion Project Definition Document Summary', July 4, 2013
xi. By not including contours below 30 NEF, this has the impression that communities are not affected or have not been considered, though clearly guidance from reference sources noted above indicate negative effects at 25 NEF. The omission on this part does not lead to a sense of transparency with respect to the noise impact, especially in the context of the narrative and discussion that was provided in the 1997 Masterplan, as recapitulated in the 2007 document that describes locations down to 20 NEF;

xii. In the context of the Collins Bay Marina and indeed any other community surrounding the Airport, the extension of the runway may mean that:

- Larger jet aircraft can use the airfield which potentially introduces aircraft noise beyond the noise levels already experienced at the Collins Bay Marina, as well as noise of a different character;
- The extension of the runway means that even existing aircraft would arrive over Collins Bay Marina at a lower altitude than at present, thereby increasing noise levels, assuming the landing thresholds are moved outwards in keeping with the extension; and
- The extension means that on departure, aircraft could actually depart at a higher altitude over the Collins Bay Marina thus potentially resulting in a benefit of lower noise levels during departures.

Over the course of reviewing the presented material identified above, no information is provided in the documents to demonstrate:

- What the noise levels during aircraft events are currently and how they may change due to the proposals?
- Whether aircraft will or will not depart or arrive lower or higher over certain areas?; and
- Particularly, how noise from 'Code C' jets is different from noise from Q400 and other aircraft types that currently use the Airport?

In our view, any environmental statement must provide information that addresses all three of these points in addition to standard NEF contour assessment at appropriate thresholds. Without information that addresses this, the effects of the development on how noise is experienced and received by communities around the airport (including Collins Bay Marina) is not fully understood, and concrete decisions on the Airport expansion and its noise impacts cannot be made.

In summary, the information currently provided does not constitute a full environmental assessment and the procurement of one is a step forward providing that it is well scoped and constructively describes the effects using appropriate metrics. Further, with respect to a comprehensive environmental assessment related to noise impact for the Airport, it should address the following:

a) What exactly the effect of the expansion development is, and the adequacy of forecasts and the selection of 2026 as an assessment year to assess these effects. This should all be subject to technically knowledgeable peer review;
b) The information provided to date has relied on a single metric and contour value which is not appropriate given the link to the acceptability of new noise-sensitive development which is not part of these proposals. Instead a lower contour value such as the 25 NEF should have been used as a minimum, and other metrics should also be adopted as described in point (e) below;

c) Any noise modelling that is undertaken to support the assessment must be accompanied by a fully descriptive modelling report that shows how the information has been interpreted. This should again be subject to a technically knowledgeable peer review;

d) Noise modelling should be provided in NEFCALC, in accordance with National Research Council and Transport Canada guidance documents for Canadian airports. Deviation to other modelling methods (e.g. INM), should be used to supplement the results from NEFCALC unless these can be demonstrated to be suitable adapted to produce consistent outputs to NEFCALC; and

e) Any environmental assessment moving forward must describe the impact of the Airport expansion in terms of levels during events, and how they compare, as well as against policy metrics such as the NEF. Failure to do so, does not provide communities with the understanding of how the Airport expansion will change their noise environment.

In simple terms, for the Collins Bay Marina, the runway extension could have a number of adverse effects from noise during aircraft events and as well as overall exposure and response to noise. This is already evident in the information provided thus far for the Airport expansion project despite a number of deficiencies and shortcomings.

From the peer review assessment provided above, we conclude the following:

1. The noise assessment provided to date is not robust enough to come to the conclusion that there are no adverse effects (as stated by MMM Group in their report); and

2. The noise assessment must be completed with more detail, including additional NEF contours (down to at least 25), and additional noise metrics, to provide a full assessment of the potential adverse effect from noise on the Collins Bay Marina and other adjacent residential developments.

We provide the following recommendations on the environmental assessment that is currently underway by MMM Group to address the issues with the current assessment:

1. The noise modeling must be updated with detailed assessment, in a comprehensive report, with sufficient supporting documentation for a qualified technical peer review to be completed;

2. The noise impact must provide additional NEF contours, down to at least 25 NEF;
3. The noise impact must provide additional noise metrics (e.g. Lmax, SEL and Ldn) to further support an assessment of effects to the community, and specifically Collins Bay Marina; and

4. Noise control and mitigation measures that the Airport intends to include in its proposals must be clearly set out to understand how the Airport will reduce any adverse impacts.

We hope that this review meets with your present requirements. Should you have any questions or if we can be of further assistance please contact the undersigned at your convenience.

Sincerely yours,

Amec Foster Wheeler Environment & Infrastructure
a Division of Amec Foster Wheeler Americas Limited

Prepared by: Reviewed by:

James Trow, B.Sc. (Hons) MIOA
Technical Director
Environment & Infrastructure Europe

Frank Babic, P. Eng., INCE
Acoustics Practice Lead

Attachments: Figures 1 & 2
Figure 1: Kingston Airport Original 2007 Noise Contours
Figure 2: MMM Group Noise Exposure Forecast, February 2013 Public Information Session
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Appendix A Modelling Inputs and Assumptions
Appendix B A3 Figures
1. Introduction

Amec Foster Wheeler has been commissioned by Collins Bay Marina to undertake a noise modelling exercise to determine the potential noise impact of proposed developments at Kingston Airport, Ontario. The work has also sought to review the latest noise impact information for the Airport as prepared by WSP MMM Group as issued 10 June 2016.

1.1 Background

The Marina and Kingston Airport

Collins Bay Marina is a family owned marina located on Eastern Lake Ontario and is situated to the west of the City of Kingston, Ontario. The Marina is located directly north of the airport’s main Runway 01/19 which runs north-south.

Immediately south of Collins Bay Marina is Kingston Airport, also known as Norman Rogers Airport. The airport has two runways (01/19 and 07/25) and accepts both domestic and international flights. Runway 01/19 is the longest runway at the airport at 1,502 metres. Runway 07/25 is shorter and is 1,191 m in length.

Collins Bay Marina is located directly under approach on Runway 19 and departures from Runway 01. At present, the Marina is approximately 500m from the airport boundary and 650m from the end of Runway 19.

Figure 1.1 Location Map
Airport Development Proposals

Based on information contained within Section 2 of the City of Kingston's Screening Level Environmental Assessment (June 2016) [1] we understand that the current development proposals are:

- An extension of the airport’s Runway 01/19 from 5,000 to 6,000 feet;
- Expansion and reconfiguration of the terminal building; and
- Reconfiguration of the airfield including new and modified aircraft stands.

We understand that the changes to the aprons as part of the development proposals which will include the construction and operation of aircraft parking stands capable of accepting larger Code C civil jet aircraft.

It is noted from the latest Kingston Airport Noise Exposure Forecast Report [2] that the City has opted for a runway length of 6,000 feet for Runway 01/19. This is a shorter runway extension and overall length than options previously considered in other iterations of the development proposals. In previous proposals, options were presented for a runway extension resulting in a total runway length of up to 6,847 feet which would comfortably accommodate Code C jet aircraft such as the Boeing 737 and Airbus A320 families.

The latest Noise Exposure Forecast report [2] states in Section 1.1 that the reduced runway length is “more conducive for use by newer (and quieter) competitive smaller regional jet and turbo-prop aircraft”. While this is technically correct, it should be noted that commercial jets could still use the runway. This is supported in Section 3.3.1 of the July 2013 Airport Infrastructure Expansion Project Definition Document Summary [3] which specifically considered a 6,000 feet runway length stated that “A turn-around will be provided at the north of Runway 01, and shall be sized in order to accommodate the turning movements of a Boeing 737-800 type”.

It therefore remains ambiguous as to whether not the runway length and the airport’s associated infrastructure has been designed to accommodate Code C civil jet aircraft and whether or not, or to what extent, these should be accounted for within the noise assessment.

The development proposals have been accompanied by a business plan. The Business Plan for Expansion [4] provides forecasts for the both passenger and aircraft movements over a period up to 2036. It identifies growth potential for Kingston Airport and how this can be facilitated through the development proposals.

The proposals include some operational measures designed to help reduce the noise impacts. These include notably the inclusion of displaced thresholds on the extended runway to maintain the landing points which are currently used on the existing Runway 01/19. This means that aircraft landing at the airport on the extended runway will do so in the same manner as they currently do.

1.2 Scope of Work

Amec Foster Wheeler has been commissioned to undertake the following scope of work:

i. Undertake noise modelling comparable with that undertaken by the City using NEFCALC;

ii. Provide a review of the work undertaken by the City and their consultants as part of reproducing the latest noise contouring; and

iii. Undertake a number of sensitivity tests considered appropriate as part of this review.

It should be noted that this work was commissioned prior to the release of the City of Kingston’s Screening Level Environmental Assessment (June 2016) [1] and Kingston Airport Noise Exposure Forecast Report (June 2016) [2]. In the case of the Kingston Airport Noise Exposure Forecast Report, this was provided to Amec Foster Wheeler on 10 June 2016.

These documents provide the latest information both in terms of the proposals and the potential noise impacts. In the case of the latest Noise Exposure Forecast Report [2], Amec Foster Wheeler has undertaken its modelling as part of this work based on and with reference to the information held within this report.
1.3 Structure of this Report

This report has been prepared with the following structure:

- **Section 2** provides relevant guidance which may be helpful in the interpretation of the noise contours presented in this report;
- **Section 3** sets out our general approach to the study presented in this report;
- **Section 4** provides information pertaining to the noise modelling undertaken by Amec Foster Wheeler in this study and by WSP MMM Group in the latest noise exposure report;
- **Section 5** provides the results of the modelling undertaken by Amec Foster Wheeler along with suitable commentary of the results;
- **Section 6** provides a high level discussion on potential mitigation; and
- **Section 7** presents conclusions and a summary of recommendations.

Appendix A builds on the noise modelling assumptions discussed in Section 4. Appendix B provides A3 versions of the noise contours prepared by Amec Foster Wheeler as presented throughout Section 5.
2. Relevant Guidance

This section sets out relevant guidance documents to be considered within the context of the noise modelling exercise presented in this study.

The following regulatory and guideline documents are considered relevant to the noise impact assessment for airports and aircraft within Canada:

- Ministry of Environment and Climate Change (MOECC) Environmental Noise Guideline NPC-300, "Noise Assessment Criteria for Stationary Sources and for Land Use Planning", August 2013; and
- Transport Canada, "Aviation Land Use in Vicinity of Airports", TP1247E, 2005 (the TC Aviation Land Use Document)

The following supplementary technical documentation is also considered relevant to the noise impact assessment for airport and aircraft within Canada:

- J.S. Bradley, "NEF Validation Study: (1) Issues Related to the Calculation of Airport Noise Contours", A1505.3, December 1996
- J.S. Bradley, "NEF Validation Study: (3) Final Report", A1505.6, December, 1996

The TC Aviation Land Use Document suggests that the Collins Bay Marina is acceptable against all levels of NEF. Our interpretation is that this is definition considers only commercial use of the Marina, and does not consider residential uses (e.g. sleeping quarters) at the Marina.

