

DILLON
CONSULTING

CORPORATION OF THE CITY OF WINDSOR

Planning Justification Report

Official Plan and Zoning By-Law Amendments

Surplus Airport Lands, City of Windsor

Table of Contents

1.0	Introduction	1
1.1	Purpose	1
1.2	Description of Site.....	2
1.3	Proposed Development & Amendments	3
1.3.1	Proposed Development	3
1.3.2	Proposed Official Plan Volume I Amendment	3
1.3.3	Proposed Official Plan Volume II Amendment	4
1.3.4	Proposed Zoning By-law Amendment	5
2.0	Existing Conditions	6
2.1	Subject Lands	6
3.0	Surrounding Land Use	8
3.1	Employment Context	8
3.1.1	Provincial.....	8
3.1.2	Regional	9
3.1.3	Local	11
4.0	Planning Evaluation	13
4.1	Provincial Policy Statement, 2020	13
4.1.1	Policy Analysis	14
4.1.2	Policy Analysis Conclusion	21
4.2	City of Windsor Official Plan	21
4.2.1	Policy Analysis	23
4.2.2	Policy Analysis Conclusions.....	49
4.3	City of Windsor Zoning By-law	49
4.4	Other Legislation	50
4.4.1	Windsor International Airport Master Plan (2010).....	50
4.4.2	Windsor Airport Zoning Regulations.....	51

4.4.3	Transport Canada – Aerodrome Standards and Recommended Practices (TP 312)	52
4.4.4	Transport Canada – Aviation: Land Use in Vicinity of Aerodromes (TP 1247).....	52
4.4.5	D6 Guidelines	52
5.0	Additional Studies	54
6.0	Justification Overview	55
6.1.1	Location.....	55
6.1.2	Land Use.....	56
6.1.3	Economic Prosperity	57
6.1.4	Infrastructure	58
6.1.5	Sustainability.....	59
7.0	Conclusions	60

Figures

1.0	Location Map
2.0	Conceptual Development Plan
3.0	City of Windsor Planning Districts & Policy Areas
4.0	City of Windsor Development Constraint Areas
5.0	City of Windsor Existing Official Plan Designations
6.0	City of Windsor Baseplan Development Phasing
7.0	City of Windsor Urban Structure Plan
8.0	City of Windsor Zoning By-law
9.0	Sandwich South Zoning By-law

Tables

Table 1-1:	Existing Estimated Excess Supply of Non-Residential Land, County of Essex, 2011	11
------------	---	----

Appendices

A	Provincial Policy Statement 2020 Policies
B	City of Windsor Official Plan Policies
C	City of Windsor Zoning By-law
D	Windsor International Airport Master Plan (2010)
E	Windsor Airport Zoning Regulations
F	Aviation: Land Use in Vicinity of Aerodromes (TP 1247)
G	D6 Guidelines
H	Restrictions and Constraints

1.0

Introduction

1.1

Purpose

Dillon Consulting Limited (Dillon) has been retained by the City of Windsor to assist in obtaining the necessary planning approvals to allow for a mix of employment uses, including business park and industrial land uses, to be developed on the surplus airport lands in the City of Windsor. The Windsor International Airport Master Plan (2010) found that given current and projected aircraft movement volumes, the Airport capacity is expected to continue to meet the needs of the Airport for the planning horizon. As such, an area of surplus lands has been identified as available for potential development.

The Windsor International Airport is owned by the City of Windsor, with the airport lands located within the Sandwich South Planning District. The Sandwich South Planning District is a major land area which will play a key role in accommodating the future population and employment growth needs of the City of Windsor. It is estimated that the City requires approximately 500 to 625 gross hectares of employment lands to accommodate the projected employment needs by 2026 (EDP Consulting, 2008). Only a portion of this land area requirement has been realized. The need for available land for employment uses is expected to continue with the development of the Stellantis LG NextStar plant as feeder plants and other supportive development are anticipated to occur in the Sandwich South Planning District.

As identified in the Windsor International Airport Master Plan (2010), the Windsor International Airport property is approximately 813 hectares in size with over 250 hectares of surplus lands located to the east of the operating airport designated as “Future Employment Area” within the Official Plan. The area of lands that is the subject of this report is approximately 187.74 hectares in size and is roughly bounded by the AAR Aircraft Services Windsor ULC to the west, the naturalized areas to the east, County Road 42 to the south, and extending approximately 460.5 metres from County Road 42 to the north (the “subject land”). These surplus airport lands in particular have the opportunity to be a driver of economic activity and support non-airport related businesses and industries. In order to attract increased economic opportunities, there is a need to provide additional capacity in terms of land available for development with appropriate access and municipal services.

This report is intended to facilitate the implementation of the necessary planning amendments to support the preparation of the surplus airport lands for employment land uses. The following report supports the following:

- City of Windsor Official Plan Amendment (OPA); and
- City of Windsor Zoning By-law Amendment (ZBA) applications.

In order to be positioned to support the investment and facilitate the timely development of the large area of employment land uses, the City is in the process of preparing the subject lands, with the land intended to be wholly owned by the City of Windsor and leased to potential proponents. Given the size of the subject lands, there is the potential for these lands to be developed using a phased approach. Details on potential phasing options will be investigated further along in the planning process.

To facilitate the development of the subject lands, an amendment to both the Official Plan and Zoning By-law will be required to recognize the ultimate use of the subject lands for various employment land uses. The rationale and justification required to change the land use designation and zoning category to accommodate the proposed use is included in this report.

The terminology used in the different sections of this report is intended to be reflective of the respective policy definitions in their respective policy documents.

1.2 Description of Site

The subject lands are located on a portion of the surplus airport lands, north of County Road 42 in the Sandwich South Planning District. The Sandwich South Planning District is situated at the eastern limits of the City, approximately 8 km south of the Windsor Downtown area. The Planning District covers approximately 2,530 hectares and will be a major factor in accommodating the future population and employment growth in the City of Windsor.

The subject lands cover approximately 187.74 hectares of land north of County Road 42. To the east of the subject lands are two (2) naturalized areas, to the west of the subject lands is the AAR Aircraft Services Windsor ULC. The subject lands currently extend approximately 460.5 metres north of County Road 42 (refer to **Figure 1.0 - Location Map**).

The subject lands have frontage along County Road 42 and with the extension of Eight Concession Road and Ninth Concession Road towards the north being proposed. The surplus airport lands are well supported by the existing and planned transportation network with access to transportation facilities including the International border crossings, the Windsor Port, the VIA Rail station, the Windsor Transit Terminal, and Provincial Highways 401 and 3.

The naturalized areas to the east of the subject lands are identified as the Airport Woodlots and are not part of this development application. Appropriate setbacks are recommended to allow for further study.

1.3 Proposed Development & Amendments

1.3.1 Proposed Development

The intent of the proposed Official Plan and Zoning By-law Amendments is to facilitate the preparation of an area of the surplus airport lands to create additional capacity in terms of land available for future employment use development. The surplus airport lands present an opportunity for a wide range of employment land uses including light industrial, warehouse, office, service commercial, business park, and heavy industrial uses. The development of these surplus airport lands may include Airport related and non-Airport related uses, with the potential to create synergies between proposed employment uses and local industry. This potential will allow for increased and diversified employment land uses and attract business to the Sandwich South Planning District while facilitating the Airport as a key economic driver in the City.

The Windsor International Airport Master Plan (2010) identifies approximately 300 hectares of potentially available land within the infield area of the airport property from major business and employment land uses. The proposed subject lands occupy approximately 187.74 hectares of these infield lands. While the surplus airport lands are being prepared for future development, the schedule of investments will be event-driven. There is a benefit to remaining flexible in the proposed land uses, and the accompanying parcel sizes to be leased, as the City evaluates interest from potential proponents and considers the infrastructure requirements and development needs required to facilitate any future development. As such, there remains the potential for the development of the surplus airport lands to be undertaken using a phased approach which will allow for the efficient coordination and utilization of resources. To accommodate for this, the current proposed development plan of the subject lands includes parcels of land varying in size from approximately 2 hectares (5 ac) to 26 hectares (64 ac) (refer to **Figure 2.0 – Proposed Conceptual Development Plan**).

All proposed land uses on the Airport property must respect the requirements of Transport Canada's TP 312 – Aerodrome Standards and Recommended Practices (2015). The standards and recommendations outlined in TP 312 place various restrictions necessary within the Airport land area and include specific criteria for building structures on the property. Protective areas of varying degrees are required around each Airport operations related facility, depending on the equipment. Future developments must consider these protective requirements. All proposed infield development projects shall be subject to review by Airport management and Navigation Canada.

1.3.2 Proposed Official Plan Volume I Amendment

The subject lands are currently designated as Airport, Industrial, and Future Employment Area in the City of Windsor Official Plan. The portion of the subject lands along County Road 42 designated as Industrial were previously subject to a City-initiated Official Plan and Zoning By-law Amendment given the need for additional employment lands in Windsor. The Industrial land use designation is to remain as it relates

to the subject lands and will adhere to the policies as set out by **Section 6.4.3 – Industrial of the Official Plan**.

The lands designated as Airport permit a variety of land uses including uses permitted in Employment Areas (as described in Section 6.4 of the Official Plan, provided that they do not conflict with aircraft operations), hotels and related commercial uses, and other uses in accordance with the Windsor Airport Master Plan, Land Use and Reserve Land Plan (as amended from time to time). As such, a variety of future employment land uses are permitted under this designation. The Airport land use designation is to remain as it relates to the subject lands and will adhere to the policies as set out by **Section 6.12 – Windsor Airport of the Official Plan**.

The lands designated as Future Employment Area represent an area intended for future development to accommodate the projected growth within the City. Council may redesignate the Future Employment Area to an alternative land use designation by amendment to the Official Plan. The current Future Employment Area land use designation on a portion of the subject lands does not permit the development of the lands for employment land uses.

The proposed City of Windsor Official Plan Amendment (OPA) will be brought forward to City Council for consideration to redesignate the portion of the subject lands from Future Employment Area to the Industrial or Business Park land use designations. The final configuration of the land use designation boundaries is to be determined. The proposed OPA will facilitate the availability of suitable lands appropriate for large scale employment uses in the City of Windsor.

