

Residential Development in Proximity to Airports

Polo Park Site Area Amendment - Supplemental Report

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R+W

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1.0 Introduction

The objective of this report is to provide regulatory and policy evidence to inform decision-making concerning the proposed amendment to the *Airport Vicinity Protection Plan* (AVPA NO. 6378/94) – Area 1 to AVPA – Area 2 and associated PDO (DAZ 210/2019; SPA 1/2019).

It also serves as an introductory precursor to the submitted ARUP Canada Polo Park Airport Vicinity Protection Area Study Review of Airport Noise Contours and Pico Architecture Acoustic Review Report. As per Transport Canada guidelines, the following studies should be provided to inform local decision-making authorities on development as per *Land Use In The Vicinity of Aerodromes*:

1. appropriate acoustic insulation features have been considered in the building; and
2. a noise impact assessment study has been completed and shows that this construction or development is compatible with aircraft noise.

Both Arup Canada and Pico Architecture are professional services firms accredited to provide engineering and architecture assessment. This report utilizes their findings along with stand-alone supplementary research and analysis.

The proposed amendment would allow the planning process to proceed, while remaining in conformance to the AVPA, to ensure the proper mitigation measures are taken.

The amendment proponent, Cadillac Fairview, considers the Polo Park site as an optimal location for new mixed-use, multi-family residential development to accommodate Winnipeg's growing population. This site is uniquely positioned to be a champion of *OurWinnipeg*'s 'Live Work Play' philosophy because of it's location, structure, serviceability and current vacant land.



Map of Polo Park Site

This report considers the following factors:

- The AVPA Secondary Plan and designated noise contours. It is important to note that the AVPA is currently the most restrictive in Canada as it relates to residential development in proximity to an airport.
- The concerns raised by the WAA related to WAA 24-Hour Status and future proposed runway to amendment.
- Impacts to sustainable urban development in the St. James community in the short, mid, and long term, including developer-led improvements to existing infrastructure.
- Current process (amendment) versus future development process, including master planning, subdivision, and rezoning.

The report concludes that, while concerns about proximity to the Winnipeg James Armstrong Richardson International Airport (YWG) have been expressed by the WAA, there is substantial evidence showing no reasonable basis to support a rationale that this potential development would adversely impact the 24-hour status of YWG or future WAA related plans.

Informing this conclusion are key factors including:

- Age of the AVPA and designated contours.
- 93% of the site is consistent with Transport Canada guidelines using the 1995 NEF contours while 100% of the site is consistent using the 2000 NEF contours
- Willingness of proponent to apply all necessary mitigation measures as set out in the Transport Canada guidelines.
- Related impacts to 'freezing' west Winnipeg from future multi-family residential development in the St. James area. This consideration is especially significant considering that new multi-family rental residential development in the Polo Park area promotes urban sustainability (compact form using existing infrastructure), access to transit, aligns with the *OurWinnipeg* Development Plan, addresses a need for housing other than single-family, enables developer-led existing infrastructure renewal and grows the municipal tax base.

2.0 Background

The following section explores the various stakeholders and authorities who have a vested interest in the proposed amendment to the City of Winnipeg's AVPA.

2.1 Cadillac Fairview

Cadillac Fairview is one of the largest owners, operators and developers of best-in-class office, retail and mixed-use properties in North America. CF has owned and operated the Polo Park Shopping Centre (now titled CF Polo Park) since it's construction in 1959, making it the oldest shopping centre in their portfolio.

Cadillac Fairview recognizes that it is time to rethink the traditional suburban malls within their portfolio. Winnipeg is one of many cities currently being considered by Cadillac Fairview as part of a capital program to 'rethink the mall'. Building off of a modern village model of 'live, work, and play', many major urban centres are embracing the opportunity to create vibrant, dense, mixed-use hubs that are serviced by transit and active transportation, in addition to cars.

Informing this evolution are structural and permanent changes to the retail/commercial landscape that are taking place in major urban centres throughout Canada, which include:

- Demand for apartment living that is located at a walkable distance to retail/commercial amenities and local jobs.
- Experiential retail/commercial that goes beyond the traditional mall. Cadillac Fairview recognizes that structural and permanent changes to the retail landscape, largely due to on-line shopping, must be acknowledged. This means creating a different format through a balance of mixed uses and a more 'experiential' approach (i.e. strong urban design, focus on creating an urban village feel).
- Sustainability. Cadillac Fairview envisions opportunities to create compact spaces where people can live, work, learn and play without taking their cars.

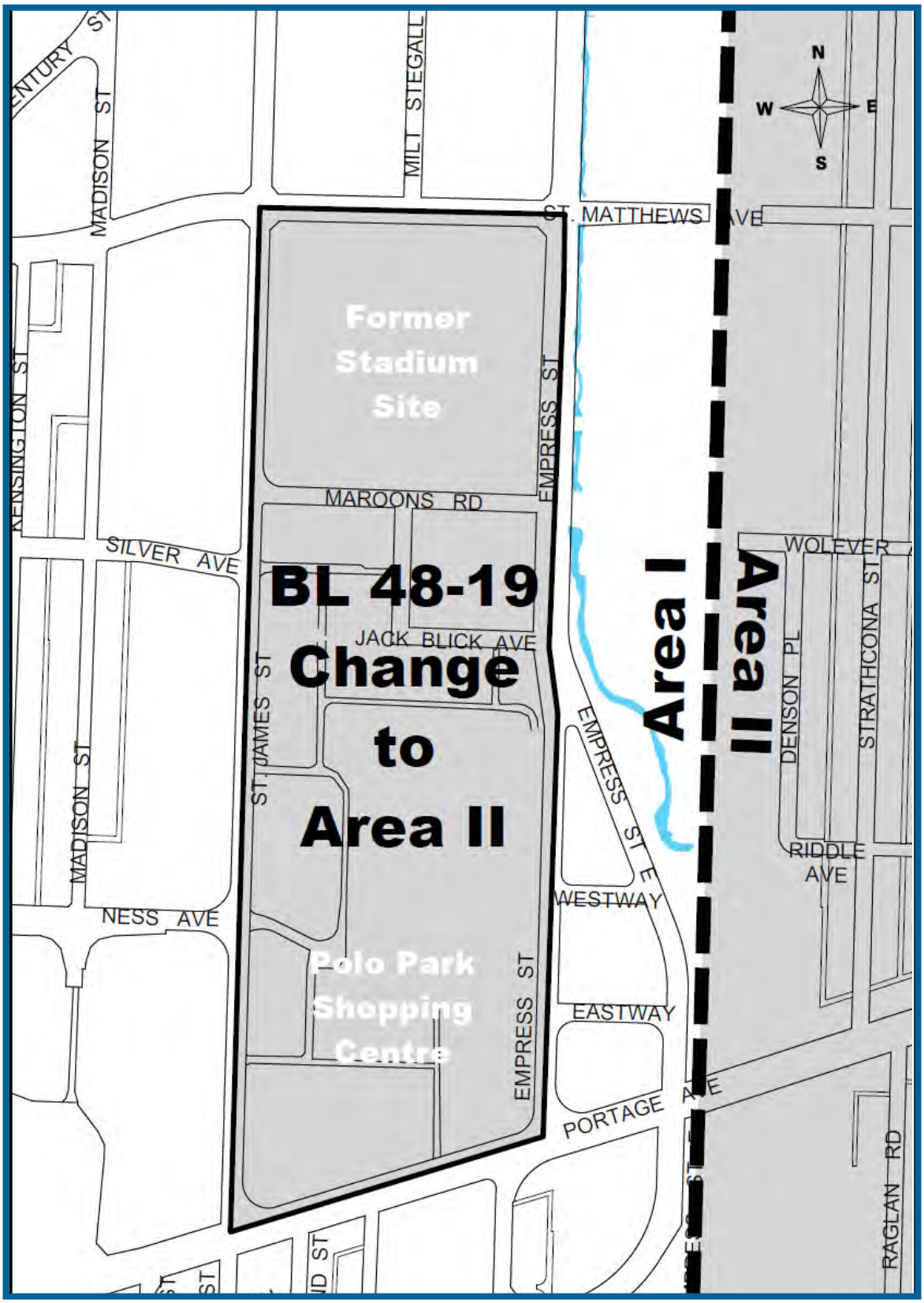
One particular project that illustrates regional scale mixed-use development within proximity to an airport, similar to the proposed Polo Park development, is the planned Richmond Centre Redevelopment in Richmond, British Columbia. For context, this redevelopment will feature 12 towers built over two phases. This includes 370,000 square feet of new retail, 1,900 residential units, 3,100 new parking stalls, and a central plaza that connects parking, shopping, and residential uses, all at a distance of 1.5 km from the Vancouver International Airport. This development is denser than what is proposed for Polo Park but provides a comparable vision for consideration that is similar in concept. See Appendix B for renderings.

2.1.1 Polo Park

Polo Park, as it is colloquially referred to, is the area of Winnipeg bounded by Empress Street on the east, Assiniboine River to the south, Kenaston Boulevard to the west, and Saskatchewan Avenue to the north.

CF Polo Park, located at 1485 Portage Avenue between St. James Street and Empress Street, is the largest mall in Winnipeg and the 12th largest in Canada. It is one of the first enclosed shopping malls in Canada and contains approximately 1.2 million square feet of commercial space. It includes Scotiabank Theater [formerly called SilverCity Polo Park] as well as the former Target Store located on the south-east corner of St. James Street and St. Matthews Avenue, partially on the lands formerly home to the Winnipeg Football Stadium. The lands at 600 Empress are associated with the former Winnipeg Arena.

The development of the Polo Park holdings is a concern to all ratepayers in the Province, since increased property values at the former stadium site are directly linked to the payment of capital for the Investors Field Stadium at the University of Manitoba.