Our understanding of the Collins Bay Marina, as set out in against Ministry of Environment guidance, is that there are extended periods of time where the Marina could be considered residential, as boat operators typically sleep on their boats in a context that could be construed as a 'second residence'. Further the owner/operator at Collins Bay Marina resides there full time, thereby making it a residential dwelling. Under Ministry of Environment NPC-300, a noise sensitive receptor is characterized as "...a property of a person that accommodates a dwelling and includes a legal nonconforming residential use; or a property of a person that accommodates a building used for a noise sensitive commercial purpose" and that a "noise-sensitive space" includes the living and sleeping quarters of dwellings.

Under these definitions, Collins Bay Marina is a noise-sensitive receptor; as the operation clearly has people on the boats that are there for residential use (sleeping on their boats), as well as the owner/operator of the Marina also lives there. On this basis, any assessment must consider and make reference to the effects on the Marina as a noise sensitive receptor.

The TC Aviation Land Use Document also states that below 30 NEF "Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident" (Table 2) and the explanatory notes for Table 3 states that "Annoyance caused by aircraft noise may begin as low as 25 NEF...". This would indicate that as a minimum, the lowest contour that should be presented is 25 NEF in any noise contouring study where existing noise-sensitive receptors are potentially subject to new or changing aircraft noise. This is further supported by research from the National Research Council by J. Bradley in the "NEF Validation Study: (2) Review of Aircraft Noise and Its Effects" where it states "significant negative effects to aircraft noise start at NEFCAN 25 and higher." (pg.136). This statement indicates that effects on existing noise-sensitive receptors are possible outside of the 30 NEF contour, and therefore adverse effects from aircraft noise could occur.
3. Approach

3.1 General Approach to the Study

Amec Foster Wheeler's general approach to this study has been to reproduce the noise assessment work presented by the City of Kingston consultants WSP MMM Group in the latest Kingston Airport Noise Exposure Forecast Report [2]. In reproducing this work, Amec Foster Wheeler have provided a review and commentary of the methods employed and the data inputs utilised.

In addition to reproducing the work presented in the Kingston Airport Noise Exposure Forecast Report, a number of scenarios have been considered which are designed to highlight the effect of potential omissions from the work presented in the Report and expand the understanding of the potential effects of the runway extension and development proposals.

3.2 Selection of Metrics

Two metrics have been selected for consideration within this study:

- NEF; and
- \( L_{\text{Amax}} \)

As outlined in Section 2, the NEF underpins Canadian aircraft noise policy, particularly in the context of land-use planning. It also provides indication of where aircraft noise annoyance may occur. All noise assessment work which has been presented by the City of Kingston to date has relied on the NEF metric and the latest Kingston Airport Noise Exposure Forecast Report reports noise exposure according to the NEF only.

The \( L_{\text{Amax}} \) metric has a number of applications. It is most often considered for the assessment of aircraft noise during the night as a number of studies [5] have identified correlations between the \( L_{\text{Amax}} \) metric, the frequency of \( L_{\text{Amax}} \) events and sleep disturbance. In a more generic sense, the \( L_{\text{Amax}} \) metric can be used to simply compare the relative noise of different aircraft events and to provide an understanding of whether one aircraft produces higher noise events than another. It can also be used to highlight how operational changes and changes to the airport infrastructure may change aircraft noise event levels. This is particularly relevant to the runway extension at Kingston airport which may affect both the level of noise from existing aircraft events but also facilitate new types of aircraft.
4. Noise Modelling

4.1 Selection of Software

This study has adopted the following aircraft noise modelling software:

- NEFCALC version 2.06
- INM version 7.0d

NEFCALC has been used for the computation of the NEF exposure metric.

INM has been used to calculate other aircraft event metrics such as the $L_{A_{10}}$ and SEL, as NEFCALC is not able to produce the $L_{A_{10}}$.

It should be noted that NEFCALC is underpinned by INM version 6.2a. This version of INM is not identical to the version of INM utilised in this study and does not have a complete and up-to-date database of aircraft noise emissions. It also implements the previous version of the ECAC Doc 29 noise calculation methodology. However, NEFCALC remains the recommended tool of noise assessment by Transport Canada and has as such been utilised.

The use of INM in this study is to provide information regarding specific noise aircraft noise events. This is considered appropriate as the NEFCALC software is limited to the calculation of the NEF and the SEL metrics.

4.2 Aircraft Movements

The Kingston Airport Noise Exposure Forecast Report [2] presents information regarding the scenarios and the corresponding number of aircraft movements being considered in the environmental assessment. This information is reproduced in Table 4.1 below.

Section 3.3 of the Kingston Airport Noise Exposure Forecast Report provides some information regarding the source of the sequence leading to the latest forecast assumptions for the noise assessment. This section of the Report states that:

- the original 2007 Masterplan assumed 350 Peak Planning Day (PPD) movements in 2026 assuming a runway extension from 4,929 feet to 6,000 feet;
- the January 2012 Business Case for Expansion outlined the business case for the runway extension citing a forecast of 44,518 total annual movements in 2026 and 38,531 annual movements for 2012;
- that in 2013, while preparing the Project Definition Document (PDD) that MMM Group identified that based on the 44,518 forecast annual movements from the Business Case for Expansion that PPD movements translated to 297 and that this was used to prepared noise exposure contours for the public meeting held in February 2013; and
- following the February 2013 public meeting it was found that the annual aircraft movements in 2012 were significantly less than forecast and that this affected the growth rates assumed in the Business Case for Expansion. The net effect has been to reduce the forecast PPD in 2026 to 222.

The figure of 222 PPD movements in 2026 is the number of movements which have been adopted by WSP MMM Group in the Kingston Airport Noise Exposure Forecast Report. Whilst the narrative outlined above as provided by this report is helpful, it does however raise a number of questions regarding the adequacy of the forecasts and the underpinning Business Plan for Expansion. As outlined in Amec Foster Wheeler’s memo dated May 20 2016 [6] there remains some residual issues regarding the selection of the 2026 assessment year.
Table 1-2 of the Business Case for Expansion presents forecast movements from 2011 to 2036. This data shows that growth in airport traffic is forecast to occur in Carrier I-III movements only. Some growth is shown in Carrier IV-VI movements from 2011 to 2021 after which there is no further growth. The forecasts also show private, Government, Military, Other Commercial and Local movements remaining the same number the period to 2036 from 2011. Critically, growth in airport movements is shown over the 10 years beyond 2026. If the development proposals facilitate this growth then additional assessment years should be considered to understand what the long-term noise exposure forecast is for the communities surrounding the airport.

Table 4.1 Summary of Reported PPD movements taken from Table 3-1 of the Kingston Airport Noise Exposure Forecast Report

<table>
<thead>
<tr>
<th>Aircraft Type</th>
<th>Masterplan (2026)</th>
<th>Business Case/Draft PPD (2026)</th>
<th>2012 Actual</th>
<th>Final PPD (2026)</th>
<th>2026 NEF Modelled in Study based on Transport Canada NEFCAL Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dash 8/Q400</td>
<td>19.0</td>
<td>49.4</td>
<td>14.5</td>
<td>21.2</td>
<td>21.2</td>
</tr>
<tr>
<td>Beech B1900</td>
<td>6.0</td>
<td>30.7</td>
<td>15.0</td>
<td>19.2</td>
<td>19.2</td>
</tr>
<tr>
<td>Cessna CNA441 (representing 6-8 seat aircraft)</td>
<td>3.0</td>
<td>11.4</td>
<td>6.7</td>
<td>6.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Beech BEC98 Baron (representing twin-piston aircraft)</td>
<td>3.0</td>
<td>11.4</td>
<td>4.2</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Cessna C-172 (representing single-piston General Aviation aircraft)</td>
<td>314.8</td>
<td>189.3</td>
<td>158.8</td>
<td>168.8</td>
<td>325.5</td>
</tr>
<tr>
<td>Lockheed C-130 Hercules (representing military aircraft)</td>
<td>0.3</td>
<td>2.4</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>CL601 (representing Regional Jet)</td>
<td>4.0</td>
<td>2.7</td>
<td>0.9</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>350.0</td>
<td>297.2</td>
<td>200.7</td>
<td>222.0</td>
<td>375.0</td>
</tr>
</tbody>
</table>

Note 1
DHC8 represents DHC8 plus twin turbine helicopter
B1900 represents 19-seat aircraft plus single-engine helicopters
Cessna CNA441 represents twin turbine 6-8 seat aircraft
Beech Baron represents twin piston General Aviation aircraft
Cessna C-172 represents single piston GA aircraft
C-130 represents military aircraft
CL601 represents CRJ705 Regional Jet

Note 2
By nature of the Transport Canada NEF modelling methodology, Local traffic is modelled separately and has an average day to PPD factor of 5x versus Itinerant traffic that has an average day to PPD factor of 2x. The PPD has been adjusted here to account for these different peaking factors. The only affected aircraft type was the C-172 and for the NEF model was separated into Itinerant and Local movements and peaked separately as presented in Section 3.6 of this report. As a result the total PPD used in the actual NEF model was higher than the value shown in the previous forecast tables. This same adjusted to local peaking was applied to the 2012 baseline models.

Itinerant and Local Movements
Amec Foster Wheeler have identified the itinerant movements for Kingston Airport in 2012 from Transport Canada’s Aircraft Movement Statistics. This includes a significant amount of information including the nature...
of the aircraft movements and shows that in 2012 there were around 17,948 itinerant movements. It also shows that there were in the order of 11,479 circuit movements. Under the definitions used by Transport Canada:

- **Local Movements**: “At airports with control towers and/or flight service stations: for the purpose of completing air traffic records, local movements are considered as movements in which the aircraft remains in the circuit. At airports without control towers: an aircraft movement in which the aircraft remains in the close proximity of the airport. Local movements are often carried out during training flights (touch-and-go), equipment tests, etc.”

- **Itinerant Movements**: “At airports with control towers and/or flight service stations: for the purpose of completing air traffic records, itinerant movements are considered as movements in which aircraft proceed to arrive from another location; or where aircraft leave the circuit but return without landing at another airport. At airports without control towers: an aircraft movement in which the aircraft arrives from or departs to a point other than the reporting airport; or a movement by an aircraft that leaves the close proximity of an airport and returns without landing at another airport.”

Information presented in previous reports commissioned by the City has not clarified whether or not local movements have been considered in the modelling. Indeed the noise exposure information provided in the July 2013 Airport Infrastructure Expansion Project Definition Document Summary [3] states in Section 3.6 appears to indicate that previous forecasts and associated noise exposure assessments have been based on itinerant movements only.

The Kingston Airport Noise Exposure Forecast Report [2] clarifies that the assessment the latest noise exposure forecast includes local movements which are mainly of the C-172 type. This reflects Amec Foster Wheeler’s understanding based on information available from Transport Canada.

As indicated in Table 4.1 above which is entirely reproduced from Table 3-1 of the Kingston Airport Noise Exposure Forecast Report, Note 2 indicates that C-172 aircraft movements have been adjusted to account for local movements. This is declared under the column headed “2026 NEF Modelled in this Study Based on Transport Canada NEFCAL methodology”. Under this column, there are 375 movements in total as a result of the adjusted movements.

Section 3.6 of the Kingston Airport Noise Exposure Forecast Report provides a breakdown of the itinerant and local movements for the 2012 and 2026 assessment years and the calculation of these movements for the Peak Planning Day (PPD) as used by the NEF. This shows that in 2012, the calculated PPD is 344 and in 2026, the PPD is 375. Table 3-2 of the Report, as reproduced in Table 4.2 below shows that the majority of the movements are local movements.