1.3.3 Proposed Official Plan Volume II Amendment

In addition to the changes proposed for the subject lands through Volume I, the proposed Official Plan Amendment will include special policies under Volume II of the Official Plan to address potential conflicts surrounding the Airport through its operation and any additional adverse effects. Specifically, the OPA will consider the following:

- Building Height Limits (to be derived from the Airport Zoning Regulations);
- Transitional surface height restrictions;
- Height Limitations for solar panels and solar farms;
- Stormwater Management requirements for dry ponds;
- Design objectives to be in line with a future institutional (Hospital) use and the County Road 42 Secondary Plan;
- Requirements from Navigation Canada to mitigate technological interference; and
- Limitations on the sale of land and dedication of public highways stemming from the transfer agreement with Transport Canada.

Please refer to **Appendix H – Restrictions and Constraints**.

Guidelines for Volume II will be further discussed with the City of Windsor and YQG, with considerations made to the recommendations outlined by Transportation Canada. These can be found in **Appendix F – Aviation: Land Use in Vicinity of Aerodromes (TP 1247)**.

The proposed OPA is supportive and in general alignment with the City of Windsor Official Plan (OP) principles and policies regarding employment uses, economic development, and the Windsor Airport (OP, 1.1.3, 4.2.6, 6.12). Further information on the OP policies can be found in **Section 4.2** of this report.

1.3.4 Proposed Zoning By-law Amendment

The subject lands have multiple zoning categories including Manufacturing District 2.2 (MD2.2) in the City of Windsor Zoning By-law 8600 and Institutional (I) in the Sandwich South Zoning By-law 85-18. The current zoning categories do not permit the development of employment uses on the entirety of the proposed subject lands. The proposed Zoning By-law Amendment (ZBA) to repeal the zoning category under the Sandwich South Zoning By-law 85-18 and to amend the zoning category under the City of Windsor’s Zoning By-law 8600 will be brought forward to the City Council for consideration. The proposed rezoning is for the subject lands to be zoned similar to the Manufacturing District 1.4 (MD1.4) and Manufacturing District 2.2 (MD2.2) categories. The final configuration of the zoning category boundaries is to be determined. The proposed ZBA will facilitate the availability of a large area of land suitable for the development of employment land uses in the City of Windsor.

Further information on the Windsor’s Zoning By-law 8600 can be found in **Section 4.3** of this report.

Further to the provisions outlined in the City of Windsor Zoning By-law 8600, registered zoning is currently in place for the Windsor International Airport. The registered zoning is entitled *Windsor Airport Zoning Regulations* and are pursuant to Section 5.4 of the Aeronautics Act of Canada. The zoning regulations found within this section include:

- Preventing lands adjacent to or in the vicinity of an Airport site from being used or developed in a manner that is incompatible with the safe operation of an aerodrome or aircraft; and
- Preventing land uses that would cause interference with signals or communications to and from aircraft from locating adjacent to or in the vicinity of equipment of facilities used to provide services relating to aeronautics.

Further, protective regulations are established around certain Airport facilities, components, and stations to protect the safety and security of aircraft operations. These requirements include physical zoning around the Airport, including off-Airport lands, electronic zoning, and noise projections. TP 312 (Transport Canada’s Aerodrome Standards and Recommended Practices) and TP 1247 (Land Use in the Vicinity of Aerodromes) identify the relevant zoning criteria in detail.

2.0

Existing Conditions

2.1

Subject Lands

The total subject land area is approximately 187.74 hectares (463.93 ac) with approximately 2,309.5 metres of frontage along County Road 42. The subject land is designated accordingly in the City of Windsor Official Plan and Zoning By-law 8600 and the Sandwich South Zoning By-law 85-18 as follows:

City of Windsor Official Plan – Schedule A: Planning Districts & Policy Areas

(refer to *Figure 3.0 – City of Windsor Planning Districts & Policy Areas*)

- Sandwich South Planning District

City of Windsor Official Plan – Schedule C: Development Constraint Areas

(refer to *Figure 4.0 – City of Windsor Development Constraint Areas*)

- Airport Operating Area
- Noise Exposure Forecast

City of Windsor Official Plan – Schedule D: Land Use

(refer to *Figure 5.0 – City of Windsor Existing Official Plan Designations*)

- Airport
- Industrial
- Future Employment Area

City of Windsor Official Plan – Schedule H: Baseplan Development Phasing

(refer to *Figure 6.0 – City of Windsor Baseplan Development Phasing*)

- As required

City of Windsor Official Plan – Schedule J: Urban Structure Plan

(refer to *Figure 7.0 – City of Windsor Urban Structure Plan*)

- Regional Employment Centre

City of Windsor Zoning By-law 8600 – Zoning District Map 12 & 16

(refer to *Figure 8.0 – City of Windsor Zoning By-law*)

- Manufacturing District 2.2 (MD2.2), S.20(1)321

Sandwich South Zoning By-law 85-18 – Zoning District Map 1 & 2

(refer to *Figure 9.0 – Sandwich South Zoning By-law*)

- Institutional (I)

The physical attributes of the subject lands are as follows:

- An irregular to rectangular shaped area;
- The subject lands are currently made up of a number of individual parcels, consolidated under two (2) PINs;
- The parcels are generally flat with no discernable changes in grade;
- There are two (2) municipal drains traversing the parcels, draining the lands to the east; and
- There is limited tree vegetation on the subject lands.

3.0

Surrounding Land Use

There is a variety of existing municipal infrastructure, roads, and utilities located nearby the subject lands. These features support the suitability of the subject lands for employment land uses. The surrounding land uses are varied and are described as follows:

North

- **Existing Uses:** Solar Fields, Canadian Pacific Railway, EC Row Expressway
- **Official Plan Designation(s):** Future Employment Area, Airport
- **Zoning By-law Zone(s):** Institutional (I) (*Sandwich South Zoning By-law 85-18*)

East

- **Existing Uses:** Open Space, Agricultural
- **Official Plan Designation(s):** Open Space, Natural Heritage
- **Zoning By-law Zone(s):** Institutional (I), Agricultural (A) (*Sandwich South Zoning By-law 85-18*)

South

- **Existing Uses:** Commercial (PCR Contractors, Herc Rentals, EMCO Waterworks Windsor, United Rentals), proposed location of the new hospital, agricultural
- **Official Plan Designation(s):** Future Employment Area, Future Urban Area (*County Road 42 Planning Area*)
- **Zoning By-law Zone(s):** Industrial (I), Commercial (C), Agricultural (A) (*Sandwich South Zoning By-law 85-18*)

West

- **Existing Uses:** Windsor International Airport
- **Official Plan Designation(s):** Airport
- **Zoning By-law Zone(s):** Institutional (I) (*Sandwich South Zoning By-law 85-18*)

3.1

Employment Context

3.1.1

Provincial

The 2008/2009 economic recession hit Ontario relatively hard, with significant declines in manufacturing output particularly in the auto sector and in construction. While the Ontario economy has experienced a rebound in economic activity since the 2008/2009 downturn, the Province's recovery has been relatively slow to materialize. The economic rebound has been partially driven by a gradual recovery in the

manufacturing sector, fueled by a lower-valued Canadian dollar (relative to the years directly following the 2008/2009 global financial crisis) and the gradual strengthening of the U.S. economy.¹

Over the previous decade, Ontario's economy has been transitioning from goods to services production. The trend towards more knowledge-intensive and creative forms of economic activity is evident across many sectors within both the broader national, provincial, and regional economies. This trend includes growth in financial services, information technology, business services, health care and social services, government, advanced manufacturing, energy, information and cultural industries, education, training and research, agri-business and tourism.

Despite this shift in the economic structure of Ontario, manufacturing remains vitally important to the provincial economy with respect to jobs and economic output. In fact, the manufacturing sector continues to be among Ontario's largest sources of employment.² The highly competitive nature of the manufacturing sector will require production to be increasingly cost effective and value-added oriented, which bodes well for firms that are specialized and capital/technology intensive.

While the recent performance of the Ontario economy has remained relatively strong over the past several years through to early 2020, the COVID-19 pandemic posed a significant challenge to the national and provincial economies in Canada. Due to the COVID-19 pandemic, which resulted in the Provincial Government mandating varying degrees of lockdowns starting in March 2020 and into early 2022, the economy has been negatively impacted. By mid-2022, the province lifted many of the restrictions that had been in place over the previous two years. At present, the economic impacts from the COVID-19 pandemic shutdowns on the Ontario manufacturing sector and the broader economy continue to be felt and are anticipated to linger over the years to come.

While the performance of the Ontario economy is anticipated to remain relatively strong over the near terms, there are potential risks to the national and provincial economies which are important to recognize. These risks include changes to the North American Free Trade Agreement (NAFTA), the adoption of protectionist trade measures in the U.S., and other various changes to the U.S. fiscal and industrial policies. These policies have the potential to create negative consequences to the integrated supply chain associated with manufacturing.

3.1.2 Regional

Invest WindsorEssex, which is the organization responsible for advancing economic development in the region, published the Five Year Strategic Plan for 2018-2022. The Strategic Plan identifies Advanced Health & Life Sciences, Logistics, Warehousing & Cross-Border Activities, and Advanced Manufacturing as Targeted Industry Alignment (Investment Focus) as these industries are deemed to hold opportunity

¹ Valued at approximately \$0.73 U.S. as of March 2023.

² Derived from EMSI Data, 2006-2016 Watson & Associates Economists.

for the Windsor-Essex Region.³ Further, these target industry sectors are sectors that are growing at a faster rate than the overall local economy and have been identified as Growth and Emerging Industries. Invest WindsorEssex aims to concentrate on growing and emerging industries that will drive diversification throughout the Region and will support a strong and sustainable economic plan.

The Ministry of Economic Development, Job Creation and Trade (MEDJCT) has identified several industries that have high potential for new business investment and growth. The federal government has also indicated priority sectors that are promoted globally for investment into Canada. It is of key consideration, where possible, for the City of Windsor and surrounding region to be aligned with federal and provincial governments to leverage the significant economic development resources and programs offered to support efforts to diversify the economy.