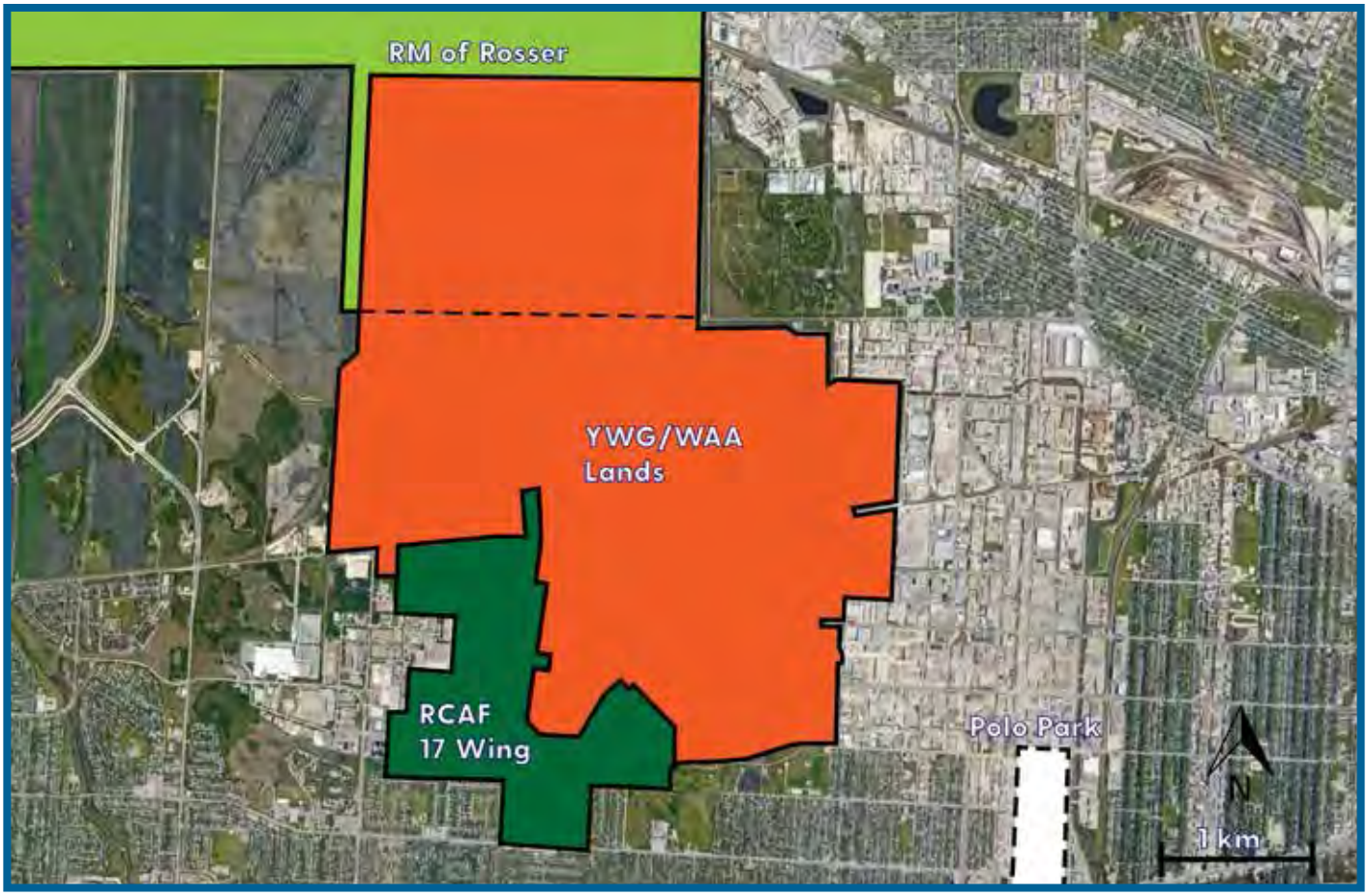


Proposed Amendment Area

2.2 Winnipeg Airport Authority

Winnipeg Airport Authority Inc. is a community-based, non-share capital corporation that operates, manages, maintains and invests in YWG. In 1994, the Federal Government redefined its role with respect to airport operations and management through the National Airports Policy (NAP). Control of the airport was transferred from the federal government to WAA on January 1, 1997 under the terms of a 60-year lease. YWG is Canada's number one airport for scheduled freighter flights with 24-hour all-weather reliable operations. It is the 7th busiest airport in Canada by passenger volume and aircraft movement, and has observed steady increases in annual passengers.

WAA identifies the AVPA as their primary noise mitigation measures (see section 2.4.2). While the WAA participated in the drafting of the AVPA, it is not the approving authority for land use changes outside of its formal boundaries. The City of Winnipeg and Province of Manitoba are the approving authorities. Their authority is described in this report.



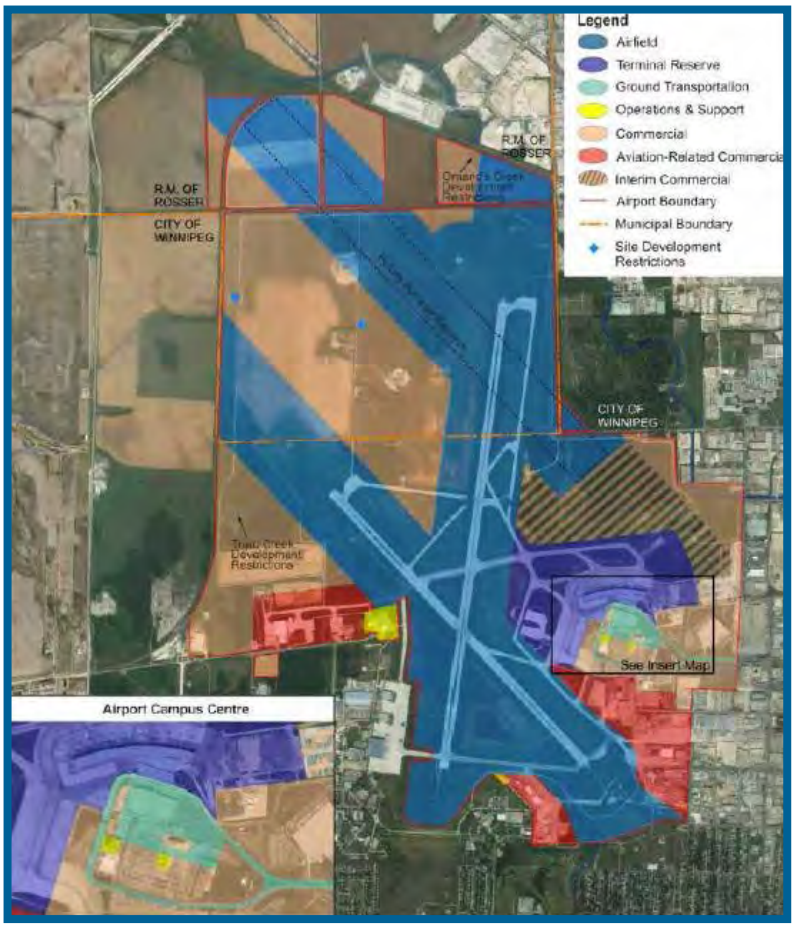
YWG/WAA and Adjacent Lands

2.2.1 New Runway

According to the submitted ARUP Canada report, *Polo Park Airport Vicinity Protection Area Study Review of Airport Noise Contours*, the approved *Winnipeg Richardson International Airport Master Plan 2033* notes that a third runway will not be required within the 20-year planning period despite anticipated passenger growth.

There has been no detailed analysis conducted on the thresholds that would be required for the construction of a third runway and no detailed planning has been done in anticipation of a third runway. However, the Master Plan's land use plan recommends reserving a portion of the airfield for future runway. Of note, the runway reserve is recommended to the far north of the existing airfield and would require a portion of land in the Rural Municipality of Rosser.

The only runway-related change recommended in the Master Plan is for a parallel taxiway expansion to the existing Runway 13 for improved capacity, which should be examined once there are 190 000 annual aircraft movements. This number of aircraft movements is not anticipated until beyond the 2033 planning horizon (167 500 aircraft movements are forecast be 2033).



Winnipeg Richardson International Airport Master Plan 2033 Land Use Map

2.2.2 Noise Contours

The submitted ARUP Canada report, *Polo Park Airport Vicinity Protection Area Study Review of Airport Noise Contours*, identifies that most cities use current noise contours when creating policy or regulation regarding multi-family residential development in proximity to their airport.

According to Transport Canada, noise contours are to be updated regularly. They identify every ten (10) years as an appropriate timeframe. According to ARUP, in a recent benchmarking study, 48 United States and 6 Canadian airports responded to a survey which included queries on the frequency they update their noise exposure maps. 55% of the respondents update their noise contour maps with a frequency of five years or less. Within that group, 17% update them annually or quarterly.

In the United Kingdom, all airports are required to update their noise contour studies every five years under the Environmental Noise Directive. Select airports are required to update them annually.

The Winnipeg Airports Authority noise contours have not been updated since 2000, well outside the maximum 10-year period defined by Transport Canada.

2.3 Transport Canada

Transport Canada provides regulatory guidance on how non-airport lands should be developed, as expressed in its *Land Use in the Vicinity of Aerodromes* (TP 1247E, Ninth Edition) manual.

The ARUP report explores in detail the current Transport Canada manual. Section 4 of the manual focuses on aircraft noise: its measurement, the NEF system, the production of noise exposure contours, and community responses to noise. Based on case histories of noise complaints, a relationship has been established between the NEF contour levels, community response, and land use recommendations.