**Table 4.2  Summary of NEF Model Peak Planning Day (PPD) movements**

<table>
<thead>
<tr>
<th>Year</th>
<th>NEF Planning Day (95th Percentile Day Method)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Itinerant</td>
</tr>
<tr>
<td>2012</td>
<td>101</td>
</tr>
<tr>
<td>2026</td>
<td>115</td>
</tr>
</tbody>
</table>

Note: By nature of the NEF methodology, Local traffic is modelled separately and has an average day PPD factor of 5x versus Itinerant traffic that has an average day PPD factor of 2x. As result the total PPD shown in the table differs from that presented in Section 1.2.

Amec Foster Wheeler would like to bring to the attention the following points:

- No adjustment appears to have been made to include the local movements for the 2012 actual movements in the same manner highlighted by Note 2 for the 2026 NEF modelled scenario;
When Amec Foster Wheeler has reviewed the modelled NEFCALC movements provided in Appendix A of the Kingston Airport Noise Exposure Forecast Report, this indicates a total of 245.43 movements for the 2026 NEF modelling;

For the 2012 actual, the total number of modelled movements presented in Appendix A are 222.68.

There appear to be discrepancies between the movements presented in Table 3-1 of the Kingston Airport Noise Exposure Forecast Report and those carried through into the modelling and this may be a result of the local movement not being accounted for in the NEFCALC modelling.

It is noted that the Kingston Airport Noise Exposure Forecast Report makes a number of statements regarding the modelling of Local and Itinerant traffic being modelled separately. While it is correct that Local traffic and Itinerant traffic requires separate consideration in the calculation of the PPD movements, it is a misinterpretation that Local and Itinerant movements be considered separately in terms of their noise and influence on the NEF. Indeed a number of other noise assessments for other Canadian airports [7,8] have combined the effect of Local and Itinerant aircraft on airport's NEF contours. This is only logical as all aircraft regardless of their type of movement effect the overall levels of noise at communities, and would be considered industry practice to do so. NEFCALC itself does not provide any facility to differentiate Itinerant and Local traffic. Instead, operations that are typically associated with local traffic more so than itinerant traffic are included, such as circuits.

**Day-Night Splits**

Section 3.9 of the Kingston Airport Noise Exposure Forecast Report correctly identifies the NEF metric penalizes night-time operations by a factor of 16.7 compared to daytime movements to account for the additional annoyance brought about from sleep disturbance and interference with rest during night-time hours as a result of aircraft noise events. Table 3.6 of the Kingston Airport Noise Exposure Forecast Report as reproduced in Table 4.3 below, states that the a day-night split of 91%/9%.

<table>
<thead>
<tr>
<th>Time</th>
<th>% of All Movements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>91%</td>
</tr>
<tr>
<td>Night</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

No reference is provided to the source of this split within the report and it is noted that the split has been applied across all aircraft types. This may negate potential operational likelihoods such as the use of the airport by light General Aviation aircraft during night hours.

In the absence of any other information, Amec Foster Wheeler have applied this assumption to the modelling work presented in this Study.

**NEFCALC Input Files**

The Kingston Airport Noise Exposure Forecast Report provides the NEFCALC movement inputs files in Appendix A. These input files have, as outlined above, provided some insight into the interpretation of the modelling based on the information presented in the report itself. However, these input files have also been used by Amec Foster Wheeler to help reproduce the results presented in the report.
4.3 Runway Distribution

The 'modal split' of an airport is the technical term for the number of movements distributed across its runways. The use of the various runways at an airport is governed by a number of factors, namely:

1. the prevailing wind direction as aircraft land and depart into the wind; and
2. operational rules regarding the use of certain aircraft on certain runways (i.e. available runway length).

The latest modelling presented in The Kingston Airport Noise Exposure Forecast Report [2] presents the average modal split assumptions in Table 3.3, as reproduced in Table 4.4 below. While these splits appear credible, the source of these splits are not provided and they appear to be consistent with the assumptions made in previous work from other years. These splits may change given annual variability in prevailing winds. Furthermore, no consideration is given as to whether the development proposals would result in a change to these splits. For example, aircraft relying on the extended runway can only operate on that runway. This would likely have the effect of changing runway splits.

Table 4.4 Average Modal Splits

<table>
<thead>
<tr>
<th>Runway</th>
<th>Arrivals (% of Total)</th>
<th>Departures (% of Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>14.2</td>
<td>32.6</td>
</tr>
<tr>
<td>07</td>
<td>14.8</td>
<td>11.2</td>
</tr>
<tr>
<td>19</td>
<td>51.2</td>
<td>23.4</td>
</tr>
<tr>
<td>25</td>
<td>19.8</td>
<td>32.9</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Notwithstanding the source of the modal splits and in the absence of any other information, the average modal splits provided in the latest noise exposure forecast report have been adopted for this study.

4.4 Displaced Thresholds and Start of Roll Locations

Section 4.4 of the Kingston Airport Noise Exposure Forecast Report reaffirms the recommendation made in the Project Definition Document [3] that the landing thresholds on the extended runway be maintained from the current runway configuration. This is best practice and we support this approach.

The modelling undertaken in this report has included displaced thresholds on the approaches to Runway 01 and Runway 19. In the case of departures, it has been assumed that all aircraft will use the full length of the runway regardless of type. This appears to be confirmed in Section 4.5 of the Kingston Airport Noise Exposure Forecast Report [2] which comments on the benefit the lengthened runway will have on departures from Runway 19.

4.5 Commentary on Inputs

Amec Foster Wheeler are concerned that the inputs adopted in the preparation of the NEF contours presented within the Kingston Airport Noise Exposure Forecast Report are opaque. Our concerns are listed as follows:

- The derivation of the number of movements within each of the modelled scenarios cannot be clearly followed;
- In the case of the 2012 baseline, methods demonstrating the working of the calculation of PPD should be shown – this cannot be verified from other publically available data as it requires daily records of movements;
Forecast movements to 2026 appear to have been revisited outside of the Business Case of Expansion;

The selection of 2026 as the assessment year can be considered inappropriate without consideration of a further assessment year taking into account addition growth in the 10 years thereafter; and

No information on the derivation for assumptions such as day-night and modal splits are presented.

Fundamentally, the impression provided by the Kingston Airport Noise Exposure Forecast Report is that inputs from previous studies have been modified based on emerging trends and information. This makes any assessment potentially ambiguous where in fact a new and comprehensive forecast should be ideally be prepared if indeed deficiencies have been identified in the existing forecast.

Alternatively, and as is common practice where actual use and operations are not certain, a reasonably foreseeable worst-case should be considered. Amec Foster Wheeler are not in a position to comment or speculate what such a case may entail without detailed information regarding the airport’s current and historic activity and a comprehensive breakdown of the forecast movements. However, the sensitivity of the noise exposure based on the inputs adopted in the Kingston Airport Noise Exposure Forecast Report can help provide understanding.

4.6 Modelled Scenarios

This section sets out the scenarios considered in this study. Two separate sets of scenarios have been considered: 1) noise exposure scenarios adopting the NEFCALC software; and 2) aircraft event scenarios aimed at describing the differences in noise levels as a result of the runway extension.

Noise Exposure Scenarios

The following scenarios have been considered in this study as presented in Table 4.6 overleaf.

Aircraft Event Scenarios

In addition to the exposure scenarios, the following scenarios have been considered in this study. These scenarios have been produced to consider the level of noise from different aircraft events and how this may change as a result of the runway extension. Focus has been given to aircraft noise levels at the Collins Bay Marina. This has meant focusing on noise levels from the following aircraft noise events:

- Departures from Runway 01 with and without the runway extension; and
- Arrivals onto Runway 19 with and without the runway extension.

Table 4.5 presents the event scenarios considered.

Table 4.5 Summary of Aircraft Noise Events Scenarios

<table>
<thead>
<tr>
<th>Aircraft Type</th>
<th>Runway 01 Departure</th>
<th>Runway 19 Arrival</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>Extended</td>
</tr>
<tr>
<td>B1900</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>BEC58P</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C130</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C172</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CL601</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Table 4.6: Modelled Scenarios within this Study

<table>
<thead>
<tr>
<th>Index</th>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL2012</td>
<td>Baseline 2012</td>
<td>Consistent with the 2012 Baseline Scenario modelled by WSP MMM Group in the Kingston Airport Noise Exposure Forecast Report (June 2016) adopted all stated assumptions. All modelling has been based on the inputs provided for the Baseline 2012 scenario within Appendix A of the Kingston Airport Noise Exposure Forecast Report.</td>
</tr>
<tr>
<td>FC2026</td>
<td>Forecast 2026</td>
<td>Consistent with the 2026 Forecast Scenario modelled by WSP MMM Group in the Kingston Airport Noise Exposure Forecast Report (June 2016) adopted all stated assumptions and the effect of the runway extension. All modelling has been based on the inputs provided for the Baseline 2012 scenario within Appendix A of the Kingston Airport Noise Exposure Forecast Report. Scenario considers the inclusion of displaced arrival thresholds.</td>
</tr>
<tr>
<td>BL2012M</td>
<td>Baseline 2012 Modified</td>
<td>Consistent with the 2012 Baseline Scenario modelled by WSP MMM Group in the Kingston Airport Noise Exposure Forecast Report (June 2016) adopted all stated assumptions modified with additional movements to reflect local traffic modelled as C172 aircraft resulting in total PPD movements of 344 as stated in Table 3-2 of the Report.</td>
</tr>
<tr>
<td>FC2026M</td>
<td>Forecast 2026 Modified</td>
<td>Consistent with the 2026 Forecast Scenario modelled by WSP MMM Group in the Kingston Airport Noise Exposure Forecast Report (June 2016) adopted all stated assumptions and the effect of the runway extension modified with additional movements to reflect local traffic modelled as C172 aircraft resulting in total PPD movements of 375 as stated in Table 3-2 and Table 3-1 of the Report. Scenario considers the inclusion of displaced arrival thresholds.</td>
</tr>
<tr>
<td>FC2036M</td>
<td>Forecast 2026 Modified</td>
<td>Consistent with the modified 2026 Forecast Scenario outlined above assuming continued growth between 2026 and 2036 as outlined in the Business Case for Expansion. Movements for the aircraft types pertaining to the growth outlined in the business plan have increased to reflect this growth. This has meant a growth of 30% in the movements modelled for the Forecast 2026 for the Dash 8, 19-seat and Regional Jet types. Scenario considers the inclusion of displaced arrival thresholds.</td>
</tr>
<tr>
<td>FC2026M_A</td>
<td>Forecast 2026</td>
<td>Previous forecasts and statements made in other documents released by the City have identified the potential for IATA Code C jet aircraft movements. To account for the potential for these movements this scenario considered incrementally the Forecast 2026 plus incrementally the following movements: (a) 2 x Boeing 737-800 movements (landing and a take-off) (b) 4 x Boeing 737-800 movements (2 x landings and 2 x take-offs) (c) 8 x Boeing 737-800 movements (4 x landings and 4 x take-offs) as indicated in the July 2013 Airport Infrastructure Expansion Project Definition Document Summary Scenario considers the inclusion of displaced arrival thresholds.</td>
</tr>
<tr>
<td>Index</td>
<td>Scenario</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FC2036M_A</td>
<td>Forecast</td>
<td>As above but for the Forecast 2036 modified scenario</td>
</tr>
<tr>
<td>FC2036M_B</td>
<td>2036</td>
<td></td>
</tr>
<tr>
<td>FC2036M_C</td>
<td>Modified + Incremental Code C Jet Movements</td>
<td>Scenario considers the inclusion of displaced arrival thresholds.</td>
</tr>
</tbody>
</table>

1. All Forecast scenarios include the effect of the extended runway
2. Modification to account of local movements have been achieved by factoring up C172 movements accordingly

4.7 Modelling Inputs and Assumptions

Appendix A sets out a comprehensive set of modelling inputs and assumptions used in this study for the scenarios considered in Section 4.2.
5. Modelling Results

This section presents the results of the modelling for the scenarios discussed in Section 4. Embedded noise contours are presented in this section with A3 contours provided in Appendix B.