While the subject lands are located within the City of Windsor, it is important to note the existing supply of employment lands within the context of surrounding municipalities. The *County of Essex Employment Land Needs Analysis* (Jones Consulting Group Ltd., 2011) provides the most recent analysis of the employment lands supply for the entire County. The County of Essex, comprised of seven lower-tier municipalities, underwent the process of developing an Official Plan which was approved in 2014. As part of the Official Plan review process, Jones Consulting Group Ltd. completed a Foundation Report in 2011 which provided a summary of the future projection for the supply of Commercial and Employment lands within the County of Essex for the planning period of 2006 to 2031. A summary of the findings of this report is presented below in **Table 1-1: Existing Estimated Excess Supply of Non-Residential Land, County of Essex.**

³ Five Year Strategic Plan. Invest WindsorEssex. 2018

Table 1-1: Existing Estimated Excess Supply of Non-Residential Land, County of Essex, 2011

Municipality	Commercial Land	Employment Land
Kingsville	36 - 40 ha (89 - 99 ac)	- 2.4 - 8.5 ha (- 6 - 21 ac)
Lakeshore	246 - 255 ha (608 - 630 ac)	300 - 331 ha (742 - 818 ac)
Amherstburg	0 - 5 ha (0 - 12 ac)	399 - 405 ha (986 - 1,001 ac)
Leamington	193 - 202 ha (479 - 499 ac)	101 - 113 ha (252 - 279 ac)
LaSalle	18 - 28 ha (45 - 70 ac)	21 - 32 ha (51 - 78 ac)
Tecumseh	81 - 93 ha (201 - 230 ac)	24 - 69 ha (58 - 170 ac)
Town of Essex	4 - 7 ha (10 - 17 ac)	- 13 - 17 ha (- 31 - 43 ac)
County of Essex	579 - 630 ha (1,431 - 1,557 ac)	821 - 935 ha (2,030 - 2,310 ac)

Source: NBLC, Foundation Report – Essex County Official Plan Review, August 2011

The report found that there is an over-supply of employment lands of between 821 ha (2,030 acres) to 935 ha (2,310 acres) across these seven municipalities of Essex County, which are in close proximity to the City of Windsor. Although the analysis illustrated that an over-supply of employment lands in Essex County, **much of the employment lands have constraints that make their development challenging.**

Constraints include parcels that are small in size, have poor locational attributes in relation to the Highway 401 corridor, are not planned for municipal servicing within the immediate planning horizon, or are disbursed across the County in a manner that does not support singular sites that can accommodate large scale industrial and production facilities. As such, the availability of large areas of land suitable for employment use is a critical factor to meet economic development objectives in the City of Windsor.

Currently, the region is experiencing economic growth and activity as the NextStar Energy plant is being constructed at the boundary of the City of Windsor and Town of Tecumseh. The Nextstar Energy plant is anticipated to provide increased employment opportunities and generate regional competitiveness. The preparation of the surplus airport lands for the development of employment uses is supportive of this type of economic investment and intensification in the region. By having suitable large scale employment lands available, the City of Windsor will position itself to generate economic diversification and allow for synergistic development between development occurring on and outside of the subject lands.

3.1.3

Local

In 2021, Windsor City Council adopted an economic development report called *Windsor Works - An Economic Development Strategy for the City's Future Growth*. The report summarizes that Windsor

continues to grow its population and attract new investments, creating a diverse economy that leverages infrastructure investments, exploits new economic trends, and attracts skilled people to drive future growth.

Similar to the current Regional availability of employment lands, the City of Windsor's supply faces constraints. As summarized in the 2018 *Background Report: County Road 42 Secondary Plan* by MHBC, the City of Windsor retained EDP Consulting to prepare a *Study of the Need for Employment Lands* in 2008. The assessment found that there would be a demand for 9,445 jobs located on employment lands by 2026. To support this number of new jobs, EDP Consulting estimated that there would need to be employment lands in the range of 536 to 661 gross hectares. When this study was conducted in 2007, it was determined there were 100 net hectares of usable, vacant employment lands in the City of Windsor. A *Land Needs Analysis Report*, including a focus on an employment land needs assessment, was completed by Dillon Consulting Limited for the City of Windsor in 2009. Through this study, it was determined that there was a potential supply of 384 gross hectares of vacant employment lands in the City. However, after excluding unsuitable lands, including those containing natural heritage features and hazards or parcels less than 1.0 hectare in size, the supply of available employment lands in the City was calculated to be 275.2 hectares. This represents the total of available lands in Windsor for employment uses, which is comprised primarily of parcels that are 2.5 to 20.0 hectares and parcels that are 20.0 hectares or more. There is a continued need for larger-scale sites to be available for employment uses.

In considering both the noted need for employment and economic development opportunities in the City, region and Province, as well as the limited employment lands suited for large-scale development in each of these areas, there is a demonstrated need for additional employment use designated land to support the proposed development and investment. At present there is very little, if any, lands available for immediate development of employment land uses.

4.0

Planning Evaluation

4.1

Provincial Policy Statement, 2020

The Provincial Policy Statement 2020 (PPS) promotes the development of ‘Strong, Healthy Communities’ through the redevelopment of lands for an appropriate mix of uses, which includes employment uses such as industrial and commercial uses. The proposed uses must be “consistent with” the Provincial Policy Statement and as a broad and general document. Through an analysis of the policies, it must be demonstrated how the proposed land use is appropriate and advances the Province’s interests. There are a number of sections of the Provincial Policy Statement that apply to the proposed development.

Policy 1.1.1, relating to healthy, liveable and safe communities;

Policy 1.1.3, relating to settlement areas;

Policy 1.2.6, relating to land use compatibility;

Policy 1.3, relating to employment;

Policy 1.6, relating to infrastructure and public service facilities;

Policy 1.6.6, relating to sewage, water and stormwater facilities;

Policy 1.6.7, relating to transportation systems;

Policy 1.7, relating to long-term economic prosperity;

Policy 1.8, relating to energy conservation, air quality and climate change;

Policy 2.1, relating to Natural Heritage; and

Policy 2.6, relating to Cultural Heritage and Archaeology.

Our analysis suggests that the following policies of the Provincial Policy Statement are relevant to the proposed Official Plan and Zoning By-law Amendments. These policies are included in **Appendix A – Provincial Policy Statement 2020 Policies** and will be referenced throughout the remainder of this report. Our analysis concludes that the proposed employment land use on the surplus airport lands is consistent with the above policies of the Provincial Policy Statement.

4.1.1

Policy Analysis**Policy 1.1 Managing and Directing Land Use to Achieve Efficient and Resilient Development and Land Use Patterns**

1.1.1 Healthy, liveable and safe communities are sustained by:

- a) promoting efficient development and land use patterns which sustain the financial well-being of the Province and municipalities over the long term;*
- b) accommodating an appropriate affordable and market-based range and mix of residential types (including single-detached, additional residential units, multi-unit housing, affordable housing and housing for older persons), employment (including industrial and commercial), institutional (including places of worship, cemeteries and long-term care homes), recreation, park and open space, and other uses to meet long-term needs;*
- c) avoiding development and land use patterns which may cause environmental or public health and safety concerns; and*
- g) ensuring that necessary infrastructure and public service facilities are or will be available to meet current and projected needs.*

The configuration and location of the subject lands accommodates the need for larger-scale employment land uses in the City to meet long-term economic development needs. The land use pattern proposed through this Official Plan and Zoning By-law amendment will promote an efficient development to sustain the financial well-being of the Province and the City with infrastructure and servicing facilities that will be available to meet the projected needs. Public health and safety concerns are not anticipated to arise from the proposed employment use of the subject lands provided that all standards and regulations are adhered to as it relates to the Windsor International Airport operations and development on airport lands.

Policy 1.1.3 Settlement Area

1.1.3.1 Settlement areas shall be the focus of growth and development.

The proposed large scale employment use for the development of light industrial, warehouse, office, service commercial, business park, and heavy industrial uses (refer to **Figure 1.0 – Location Map**) is located within the City's Settlement Area boundary. The proposed employment uses will be contiguous to the existing and planned built up area. The proposed development of the surplus airport lands is of Provincial interest and will provide a focused area for growth and development in the City.

1.1.3.2 Land use patterns within settlement areas shall be based on densities and a mix of land uses which:

- a) efficiently use land and resources;*

- b) *are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion;*
- c) *minimize negative impacts to air quality and climate change, and promote energy efficiency;*
- d) *prepare for the impacts of a changing climate;*
- e) *support active transportation;*
- f) *are transit-supportive, where transit is planned, exists or may be developed; and*
- g) *are freight-supportive.*

The subject lands are located nearby to the existing and planned commercial and industrial areas and are well served with existing infrastructure, resulting in the efficient use of land and resources in the City. The proposed employment land uses are not intended to have any negative impacts to air quality and climate change and will consider and promote energy efficiency. The physical attributes of the subject lands and surrounding infrastructure supports freight-supportive commercial and industrial development and promotes the feasibility of transit service expansion to the Sandwich South Planning District.

1.1.3.6 New development taking place in designated growth areas should occur adjacent to the existing built-up area and should have a compact form, mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities.

The proposed large scale employment uses development is located nearby to existing industrial, office, service commercial, and business park land uses. The proposed development of the surplus airport lands intensifies vacant land that is well served with existing infrastructure and provides for additional employment uses at an appropriate density in support of the development of the Sandwich South Planning District and the general employment needs of the City. The development of this land will result in the efficient use of land.

Policy 1.2.6 Land Use Compatibility

1.2.6.1 Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.

The subject lands are located adjacent to the Windsor International Airport, with a mix of service commercial and industrial uses to the south along County Road 42. To the north and east of the subject lands is currently vacant. Any planned land uses on the Windsor International Airport property must respect the requirements of Transport Canada's TP 312. The aerodrome standards and recommendations of TP 312 place various restrictions necessary within the airport land area and include

specific criteria for building structures on the property. These standards will be adhered to as the subject lands are developed. The proposed mix of employment land uses on the subject lands are located within an acceptable distance from the planned sensitive land uses within the County Road 42

Planning Area including residential, institutional, and commercial uses. The distance between the planned land uses is appropriate to minimize and mitigate any potential adverse effects from odour, noise, and other contaminants as a result of any of the proposed employment uses on the subject lands. The subject lands shall be planned to minimize any risk to public safety and to ensure the long-term operational and economic viability in accordance with provincial guidelines, standards, and procedures with consideration given for any additional requirements as it relates to the airport land use.