The Transport Canada guidelines note that the location of the contour lines between noise zones cannot be fixed exactly. It will therefore be necessary for the responsible public authority to make an appropriate interpretation of what regulations are to apply at a specific location.

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

No: indicates that new construction or development of this nature should not be undertaken.

This note applies to NEF 30 to 35 only. New residential construction or development should not be undertaken. If the responsible authority chooses to proceed contrary to Transport Canada's recommendation, residential construction or development between NEF 30 and 35 should not be permitted to proceed until the responsible authority is satisfied that:

(1) appropriate acoustic insulation features have been considered in the building and

(2) a noise impact assessment study has been completed and shows that this construction or development is not incompatible with aircraft noise.

Notwithstanding point 2, the developer should still be required to inform all prospective tenants or purchasers of residential units that speech interference and annoyance caused by aircraft noise are, on average, established and growing at NEF 30 and are very significant by NEF 35.

A: this particular land use may be acceptable in accordance with the appropriate note and subject to the limitations indicated therein.

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.

Land Use Table - Aircraft Noise considerations Only (for Residential Uses)
Source: ARUP Canada Report

2.4 City of Winnipeg

The City of Winnipeg is the 'first line' authority on development approvals in the AVPA. They are authorized through *The City of Winnipeg Charter Act*. An appeal can be made to the Province of Manitoba, through their quasi-judicial tribunal, The Municipal Board, but is limited in terms of who can appeal a matter.

2.4.1 The City of Winnipeg Charter

The Province of Manitoba legislates the airport vicinity protection area and how development within this area will be handled, including setting out a mechanism for appeal.

Section 269(1) of *The City of Winnipeg Charter Act*, the City's enabling legislation as enacted by the Government of Manitoba, requires that regulations be made to protect the airport vicinity:

The Lieutenant Governor in Council may make regulations:

(a) requiring the establishment by council in *Plan Winnipeg* of an area of the city adjacent to Winnipeg International Airport as an airport vicinity protection area;

(b) establishing policies for use of real property, and for development, in the airport vicinity protection area to ensure that the use of real property and development in the area are compatible with the operation of Winnipeg International Airport, and requiring any *Plan Winnipeg* by-law to be consistent with those policies

(c) requiring a zoning by-law to be passed by council to control or prohibit any use of real property or development in the airport vicinity protection area, or in a part of it, to ensure that the use of real property and development are compatible with the policies established under clause (b).

The Charter also sets out provisions for limited appeal to The Municipal Board including:

<u>Referral to Municipal Board</u>

Where:

(a) a proposed secondary plan by-law deals with the airport vicinity protection area; and

(b) a municipality, or the board of a planning district established under *The Planning Act*, that is adjacent to the area, or the Government of Canada or the Government of Manitoba objects to the proposed by-law by filing a notice of objection with the city clerk before the day of the meeting at which council is to consider the report of a committee of council or planning commission respecting the proposed by-law;

the city must, before council gives second reading to the proposed by-law, refer the proposed by-law to The Municipal Board.

<u>Hearing by Municipal Board</u>

Where a proposed secondary plan by-law is referred under subsection (1) to The Municipal Board, the board must:

(a) give notice of a hearing respecting the proposed by-law in accordance with clause 230(1)(a) (hearing by Municipal Board) which applies with necessary changes;

(b) conduct a hearing respecting the proposed by-law; and

(c) submit a report, with recommendations, to council in respect of the proposed by-law.

2.4.2 The Airport Vicinity Protection Area Secondary Plan No. 6378/94 and PDO

To meet the Charter requirement, on 25 May 1994, the City adopted the *Winnipeg Airport Vicinity Development Plan No. 6378/94* to protect the 24-hour air operations of YWG. The *Winnipeg Airport Vicinity Development Plan* was renamed to the *Airport Vicinity Protection Area Secondary Plan By-law* (henceforth referred to as the AVPA) in December 2002. In recognition of the economic benefits generated from a 24-hour airport operation, the City of Winnipeg established the AVPA - PDO 1 under Schedule D of the *City of Winnipeg Zoning By-law 200/2006*.

The AVPA defines land uses and development restrictions in areas surrounding the airport and along designated flight paths in an effort to reduce residential exposure to aircraft noise:

<u>All Areas Within Overlay District</u>

(4) Within the AVP Area all new single-family and multiple-family dwellings including replacement and infill dwellings must comply with the construction standards set out in the *Airport Vicinity Acoustic Insulation By-law*.

<u>Area I</u>

Contains parcels of land that would be generally exposed to 30+ NEF but some 25+ NEF. No new residential development shall be permitted (subject to statutory non-conforming rights and any related variance); but, existing dwellings may be replaced if destroyed or demolished.

<u>Area I of Overlay District</u>

(1) Within that part of the AVP Area overlay district shown as Area I on the Map:

(a) no new residential development is permitted (subject to statutory non- conforming rights and any Variance Order related thereto) except replacement of existing dwellings, if destroyed or demolished, with new dwellings which in the case of multiple-family dwellings must not exceed the original number of dwelling units; and

(b) minor residential infilling may be approved as a conditional use under The City of Winnipeg Charter in areas of established residential development.

*(*AVPA No. 6378/94, *p. 35)*

<u>Area II</u>

Contains parcels of land that would be generally exposed to <30 NEF. New single family dwellings may be approved and new multiple residential dwellings may be approved up to 85 units per hectare (35 units per acre) and approved above that density by conditional use approval.

For residential dwellings constructed in Area II, the City has established acoustic performance guidelines for sound insulation within sleeping areas. Though these are intended for Area II constructions (NEF less than 25), the guidelines provide parameters for sleeping areas within higher NEF contour locations.

<u>Area II of Overlay District</u>

(2) Within that part of the AVP Area overlay district shown as Area II on the Map, new single-family dwellings are permitted subject to all required amendments of or approvals under applicable land use controls.

<u>Area II of Overlay District Not Fronting on Portage Avenue</u>

(3) Within lots that are in that part of the AVP Area shown as Area II on the Map but are not fronting on Portage Avenue, and subject to all required amendments of or approvals under applicable land use controls:

(a) *existing multiple-family dwellings may, if destroyed or demolished, be replaced with multiple-family dwellings but not exceeding the original number of dwelling units; and*

(b) *new multiple-family dwellings may be constructed not exceeding a density of 85 units per hectare (35 units per acre) inclusive of any dwelling units referred to in clause 3(a) above of that portion of lots falling within Area II, excluding any part of that area designated Floodway, and new multiple-family dwellings in excess of that density may be approved as conditional uses under The City of Winnipeg Charter.*

(AVPA No. 6378/94, p. 35)

The AVPA also states that its boundaries will be reviewed and revised as necessary to reflect changes to the NEF contours. However, it appears that the AVPA boundaries have not been substantially revised since 1994 despite revisions to the *Airport Master Plan* and other City planning initiatives. AVPA revisions have been limited to sporadic adjustments as a result of development approvals within the area(s).

It is important to note that the AVPA does not conform to the existing Transport Canada guidelines and if it did, the Polo Park site would qualify for multi-family residential development, upon certain measures being implemented by the developer.

The Transport Canada guidelines were established in 1989, while the AVPA was enacted in 1994. Whereas the Transport Canada guidelines were in place when the AVPA was drafted, the regulatory language in the Transport Canada guidelines does not match reference to the same guideline in the AVPA.

Omitted from the AVPA are the critical qualifying notes that accompany the Community Response Prediction to Noise Exposure Forecast (NEF Level) and would presumably be part of the Transport Canada expectation that the regulation in the form of the complete guidelines is used to guide local authority decision-making.

If it was included in its entirety, new residential development in NEF areas <35 would be suitable provided that mitigating measures could be employed by the developer.

Community Response Prediction to Noise Exposure Forecast (NEF Levels)

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 my occur. Noise may interfere occasionally with certain activities of the resident.

* These community response predictions are generalizations based upon experience resulting from various noise exposure units used by other countries. For specific locations, the response may vary somewhat in accordance with existing ambient or background noise levels and prevailing social, economic and political conditions.

Source: Transport Canada Aviation Group, June 1989.

Community Response Prediction to NEF Levels
Source: AVPA NO. 6378/94, p. 8

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

NO	Indicates that new construction or development of this nature should not be undertaken.
NO	Indicates that new construction or development of this nature should not be undertaken. See Explanatory Note B.
A	This particular land use may be acceptable in accordance with the appropriate note and subject to the limitations indicated therein.
YES	The indicated land use is not considered to be adversely affected by aircraft noise and no special noise insulation should be required for new construction or development of this nature.

Land Use Tables - Aircraft Noise Considerations Only
Source: Land Use in the Vicinity of Aerodromes (TP 1247E, Ninth Edition)

Note B states:

This note applies to NEF 30 to 35 only. New residential construction or development should not be undertaken. If the responsible authority chooses to proceed contrary to Transport Canada's recommendation, residential construction or development between NEF 30 and 35 should not be permitted to proceed until the responsible authority is satisfied that:

(1) appropriate acoustic insulation features have been considered in the building and

(2) a noise impact assessment study has been completed and shows that this construction or development is compatible with aircraft noise.

Notwithstanding point 2, the developer should still be required to inform all prospective tenants or purchasers of residential units that speech interference and annoyance caused by aircraft noise are, on average, established and growing at NEF 30 and are very significant by NEF 35.

2.4.3 OurWinnipeg and OurWinnipeg – Complete Communities

In Winnipeg's *Complete Communities Direction Strategy*, adopted as the City's land use and development guide for the *OurWinnipeg Development Plan By-law* that took effect in August 2011, Polo Park was designated as a Regional Mixed-Use Centre. These Centres are identified as the most desired area for intensive mixed use development since the existing land uses are able to accommodate a higher density population.