5.1 NEF Modelling and Outcomes

Scenarios BL2012 and FC2026

These scenarios pertain to those presented in the Kingston Airport Noise Exposure Forecast Report [2]. NEF contours are presented for these scenarios in Figure 5.1. From a visual review of these contours with those presented in the Report, the 2012 baseline contours show a very high degree of correlation and could be considered identical. This is not such the case for the forecast 2026 contours. In this case the 25 NEF contour is not as extended under Runway 19 arrivals as far as the contour prepared by WSP MMM Group. This indicates that a displaced threshold may not have been modelled in the City's work. However, there is general agreement between the modelling outputs.

The change in the shape of the 30 NEF contours between the 2012 and 2026 scenarios around the Runway 19 end is due to the split positions being used for aircraft departures and the displaced threshold for arrivals. This also has a knock-on effect on the 25 NEF contour shape in the community areas around the Runway 19 end. Areas of Collins Bay Marina falls within the 25 NEF contour.

Scenario BL2012M and FC2026M

As outlined in Table 4.5 above, these scenarios reflect those modelled and presented by the City in the latest Report but with the addition of local movements which are all Cessna C172 aircraft events. Figure 5.2 presents 25 NEF and 30 NEF contours for these scenarios overlaid with the scenarios considered by the City as outlined above. It can be seen that for both the 2012 and 2026 baseline scenarios that the effect of including the local movements is to generally extend the size and area covered by the 25 and 30 NEF contours and Collins Bay Marina is located between these.

In the case of the 2012 baseline, the inclusion of these movements results in the 30 NEF contour running along the boundary of the airport with residential dwellings on Sackville Crescent. Interesting, the net effect of displaced thresholds and the relocated start of roll position on Runway 19 is that aircraft noise at the runway end is not as concentrated in. As such, the noise exposure presented by the contours is spread.

Scenario FC2036M

This scenario takes into account local movements at the same volume as in 2012 and 2026 but includes the 30% growth in commercial aircraft movements between 2026 and 2036 as highlighted by the Business Plan for Expansion [4]. Figure 5.3 presents the 25 NEF and 30 NEF contours for this scenario along with those presented for scenarios BL2012M and FC2026M. It can be seen from these contours that the effect of the additional 30% growth in the commercial movements is to further extend the 25 NEF contour further into residential areas. The 30 NEF contour is calculated to remain within the airfield boundary and Collins Bay Marina is located outside of it.

Scenarios FC2026M, A - C

This scenario considers the forecast 2026 conditions which have been modified to include local movements. Four contour sets are presented in Figure 5.4. These contour sets relate to the situation in 2026 without any...
Boeing 737-800 movements and 2, 4 and 8 movement per day on Runway 1 and Runway 19 according to the modal split presented in Table 4.4.

These contours show that by introducing the Boeing 737-800 civil jet aircraft movements, the 30 NEF contour begins to extend. When 8 No movements are considered, the 30 NEF contour begins to move into the parts of the Marina and into residential areas from Sackville Crescent.

**Scenarios FC2036M, A - C**

Like the scenario described above, Figure 5.5 shows a similar effect of adding the Boeing 737-800 movements in 2036. In which case the Boeing 737-800 move the 30 NEF into parts of the Marina and into residential areas from Sackville Crescent.
Figure 5.1
2012 Baseline and 2026 Forecast Contours
Modelled using City Inputs
Proposed Runway Extensions

Figure 5.2
2010 Contour Study
City and Modified
5.2 Aircraft Event Modelling

Table 5.1 presents $L_{A,\text{max}}$ noise levels for the various aircraft considered in this study. It should be noted that the noise levels do not consider the effect of the proposed displaced arrival threshold on Runway 19. If this is considered, then arrival noise levels for the ended Runway 19 will be same as those for the existing runway.

As a rule of thumb, maximum noise events above 70 dB(A) [9] can typically be associated with interference in speech and conversation within an outdoor environment and will therefore interfere within an outdoor environment too. During the night, maximum noise levels can be considered along with dose-response relationships\(^1\) to identify the likelihood of awakenings.

We note that though the levels provide comparison for aircraft impacts, in the context of this work a comprehensive assessment would require the consideration of the number of aircraft occurrences, which is beyond the scope of this study.

<table>
<thead>
<tr>
<th>Aircraft Type</th>
<th>Runway 01 Departure</th>
<th>Runway 19 Arrival</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>Extended</td>
</tr>
<tr>
<td>B1900</td>
<td>75.4</td>
<td>74</td>
</tr>
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<td>BEC58P</td>
<td>84.8</td>
<td>83.6</td>
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<tr>
<td>C130</td>
<td>101.2</td>
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</tr>
<tr>
<td>737800</td>
<td>n/a</td>
<td>91.6</td>
</tr>
</tbody>
</table>

The table shows that at the moment the most prevalent aircraft movements at the Airport (i.e. the single piston general aviation Cessna C172 types) happen to result in some of the quietest aircraft noise events at Collins Bay Marina. The highest levels of noise currently being experience at the Marina is from the C130 military aircraft type; however these are very infrequent with the baseline 2012 PPD movements presented in Table 4.1 showing 2012 actual movements of this type of less than 1 per day.

When comparing Runway 01 departures with and without the runway extension, the maximum noise levels appear to reduce by over 1 dB at the Marina. This is due to the increased altitude the aircraft overfly the Marina. This is acknowledged by WSP MMM Group in their latest report [2].

On arrival to Runway 19, maximum noise levels at Collins Bay Marina would be around 1 dB higher without a displaced threshold.

With reference to the Boeing 737-800 movements, noise levels on departure are lower than the CL601 regional jet types and the C130 but much higher than existing propeller aircraft including the turbo-prop Dash

\(^1\) A dose-response relationship is a term used to describe how increasing or changes in noise exposure results in certain effects. For example, increasing aircraft noise exposure has been attributed to increased community annoyance.
8. On arrival, only the C130 results in higher noise levels than the Boeing 737-800 even with the displaced threshold.

Maximum noise levels only help understand relative differences and do not necessarily enable a comparison of the character of the aircraft noise; where different frequency components between aircraft noises could result in a different annoyance response irrespective of overall noise level. If it is indeed the case that the runway extension would facilitate the potential for the character of the noise to change by introduction of jet aircraft then this could result in subjective responses that cannot necessarily be assessed through numerical comparisons alone. Further investigation would be required to address this potential subjective response, which is beyond the study.

5.3 Summary of Findings

The modelling and outputs presented in this section demonstrate the following:

1. Collins Bay Marina is likely to be exposed to levels of 25 – 30 NEF in the future in the absence of Code C jet aircraft movements providing a displaced thresholds are incorporated into the proposals;
2. The airport development proposals will increase the NEF levels at Collins Bay Marina and could therefore lead to increased annoyance;
3. 8 No. Boeing 737-800 movements per day could result in areas of Collins Bay Marina and Sackville Crescent being exposed to levels above 30 NEF assuming displaced thresholds are adopted;
4. In the case of Collins Bay Marina, jet noise from Code C aircraft, in this case the Boeing 737-800 would result in maximum noise level events higher than the majority of other aircraft currently operating at the airport during Runway 19 arrivals;
5. NEF contours and exposure at Kingston Airport is quite sensitive to the inclusion of jet aircraft types as the current airport fleet mix is dominated by generally much quieter but more frequent small propeller aircraft. Only a small number of movements per day of the Code C jet aircraft is sufficient to add another street of housing to the 25 NEF contour; and
6. It is highly probable that without the displaced thresholds that a number of the scenarios modelled would result in much larger areas of Collins Bay Marina and the adjacent Sackville Crescent being exposed to noise above 30 NEF.

We reiterate that the findings set out above are based a number of assumptions and forecasts set out within the Kingston Airport Noise Exposure Forecast Report and as applied by Amec Foster Wheeler in interpretation. As highlighted in Section 4.5, there are a number concerns regarding this information which may indeed invalidate these findings and those prepared recently by WSP MMM Group. These include:

- The robustness of the movements adopted for both the baseline and forecast assessment scenarios;
- The forecast fleet mix including the inclusion of certain Code C Jet aircraft;
- The use and derivation of assumption pertaining to items such as modal and day-night splits; and
- The inclusion and securing of a displaced threshold in runway configurations.

5.4 Comparisons against previous information

Figure 5.6 below presents an example of the 30 NEF contours presented as recently as March 2016 which consider PPD movements in 2026 with the inclusion of 8 No. Boeing 737-800 movements.
These contours bear no resemblance and are markedly different to the contours reported by WSP MMM Group in the latest report [2] or those prepared by Amec Foster Wheeler in this study. By comparison these contours do not include 25 NEF contour which is considered relevant, and have ignored movements on the airports cross runway. The shape of the NEF 30 contour are also different to those reported by WSP MMM Group. This indicates that up until recently, there have been shortcomings and deficiencies in the modelling and assessment of noise for the airport and of its proposals.
6. Mitigation

6.1 Displaced Thresholds

Section 4.4 of the Kingston Airport Noise Exposure Forecast Report cites the Project Definition Document which recommends that the existing landing thresholds be maintained at their current positions following the runway extension. This means that for landing aircraft, no change should be observed in noise from existing aircraft landing at the airport following the runway extension.

This recommendation is fully supported by Amec Foster Wheeler. It can be seen in Table 5.1 that should the landing thresholds not be displaced on Runway 19, maximum aircraft noise levels would be around 1 dB higher. While this difference may only just be noticeable, displaced landing thresholds are welcome and will help mitigate the effect of the runway extension.

However, displaced thresholds do require consideration of their operational impact, most notably on the safety of landing aircraft. Displaced landing thresholds effectively reduce the landing length of the runway. It is therefore recommended that a study be completed which seeks to confirm that the proposed displaced thresholds are operationally sound with respect to the aircraft which are to be attracted to the airport as part of the development proposals.

6.2 Operational Restrictions and Conditions

Operational restrictions such as limiting the number of movements from an airport are generally considered blunt instruments in the management of aircraft noise but are often welcomed by local communities as they provide some security and reassurance regarding the extent to which an airport can operate.