Policy 1.3 Employment

1.3.1 Planning authorities shall promote economic development and competitiveness by:

- a) providing for an appropriate mix and range of employment, institutional, and broader mixed uses to meet long-term needs;*
- b) providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses;*
- c) facilitating the conditions for economic investment by identifying strategic sites for investment, monitoring the availability and suitability of employment sites, including market-ready sites, and seeking to address potential barriers to investment; and*
- e) ensuring the necessary infrastructure is provided to support current and projected needs.*

The subject lands present a strategic opportunity for economic investment, being located close to existing transportation infrastructure (E C. Row Expressway, Canadian Pacific Railway, Highway 401) that will support the projected needs of the employment land uses. The subject lands are also located within the Sandwich South Planning District, an area that represents a large supply of lands suitable for new residential and employment uses. The development of the surplus airport lands for employment uses represents an opportunity for large scale and diversified economic activities to meet the needs of the planned development within the Sandwich South Planning District, as well as the City of Windsor as a whole. There is existing suitable infrastructure available to the subject lands with additional servicing planned to be extended into the Sandwich South area.

Policy 1.3.2 Employment Areas

1.3.2.1 Planning authorities shall plan for, protect and preserve employment areas for current and future uses and ensure that the necessary infrastructure is provided to support current and projected needs.

The development of the surplus airport lands for the purpose of employment uses supports the need for approximately 500 to 625 gross hectares of employment lands required to accommodate the projected need by 2026 (EDP Consulting, 2008). The proposed employment land uses are appropriate for the subject lands given the location adjacent to the Windsor International Airport, which is considered a major facility. The subject lands are supported by the necessary infrastructure, with a number of planned infrastructure improvements and additions.

1.3.2.3 Within employment areas planned for industrial or manufacturing uses, planning authorities shall prohibit residential uses and prohibit or limit other sensitive land uses that are not ancillary to the primary employment uses in order to maintain land use compatibility. Employment areas planned for industrial or manufacturing uses should include an appropriate transition to adjacent non-employment areas.

The proposed Official Plan and Zoning By-law Amendments do not permit residential uses. The proposed development of the subject lands for a mix of employment land uses will provide for an appropriate transition between the land uses with various levels of sensitivity. Further, the subject lands are of substantial size with the ability to provide on-site mitigation through spatial separation adjacent to any planned employment uses.

1.3.2.6 Planning authorities shall protect employment areas in proximity to major goods movement facilities and corridors for employment uses that require those locations.

The proposed development of the surplus airport lands protects existing lands suitable for employment uses which are well supported by existing major goods movement facilities. The subject lands are located close to major goods movement facilities and corridors including the Windsor International Airport, the Canadian Pacific Railway, and a number of primary transportation corridors used for the movement of goods including Highway 401.

1.3.2.7 Planning authorities may plan beyond 25 years for the long-term protection of employment areas provided lands are not designated beyond the planning horizon identified in policy 1.1.2.

The proposed development will provide a range and mix of employment opportunities, suitable to meet the existing and projected needs of the City of Windsor. The subject lands are expected to be developed over the course of a number of years and the lands shall not be designated beyond the identified planning horizon. There is a need for lands suitable in size to accommodate a range and mix of employment land uses, including large scale developments, within the City of Windsor. The development of these lands within the Sandwich South Planning District will help support the projected employment growth identified over the planning horizon (EDP Consulting, 2008).

Policy 1.6 Infrastructure and Public Service Facilities

1.6.3 Before consideration is given to developing new infrastructure and public service facilities:

- a) the use of existing infrastructure and public service facilities should be optimized; and*
- b) opportunities for adaptive re-use should be considered, wherever feasible.*

The existing infrastructure will be used to the maximum extent possible with the additional infrastructure being constructed for use by, and providing benefit to, the surrounding area.

Policy 1.6.6 Sewage, Water and Stormwater

1.6.6.2 Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas to support protection of the environment and minimize potential risks to human health and safety. Within settlement areas with existing municipal sewage services and municipal water services, intensification and redevelopment shall be promoted wherever feasible to optimize the use of the services.

Being located within the settlement area, the use of existing municipal sewage services and municipal water services will be optimized, along with updates anticipated within the planning horizon, to support the activities of the proposed employment land uses.

1.6.6.7 planning for stormwater management shall:

- a) be integrated with planning for sewage and water services and ensure that systems are optimized, feasible and financially viable over the long term;*
- b) minimize, or, where possible, prevent increases in contaminant loads;*
- c) minimize erosion and changes in water balance, and prepare for the impacts of a changing climate through the effective management of stormwater, including the use of green infrastructure;*
- d) mitigate risks to human health, safety, property and the environment;*
- e) maximize the extent and function of vegetative and pervious surfaces; and*
- f) promote stormwater management best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development.*

Any development of the subject lands will promote stormwater management best practices and will include facilities to address stormwater runoff and any impacts on the water quality of receiving watercourses, as determined through the required technical reports. A stormwater management plan will be undertaken as part of the Site Plan Control Application process and will be reviewed and approved in consultation with the Essex Region Conservation Authority as part of Site Plan Control Approval relating to any individual proposed employment use development.

Policy 1.6.7 Transportation Systems

1.6.7.2 Efficient use should be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible.

The subject lands are easily accessible from the major roadway network and transportation facilities, including International border crossings, the Windsor Port, the VIA Rail station, and Provincial Highways 401 and 3. The existing road network and related road improvements position the subject lands to meet the transportation needs of future development. As the proposed employment land uses are likely to involve the frequent movement of people and goods, the surrounding road network including County Road 42, Lauzon Parkway, Walker Road, E.C. Row Expressway, and Highways 401 and 3 will be used efficiently with any infrastructure upgrades carried out in a manner to facilitate increased transportation network demand.

Policy 1.7 Long-Term Economic Prosperity

1.7.1 Long-term economic prosperity should be supported by:

- a) promoting opportunities for economic development and community investment-readiness;*
- c) optimizing the long-term availability and use of land, resources, infrastructure and public service facilities;*
- g) providing for an efficient, cost-effective, reliable multimodal transportation system that is integrated with adjacent systems and those of other jurisdictions, and is appropriate to address projected needs to support the movement of goods and people; and*
- l) encouraging efficient and coordinated communications and telecommunications infrastructure.*

The development of the surplus airport lands represents a considerable opportunity for economic development and will facilitate the community's investment-readiness through the establishment and designation of the subject lands for employment land uses. The availability of suitable, high quality services business parks/employment lands is one of several factors that potential investors may consider in site selection decisions for investment. These lands within the Sandwich South Planning District are particularly important for the City of Windsor to move forward with preparing for development in an effort to accommodate the project needs of the City.

The Windsor International Airport Master Plan (2010) identifies the surplus airport lands are being strategically located for the potential development of a multi-modal transportation hub as there is the availability to efficiently use the existing networks including roads, rail, ports, airports, inter-modal facilities, and border crossings. These existing facilities can accommodate the projected needs to support the movement of goods and people. Further, the existing communications and telecommunications infrastructure is suitable as Bell Canada and Cogeco Cable have indicated that they can readily accommodate the servicing requirements for future development on the airport lands

(Windsor International Airport Master Plan 2010). Overall, the development of the surplus airport lands will lead to the long-term economic success and prosperity of the City of Windsor.

Policy 1.8 Energy Conservation, Air Quality and Climate Change

1.8.1 Planning authorities shall support energy conservation and efficiency, improved air quality, reduced greenhouse gas emissions, and preparing for the impacts of a changing climate through land use and development patterns which:

- c) focus major employment, commercial and other travel-intensive land uses on sites which are well served by transit where this exists or is to be developed, or designing these to facilitate the establishment of transit in the future; and*
- d) focus freight-intensive land uses to areas well served by major highways, airports, rail facilities and marine facilities.*

The development of the surplus airport lands for a mix of employment uses will support the intensification of the area in a manner that will make the most effective use of infrastructure and be transit supportive. Future development of the subject lands will be able to take advantage of the area's strong transportation connections as the lands are located in a high-profile area adjacent to major facilities and corridors. The proposed employment uses will be well serviced by the nearby Provincial Highways 401 and 3, the future improved County Road 42 and Lauzon Parkway, the Windsor International Airport, and the Canadian Pacific Railway. The existing supportive transportation network provides an opportunity for energy conservation and efficiency, improved air quality, and reduced greenhouse gas emissions.

Policy 2.1 Natural Heritage

2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

At the eastern boundary of the subject lands are two areas identified as the Airport Woodlots, which are considered significant by the Province, City of Windsor, and Essex Region Conservation Authority. The long-term ecological function and biodiversity of these natural heritage features will be further

investigated to determine the best strategies for maintaining and/or improving their function. Any future development on the subject lands will adhere to all Provincial and Municipal policies and recommendations as it relates to the Natural Heritage features. The required studies and, if necessary, approvals will be completed/obtained in accordance with Policy 2.1.8.

Policy 2.6 Cultural Heritage and Archaeology

2.6.2 Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.

A Stage 1 Archaeological Assessment was completed by Lincoln Environmental Consulting Corp., dated May 2023. The Stage 1 Archaeological Assessment recommends a Stage 2 Assessment for the entirety of the subject lands. Preliminary results indicated nothing of significance was discovered. Reports are currently being finalized and submitted to the MHSTCI for review and entry into the Ontario Public Register of Archeological Reports.

4.1.2 Policy Analysis Conclusion

We are of the opinion the development of the surplus airport lands for employment land uses is consistent with the Provincial Policy Statement, 2020 as demonstrated through the above analysis of applicable policies. The Provincial Policy Statement policies are included in **Appendix A – Provincial Policy Statement 2020 Policies**.

4.2 City of Windsor Official Plan

Similar to the Provincial Policy Statement, the City of Windsor Official Plan (OP) supports the direction of growth and development with consideration towards social, environmental, and economic matters. Land use designations in the Official Plan are intended to promote a compact pattern of development with compatible development directed to appropriate locations in existing and future neighbourhoods. In the Essex Region, the City of Windsor is the main employment, population, and cultural centre. The subject lands are currently designated as Airport, Industrial, and Future Employment Area in Schedule D – Land Use Plan of the City of Windsor Official Plan. The current land use designations do not permit the development of employment uses on the entirety of the proposed subject lands. The current Airport and Industrial land use designations are to remain. The proposed City of Windsor Official Plan Amendment (OPA) will be brought forward to City Council for consideration to redesignate the portion of the subject lands designated as Future Employment Area to the Industrial or Business Park land use designations. The final configuration of the land use designation boundaries is to be determined. The proposed OPA will facilitate the availability of suitable lands appropriate for large scale employment uses in the City of Windsor.