OurWinnipeg recognizes the importance of focusing a significant share of growth to these Centres (see section 3.5 for further detail). Furthermore, the site is adjacent to Portage Avenue, which is a major arterial route, a Regional Mixed-Use Corridor with a high volume of public transit services, and a proposed future rapid transit corridor.

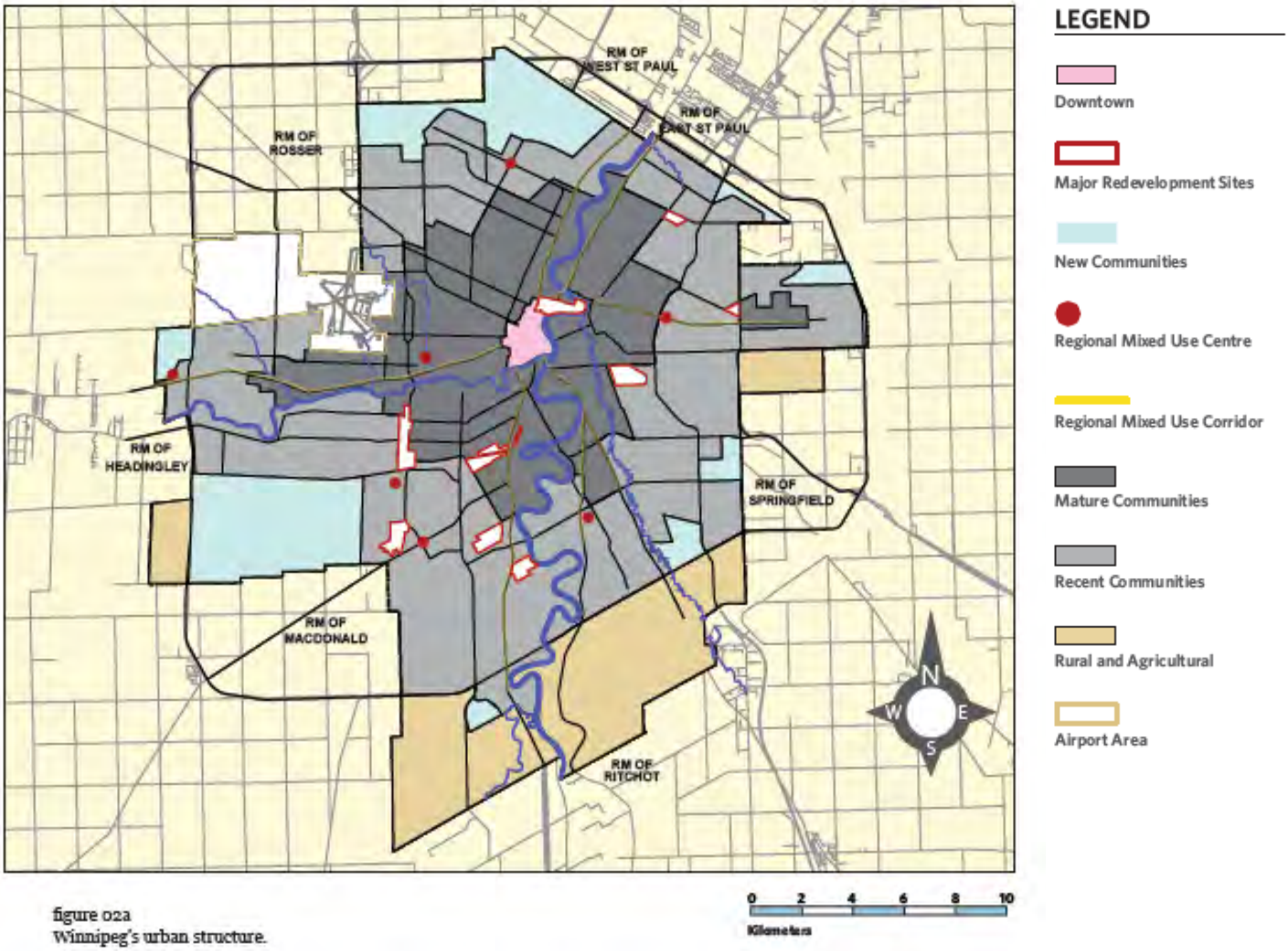


figure 02a
Winnipeg's urban structure.

Winnipeg Urban Structure Map
Source: Complete Communities Direction Strategy

3.0 Current Status

3.1 The City of Winnipeg - Planning Process

Currently, the Polo Park site is entirely within the AVPA's Area 1 designation, which prohibits any new residential development. Amending the site to Area 2 would allow for a future land use approval process.

If the amendment is approved, the proponents will be in a position to work with the City of Winnipeg through a collaborative and consultative planning process to determine appropriate zoning, site planning and any associated subdivision. The post-amendment planning exercise will determine exact development thresholds including residential densities, location of residential uses and their configuration. It is also through a future planning process that servicing and transportation requirements are considered including any required improvements. The proposed amendment does not approve any future residential development.

The City of Winnipeg, through their authority of land use, will be the steward of determining an appropriate level of residential/mixed-use development if the proposed amendment is approved and property owners seek to develop residential/mixed-use. The amendment does not enable or prescribe or bound the City of Winnipeg into approving any density or residential unit counts.

In addition to changing land use through a post-amendment process, the proponents will likely be required to execute a Development Agreement with the City of Winnipeg to address issues such as developer-led infrastructure.

3.2 The City of Winnipeg - Development Approval Process

The City of Winnipeg approval process involves the following steps:



The Winnipeg Airport Authority does not have veto powers related to consideration of residential construction or development in areas identified in the AVPA. It has been determined that the City of Winnipeg Administration has advised in writing and verbally to several development proponents that in order to proceed with an application, WAA must be supportive. This is not the case. The City of Winnipeg is the only authority and must follow the process set out in *The City of Winnipeg Charter* and the *Development Procedures By-law 160/2011*.

The City of Winnipeg is also the only authority that can approve development on-site, including controlling the number of units and height of all residential development.

3.3 Annual Noise Complaints

From 2004 to 2014, WAA received an average of 181 complaints per year equating to an average of 1.4 complaints per 1,000 aircraft movements. This number is significantly lower than other North American Airports, such as Toronto (252.2), Calgary (29.8), and Vancouver (2.7) in 2018. There are no available reports for complaints since 2014, but there is clear indication that the amount of complaints are decreasing over time. Additionally, according to WAA, the complaints are not representative of the number of individuals reporting. Rather, a small number of people are actually responsible for the complaints.

A recent report conducted by NAV Canada concluded that YWG noise complaints were not a major issue for residents living within the contour areas. The NAV Canada *Airspace Change Community Engagement Report* (August 2017) observed noise impacts related to YWG operations as a result of aircraft rerouting.

The NAV Canada report states: The "Richardson International Airport confirmed that there have been no complaints specifically associated with the implementation of RNP AR procedures. NAV CANADA did not receive any complaints or inquiries subsequent to implementation from either residents or public officials."

3.4 Other Cities Comparison

The City of Winnipeg benefits from the experiences of other cities. This report (Appendix A) provides examples from other cities, using the findings from the Pico Report and ARUP report. The examples illustrate how other cities have faced similar challenges and how they accommodated development in proximity to their airports.

3.5 Current City of Winnipeg Growth Factors

The City of Winnipeg AVPA does not: account for resumed City of Winnipeg population growth; anticipate the refocusing of the housing market from a single-family market to a multi-family market; or that the growing preference of residents is to live close to amenities, like Polo Park and transit.

From 2015 to 2040, the City of Winnipeg is expected to experience a growth of 204,200 new residents. This averages to approximately 8,200 residents annually. During this time, multi-family development will become the primary form of development in the City of Winnipeg. Currently, multi-family development forms over half of all new housing starts in the City. From 2010 to 2018, average total housing starts were 4,339 units per annum. Of these starts, 2,361 units (or 54%) were now multi-family, compared to single-family.

Decade over decade, one can see a shift in the split between single-family and multi-family starts, with multi-family starts increasing as a percentage of the total. Multi-family starts in the 1990s averaged 23% of total housing starts. In the 2000s, this increased to an average of 30% and from 2010 to 2018 multi-family starts have increased to an average percentage of 54% of total starts, surpassing single-family starts. Notably, the percentage of multi-family starts only seems to be increasing as multi-family starts in 2017 and 2018 were now 60% and 65% of total housing starts, respectively.

In 2012, multi-family starts, although increasing over previous years, were still below those of single-family starts at 48% of total starts. By 2013, multi-family housing begins to surpass single family starts, representing 53% of total housing starts. Multi-family starts as a percentage of total starts have not fallen below this level during the period of 2013 to 2018. As noted above, by 2018, multi-family starts increased to 65% of total housing starts.

Restrictions set out in the AVPA - PDO severely limit population growth in west Winnipeg (St. James). The outcome of sustained 'no growth' in the St. James area has already resulted in an inability to accommodate new housing in the area for residents who do not want – or cannot afford – a single-family home. The existing housing stock in and around the Polo Park area is aging and there is little opportunity for mobility to apartments, like other areas in the City.

3.6 Impacts on the City of Winnipeg

3.6.1 Impacts to Tax Base

Losing major infill development opportunities will have an adverse effect on the city's future tax base. Currently, the described Polo Park holdings generate $17 million per annum in property taxes.

3.5.2. Impacts to Infrastructure

According to the City of Winnipeg, denser infill development is going to become the City's primary tool for capturing population growth. Responsible and well-planned infill development is less burdensome on existing infrastructure and it is more environmentally-friendly due to the lower overall carbon footprint of residents in multi-family dwellings. It also relieves the City of Winnipeg from investment in new infrastructure required to service expansion of the City's footprint into the suburbs or Capital Region.