Other, alternative restrictions which could be considered include, at a high level:

- **An NEF Contour Area Limit or Envelope**
  - An area for the 25 NEF and 30 NEF contour within which the airport can grow into as be reported on an annual basis as such. This provides communities with confidence that noise exposure is restricted without imposing any hard rules on the number and types of aircraft operating. This approach brings with it forecasting and community engagement which can help relations between the communities and the airport.

- **Noise Quota System**
  - Such a system seeks to restrict the number of movements at an airport by the noise emissions produced by each aircraft type. It can be appropriate when aircraft movements are planned during the night or in restricting aircraft of a certain type where these are known to be noisier.

In addition to the consideration of the above, it is highly recommended that should permission be granted that the Airport establish a consultation forum where noise can be discussed openly with the local community and upcoming changes to the airport's fleet and scheduled operations can be discussed before they occur.
7. Conclusions

This report has identified a number of concerns regarding the latest noise exposure forecasts produced by the City of Kingston for the development proposals at Kingston Airport.

With the exception to the apparent omission of local movements from the noise contouring exercise, Amec Foster Wheeler considers the noise contouring work undertaken by WSP MMM Group to be competent based upon the information adopted. This is highlighted by the comparison of the noise contours presented as recently as 10 March 2016 with those provided in the latest Report [2]. This comparison upholds Collins Bay Marina’s ongoing concerns over the adequacy of the noise assessment work presented prior to latest Report.

However, any noise exposure forecast or contouring exercise can only be as robust as the information underpinning it such as the number of movements, aircraft fleet mix, and the modal and day-night splits. While the latest report provides this information, the derivation and robustness of the information used to underpin it should be questioned as there are a number of potential conflicts such as:

- The forecast number of PPD movements which have continued over the proposals have consulted;
- The appropriateness of the selected assessment year;
- The inclusion of local movements within the noise forecasts; and
- Whether or not and if so what types of Code C jet aircraft will or will not be able to utilise the runway and how many of these movements could occur.

The noise contouring work undertaken by Amec Foster Wheeler as part of this Study has highlighted the sensitivities of the noise exposure forecast to these considerations. It is entirely appropriate that the exacting details of the forecasts and the calculation of matters such as day-night and modal splits be clarified.

Amec Foster Wheeler have not been commissioned by Collins Bay Marina to state whether or not the development proposals should or should not go ahead. Instead Amec Foster Wheeler’s role has been to identify whether the noise assessment work undertaken is robust and whether all of the relevant information has been presented to enable a decision to made against a sound evidence base.

Although significant improvements have been made to the noise assessment work by MMM Group to date, residual concerns remain regarding the adequacy of the information underpinning them. Until this data can be fully disclosed, described and clarified, it is recommended that no decision be made until the robustness of the noise assessment has been addressed and mitigation has been secured. In this respect, the following recommendations are made:

i. The calculation of the PPDs are fully disclosed along with the forecasting assumptions and how these relate to the business plan. This should be done as an entirely separate document with worked examples and data sources clearly declared;

ii. Agreement is reached regarding the modelling and extent of the NEF contours for the baseline conditions which should be open to debate;

iii. Confirmation is provided regarding the aircraft types that the runway extension facilitates and their likelihood operation in the future to enable a sound and solid understanding of how the character of the noise around the airport will change;

iv. Key assumptions regarding day-night splits and modal splits are explored in more detail including whether or not these remain valid in forecast years owing to meteorological trends and aircraft scheduling;

v. There is general recognition and clear differentiate on the effect the development proposals have on the growth of the airport and the likely requirement to consider more than one future assessment year;
vi. The process for securing mitigation in the form of displaced thresholds is clarified and that the operational impacts of this are fully declared with respect to attracting new aircraft types;

vii. Other forms of mitigation should be explored such as those suggested in Section 6.2; and

viii. Efforts should be made to establish a community consultative committee which can focus on noise and other environmental concerns.

It is concluded and recommended that no decision be made on the proposals until the recommendations set out above have been addressed. This is considered a sensible approach as demonstrated from Section 5.4 the information provided on noise regarding the proposals to the communities been subject to routine changes and shortcomings.

This is particularly relevant to recommendation (vii) outlined above as it is apparent from an independent position that the information provided to date regarding the airports development proposals has resulted in a breakdown in trust between the community, the city and the airport.
8. References

1. City of Kingston Screening Level Environmental Assessment, June 2016, MMM Group
3. The Corporation of the City of Kingston, Airport Infrastructure Expansion Project Definition Document Summary, 4 July 2013, MMM Group
6. Peer Review of the Kingston Airport Infrastructure Report related to Airport Noise, 14 March 2016, Amec Foster Wheeler
8. Noise Contours Study Toronto City Centre Airport Final Report, June 2010, Transport Canada
Appendix A
Modelling Inputs and Assumptions
### Table A.1 Runway End Points and displaced thresholds as Modelled in Both INM and NEFCALC

<table>
<thead>
<tr>
<th>Runway End</th>
<th>Lat</th>
<th>Lon</th>
<th>Arrival Displacement</th>
<th>Departure Displacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runway 01</td>
<td>44.21914712</td>
<td>-76.60179359</td>
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<td>0</td>
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<td>44.21810808</td>
<td>-76.60167909</td>
<td>360</td>
<td>140</td>
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<td>Runway 19</td>
<td>44.23262061</td>
<td>-76.60314805</td>
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<td>44.22564413</td>
<td>-76.59008826</td>
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</tr>
</tbody>
</table>
Modelled Movements

Note: All departure movements are based of ‘Stage Length 1’. This is the lightest aircraft noise profile available in both the INM and NEFCALC software and reflects low fuel levels and weights associated with destination typically within 500nmi of the airport. For jet aircraft this assumption may be considered lenient.

Table A.2   BL2012

<table>
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<th></th>
<th></th>
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<td>Day</td>
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FC2026M and FC2036M Scenarios A, B and C – Boeing 738 Movements - as per the scenarios in the tables above plus the following Boeing 737-800 Movements

Table A.7 Scenario A – 2 Boeing 738 movements – 1 arrival and 1 departure

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Table A.8 Scenario B – 4 Boeing 738 movements – 2 arrivals and 2 departures

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Table A.9  Scenario C – 8 Boeing 738 movements – 4 arrival and 4 departure

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Flight Paths

Departures
- Straight out departures assumed from all runways

Arrivals
- All arrivals assume to be straight in from at least 8nmi from landing
- All glideslopes assumed to be international standard of 3 degrees

Circuits
- Circuits assumed to use existing runway lengths and configurations including scenarios relating to the extended runway
- All circuits performed by C172 type therefore approaches are considered short with final approach established by 1.5nmi from the runway end
- All circuit turns start at least 1.5nmi from departure and direct over the lake
Appendix B
A3 Figures
Collins Bay Marina

Existing Runway 01/19

Proposed Runway Extensions

Collins Bay Marina—Kingston Airport Noise Contour Study

Figure 1.1
Location Map
Figure 5.1
2012 Baseline and 2026 Forecast Contours
Modelled Using City Inputs
Figure 5.3
2012 Baseline, 2026 and 2036 Forecast
Modified
Figure 5.4
2026 Forecast including incremental Boeing 737-800 movements Modified

Collins Bay Marina
Kingston Airport Noise Contour Study

Proposed Runway Extensions

FC2026 (2x738) - 25 NEF
FC2026 (2x738) - 30 NEF
FC2026 (4x738) - 25 NEF
FC2026 (4x738) - 25 NEF
FC2026 (8x738) - 25 NEF
FC2026 (8x738) - 30 NEF
FC2026M - 25 NEF
FC2026M - 30 NEF

Scale 1:100,000

June 2018

2026 forecast including incremental Boeing 737-800 movements
Modified
Peer Review of Noise Reports

KINGSTON AIRPORT
RUNWAY EXPANSION

City of Kingston

May 4, 2017
Project: 117-0050

Prepared for
Collins Bay Marina

Prepared by

[Signature]

Al Lightstone, Ph.D., P.Eng.

VALCOUSTICS Canada Ltd.
Document Version Index:

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Peer Review of Noise Reports

KINGSTON AIRPORT
RUNWAY EXPANSION

City of Kingston

1.0 INTRODUCTION

Valcoustics Canada Ltd was retained by Collins Bay Marina ON February 24, 2017 to peer review the noise studies done by MMM Group (MMM) for the City of Kingston and by Amec Foster Wheeler (AFW) for Collins Bay Marina, examining the expansion of Runway 01-19.

The reports reviewed are:

- "Collins Bay Marina, Noise Modelling Study", Draft Report, Amec Foster Wheeler, June 2016.[Ref 2]

Also consulted for background information, to assist the peer review were:

- "Airport Infrastructure Expansion, Concepts for Public Information Session", February 25, 2013.[Ref 3]
- "Screening Level Environmental Assessment", Community Information Session, March 30, 2016.[Ref 5]

2.0 KINGSTON AIRPORT NOISE EXPOSURE TECHNICAL REPORT BY MMM

- The main objective of the MMM study[Ref 1] is stated to be producing noise contours for 2012 as well as for 2026 (based on forecasted future aircraft movements) [Section 1.2].
Section 2.0 of the MMM report [Ref 1] provides an overview and history of aircraft noise assessment in Canada. It makes reference [Sections 2.3 and 2.4] to a study done by the National Research Council (NRC) for Transport Canada validating the NEF method [Ref 3]. The important aspect is that in Canada the NEF system is used, based on a computer program provided by Transport Canada. The MMM report [Ref 1] discusses differences with the methods of the American FAA [Section 2.5]. These differences are not particularly relevant because the FAA does not use the NEF system and the unique characteristics of the Canadian Transport Canada approach are deliberate as discussed in References 8-10.

The aircraft noise assessment is to be based on the aircraft movements on a projected "peak planning day (PPD)" as per Transport Canada policy/procedures [Ref 8, Section 3.2.1]. Over time, the total aircraft movements predicted for the Kingston Airport 2026 PPD have been reduced: 350 in 2007; 297 in 2013; the Project Definition Document of July 2013 used 222. The latter prediction was based on the 2012 actual movements being less than the amount previously predicted for 2012 in the business plan. The net effect of a reduced number of aircraft movements is to shrink the airport noise contours and reduce the potential noise impact on the Collins Bay Marina.

Noise contours for 2012, 2026 with no runway expansion and 2026 with runway expansion were modelled. With the expanded runway, the thresholds will be "displaced". This means that, although the runway would be extended at both ends, the landing thresholds would remain the same as for the current runway. That is, the runway extensions would not be used for landings, only for take-offs.

The same runway utilization was assumed for year 2026 as for 2012. That is, the same percentage of landings and takeoff on each runway, 01-19 extended and 07-25, was assumed for year 2026 as for year 2012 [Ref 1, Section 3.7].

With the expanded runway, because of the displaced runway thresholds, the noise impact of landing existing aircraft would remain the same. This, of course, assumes that individual aircraft will follow the mandated flight procedures. Some aircraft likely may land short of the threshold but still on the extended runway, particularly if it is local traffic on a training flight. The noise contours would expand due to the increased number of aircraft movements and additional, new types of noisier aircraft. Our opinion is Collins Bay Marina would be negatively impacted.