The Airport, Industrial, and Business Park land use designations permit a broad range of employment uses. Due to the characteristics of the built form and operations of such uses, various employment land uses are more appropriately clustered together and separated from sensitive land uses (OP, 6.4.3). Our analysis suggests that the proposed development of the surplus airport lands, subject to the approval of the Official Plan and Zoning By-law Amendments, will be in conformity with the applicable policies of the Official Plan, which include the following:

- Section 3.2.2, relating to a vibrant economy;
- Section 3.2.3, relating to a sustainable, healthy environment;
- Section 3.3, relating to the urban structure plan;
- Section 4.2.6., relating to objectives for economic opportunity for a healthy community;
- Section 5.4.5, relating to noise and vibration policies;
- Section 6.1, relating to goals for land use designations and associated policies;
- Section 6.4, relating to employment policies;
- Section 6.4.3, relating to the Industrial land use designation policies;
- Section 6.4.4, relating to the Business Park land use designation policies;
- Section 6.12, relating to Windsor Airport;
- Section 6.13.4, relating to Future Employment Area policies;
- Section 7.2.2, relating to the transportation system;
- Section 7.2.3, relating to pedestrian network policies;
- Section 7.2.4, relating to the cycling network;
- Section 7.2.5, relating to public transportation;
- Section 7.2.6, relating to road network policies;
- Section 7.2.10, relating to air transportation policies;
- Section 7.3.2, relating to general policies for infrastructure;
- Section 7.3.3, relating to infrastructure provision policies;
- Section 7.3.4, relating to sewage and stormwater management works
- Section 7.3.5, relating to solid waste management;
- Section 7.3.6, relating to utilities and other infrastructure policies;
- Section 8.2.2, relating to urban design for the image of Windsor;
- Section 8.3.2, relating to design for people;

Section 8.4.2, relating to pedestrian access;

Section 8.7, relating to built form;

Section 8.12, relating to safety;

Section 8.13, relating to lighting;

Section 9.3.2, relating to identification of heritage resources; and

Section 11.6.3, relating to zoning by-law amendments.

4.2.1 Policy Analysis

Section 3.2.2.1 Employment Centres

Windsor's economy will be stimulated by active employment centres that serve the larger Census Metropolitan Area. These centres will cluster appropriate large-scale employment, shopping and entertainment uses together to create exciting areas for employment and investment. With convenient access to major transportation routes, these centres will be transit friendly and poised to take advantage of Windsor's role as an international gateway.

The proposed change in land use designation will support economic investment in the City of Windsor by providing a large area of lands suitable for employment land uses. The employment land uses shall be clustered together to create efficient employment and investment opportunities. The subject lands are adjacent to a major facility and have convenient access to major transportation routes. As the Sandwich South Planning District develops, the intensification provided by the proposed development of the surplus airport lands will encourage the development of transit infrastructure.

The Windsor International Airport Master Plan (2010) identified the opportunity for trans border business between Detroit/Windsor, the Windsor International Airport, and the Sandwich South Planning District. The proposed employment lands have the potential to serve as a primary business gateway and a major logistics cluster. The development of the subject lands presents a strategic market opportunity given that the lands are located in close proximity to the Windsor-Detroit gateway and Highway 401, providing convenient access to major transportation networks.

Section 3.2.3.1 Transportation System

Windsor will work toward achieving a sustainable transportation system where all modes of transportation can play a more balanced role. The creation of mixed use and employment centres will allow businesses and services to be closer to homes and allow greater opportunities for walking, cycling and transit.

The subject lands are located north of the County Road 42 Planning Area. The County Road 42 Planning Area supports a range and mix of land uses including residential, commercial, institutional, business park, and mixed use. The proposed employment land uses on the surplus airport lands will be appropriately located and planned for to account for these sensitive land uses within the County Road 42 Planning Area. The close proximity to planned residential and commercial service land uses will promote opportunities for walking, cycling, and transit infrastructure within the community. The location of the subject lands nearby to major transportation networks will facilitate efficient use of the multi-modal transportation system.

Section 3.3.1.2 Major Activity Centres

Major Activity Centres are second in the hierarchy of nodes in Windsor. The following comprise Windsor's Major Activity Centres:

- (a) Regional Commercial Centres;*
- (b) Regional Institutional Centres;*
- (c) Regional Employment Centres; and*
- (d) Regional Open Space System.*

These types of nodes are considered to be sub-regional in the context of Windsor and were originally planned as single-use facilities that have evolved into multi-use urban areas with a variety of densities.

(c) Regional Employment Centres

Regional Employment Centres are a type of Major Activity Centre where a large number of jobs are located. This type of node typically serves as a location for the large-scale manufacturing or distribution of goods. Additionally, retail, office and personal service uses may be established as ancillary uses.

According to Schedule "J" – Urban Structure Plan of the City's Official Plan, the subject lands are designated as a Regional Employment Centre.

The Regional Employment Centre is intended to be an area where a larger number of jobs are located. Regional Employment Centres exist to serve as the location for clusters of manufacturing and commercial land uses. The proposed development of the subject lands for employment land uses is consistent with the objectives of the Regional Employment Centre and will act as a hub of economic activity within the Sandwich South Planning District.

The subject lands are located directly north of an area identified as a Regional Institutional Centre. There is potential for the less intensive employment uses to develop nearby to the Regional Institutional Centre, taking advantage of possible synergies and unique market opportunities to promote investment and economic growth within the Sandwich South Planning District.

Section 4.2.6.1 Employment Opportunities

To provide for a wide range of employment opportunities at appropriate locations throughout Windsor.

The proposed development of the subject lands for employment uses including light industrial, warehouse, office, service commercial, business park, and heavy industrial uses adds to the range of employment options available. The location of the subject lands is appropriate given the anticipated economic and population growth patterns within the City and the development plan for the Sandwich South Planning District. The subject lands are well serviced by the existing and planned infrastructure and represent the opportunity to provide large scale lands suitable and available for investment. The development of the subject lands for employment uses accommodates the projected employment land requirements for the City.

Section 4.2.6.2 Economic Development

To encourage a range of economic development opportunities to reach full employment.

The proposed development is supportive of economic development opportunities for the City of Windsor that will provide additional employment options for residents. The proposed development of the surplus airport lands for employment land uses is consistent with the desire to attract increased economic activity to the airport lands and position the Sandwich South Planning District as a primary business gateway and major multi-modal hub (Windsor International Airport Master Plan, 2010).

Section 5.4.5.1 Regard for Noise & Vibration

Council shall require the proponent of development in proximity to existing or proposed sources of noise and vibration, or the proponent of development that may be a source of noise or vibration, to evaluate the potential negative impacts of such noise and vibration on the proposed future land use. In determining the exact distances for the application of this policy, the Municipality shall have regard to provincial legislation, policies and appropriate guidelines (Amended by OPA 43 – 06/13/2006 – OMB Order 1695)

Airport operations may be the source of significant noise and vibration impacts. To estimate the potential noise impacts on areas in the vicinity of airport operations, Noise Exposure Forecast contours (NEF) are used to measure the likely level of community response to airport noise. In 2009, a noise exposure forecast was prepared for the Windsor International Airport. The NEF around the airport was forecasted at 25 and 30. TP1247 – Land Use in the Vicinity of Airports (Transport Canada) outlines land uses that are compatible from a noise perspective. Given the NEF values of 25 and 30, TP1247 indicates that the proposed land uses for employment uses represents compatible land use planning with minimal noise conflicts. The proposed land uses may act as a source of noise and vibration. Any development

shall consider implementing noise control actions, especially as development approaches the planned sensitive land uses to the south of County Road 42.

Section 5.4.5.2 Require Study

If a proposed development is expected to be subject to noise or vibration, or to cause noise or vibration, the proponent shall be required to complete a noise and/or vibration study to the satisfaction of the Municipality to support the feasibility of the proposal in accordance with the Procedures chapter of this Plan. (Amended by OPA 43 – 06/13/2006 – OMB Order 1695)

The development of the surplus airport lands for employment land uses may create noise and vibration impacts. As such, any new development shall evaluate any potential negative impacts from noise and vibration in order to support the feasibility of the proposed development. Given the size of the subject lands, and the variety of potential development options, there is considerable opportunity for abatement measures. Any new development with expected noise and vibration impacts shall complete the required studies as per any municipal, provincial, or federal requirements. Special consideration should be given to any proposed land uses directly adjacent to airport operations. Transport Canada's TP1247 should be consulted to ensure safe and compatible development as it relates to noise and vibration impacts.

Section 5.4.5.3 Abatement Measures

Abatement measures may include one or more of the following, depending on the physical characteristics of the specific location and the source of the noise and/or vibration:

- (a) increased setbacks from the noise or vibration source;*
- (b) sound barriers such as landscaped berms, walls, buildings, and fences;*
- (c) building design, including specific attention to height, massing, internal layout and fenestration;*
- (d) building construction, including materials for acoustical and/or vibration insulation, glaze or ventilation;*
- (e) registered notice on title of possible excessive noise and/or vibration; and*
- (f) any other appropriate attenuation measures.*

Future development of the surplus airport lands for light industrial, warehouse, office, service commercial, business park, and heavy industrial land uses shall consider the appropriate abatement measures based on any expected noise and vibration impacts either as a result of the adjacent airport operations or as a result of the proposed use. The final consideration and detail of the appropriate abatement measures will be determined at the detailed design stage of any individual future development proposal.

Section 5.4.5.4 Implementation

Council shall require that appropriate noise and/or vibration abatement measures be implemented by the proponent as a condition of development approval.

Should a noise and vibration study be required for any individual development proposal, said proposal shall consider the appropriate abatement measures to be implemented at the detailed design stage as a condition of development approval.

Section 6.1.4 Employment

The retention and expansion of Windsor's employment base.

The proposed development of the surplus airport lands for large scale employment land uses will contribute to the goal of expansion of Windsor's employment base, especially in the Sandwich South Planning District. Given the longevity and scale that the development of these lands will provide, there is the potential to generate a large number of new jobs and economic activity. The use of the surplus airport lands for a diverse set of employment uses will support, expand, and retain the employment base within the City and the surrounding region.