4.0 Concluding Analysis

The proposed amendment poses little risk to all stakeholders including the WAA and the City of Winnipeg. The following factors must be considered:

4.1 Age of the AVPA (25 years) and designated contours

The AVPA and its designated contours are 25 years old. In this time, it has not been materially or substantively updated to reflect the changing city. This is a highly unusual circumstance with most plans and associated information being updated within a reasonable timeframe (i.e. 5-10 years).

It does not account for City of Winnipeg resumed growth. In 1994, the City of Winnipeg grew by 600 people. Today, the average annual growth rate of the City of Winnipeg is between 12,000 to 15,000 persons per annum.

Year	City of Winnipeg Population	Population Change
2018	753,700	+12,000
2017	741,700	+15,600
2016	726,100	-
2002	640,700	+3,500
2001	637,200	-

Estimated Population Total
Source: City of Winnipeg

City of Winnipeg housing patterns have also changed since the adoption of the AVPA with more than half of all new housing being multi-family. The City of Winnipeg expects this trend to be the norm moving forward and through their development plan, *OurWinnipeg*, encourages infill, redevelopment and compact form using existing infrastructure.

Year	Single-Family	Semi-Detached	Row-houses	Apart-ment	Total
2018	35%	4%	10%	51%	5384
2017	40%	7%	11%	41%	5621
2016	46%	5%	9%	40%	4054
2002	84%	1%	0%	14%	1821
2001	84%	2%	3%	11%	1473

Construction of Dwelling Units, City of Winnipeg
Source: Canadian Housing Observer

Accommodating infrastructure has fundamentally changed in 25 years with strong governmental preference to containment and improvements of existing infrastructure. There is focused priority on the efficiency of existing systems, including utilities, water, wastewater, land drainage and transportation. The AVPA does not account for this reality and that new growth, under this constraint, is desirable to be accommodated, as much as possible, within the existing built environment.

The AVPA does not account for important sustainability measures such as GHG emission reduction expectations. Currently, the largest contributor to GHG emissions in urban areas is the predominate use of personal automobiles. For this key reason, compact, mixed-use development along transit corridors and active transportation systems (cycling and walking) become critical.

4.2 Transport Canada guidelines permit residential development in 93% of the amendment area with mitigating measures

The proponent has committed, in writing and to all consulted stakeholders and the City of Winnipeg, to adopt mitigating measures as described in the Transport Canada guidelines.

Both the ARUP report and Pico Architecture report provide evidence of the commitment of the proponent to meeting expectations regarding mitigating measures. Appropriate acoustic insulation features will be used in the building and a noise impact assessment study has been completed, showing that this construction or development is compatible with aircraft noise.

The proponent will be developing rental housing, not condominiums. Future tenants will be advised at the time of executing their tenancy agreement that they are within the AVPA boundaries, and will be advised of possible impacts.

As stated in the Transport Canada guidelines:

"The developer should still be required to inform all prospective tenants or purchasers of residential units that speech interference and annoyance caused by aircraft noise are, on average, established and growing at NEF 30 and are very significant by NEF 35."

4.3 Related impacts to 'freezing' west Winnipeg from future multi-family residential development in the St James area are substantial and cannot be overlooked

Without allowing new multi-family housing in west Winnipeg, the ability of the City of Winnipeg to accommodate growth is severely jeopardized and the associated impacts are very serious.

According to the City of Winnipeg's development plan, *OurWinnipeg*, in order to accommodate growth and change, the City must build up areas within its existing built environment. Without doing so, growth will be decanted to 'greenfield or exurban development' only (or expansion of suburban development or development outside of the City).

While other areas of the City will have a more balanced approach to growth, including building up areas suitable for denser mixed-use development, west Winnipeg will continue to not realize similar new investment. Over time, the area will experience what is called 'disinvestment' or a decline in the 'value' of the area because of lack of new investment and housing. Existing housing stock in such environment becomes more 'depressed' with little opportunity for transitioning as people hang onto their existing homes. Increasing population will become more and more difficult as preferred housing stock, being multi-family, is not available in the area.

An important corollary impact associated with lack of new investment to accommodate growth is the obvious impact on municipal revenue. Allowing multi-family within communities exponentially increases the amount of municipal revenue related with it. For example, an apartment building generates substantially more municipal revenue than a single-family home.

As decisions related to improving existing infrastructure become more difficult to make, it is conceivable that areas that are generating efficient municipal revenue or are willing to support new investment will be subsidizing areas where renewal of infrastructure is necessary but the tax base does not support it.

Appendix A: Airport Noise Comparison Report

BASE STATISTICS

ANNUAL TOTAL PASSENGERS

AIRPORT	2018	2017
Vancouver / Richmond (YVR)	26,015,573	24,328,872
Calgary (YYC)	17,343,402	16,275,862
Toronto (YYZ)	49,507,418	47,130,358
Chicago (ORD)	83,245,472	79,828,183
Denver (DEN)	64,494,613	61,379,396
Portland (PDX)	19,882,788	19,080,494
Winnipeg (YWG)	4,484,343	4,305,744

ANNUAL TOTAL CARGO (metric tonnes)

AIRPORT	2018	2017
Vancouver / Richmond (YVR)	321,318	281,001
Calgary (YYC)	86,204	86,288
Toronto (YYZ)	481,155	444,548
Chicago (ORD)	1,807,091	1,721,807
Denver (DEN)	278,272	265,240
Portland (PDX)	247,385	236,822
Winnipeg (YWG)	57,827	61,543

Note: Canadian Airport Cargo data from Statistics Canada

ANNUAL TOTAL AIRCRAFT MOVEMENTS

AIRPORT	2018	2017
Vancouver / Richmond (YVR)	338,073	330,839
Calgary (YYC)	235,166	223,706
Toronto (YYZ)	474,289	465,555
Chicago (ORD)	903,747	867,049
Denver (DEN)	595,190	574,966
Portland (PDX)	233,993	228,949
Winnipeg (YWG)	113 226	97,422

Note: Data on all charts from Airports Council International Report

NOISE COMPLAINT STATISTICS

ANNUAL NOISE COMPLAINTS (# OF COMPLAINTS/# OF INDIVIDUALS)

AIRPORT	2018	2017
Vancouver / Richmond (YVR)	920 (250)	1,293 (253)
Calgary (YYC)	7,006 (341)	5,736 (407)
Toronto (YYZ)	119,613 (1,471)	168,676 (2,399)
Chicago (ORD)	648,672 (avg. 13,287 individuals/mo)*	5,522,271 (avg. 135,819 individuals/mo)*
Denver (DEN)	N/A (54)	N/A (71)
Portland (PDX)	1,975 (283)	2,047 (411)
Winnipeg	N/A	N/A

* Chicago numbers for 2017 inaccurate due to internet complaint system security/bot issue, resolved end of January 2018. January 2018 indicates over 250,000 complaints due to bots. Chicago also reports data monthly, so multiple individuals may complain every month. To avoid counting individuals multiple times Chicago data shows the average monthly number of individuals.

Note: Data obtained from respective Airport Authorities

REPORTS PER 1,000 AIRCRAFT MOVEMENTS

AIRPORT	2018	2017
Vancouver / Richmond (YVR)	2.7	3.9
Calgary (YYC)	29.8	25.6
Toronto (YYZ)	252.2	362.3
Chicago (ORD)	717.8	6,369.0
Denver (DEN)	N/A	N/A
Portland (PDX)	8.4	8.9
Winnipeg	N/A (1.4 avg from 2004 to 2014)	N/A (1.4 avg from 2004 to 2014)

CALGARY (YYC)

- The City and Airport have agreed that development over 30 NEF should be allowed in the Inglewood neighbourhood, in which development is currently affected by current AVPA regulations. Inglewood is an established Calgary neighbourhood that has been experiencing significant retail, services, and commercial revitalization in the past few years, but lacks residential development. A proposal to amend the AVPA has been submitted to the Province of Alberta.
- Project Precedent: The Grid (located in Inglewood in a 30 - 35 NEF area) - proposes to redesignate an auto-oriented commercial corridor district parcel to a direct control district based on a multi-residential - high density medium rise (M-H2) district the development of:
    - 16 – storey (49m) residential tower on the northern portion of the site with 110 units
    - 6 – storey (17.1m) building on the east side with 34 units
    - 18 townhouse units at the base fronting onto 7 Avenue and the Bend in the Bow
    - Commercial opportunities at grade fronting 19 Street
- Project proposed as contributing to transit oriented development.
- Project has support from Council and the Airport Authority and is currently awaiting approval of AVPA amendment.



Figure C - Rendering of The Grid proposed development

DENVER (DEN)

- Multi-unit dwellings, live/work dwellings, and other housing categorized as group living uses are not permitted in the DIA (Denver International Airport) Influence Overaly Zone District north of 64 Ave. The zone itself extends from 56th Ave to 72nd Ave, meaning group living uses ***ARE*** permitted in the zone south of 64 ave. (See map opposite page.)
- "Easement. All property owners within the AIO shall be required to convey an avigation easement to the city with the city as sole grantee in accordance with article 9 of the Denver Zoning Code, section 9.5.3.4."
    - Section 9.5.3.4. reads "On or before the date of approval of an official map amendment or approval of a site development plan for development in the DIA Influence Area Overlay Zone District, the property owner shall be required to grant an avigation easement and right-of-way to DIA for passage of aircraft in a form established by DIA and recorded in the Office of the Denver Clerk and Recorder."
- The Denver Municipal Code (Chapter 5, Article IV, Section 5-37. (d)) states:
    - For all residential dwelling units within the AIO, all prospective purchasers, in writing:

      "(Residential address) is located within the proximity to Denver International Airport (DEN). The purchaser should be aware that (residential address) may be subject to overflights by commercial, general aviation or military aircraft, subject to noise, vibration, exhaust, air and vehicular traffic and other conditions associated with the operation of this international airport. DEN consists of six existing runways and is planned to have a total of twelve runways at full build out, additional runways will be constructed in the future, which could change and/or increase current flight operations at DEN. Also, future airfield support facilities could be constructed on airport property with additional access roads resulting in increasing vehicular traffic and noise near (residential address)."
- The Denver Building Code, section 143 - Aircraft Noise Reduction, states that Exterior walls, doors, windows, skylights must provide a minimum STC rating of 32 and OITC rating of 25.
- As an effort to provide transparency, DEN Noise Management includes an online flight path tracker online with the Publicvue Tool. Airport Noise advisories are also noted on Publicvue, and there is a phone number provided for a DEN noise hotline.