With the expanded runway, existing aircraft would take off starting at a point close to the new end of the runway, achieving any given height at a point further from (prior to) the other end of the runway than is currently the case. Thus, the departing aircraft would be somewhat higher by the time they pass the end of the runway, resulting in slightly lower noise impact along the ground, beyond the runway. This would not be the case for larger aircraft such as jets (such as the 737) which require the use of the longer runway. Of course, an increased number of existing (and new) aircraft will result in an expansion of the NEF noise contours and increasing the negative impacts on Collins Bay Marina.

The NEF modelling [Ref 1, Figure 4-4] shows that the NEF 30 contours for 2012 and 2026 lie essentially within the airport boundaries (except at the south end, where they touch Front Road). The NEF 25 contours for both 2012 and 2026 extend beyond the airport and encompass Collins Bay Marina as well as small portions of adjacent residential
development such as in the region of Sackville Crescent, Shilo Avenue, and Acadia Drive to the north-east of Runway 01-19 and to the east of Bayridge Drive north and east of the end of Runway 07-25.

* The aircraft type movements modelled, as tabulated in Table 3-1 of Reference 1 for the PPD, are the existing types and includes the CL601 type, noted as representative of the CRJ 705 Regional Jet (per day: 4 in Master Plan (2026); 2.7 in Business Case/Draft PPD(2026); 0.9 2012 Actual; 1.3 in Final PDD (2026); 1.3 in 2026 NEF model). In effect, this is less than one jet aircraft landing and taking off per day, for the latter cases and does not appear to be the worst case planning scenario. These regional jets can use the existing runways. The expansion to Runway 01-19 to 6000 feet is said to be for the express purpose of accommodating larger jets such as the 737 class. However, the larger jets are not included in the noise modelling.

* The assessment of aircraft noise compatibility/suitability in the MMM report [Ref 1] is based on Transport Canada document TP 1247 [Ref 1]. See Section 3.1.1.

* The Collins Bay Marina is not discussed in detail but the implication in the MMM report [Ref 1] is that there will be no impact of aircraft noise and no land use incompatibility. We understand that Collins Bay Marina had attempted to provide MMM staff information about the marina operations and concerns, at public meetings.

* The MMM noise assessment does not address the Ontario Ministry of Environment and Climate Change Noise Guideline, NPC-300 [Ref 12], which includes aircraft noise, nor the Ontario 2014 Provincial Policy Statement [Ref 11]. See Discussion below.

3.0 DISCUSSION

3.1 AIRCRAFT NOISE CRITERIA

3.1.1 Federal

Aircraft noise criteria, as it may affect people in the community are found in Transport Canada document TP1247E, "Aviation, Land Use in the Vicinity of Aerodrones" (latest version 2013/14, ninth edition – Reference 7). Based on noise impact (using the NEF metric) and corresponding community reaction, TP1247E provides tables showing what land uses are suitable for different magnitudes of aircraft noise (NEF levels), with conditions in some cases. That is, the tables indicate over what range of NEF values a given land use is considered compatible with aircraft noise.

TP1247 indicates in Table 2A-Residential that residential land uses are generally acceptable below NEF 30 but that annoyance caused by aircraft noise may begin as low as NEF 25 and that "speech interference and annoyance caused by aircraft noise are, on average, established and growing at NEF 30....". With respect to new residential development it is also generally recommended that appropriate acoustic insulation be incorporated into building envelope design.

For all types of outdoor recreation areas, except one (Table 2B), less than NEF 30 is indicated as acceptable. For marinas all NEF values, including above NEF 40 are shown as acceptable. For some uses, playgrounds, fairgrounds, tennis courts and parks/picnic grounds, above NEF 35 it is
recommended that peak noise levels (individual events) and their effects should be considered. Interestingly, camping grounds are listed as unacceptable, even below NEF 30. It should be noted that the various land uses, and in particular Marinas and Camping Grounds are not defined in the TP1247E [Ref 7]. An Athletic Field is compatible under NEF 30, not compatible above NEF 40 (Table 2B – Recreational – Outdoor). Between NEF 30 and 35 an analysis of peak sound levels and their effects on the activities is recommended if there are spectator events. That is, between NEF30 and 40 there may or may not be compatibility, subject to circumstances.

Offices are compatible below NEF 30 (Table 2C – Commercial). Between NEF 30 and 40 a detailed noise analysis and appropriate "noise insulation" should be incorporated in the architectural building design is required, to produce an appropriate indoor acoustical environment in the presence of aircraft noise. Above NEF 40, special noise insulation is identified and office uses should be restricted to aviation-related functions/activities, because these would have a higher tolerance for aircraft noise.

3.1.2 Provincial

3.1.2.1 Provincial Policy Statement

In Ontario, environmental noise, including aircraft noise, must be taken into account in land use planning, whether involving new sensitive land uses, or new sources of noise. The Provincial Policy Statement 2014 (PPS), issued by the Provincial Government under Section 3 of the Planning Act, is formal policy. Land use planning decisions (such as is the case here) made by municipalities or other government agencies must be consistent with the PPS.

Section 1.2.6.1 requires that "major facilities and sensitive land uses" should be planned to ensure they are appropriately designed, buffered and/or separated from each other to prevent or mitigate adverse effects from odour, noise, and other contaminants, minimize the risk to public health and safety, and to ensure the long-term viability of major facilities". In practice, this means that both sensitive land uses and major facilities (an airport is a major facility) must each be designed to not have negative effects on each other.

Section 1.6.9.2 deals specifically with aircraft noise, restricting new residential development near airports, above NEF 30. This is consistent with the Federal criterion discussed above. That is, aircraft noise above NEF 30 is basically considered undesirable for residential land use.

3.1.2.2 Ministry of the Environment and Climate Change

The Ministry of the Environment and Climate Change (MOE) provides environmental noise guidelines for use in land use planning in the document, NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning" [Ref 12]. Consistent with Section 1.6.9.2 of the PPS, Section C3.4 of NPC-300 prohibits new residential development above NEF 30 (except for redevelopment or infilling).

The MOE noise guidelines include much detail such as definitions of noise sensitive receptors (land uses). A "noise sensitive land use" is defined as a property accommodating a dwelling or a noise sensitive commercial or institutional purpose building.
A campsite or campground is defined in Part A of Reference 12 as "a portion of property used for camping at which overnight accommodation is provided by, or on behalf of a public agency, or as part of a commercial operation" and as a noise sensitive use because of use for overnight accommodation (sleeping).

3.1.3 Application of Aircraft Noise Criteria

A marina such as the Collins Bay Marina is analogous to a campsite or campground because of the nature of its use. Pleasure boaters often make use of their boats, many or most of which include sleeping accommodations, like a cottage, and stay overnight, sleeping on board. The typical boat/yacht would have a fridge, stove, washroom and sleeping quarters for 4-6 people. The marina has 304 boat slips. It also has campgrounds with washrooms and showers, and outdoor picnic facilities—a gazebo, BBQ's, tables and chairs.

The marina hosts a yacht club. Most yacht clubs have reciprocal privileges with each other, allowing visiting boats to stay overnight for free. Last summer Collins Bay Marina had 270 transient, visiting boats that came for the sole purpose of staying overnight, in addition to the seasonal customers. The seasonal patrons keeping their boats at the marina come from an area extending from London to Montreal and points well north of Kingston. Many typically arrive Friday evening to head out the next day for other destinations or to day sail and return to stay the night. This is all aside from the marina owner's residence also on the property. Thus, in practice, the Collins Bay Marina is very much equivalent to a residential or campground land use, as per MOE definitions.

There are some anomalies in the land use tables in TP 1247E. In Table 2B, Camping Grounds are, in effect, listed as incompatible with aircraft noise at any level, from below NEF 30 to above NEF 40, as evidenced by "NO" entries all columns. This implies a greater noise sensitivity than residential. The rationale for this may be that residential dwellings can be expected to provide reduction of aircraft noise from outside to inside, significantly so if deliberately designed with aircraft noise insulation. Users of camp grounds, on the other hand, sleeping in shelters such as tents, experience the full extent of outdoor aircraft noise. On the other hand, NPC-300 considers residential, seasonal residential and camp grounds similarly.

In the case of marinas, in Table 2B, they are shown as compatible with aircraft noise at any level (universal YES entries), from below NEF 30 to above NEF 40. This appears to not recognize the time use and nature of a typical Ontario marina and assumes it is only a commercial enterprise. A marina should be treated similar to a Camping Ground, seasonal residence or holiday resort and have the same noise criterion as residential. It should be noted that like a campground situation, most pleasure boats would provide little aircraft noise attenuation to the inside, as can a house structure.

3.2 THE MMM NEF STUDY AND CONCLUSIONS

It would appear that the MMM aircraft noise contours do not include in the input data Class C narrow-body jets such as the 737-800. One purpose of the runway expansion would be to accommodate these aircraft. Thus, the noise contours would be expected to expand, with such aircraft. All anticipated types of aircraft should be included in the modelling. It is not appropriate to omit from the analysis the type of aircraft for which the runway expansion is needed.
For the anticipated uses of both the airport and the marina, and taking into account the special location of the marina, directly under the path of Runway 01-19 and close to its northern threshold, the noise assessment, in addition to NEF, should include peak sound levels (i.e., single events) in the spirit of TP1247E.

The NRC NEF Validation Study referenced in the MMM report does point out that "significant negative effects of aircraft noise start at NEFCAN 25 and higher". The MMM study shows that a significant part of the Collins Bay Marina is within (above) NEF 25 and the contours will expand in the future. Thus, it cannot be concluded from the study that the marina will experience no adverse noise impacts.

The number of projected aircraft movements has been revised downward several times over the years. It is not clear that appropriate projections are available or have been used or that those that have been used are consistent with the business plan. At this point it would also seem that the future design/analysis date of 2026 is too soon and that a full and proper projection of a further 10 years out is appropriate. (A 20 year planning horizon for a major airport is not unusual.) The net result of all of the omissions is an expectation that the extent of aircraft noise contours has been underestimated.

The runway modal split was assumed by MMM to remain the same. However, with Runway 01-19 being extended, it would seem reasonable for the utilization of the extended runway to increase, compared to now.

In summary, the MMM study is not sufficiently complete to come to the conclusion of no adverse noise impact at Collins Bay Marina and in fact underestimates potential aircraft noise impact.

### 4.0 AMEC FOSTER WHEELER REPORT "COLLINS BAY MARINA", JUNE 2016

#### 4.1 SCOPE OF WORK

The scope of work of AFW was to review the noise impact analysis and results of the MMM noise study for the Kingston Airport, as documented in the June 2016 report. The scope also included aircraft noise modelling to compare against that done by MMM. Note, this AFW report was issued as a draft.

#### 4.2 AIRCRAFT MOVEMENTS

The total number of aircraft movements of different types of aircraft in the analysis period (day/night over 24 hours) is a fundamental input to the aircraft noise modelling. AFW has raised concerns (Section 4.2) about gaps in the origin/source of some of the data presented in the MMM report:

- the projected aircraft movements do not originate with the business case;
- the business case projections should be extended to 2036 for NEF modelling, not just 2026;
- there are discrepancies in various aspects of projected growth or lack of growth to 2036 in the documents;
- some doubt is raised as to whether and how local and itinerant aircraft movements have been addressed in the MMM modelling – it is not clear whether there is a deficiency in the
We share these concerns.