Section 6.1.12 Airport

Protection and enhancement of Windsor Airport's role in serving passenger and cargo needs. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

The development of the surplus airport lands for employment land uses has the potential to enhance the Windsor Airport's role in serving passenger and cargo needs as it will generate an increase in economic activity and will support businesses and industries that rely on air transportation. Special consideration and adherence to all applicable legislation will ensure that no incompatible land uses are proposed within the Airport Operating Area.

Section 6.1.13 Future Growth Areas

The provision of sufficient land in appropriate locations to accommodate future population and employment growth in Windsor. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

The proposed Official Plan and Zoning By-law Amendments will facilitate the logical development of the surplus airport lands for employment land uses, which will ensure a sufficient supply of land to accommodate new commercial and industrial activity. The development of the subject lands will make use of appropriately located lands based on the intent of the Sandwich South Planning District and the City's development phasing plan.

Section 6.4.1 Employment Lands Objectives

The following objectives establish the framework for development decisions in Employment areas:

- (6.4.1.1) to ensure Windsor continues to be an attractive place to establish businesses and locate employees;*
- (6.4.1.3) to ensure that employment uses are developed in a manner which are compatible with other lands uses;*
- (6.4.1.4) to accommodate a full range of employment activities in Windsor;*
- (6.4.1.5) to enhance the quality of employment areas by providing complementary services and amenities;*
- (6.4.1.6) to locate employment activities in areas which have sufficient and convenient access to all modes of transportation; and*
- (6.4.1.11) to promote comprehensively planned employment areas.*

The use of the surplus airport lands for employment land uses satisfies a number of objectives set out for the employment land use within the City of Windsor. By providing appropriately designated and zoned lands of a large scale, the City will be able to attract and support a range and mix of economic investment opportunities. The subject lands will develop comprehensively in a manner which promote compatibility between individual proposals and takes advantage of any potential synergies between industries. The subject lands are suitably located with convenient access to a variety of transportation modes including air, vehicular, and rail.

Section 6.4.2.1 Sufficient Supply

Council shall designate a sufficient supply of appropriately located Industrial and Business Park lands to meet the projected 20-year employment demands.

The development of the surplus airport lands for employment land uses will add to the supply of lands suitable for a range and mix of development options in support of the current need for the City to supply designated and appropriately zoned employment lands to meet the employment demands.

Section 6.4.2.2 Attract Business

Council shall encourage businesses and industries to locate and expand in Windsor.

The surplus airport lands have the potential to be a driver of economic activity and contribute significantly to the expansion of new and existing industries in the City. The availability of the subject lands for a range and mix of employment uses will build on Windsor's manufacturing strength while diversifying via building up adjacent sectors. The development of the subject lands will support the

desire to attract new investments, leverage infrastructure investments, and exploit economic trends to drive growth.

Section 6.4.2.3 City Participation

Council shall facilitate economic investment by:

- (a) planning and developing Industrial and Business Park areas;*
- (b) participating in the development or redevelopment of strategic areas of Windsor;*
- (c) fostering public-private partnerships to facilitate economic development; and*
- (d) other measures as may be appropriate.*

The surplus airport lands represent an opportunity for appropriately located commercial and industrial development. The subject lands are strategically located in an area of the City that is expected to experience significant growth, while being well supported by the existing infrastructure network. This significant opportunity for economic development will attract new investment interest and may generate public-private partnerships to facilitate growth within the City. The development of the subject lands will require Council's participation in appropriately designating and zoning the lands to facilitate the suitable development of employment land uses.

Section 6.4.2.4 Site Plan Control

Council shall require all development within areas designated as Industrial and Business Park to be subject to site plan control, with the exception of Public Open Space uses.

Any individual development proposal within the subject lands will be subject to Site Plan Control Approval prior to the issuance of any building permits.

Section 6.4.3.1 Permitted Uses in the Industrial Land Use Designation

Uses permitted in the Industrial land use designation identified on Schedule D: Land Use include establishments which may exhibit any or all of the following characteristics:

- (a) large physical size of site or facilities;*
- (b) outdoor storage of materials or products;*
- (c) large production volumes or large product size;*
- (d) frequent or continuous shipment of products and/or materials;*
- (e) long hours of production and shift operations;*
- (f) likelihood of nuisances, such as noise, odour, dust or vibration;*
- (g) multi-modal transportation facilities;*
- (h) is dependent upon, serves or otherwise complements the industrial function of the area; and (amended by OPA #22 – 07/16/02); and*
- (i) service and repair facilities. (amended by OPA #22 – 07/16/02).*

The Official Plan Amendment to designate a portion of the subject lands as Industrial will provide the opportunity for a range and mix of uses to accommodate the employment land needs of the City and generate diverse economic investment. While the specific uses of the subject lands have not yet been identified, there is a desire to prepare a large area of lands to accommodate the employment demands that the City is expecting. Any future individual proposals within the Industrial land use designation shall adhere to the permitted uses as identified in the Official Plan.

Section 6.4.3.3. Locational Criteria

Industrial development shall be located where:

- (a) the industrial use can be sufficiently separated and/or buffered from sensitive land uses;*
- (b) there is access to an arterial road;*
- (c) full municipal physical services can be provided;*
- (d) industry related traffic can be directed away from residential areas;*
- (e) peak period public transportation service can be provided; and*
- (f) there is access to designated truck routes.*

The subject lands are sufficiently separated away from nearby sensitive land uses, with the intent that the more intensive industrial uses be located adjacent to the airport operations and the less intensive uses be located closer to County Road 42 and the 9th Concession Road. The subject lands have direct access to County Road 42 which is designated as a Class I arterial road and provides connection to designated truck routes and the greater transportation network including Provincial Highways 401 and 3. The industry related traffic will be directed away from nearby residential areas. While no public transportation service is currently available in the area, there is the planned expansion of transit services to the Sandwich South Planning District. Full municipal services are available to the subject lands with planned improvements.

Section 6.4.3.4 Evaluation Criteria

At the time of submission, the proponent shall demonstrate to the satisfaction of the Municipality that a proposed industrial development is:

- (a) feasible having regard to the other provisions of this Plan, provincial legislation, policies and appropriate guidelines and support studies for uses:

 - (i) within or adjacent to any area identified on Schedule C: Development Constraint Areas and described in the Environment chapter of this Plan;*
 - (ii) within a site of potential or known contamination;*
 - (iii) where traffic generation and distribution is a provincial or municipal concern; and*
 - (iv) adjacent to sensitive land uses and/or heritage resources.**
- (b) in keeping with the goals, objectives and policies of any secondary plan or guideline plan affecting the surrounding area;*

- (c) capable of being provided with full municipal physical services and emergency services;*
- (d) provided with adequate off-street parking; and*
- (e) compatible with the surrounding area in terms of siting, orientation, setbacks, parking and landscaped areas.*

The development of the surplus airport lands is feasible based on the provisions of the Official Plan, provincial legislation, and other legislation and policies as it relates to the Windsor International Airport and the development of airport lands / vicinity lands. The development of these lands for employment land uses is in keeping with the goals of the Sandwich South Planning District and the Windsor International Airport Master Plan, along with the Official Plan and other applicable policies and guidelines. There is available municipal services and emergency services readily available to the subject lands, as well as a suitable transportation network to support the needs of the industrial uses. Development on the subject lands will occur in a manner that is compatible with each individual proposed use and will provide the appropriate transition from the airport operations to the planned land uses within the County Road 42 Planning Area.

Section 6.4.3.5 Design Guidelines

The following guidelines shall be considered when evaluating the proposed design of an Industrial development:

- (a) the ability to achieve the associated policies as outlined in the Urban Design chapter of this Plan;*
- (b) the provision of appropriate landscaping or other buffers to enhance:

 - (i) all parking lots, and outdoor loading, storage and service areas; and*
 - (ii) the separation between the industrial use and adjacent sensitive uses, where appropriate.**
- (c) motorized vehicle access is oriented in such a manner that industry related traffic will be discouraged from using Local Roads where other options are available;*
- (d) pedestrian and cycling access is accommodated in a manner that is distinguishable from the access provided to motorized vehicles and is safe and convenient;*
- (e) loading bays and service areas are located to avoid conflict between pedestrian circulation, service vehicles and movement along the public right-of-way; and*
- (f) the design of the development encourages and/or accommodates public transportation services.*
- (g) the design of the development encourages the retention and integration of existing woodlots, vegetation and drainage corridors where feasible to provide amenity areas for employees and to create a positive visual image of industry in Windsor. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)*

The design of any individual industrial development proposal shall adhere to the design guidelines as set out by the Official Plan. Design review through the Site Plan Control Approval process per each development proposal will ensure that the development of the subject lands occurs in a manner that will contribute to the positive visual image of industry in Windsor.

Section 6.4.4.1 Permitted Uses in the Business Park Land Use Designation

Uses permitted in the Business Park land use designation include:

- (a) establishments devoted to research, development and information processing, offices, services, industrial research and/or training facilities, communication, production uses, printing and publishing; and*
- (b) selected industrial uses which:*
 - (i) do not create nuisances such as noise, dust, vibration or odour;*
 - (ii) confine industrial operations within a building and/or structure; and*
 - (iii) do not require outside storage.*

The Official Plan Amendment to designate a portion of the subject lands as Business Park will provide the opportunity for a range and mix of uses to accommodate the employment land needs of the City and generate diverse economic investment. While the specific uses of the subject lands have not yet been identified, there is a desire to prepare a large area of lands to accommodate the employment demands that the City is expecting. Any future individual proposals within the Business Park land use designation shall adhere to the permitted uses as identified in the Official Plan.

Section 6.4.4.3. Locational Criteria

Business Park development shall be located where:

- (a) the business park uses can be sufficiently separated and/or buffered from sensitive land uses;*
- (b) the site will be accessible and highly visible from Controlled Access Highway of a Class I or Class II Arterial Road;*
- (c) full municipal physical services can be provided;*
- (d) business park related traffic can be directed away from residential areas;*
- (e) public transportation service can be provided; and*
- (f) there is access to designated truck routes.*

The subject lands are sufficiently separated from the existing and planned nearby sensitive lands uses. Development of the subject lands will feature the less intensive and intrusive employment uses along County Road 42. The employment uses along County Road 42 shall be well buffered from the planned land uses within the County Road 42 Planning Area. The subject lands have direct access to County Road 42 which is designated as a Class I arterial road and provides access to the existing transportation network which will direct the employment related traffic away from any residential areas and provide access to designated truck routes. The development of the surplus airport lands will support the planned expansion of public transit services to the Sandwich South Planning Area. The subject lands are supported by full municipal services with access to emergency services.