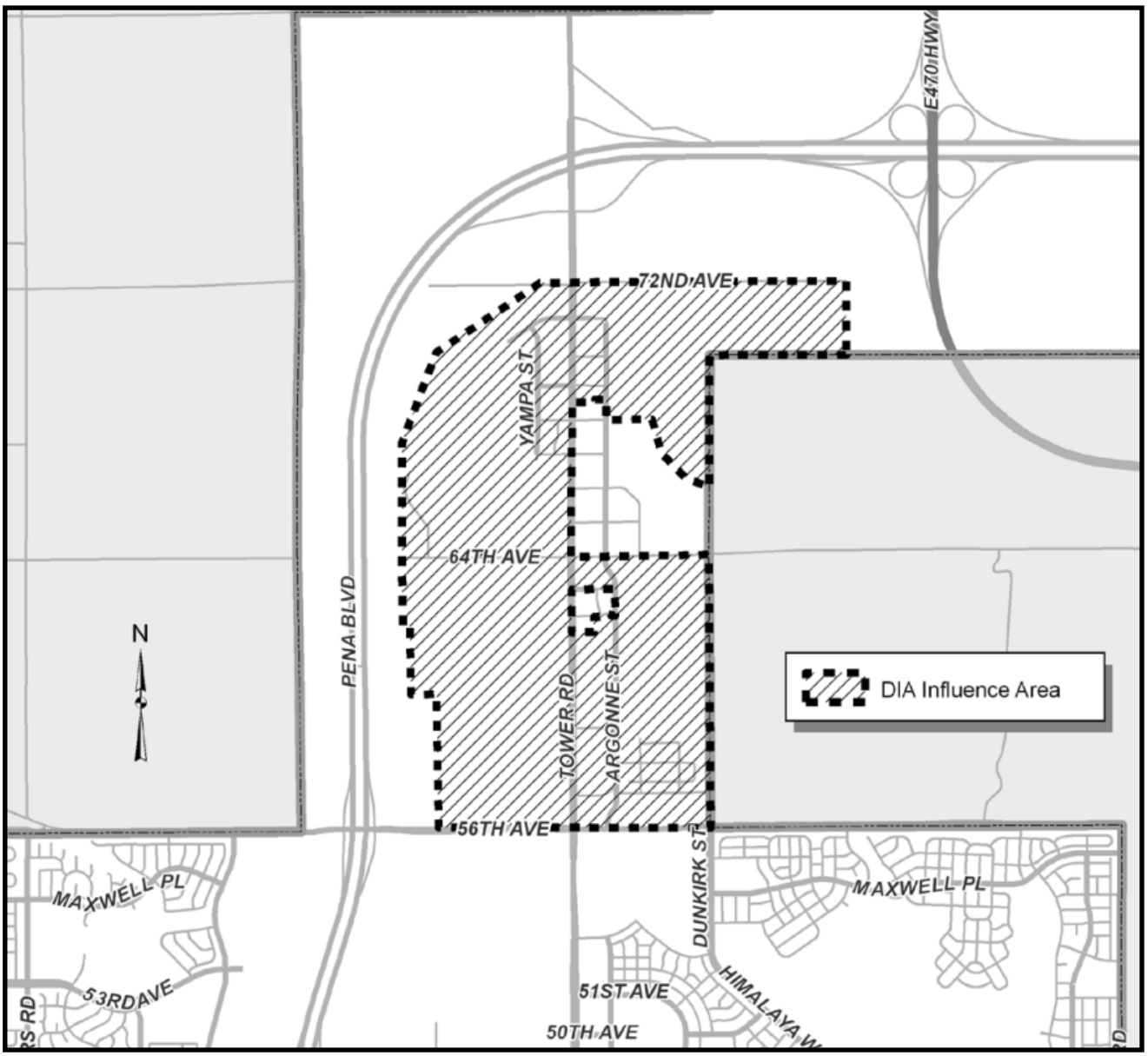


Figure D - Denver International Airport Influence Overlay Zone Map

PORTLAND (PDX)

- The Portland Zoning Code, Section 33.470, details regulations for the Portland International Airport Noise Impact Zone:
    - There are several contours used including 65 and 68 DNL noise contours based on the 1990 Portland International Noise Abatement Plan, and 55 DNL noise contour based on the 2010 Portland International Airport Master Plan Update (65 DNL = 30 NEF - Please refer to the ARUP report for further details).
    - For Residential land uses within the 55, 65, and 68 DNL contours a noise disclosure statement is required. Before a building permit can be issued for developments in which the total cost of site improvements exceeds 75% of the total assessed improvement value of the site, the landowner must sign a City noise disclosure statement, recognizing the property is within the noise contours and the landowner is aware of the associated noise levels.
    - For Residential land uses within the 65 and 68 DNL contours a noise easement is required. Before a building permit can be issued for developments in which the total cost of site improvements exceeds 75% of the total assessed improvement value of the site, the landowner must dedicate a noise easement to the Port of Portland. The easement authorizes aircraft noise over the property at the established DNL noise contour value. "Any increase of the DNL noise level above that stated on the easement will not void nor be protected by the easement."
    - For Residential land uses within the 65 and 68 DNL contours noise insulation is required. New dwelling units within these areas must be constructed in a way that achieves a day/night average interior noise level of 45 dBA. Reconstructed dwellings, where the total cost of site improvements exceeds 75% of the total assessed improvement value, must also meet this standard. Garages and similar accessory buildings, without living areas, do not need to conform to this standard.
        - Once the dwelling meets the requirements, the Port of Portland will pay for sound insulation certification. This does not include cost of design, materials, labour, or engineering costs associated with the sound insulation installation.
    - Regarding Residential land use density, for properties that are within, or a portion is within, the 68 DNL contour new development is prohibited except by cases in which the property is subdivided and a new parcel lies entirely outside the 68 DNL contour.

- Regarding Residential land use density, for properties within the 65 DNL contour, sites that have a residential Comprehensive Plan Map designation may develop upto a maximum residential density of the R10 zone. The R10 zone allows for single family houses, attached houses, accessory dwelling units, and duplexes. Multi-family dwellings are permitted within planned development areas in accordance with the R2.5 zone, which allows buildings up to a height of 35ft.

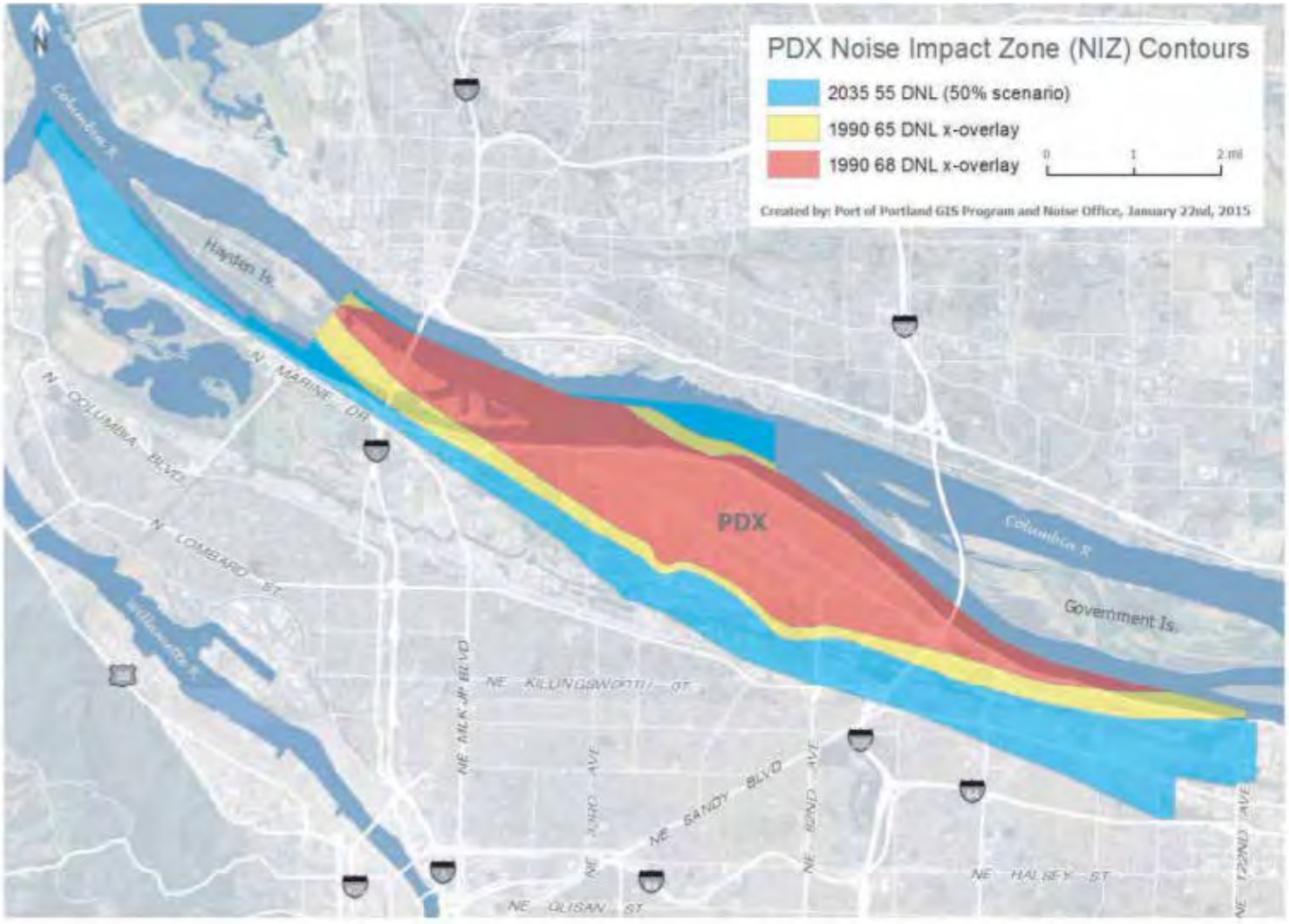


Figure P - PDX Noise Impact Zone Map

TORONTO (YYZ)

- The Toronto Pearson Airport restricts aircraft movement during night hours. This affects different classes of aircrafts differently. See Figure T1.