4.3 DISPLACED RUNWAY THRESHOLDS

The AFW review recognized that displaced thresholds are intended and that existing landing thresholds would be retained. For take-offs the full extended runway would be used.

AFW raised a concern that the MMM NEF 25 contour may not have been modelled with displaced threshold. Also, some of the AFW analysis was also done without displaced threshold.

4.4 NOISE ANALYSIS AND CONCLUSIONS

- AFW ran essentially the same NEF contours as MMM, ensuring what AFW considered an appropriate combination of local and itinerant movements. AFW also added other inputs plus additional scenarios:
  - for 2026, adding Code C jets;
  - for 2036, adding Code C jets.

  Single event (peak sound level) analysis was also done.

- The single event analysis shows quite high sound levels at the marina for 737-800 jets: 92 to 97 dBA. The existing C130 aircraft are higher but relatively infrequent. Regional jets on take-off also produce high peak sound levels (98dBA) which will diminish somewhat (94dBA) with the extended runway. Jets taking off on Runway 01, heading northerly, and overflying Collins Bay Marina, can be expected to have significant impact. Even jets taking off on Runway 19, heading southerly, would be expected to create significant noise at the marina because of jet engine exhausts directed toward the marina. (Neither study examined this.)

- Generally, the AFW NEF contours are larger than those by MMM, especially with Code C jets. Plots are provided of both the MMM and AFW contours for comparison. However, in some cases it is not obvious from the Legends presented which contour is which (AFW or MMM).

- The AFW results for 2016 show that a major part, if not all, of the Collins Bay Marina is within (above) NEF 25, with parts touching or slightly within NEF 30. The AFW results for 2036 show enlarged contours, with more of the marina within NEF 25 and a larger portion within NEF 30.

- The AFW contours appear to be more appropriate because of the scenarios used. From these it is concluded that the marina will experience increased aircraft noise impact from future airport operations, including Code C jets.
• The AFW review also has a brief discussion of potential mitigation: displaced thresholds (which appears to be already committed), an NEF contour limit — which may not be particularly practicable; and a noise quota system, restricting the number of movements by aircraft type.

5.0 OVERALL CONCLUSIONS

The Collins Bay Marina should be considered as a combination of residential and campground use because of the owner’s residence and the nature of the marina/boating use. In both the federal and provincial guidelines, residential and campground uses are noise sensitive.

There are a number of omissions and deficiencies in the MMM noise study which lead to the expectation of underestimating the potential aircraft noise impact on the Collins Bay Marina. For example, Class C jets were not included in the analysis. Single event noise impacts of various aircraft were not studied. NEF/NEP dates should have been 20 years hence (2036) not just 10 years (2026). It also appears that the number and types of aircraft may have been reduced from previously used data in order to minimize the extent of NEF/NEP noise contours. The conclusion that there will be no adverse noise impact on Collins Bay Marina is not justified. The MMM noise study also failed to reference and address the aircraft noise policies and guidelines of the Ontario government.

The AFW noise study, in addition to reviewing the deficiencies in the MMM study provides NEF contours for 2016 and 2036, including for Class C jets. Further, an analysis of peak sound levels (single events) as recommended in the federal guidelines is presented. These results indicate that adverse noise impact on the Collins Bay Marina is to be expected.

6.0 REFERENCES


Response Area | Response Prediction
---|---
30 – 35 | Sporadic to repeated individual complaints. Group action possible.
< 30 | Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident.

A series of land use tables for aircraft noise considerations only are produced by Transport Canada as shown in the example below. This is only offered up as a guide and is mostly related to land use compatibility as related to airport noise and the following table and associated descriptions are found in Transport Canada’s TP1247 - Aviation - Land Use in the Vicinity of Aerodromes, 2013/14.

| Table 2A - Residential |
|---|---|---|---|---|
| Noise Exposure Forecast Values | > 40 | 40-35 | 35-30 | < 30 |
| Response Areas | 1 | 2 | 3 | 4 |
| Detached, Semi-Detached | NO | NO | NO | A |
| Town Houses, Garden Homes | NO | NO | NO | A |
| Apartments | NO | NO | NO | A |

Annoyance caused by aircraft noise may begin as low as NEF 25. It is recommended that developers be made aware of this fact and that they undertake to so inform all prospective tenants or purchasers of residential units. In addition, it is suggested that development should not proceed until the responsible authority is satisfied that acoustic insulation features, if required, have been considered in the building design. Additionallly it is suggested that development should not proceed until the responsible authority is satisfied that acoustic insulation features, if required, have been considered in the building design. Transport Canada does not support or advocate incompatible land use (especially residential housing and similar noise sensitive uses) in areas affected by aircraft noise. These may begin as low as NEF 25. At NEF 30, speech interference and annoyance caused by aircraft noise are, on average, established and growing. By NEF 35, these effects are very significant. New residential development is therefore not compatible with NEF 30 and above, and should not be undertaken. As was previously detailed, jurisdictional boundaries do not permit the federal government to impose the NEF 30 limit on provincial land use planning. These are recommendations only. However, these recommendations are “imposed” on projects within federal scope. The Canada Mortgage and Housing Corporation will generally only fund developments which meet their standards which are consistent with Transport Canada’s recommendations.

There are three types of noise exposure contours depending on the time element involved and are summarized as follows:

- Noise Exposure Forecasts (NEFs)

Traffic volume and aircraft type and mix used in calculating the noise contours are normally forecast for a period of between five to ten years into the future. Runway geometry must be the current layout,
except that new and approved projects involving changes in the runways may be included, when the completion date of the project lies within the forecast period.

► Noise Exposure Projections (NEPs)

It is recognized that much land use planning involves projections beyond five years into the future, when aircraft fleet mixes and runway configurations are most likely to be different from the known conditions of today. To provide provincial and municipal authorities with long range guidance in land use planning, Transport Canada introduced the Noise Exposure Projection (NEP). The NEP is based on a projection of aircraft movements for up to 20 years into the future and includes aircraft types and runway configurations that may materialize within this period. NEPs are official contours and Transport Canada will support them to the level of accuracy of the input data. The information required to produce an NEP must, at least, be contained in an Airport Master Plan.

► Planning Contours

The third type of noise contour is the Planning Contour which is produced to investigate planning alternates and must be labeled as such. Any agency may produce these contours as they do not have an official status. Examples of a planning contour may include composite contours (overlay of two or more different contours) or contours that project airport capacity or “what if” runway configurations.

2.4 Validation of the Canadian Noise Metric

In 1996, Transport Canada commissioned the National Research Council to validate the Canadian NEF system. The following basic recommendations/conclusions were developed:

► Recommends additional surveys be done in Canada to validate the negative effects of aviation noise.

► Upgrade the NEF system software

► Consider adopting an A-weighted NEF Measures (to permit field measurements to correlated modeled information)

► NEFs should be supplemented with single event noise limits using the SEL metric to ensure the general noise environment, including particular worst case situations are considered.
Financial responsibility

In 1940 when the airport was constructed to support the war effort, its location was reasonably remote from Kingston resulting in little impact to the majority of the Kingston populace. Over time Kingston has allowed development to encompass all of the airport less the lake side and lemons point park.

With this growth Kingston must take due responsibility for its actions to allow growth around the airport and carefully review, consider and weigh the impact of airport growth with meaningful participation of the public thru consultations.

The result of these consultations for the expansion of the airport may have a number of different outcomes, for example,

1. After consultation with the city, the public agrees and approves of the expansion plans, the project moves forward.
2. After consultation, the city works with the public to modify its expansion plans to accommodate and minimize operational and financial impact to the public, the expansion project moves forward.
3. After consultation, the public and the city determine that the expansion plan is not in the best interest of the city and as a result the expansion project is terminated.

All of these options must be accepted by the city and the public in order for the consultation process to be meaningful. Currently this is not the case with the city of Kingston. It appears thru their actions that the city is moving forward with the project while ticking of the regulatory Transport Canada requirements without following the intent of the law. In other words, Kingston appears to be moving thru the consultation process so they can say that the consultations occurred regardless of their outcome. Airport management as well as the commissioner of transportation for the city have both said that the airport expansion will proceed regardless of the process.

This leave the public in a precarious position where they have no say on how their property values, quality of life, and how their tax dollars are going to be spent. We live in a democracy, currently the city is not demonstrating this Canadian value we hold to dear.

With the above in mind we would like the following to be on the table with the city for discussion as part of the consultation process. We do not consider a response by email or letter to a question to be meaningful and therefore the only option is to have face to face meetings with the expansion plan team(s) until all the reasonable inquiries have been address.

What is not acceptable is for the city to solely refer to previous studies, assessments, master plans and analysis as their response to inquiries made by the public. The aforementioned documents are to a great degree the source of confusion due to age, constantly changing requirements and lack of clear
information. The public must also be allowed to submit independent engineering studies to be considered by the expansion team and accept the conclusions. The transportation commissioner when presented with a peer review of the MMM EA stated that he believes his own report and will not consider the independent noise modeling study. This is unacceptable. This is not an example of good consultations.

In order to resolve the current situation we would like to see a more effective process for consultation without burdening the city, public or costs moving forward.

Below is a list of questions and concerns that need to be on the table for review and consultation. Clarification will result in a better understanding by the public to make a better decision to correctly make the right decision in the previously discussed 3 possible consultation outcomes. Accept, Modify or cancel the expansion project.

- In 2013 Collins Bay Marina (CBM) met with Mayor Gerretsen to discuss the NEF 30 contours that were over the marina as they were based in the 2007 Master Plan. 3 months later, it was observed in the definition document summary report 2013, that the noise contours for traffic in 2010 NEF 30 which extended well over the marina and onto the bay had been reduced to the point of all NEF contours not expending beyond the airport property. Why and how was this change made? It appears from our review that this was done by reducing air traffic to achieve the desired results. For example, jet traffic appears to have been reduced by 66.5% and Cessna traffic by 46.4%. all this while not including the 737-800 traffic.

Who decided that the City consultants should study 130 less movements on a peak planning day? Were the consultants told by City staff what to study?

- Do you disagree with Amec foster wheeler that fundamentally, the impression provided by the Kingston Airport Noise Exposure Forecast Report is that Inputs from previous studies have been modified based on emerging trends and information. This makes any Assessment potentially ambiguous where in fact a new and comprehensive forecast should be ideally be prepared if indeed deficiencies have been identified in the existing forecast. The forecast must also be generated to include, a worst possible case scenarios with the airport operating at maximum capacity.

- Why was the 2007 Master Plan was never updated to 2017 to reflect the current air traffic and economic conditions. Also as required by Transport Canada, an up to 20 year projection is required bringing it to 2037 which must include aircraft types and frequency that may materialize in the future. These NEP projections must be contained in the Master Plan.

- How is it possible to produce any NEP up to 20 yrs in the future with an outdated 2007 Master Plan
• Why were the 8 movements of the 737-800 jets removed from the current NEF, NEP contour calculations? The 737-800 jet were in the July 4th 2013 MMM noise modeling study. They were also in the Screen Level Environmental Assessment of March 2016. These jets were then removed in the MMM Noise Exposure Technical Report of June 2016. The 737-800 has now reappeared in the Dec 2016 PDD. If this is the target aircraft for the future, why is this not reflected in the noise modeling?