Section 6.4.4.4 Evaluation Criteria

At the time of submission, the proponent shall demonstrate to the satisfaction of the Municipality that a proposed industrial development is:

- (a) feasible having regard to the other provisions of this Plan, provincial legislation, policies and appropriate guidelines and support studies for uses:

 - (i) within or adjacent to any area identified on Schedule C: Development Constraint Areas and described in the Environment chapter of this Plan;*
 - (ii) within a site of potential or known contamination;*
 - (iii) where traffic generation and distribution is a provincial or municipal concern; and*
 - (iv) adjacent to sensitive land uses and/or heritage resources.**
- (b) in keeping with the goals, objectives and policies of any secondary plan or guideline plan affecting the surrounding area;*
- (c) capable of being provided with full municipal physical services and emergency services;*
- (d) provided with adequate off-street parking; and*
- (e) compatible with the surrounding area in terms of siting, orientation, setbacks, parking and landscaped areas.*

The development of the surplus airport lands is feasible based on the provisions of the Official Plan, provincial legislation, and other legislation and policies as it relates to the Windsor International Airport and the development of airport lands / vicinity lands. The development of these lands for employment land uses is in keeping with the goals of the Sandwich South Planning District and the Windsor International Airport Master Plan, along with the Official Plan and other applicable policies and guidelines. There is available municipal services and emergency services readily available to the subject lands, as well as a suitable transportation network to support the needs of the business park uses. Development on the subject lands will occur in a manner that is compatible with each individual proposed use and will provide the appropriate transition between the airport operations and the planned land uses within the County Road 42 Planning Area.

Section 6.4.4.5 Design Guidelines

The following guidelines shall be considered when evaluating the proposed design of a Business Park development:

- (a) the ability to achieve the associated policies as outlined in the Urban Design chapter of this Plan;*
- (b) the massing and scale of buildings, and the extent of which their orientation, form and siting help to enhance the well landscaped setting of the business park;*
- (c) the provision of functional and attractive signage;*
- (d) the provision of appropriate landscaping or other buffers to enhance:

 - (i) all parking lots, and outdoor loading and service areas; and*
 - (ii) the separation between the use and adjacent sensitive uses, where appropriate.**

- (e) motorized vehicle access is orientated in such a manner that business park related traffic will be discouraged from using Local Roads where other options are available;*
- (f) loading bays and service areas are located to avoid conflict between pedestrian circulation, service vehicles and movement along the public right-of-way;*
- (g) pedestrian and cycling access is accommodated in a manner which is distinguishable from the access provided to motorized vehicles and is safe and convenient;*
- (h) the design of the development encourages and/or accommodates public transportation services; and*
- (i) the design of the development encourages the retention and integration of existing woodlots, vegetation and drainage corridors where feasible to provide amenity areas for employees and to create a positive visual image of industry in Windsor. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)*

The design of any individual business park development proposal shall adhere to the design guidelines as set out by the Official Plan. Design review through the Site Plan Control Approval process per each development proposal will ensure that the development of the subject lands occurs in a manner that will contribute to the positive visual image of industry in Windsor.

Section 6.12.1 Windsor Airport Objectives

- (6.12.1.1) to recognize and strengthen the airport's role in the City of Windsor as an important component of the transportation system;*
- (6.12.1.2) to provide for suitable groundside and airside uses and services; and*
- (6.12.1.3) to minimize the potential for conflicting or incompatible land uses.*

The development of the surplus airport lands for employment land uses will strengthen the airport's role in the City and will take advantage of the transportation system. The employment land uses proposed for the subject lands have the potential to maximize the availability of the airport for the movement of goods and people. Groundside employment includes public or private concerns not requiring direct airside access including airport and non-airport uses. Airside employment includes general aviation facilities and functions requiring airside access. Less intensive employment land uses shall be focused away from the airport operations and closer to County Road 42. No land uses that create conflict with airport operations shall be considered within the subject lands.

Section 6.12.2 Windsor Airport Policies

Uses permitted in the Airport land use designation identified on Schedule 'D': Land Use are as follows:

- (a) civilian or military airport;*
- (b) airport terminal facilities and communications structures;*
- (c) uses permitted in Employment Areas, as described by Section 6.4, provided that they do no conflict with aircraft operations;*

- (d) hotels and related commercial uses; and*
- (e) other uses in accordance with the Windsor Airport Master Plan, Land Use and Reserve Land Plan, as amended from time to time.*

A portion of the subject lands are currently designated as Airport. This land use designation is to remain on these lands and will not be considered as part of the Official Plan Amendment. Development occurring on the portion of lands designated as Airport shall be required to conform to the above noted permitted uses. Land uses on the airport property must further respect the requirements of Transport Canada's TP 312 and TP 1247.

Section 6.13.4 Future Employment Area Policies

(6.13.4.1) the Future Employment Area designation is intended to accommodate future Industrial and Business Park designations;

(6.13.4.3) Council may consider site-specific Official Plan Amendments for a Future Employment Area without requiring a Secondary Plan provided the proposed development is of a large-scale, single use nature such as a multi-modal transportation facility or large manufacturing plant. Site specific exemptions will only be considered where all studies relation to physical servicing, transportation, environmental evaluation or others as requires by this Plan are completed as part of an alternative planning process and where the absence of a Secondary Plan will not jeopardize the orderly planning and development of the site or surrounding lands; and

(6.13.4.4) Future Employment Areas shall develop on full municipal physical services in accordance with the policies contained in Section 7.3 of this Plan.

The portion of the subject lands designated as Future Employment Area are intended to be redesignated to Industrial and Business Park land use designations. The final configuration of the land use designations is to be determined based on projected employment needs. The development of the subject lands is intended for large-scale industrial and business park investment. As of the date of this report studies related to physical servicing, transportation, and environmental evaluation have been completed by Dillon Consulting Limited in support of the proposed Official Plan and Zoning By-law Amendments. While there is no secondary plan complete for the subject lands, there is no anticipated negative impact to the orderly planning of the subject lands given that the property will be owned by the City of Windsor and leased to future proponents of development. There is no negative impact to the surrounding lands anticipated as there is a secondary plan in place for the lands to the south known as the County Road 42 Planning Area. Full municipal services are expected to be available to the subject lands as indicated in the supporting studies.

Section 7.2.2.5 Alternative Development Patterns

Council shall promote development patterns that support an increase in walking, cycling and public transportation in accordance with the Land Use and Urban Design chapters of this Plan.

The subject lands represent an opportunity to comprehensively development a large area with increase employment density. The development pattern planned for the subject lands supports the expansion of transit services to the Sandwich South Planning District and may encourage the increase in active transportation methods as the County Road 42 Planning Area develops and a range and mix of land uses become available nearby. There is long-term opportunity for the thoughtful integration of a multi-modal transportation network in the area though the implementation of alterative development patterns.

Section 7.2.2.9 Truck Route System

Council shall establish and manage a truck route system to minimize the intrusion of trucks into sensitive areas while providing acceptable access to business and industries.

The subject lands have direct access from County Road 42 which is designated as a Class I arterial road and as a truck route. County Road 42 provides access to Walker Road and Lauzon Road. Walker Road provides direct access to Provincial Highways 401 and 3 with Lauzon Road providing future access to Highway 401. Trucks will have sufficient access from the subject lands to the existing major roadway network and transportation facilities. The existing road network and related road improvements position the subject lands well to meet the transportation needs of future development. The subject lands are easily accessed from the International border crossings, the Windsor Port, the VIA Rail station, E.C Row Expressway, and Provincial Highways 401 and 3. The suitability of the existing truck route system to support the proposed development of the subject lands for employment use is to be confirmed through the applicable technical studies and reports.

Section 7.2.2.10 Truck Access

Council recognizes that while truck access is necessary for some properties, the adverse effects of truck traffic shall be minimized by:

- (a) Discouraging truck traffic in residential and pedestrian oriented areas;*
- (b) Directing land uses which generate substantial truck traffic to appropriate areas in accordance with the Land Use chapter of this Plan;*
- (c) Ensuring the proper design of roads intended to carry truck traffic; and*
- (d) Implementing other measures as may be appropriate and necessary.*

Any negative impacts anticipated from future truck traffic related to the development of the surplus airport lands will be minimized as the subject lands are not located within a residential area, or an area that is predominantly pedestrian-oriented. The proposed employment land uses are appropriate given the subject lands meet the locational criteria outlined in the Official Plan for Industrial and Business Park land uses. As such, any impacts from the substantial truck traffic anticipated will be minimized based on direction provided through additional technical studies and reports.

Section 7.2.2.11 Hazardous Goods

Council shall restrict the movement of hazardous goods to transportation routes which avoid high risk areas and provide safe and direct access to their intended destination.

The potential for movement of hazardous goods related to operations of the proposed employment land uses are appropriately restricted to transportation routes with direct access to intended destinations, avoiding high risk areas.

Section 7.2.2.12 Parking & Loading Facilities

Council shall require adequate off-street parking and loading facilities as a condition of development approval in accordance with the Land Use chapter of this Plan.

Any individual development proposals shall contain ample off-street parking areas with loading facilities located on-site.

Section 7.2.2.18 Land Use and Transportation

Council shall recognize the link between land use and transportation systems by:

- (a) Focusing office development and high-density employment and high density residential in areas which have access to transit and pedestrian amenities;*
- (b) Encouraging commercial and employment uses within 400 metres to 800 metres of residential areas to promote the use of active transportation and to promote transit service.*

The development of the subject lands represents the opportunity for the development of high-density employment and supports the planned expansion of transit services to the Sandwich South Planning District. The development of the subject lands will include the appropriate pedestrian amenities such as sidewalks and bicycle parking. The subject lands are located adjacent to the County Road 42 Planning Area which will feature a mix of residential densities, including high density residential options, in support of a multi-modal transportation network.

Section 7.2.2.20 Transit Supportive Development

Council shall support transit by planning for compact mixed-use, higher density residential, commercial and employment development within concentrated nodes and corridors that are adjacent to higher order transit corridors.

The development of the surplus airport lands will support the expansion and use of transit in the Sandwich South Planning District. The high-density employment use is located within a Regional Employment Centre and adjacent to a Regional Institutional Centre. These areas have the potential to act as nodes for transit services and be focal areas within the City.