Aircraft (noise certification type)	Restricted hours (local time) - arrivals and departures	Type of restriction
No Chapter number assigned	2000-0800	No allowed to operate
Chapter 2 aircraft	0000-0700	
Chapter 3 aircraft	0030-0630	Exemption or extension required to operate
All other Chapters	0030-0630	

Figure T1 - Noise Related Operation Restrictions at Toronto Pearson Airport

  - Toronto Pearson is the only Canadian Airport to have such a budget system mandated by Transport Canada.
  - Night flights account for approximately 3% of all flights.
- NOTE: While the NEF contours affect Toronto, the City is outside the Airport Operating Area. See Figures T2 and T3.
- Precedent Project: 7-21 Richgrove Drive - is a high density residential development containing "3 stacked townhouse blocks containing 88 units along Richgrove Drive, and two 22-storey residential buildings with a total of approximately 462 condominium apartment units on the southern portion of the site."

  • This development supports housing policies in the official plan that call for greater housing options in terms of tenure and form. Intensification of the area also supports transit initiatives that include the development of a nearby light rail corridor.

  • Due to the proximity to the airport, the development does not meet all Tall Building Guidelines. Staff recognizing these constraints allowed other density considerations to reach the proposed density.

  • Figures T4/T5 show site proximity to the airport and image of the site.