• With two park up bays, what is the max capacity of the airport? The max capacity must also consider the largest aircraft, (fully loaded and fueled) that the terminal can accommodate. This must then be reflected into the NEF and NEP contours.

• Is it true that turbo prop aircraft and jet aircraft facilitate the potential of the character of noise change? For example, propeller driven engines produced a significantly different sound profile from jet engines. One of the arguments for the expansion is as the fleet of current aircraft are retired they will likely be replaced with jets. How is this reflected in the NEP and contour calculations?

• In the 2007 Master Plan study by MMM Group, the NEF contours were calculated using the Canadian NefCalc software. This resulted in the 2010 NEF 30 contours extending over the Collins bay marina. After the 2013 meeting with the Mayor to discuss these contours, the contours were recalculated in the July 2013 PDD resulting in significantly reduce contours. To achieve this, 2 changes were made by reducing the flight volumes and using the American NEF software not approved by Transport Canada. If the master plan used the correct software why did you change software for the next study and use the wrong software and why were the flight volumes changed? The projection dates should have also been revised.

• Transport Canada freely provides NEF software to help airports and municipalities plan for land use around airports. As it is nearly impossible to calculate and average all the air traffic as single events, the data is averaged over a 24 hour period with different weightings depending on the time of day. This is extremely useful and applicable to airports that have significant volumes such as Toronto. When volumes fall below 100 movements for a single runway, the data becomes statically irrelevant. This is when single event noise levels must be considered resulting in a more relevant forecast. Why weren’t single events studied?

• In the James Bradley NEF Validation study, the single event limits in addition to the NEF limits should ensure that the general noise environment including particular worst case situations is acceptable and the effects on people are minimal. We request that these studies be completed.

• The James Bradley NEF Validation study states “medical effects, sleep interference, speech interference and annoyance all begin around NEF 25. The airport is surrounded by residential homes as well as boaters who spend their summers on board. The boaters are in a difficult predicament as the boats are not only located under the runway takeoff and landing paths but
are not designed to insulate against aircraft noise in and around airports. Has this been taken into account in the studies conducted by Kingston?

- The James Bradley NEF Validation study states that outdoor nighttime levels should not exceed 80Db to avoid sleep disturbance. Has this been factored in the studies completed by Kingston?
- The James Bradley NEF Validation study analysis of indoor speech interference suggests a limit of 90Db for the outdoor single event level. Has this been studied by Kingston?
- Amec FW studied single events, the 737-800 on departure would be 91 DB and 96DB on arrival, the C130 is 98.6 on dep. And 97.7 on arrival the CL601 is 94.1 db dep. And 88.2 on arrival how can you not consider this high noise levels negative effects for single events. The noise modeling study was provided to Kingston for review. Denis Leger stated that he believes his own consultants and the submitted data was refused. How is this refusal a form of good consultation and on what basis was the refusal made. As far as we know Mr. Leger is not the subject matter expert who can make a decision to accept or reject provided data. As a result, single event noise levels were not considered. Will Kingston consider Single Event Noise Levels?
- Prior to expansion, if in 2012 the PPD jet traffic was 0.9 movements, does 1.3 jet movements after the expansion, represents the worst case scenario in 20 yrs?
- Does 1.3 jet movements represent healthy growth?
- Will you commit to 1.3 jet movements as a traffic quota to 2037?
- In David Snow's affidavit he makes reference to flights to other destinations. In the Master plan these flights to other destinations equals 26 jet movements per day, not including business or charter jets. Why was this level of air traffic not included in the NEF NEP calculations?
- In the June 6th Noise Exposure Forecast, exhibit D, the displaced landing threshold only adds an increased altitude of 36 feet. This works for smaller aircraft that are currently flying in the airport but as the 737 series and other new jet traffic start using the airport it will likely result in the use the full runway length. Will the NEF calculations be redone to reflect this with the aircraft at max load and fuel using the full runway?
- Taking into account the runway safety runoff and the end of the new runway, what is the distance to the Collins bay marina?
- Who is receiving the airport expansion plans, Consultation Summary Report, etc. at Transport Canada? Their contact information is required for transparency.
- Will Kingston post all documentation sent to Transport Canada on the airport website including a list of all calls made and for what purpose?
• Why were: All departure movements based of ‘Stage Length 1’. This is the lightest aircraft noise profile available in both the INM and NEFCALC software and reflects low fuel levels and weights associated with Destination typically within 500nmi of the airport. For jet aircraft this assumption may be considered lenient. How does this represent worst case?

• In the latest memo to council city staff states they are putting up signs for consultation but that this will not impact the expansion start date. Does this represent meaningful consultation to you?

• The Definition Document Summary Report from July 2013, was the document in play when city council based it decision to approve the expansion project and budget. It has been shown that this document was based on the wrong software used to calculate the noise contours and well as discrepancies in the aircraft types and number of flights studied. It can be concluded that the city councillors did not have all the necessary information before them when they granted their approvals. Would the city be willing to put the expansion project to a new vote with all the latest information currently available?

• Were the city councillors properly informed prior to voting for the expansion project that the data available to them such as the 2007 master plan, technical report, etc were significantly out of date?

• In preparing the Noise Exposure Technical Report why wasn’t a complete new study undertaken instead of using 5 year old flight data and 10 year old projection dates?

• Was the Ministry of environment’s definition of a campsite or campground considered? It is defined in Part A of Reference 12 as “a portion of property used for Camping at which overnight accommodation is provided by, or on behalf of a public agency, or as Part of a commercial operation” and as a noise sensitive use [Ref 12, Part A, definition of “Point of Reception”] because of use for overnight accommodation (sleeping Transport Canada states no to below 30 for campgrounds down to 25 NEF and my business is already in the 25 to 30 NEF zone

• Was the fact that the residential dwelling of the Collins bay marina owner is on the property considered, as a noise sensitive receptor? The house was built about 45+ years ago and as such predates all of the development requirements near airports where developers add more insulation to homes to reduce internal noise levels. Developers were also required to notify home buyers of this requirement as well. What is the airports remediation plan for this home?

• Why would Greg Newman state The NEF contours have been verified by the City’s consulting engineers and Transport Canada? If, Transport Canada does not produce or verify NEFs.

• Was any consideration given to this statement by Transport Canada? From Transport Canada 4.6.1 New Aerodromes and Community Response to Noise
For the purposes of this section, "New Aerodrome" means any land designated by the Governor in Council as an "Airport Site" under the Aeronautics Act after January 1, 2001.

Where an aerodrome is already surrounded by residential or other noise sensitive land uses, the intent of land use planning guidelines is to prevent any increases in incompatible land use. As urbanization increases, any new aerodrome would, by necessity, be planned for and built in non-urban areas. Therefore, where a new aerodrome is planned on land designated as an airport site, an opportunity exists to establish appropriate land use planning guidelines that recognize the unique noise environment of a non-urban area and preserve the balance between the integrity of the future aerodrome and the quality of life of the community that it will serve.

If this was considered by Kingston, what was the outcome, mitigation plans, areas that could not be resolved, etc.? If this work has not taken place when will it be done?

Urban is defined as the space occupied by the city. Transport Canada preferred approach for airport development is outside of urban spaces. This make complete sense as it will disturb as few people as possible.

The Kingston airport was originally constructed in 1940 to support the war effort and was located outside the at the time urban space of Kingston. Since then Kingston has approved development to the point that the urban space has completely surrounded the airport. With that in mind Kingston bears the responsibility for making sure that the airport impact the urban spaces as little as possible. The old saying “you made your bed, now you have to lay in it” certainly applies. The days of airport expansion must be over due to the approval for growth granted by Kingston. Will Kingston stand up to their responsibility to limit or stop expansion of the airport based on the fact that the non-urban aspect of the airport is no longer there?

- Why does it state in your latest project definition document December 2016, airside structures and underground infrastructure shall be designed to withstand B737-800 loading when this aircraft was removed from the noise modeling study?
- There were 8 movements by the 737-800 in the Airport Infrastructure Expansion Project definition document summary July 2013. Also the same number of movements for the 737-800 in the Screening Level Environmental Assessment March 2016. The 737-800 reappear in the latest PDD Dec 2016 as a requirement for airside structures and underground infrastructures. Why was the 737-800 removed from the Noise Exposure Technical Report June 2016? Was this information made available to the city councillors when they voted for the project and budget?
Q1
Where is your principal residence? (City, Province and Country (if not in Canada))

Answered: 102  Skipped: 0

- Gatineau Quebec
  9/12/2017 10:28 PM

- Kingston, Ontario
  9/12/2017 9:57 AM

- Ottawa
  9/11/2017 5:31 PM

- Kingston ON
  9/11/2017 11:15 AM

- Hamilton, ON
  9/11/2017 8:01 AM
Q2

If Kingston is not your principal residence, approximately how much money do you spend in the Kingston economy during the boating season?

Answered: 75    Skipped: 27

- 5000$  
  9/12/2017 10:28 PM

- $5000  
  9/11/2017 5:31 PM

- 20,000  
  9/11/2017 11:15 AM

- 5000.00  
  9/11/2017 8:01 AM

- 5000  
  9/10/2017 10:35 PM

...
Q3
Do you live and sleep on your boat during the boating season while parked (docked) at the marina?

Answered: 101  Skipped: 1

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<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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<td>73.27%</td>
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<td>No</td>
<td>26.73%</td>
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<td>TOTAL</td>
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Q4
Do you use your boat as a summer home or weekend cottage during the boating season?

Answered: 100  Skipped: 2

**Answer Choices** | **Responses**
---|---
Yes | 76.00% | 76
No | 24.00% | 24
**Total** | | 100
Q5
If you answered yes to question 4, please check off one of the following:

Answered: 79  Skipped: 23

Weekends only
Weekends and during summer vacation
Our boat is our principal residence during the summer season

ANSWER CHOICES
Weekends only
Weekends and during summer vacation
Our boat is our principal residence during the summer season

RESPONSES
6.33% 5
64.56% 51
29.31% 23
TOTAL 79
Q6
Does the existing air traffic over the marina have a negative experience on your marina experience?

Answered: 99  Skipped: 3

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>76.77%</td>
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<tr>
<td>No</td>
<td>23.23%</td>
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<tr>
<td><strong>TOTAL</strong></td>
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Comments (81)
Q7
Are you concerned about the impact that the airport's planned runway extension towards the marina will have on your overall experience while at the marina?

Answered: 98  Skipped: 4

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<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
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<tbody>
<tr>
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<td>89.80%</td>
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<td>No</td>
<td>10.20%</td>
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<td>TOTAL</td>
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Q8
Are you concerned about increased jet aircraft traffic over the marina?

Answered: 101   Skipped: 1

Yes
No

RESPONSES

ANSWER CHOICES
Yes 88.12% 89
No 11.88% 12
TOTAL 101

Comments (87)
Do you believe that marinas such as Collins Bay deserve the same protection against aircraft noise as campgrounds as stated in the Ministry of the Environment environmental noise guidelines (NPC-300 Stationary and Transportation Services)?

Answered: 100  Skipped: 2

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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<tr>
<td>Yes</td>
<td>98.00%</td>
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<tr>
<td>No</td>
<td>2.00%</td>
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