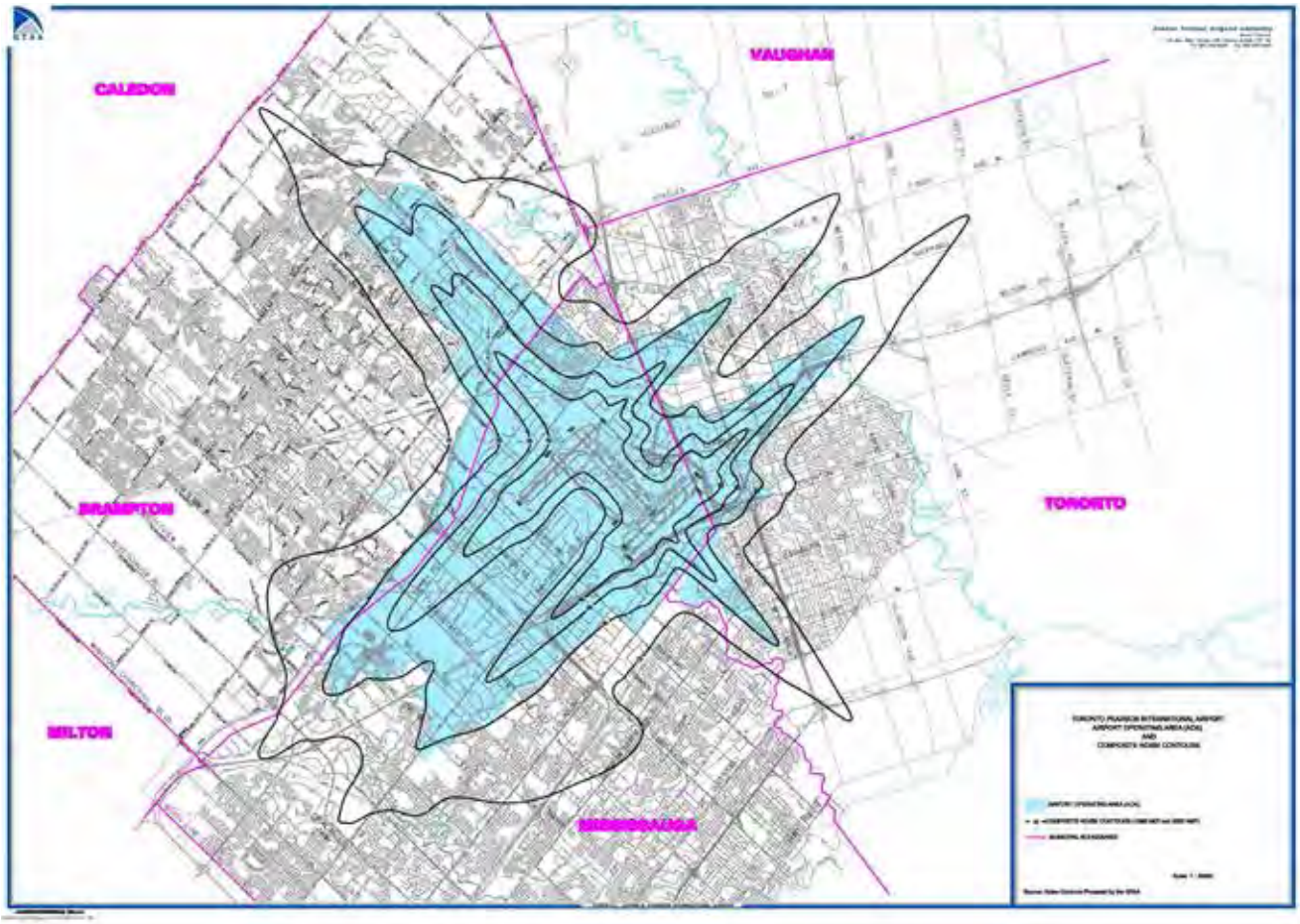


Figure T2 - Toronto Pearson Airport NEF Contour Map

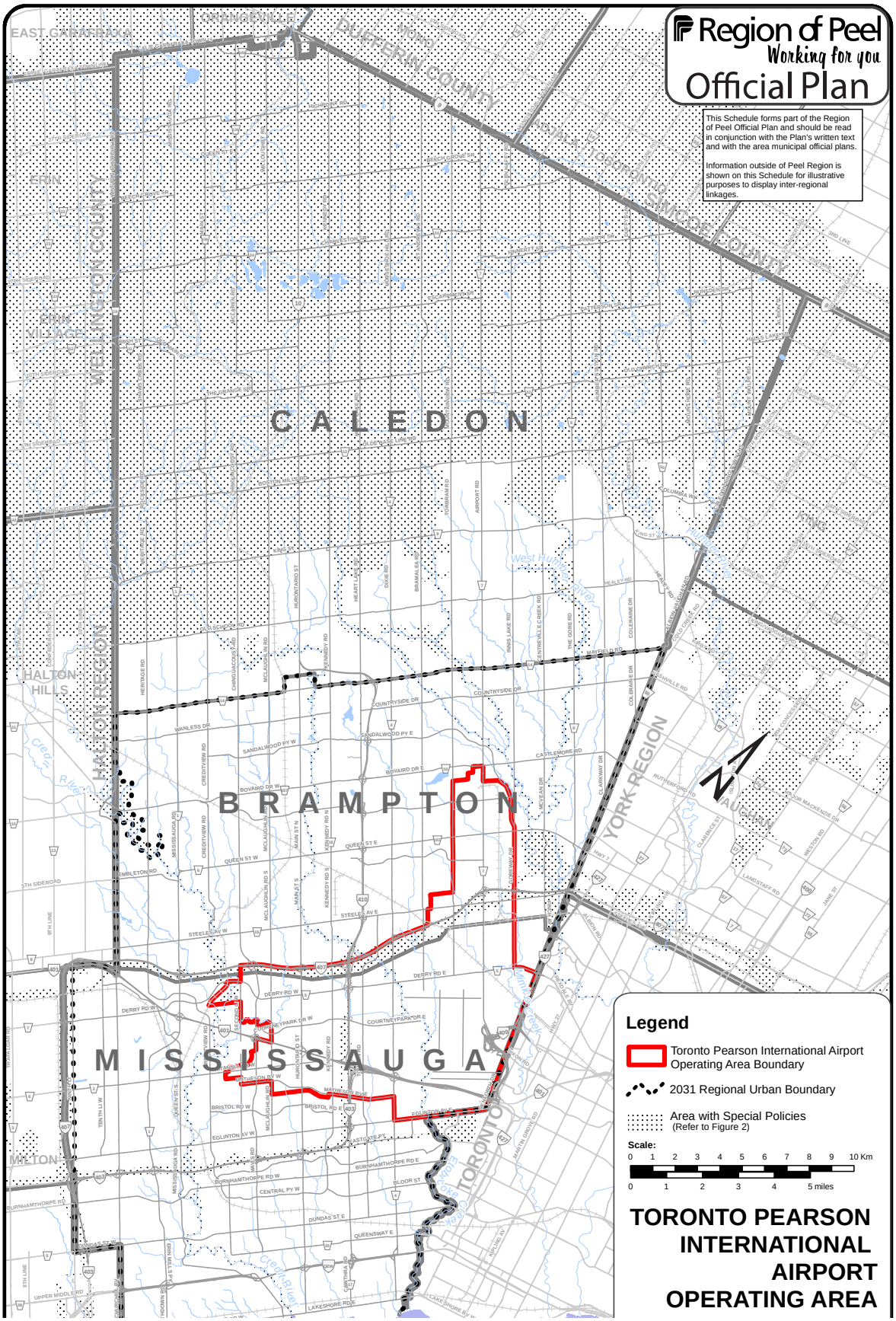


Figure T3 - Toronto Pearson Airport Operating Area

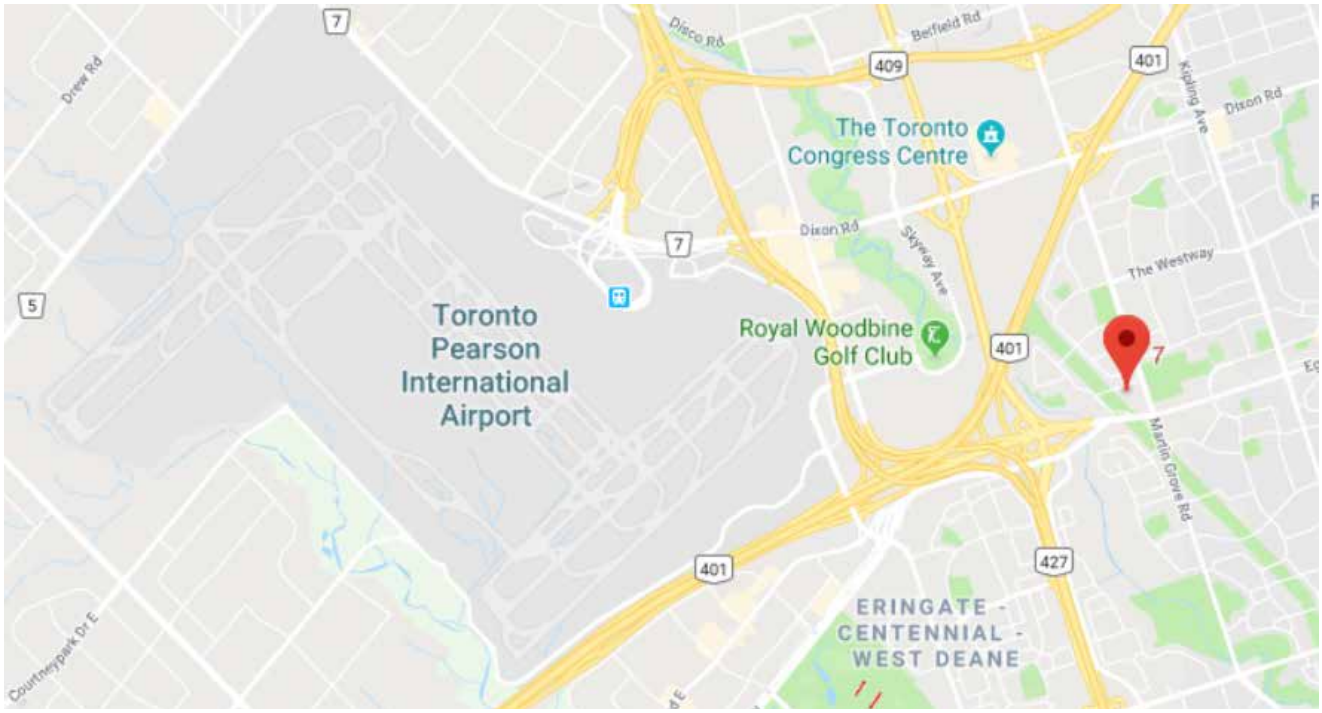


Figure T4 - 7-21 Richgrove Dr Proximity to Toronto Pearson International Airport



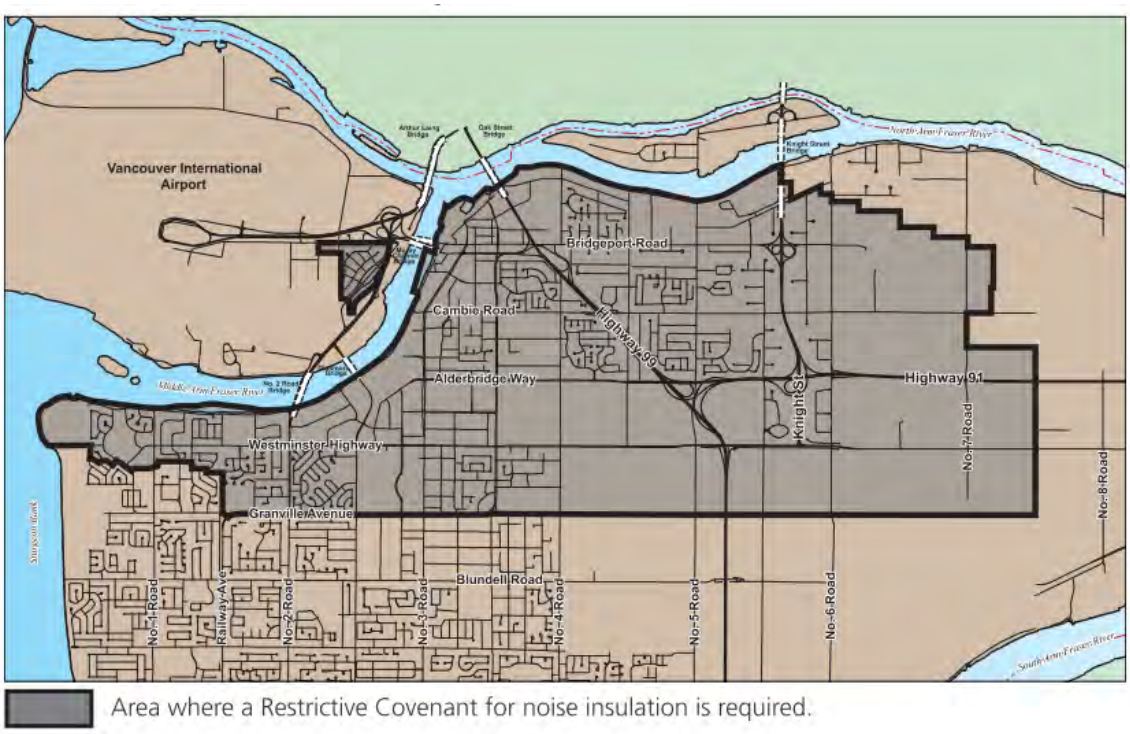
Figure T5 - Google Street View image of 7-21 Richgrove Dr

VANCOUVER/RICHMOND (YVR)

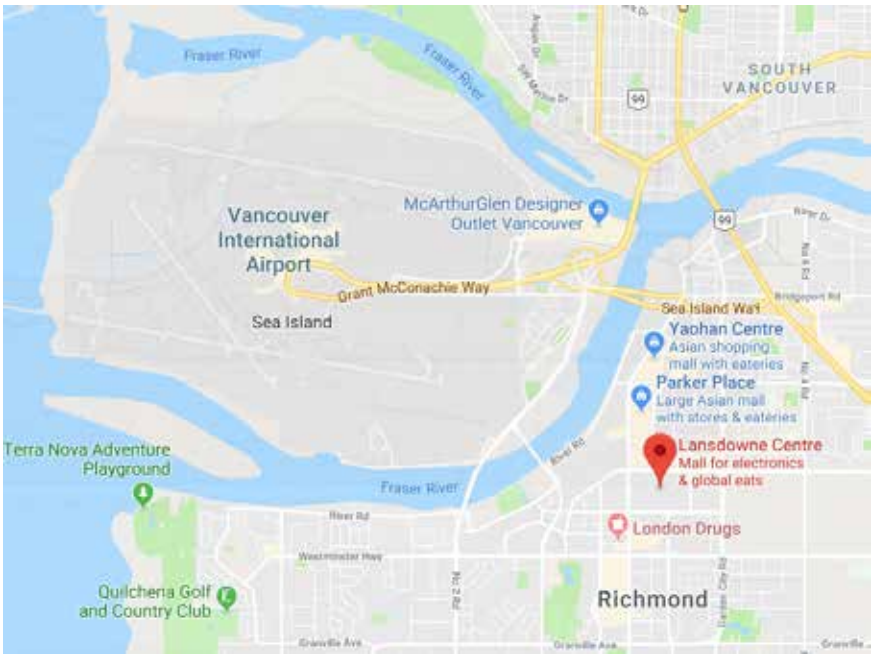
- The City of Vancouver is virtually unaffected by the Vancouver international airport operations, however, RIchmond is greatly impacted.
- The City of Richmond utilizes an airport noise sensitivity covenant on properties within the Aircraft Noise insulation map, as well as acoustic reports that determine the impact of aircraft noise and appropriate building practices to meet CMHC noise insulation standards.
- Precedent Project: Lansdowne Village. This project is within close proximity to the airport and is a proposed high-density mixed use development.
    - Lansdowne Village is a "podium and tower form of development with three levels of below grade parking, ground level commercial, one office tower and six residential towers" with a "floor area ratio (FAR) of 3.89 and a height of 41.5 m geodetic". This will include 824 residential units, 38 of which will be affordable housing. It will also include 6,611 m2 of commercial space, and 12,000 m2 of office space.
    - The bylaw amendment to allow for this project was adopted in May 2019.



Lansdowne Village Rendering



Aircraft Noise Insulation Map



Project Proximity to Airport

Appendix B: CF Richmond Centre Renderings



NOTE.
Rendering of CF Richmond Centre, Richmond, BC.



NOTE.
Rendering of CF Richmond Centre, Richmond, BC.





Figure 1 - *Richmond Centre Redevelopment Precedent Renderings*