Section 7.2.2.21 Minimizing Vehicle Trips and Travel Distances

Council shall implement land use patterns that promote sustainable travel by locating land uses within reasonable walking or cycling distance by:

- (a) Encouraging development that include an appropriate mix of residential, commercial and employment lands within reasonable walking distance of each other;*
- (b) Planning higher density developments in areas along major transportation corridors and nodes;*
- and*
- (c) Integrating land use and transportation planning decisions by ensuring each fit the context of each other's specific needs.*

The development of the subject lands for higher density employment uses is appropriate given the location along the County Road 42 transportation corridor with connections to other major transportation corridors including E.C Row Expressway and Provincial Highways 401 and 3. Planned improvements to the existing transportation networks including work to County Road 42 and the extension of Lauzon Road to Highway 401 will further support the development of the subject lands. The subject lands are located at an appropriate distance from the County Road 42 Planning Area planned land uses, including a mix of institutional, residential, and commercial development, to facilitate the use of active transportation and minimize the number of vehicle trips. The expansion of transit services to the Sandwich South Planning District will be supported through the development of high-density employment uses on the subject lands. The combination of these existing and planned elements will work holistically to reduce the number of vehicle trips required.

Section 7.2.2.25 Transit Supportive Design

Council shall support transit friendly design by:

- (a) Planning for compact, higher density developments along nodes and corridors;*
- (e) Promoting urban design that encourages walking and cycling; and*
- (f) Requiring entranceways proximate to the public right of way to reduce walking distances for pedestrians, particularly those who are mobility impaired.*

The subject lands are located within a Regional Employment Centre and adjacent to a Regional Institutional Centre. These areas have the potential to be important destinations within the regional public transit network. The subject lands are located along the County Road 42 corridor which provides access to a number of significant transportation facilities. As individual development proposals are brought forth, they shall consider the site layout so as to support walking and cycling access from the public rights-of-ways.

Section 7.2.3.1 Pedestrian Movement

Council shall require all proposed developments and infrastructure undertakings to provide facilities for pedestrian movements wherever appropriate by:

- (a) Requiring safe, barrier free, convenient and direct walking conditions for persons of all ages and abilities;*
- (b) Ensuring that all residents have access to basic community amenities and services and public transit facilities without dependence on car ownership; and*
- (c) Providing a walking environment within public rights-of-ways that encourages people to walk to work or school, for travel, exercise, recreation and social interaction.*

The development pattern of the subject lands shall provide adequate walking conditions for all people to facilitate pedestrian movement throughout the subject site. Any development on the subject lands shall consider providing amenities for employees which are accessible without a car and will encourage exercise and social interaction. Where possible, connections to development within the County Road 42 Planning Area shall be considered to allow people to walk between work, home, and their other daily needs. Detailed pedestrian facilities shall be determined during the detailed design phase of any individual development proposal.

Section 7.2.4.1 Cycling

Council shall require all proposed developments and infrastructure undertakings to provide facilities for cycling movement and parking wherever appropriate.

The development pattern of the subject lands shall provide adequate cycling facilities such as bicycle lanes and parking where appropriate. Detailed bicycle facilities shall be determined during the Site Plan Control Approval stage of any individual development proposal.

Section 7.2.5.1 Public Transportation

Council shall require all proposed developments and infrastructure undertakings to provide facilities for public transportation wherever appropriate.

While no public transit service currently exists in the area, there is the planned expansion of transit services to the County Road 42 Planning Area. The development of the surplus airport lands represents intensification that is supportive of the expansion of transit services to the area. Transit facilities shall be planned throughout the subject lands where appropriate to facilitate potential connections between the subject lands, to the Windsor International Airport, the County Road 42 Planning Area, and the City Centre.

Section 7.2.5.2 Improve Public Transportation

Council shall require that the design of development proposals and infrastructure undertakings facilitate easy access to public transportation. In this regard, Council shall:

- (a) Ensure that all new development patterns are supportive of public transportation in accordance with the land use and transportation policies in this Plan;*
- (b) Require that the street pattern in new developments allows for the extension of public transportation services;*
- (c) Require that sidewalks and other pedestrian facilities connect major traffic generators to public transportation services;*
- (d) Encourage the provision of benches, lighting, rest areas and climate shelters for the safety, comfort and convenience of public transportation users;*
- (e) Support the coordination and integration of local public transportation services and facilities with inter-regional, regional and international services and facilities;*
- (f) Ensure that the design of roads accommodate the requirements of public transportation; and*
- (g) Encourage transit routes to be within new major employment areas.*

The development pattern of the subject lands shall be supportive of public transportation services and facilities in support of the integration of public transit to the Sandwich South Planning Area. Transit routes shall be considered within the Regional Employment Centre, with connections to other growth centres within the City. Site features to facilitate the use of public transportation will be determined further into the detailed design stage of planning infrastructure throughout the subject lands.

Section 7.2.6.1 Road Classification

The road network within Windsor is classified as follows:

- (ii) Expressways;*
- (iv) Class II Arterial Roads; and*
- (v) Class I Collector Roads.*

The subject lands have frontage along County Road 42 which is designated as a Class I Arterial Road.

Section 7.2.6.3 Expressways

Council shall provide for Expressways as follows:

- (a) Expressways are designated on Schedule F, as controlled access highways and are to be designated in any secondary plan or master plan where appropriate.*

(b) Operational and design characteristics:

- (i) Expressways shall be designed on as a Controlled Access Highway and have a minimum right-of-way width of 100 metres;*
- (ii) Expressways shall be designed to carry high volumes of traffic;*
- (iii) On street parking shall not be permitted on Expressways;*
- (iv) Access to Expressways shall only be facilitated through interchanges or partial interchanges;*
- (v) New interchanges shall only be permitted with Class I Arterial Roads and Class II Arterial Roads, Expressways or Provincial Highways;*
- (vi) Direct property access shall not be permitted; and*
- (vii) Cycling facilities shall not be permitted on Expressways.*

E.C Row Expressway is located north of the subject lands. While not directly bounded by the Expressway, the development of the subject lands for employment uses is anticipated to have an effect on the traffic volumes of the Expressway. The development of the subject lands shall be consistent with the Expressway policies. County Road 42 will provide access to both Walker Road and Lauzon Road, both of which have interchanges along the Expressway. Development occurring within the subject lands will make efficient use of the high volume of traffic carrying capacity that the expressway provides.

Section 7.2.6.4 Class I Arterial Roads

Council shall provide for Class I Arterial Roads as follows:

(a) Class I Arterial Roads shall be designated on Schedule 'F' and in any secondary plan or master plan where appropriate;

(b) Operational and design characteristics:

- (i) Class I Arterial Roads shall be designed on as Controlled Access Highways and have a minimum right-of-way width of 46 metres;*
- (ii) Class I Arterial Roads shall be designed to carry high volumes of traffic;*
- (iii) New intersections shall only be permitted with Provincial Highways, Expressways, Class I Arterial Roads, Class II Arterial Roads or Class I Collector Roads;*
- (iv) Direct property access shall not be permitted to Class I Arterial Roads;*
- (v) Cycling facilities may be permitted on Class I Arterial Roads; and*
- (vi) On street parking shall not be permitted on Class I Arterial Roads.*

The subject lands are bounded by County Road 42 to the south. County Road 42 is designated as a Class I Arterial Road and is designed to carry high volumes of traffic. There is no direct property access proposed along County Road 42. Any access to the proposed employment uses shall be facilitated through the new proposed rights-of-ways within the subject lands. There are no cycling facilities or on street parking proposed along County Road 42.

Section 7.2.6.19 New Development

All proponents of development may be required to complete a Traffic Impact Study to support the feasibility of a proposal, and if feasible, identify appropriate traffic management measures, in accordance with the Procedures chapter of this Plan.

A Traffic Impact Study (TIS) has been undertaken by Dillon Consulting Limited in support of the feasibility of the development of the surplus airport lands for employment land uses. The TIS will identify the appropriate traffic management measures required to facilitate the proposed development on the subject lands. Recommendations in the TIS can be considered through the Site Plan Control Approval process and then implemented through the Site Plan Agreement.

Section 7.2.10.1 Economic Benefits

Council shall maximize the economic development potential provided by the Windsor Airport by promoting the development of Commercial and Employment uses, including multi-modal facilities in the vicinity of the airport.

The development of the subject lands for a range and mix of employment uses including light industrial, warehouse, office, service commercial, business park, and heavy industrial uses is in keeping with the intent to utilize the airport as a driver of economic activity. The proposed Official Plan and Zoning By-law Amendments will facilitate the need to provide additional lands suitable for development of employment uses. The subject lands represent large scale land available for a wide range of employment land uses both airport related and non-airport related. The development of the subject lands will attract diverse businesses and industries to the Sandwich South Planning District.

Section 7.2.10.2 Development Within the Airport Operating Area

Council shall protect the Windsor Airport from incompatible development. Accordingly, all proponents of development within the Airport Operating Area designated on Schedule 'C': Development Constraint Areas shall be subject to the following:

- (a) new sensitive land uses shall not be permitted in areas above 30 NEP/NEF as set out on maps approved by Transport Canada;*
- (b) redevelopment of existing sensitive land uses may only be considered above 30 NEF/NEP provided the proponent successfully completes a noise study to:

 - i. support the feasibility of the proposal;*
 - ii. identify and implement appropriate mitigation measures (refer to Procedures chapter);**
- (c) redevelopment of existing residential uses and other sensitive land use in areas above 30 NEF/NEP may only be considered if it has been demonstrated that there will be no negative impacts on the long-term function of the airport;*
- (d) land uses which may cause a potential aviation safety hazard are discouraged; and*

(e) other land uses may be permitted within the Airport Operating Area provided the proponent completes a noise study to support the feasibility of the proposal and, if feasible, identify and implement appropriate mitigation measures.

The proposed employment land uses are appropriate for the subject site as outlined in Transport Canada's TP1247. There are no residential land uses proposed within the subject site. All individual development proposals will need to be considered for potential aviation safety hazards. Noise studies may be required per individual development proposal to ensure compatibility.

Section 7.2.10.3 Noise and Vibration Abatement

Council shall ensure that new development in the vicinity of the Windsor Airport includes appropriate noise and vibration abatement measures in accordance with established off-airport land use planning practices.

Any development occurring within the subject lands will be required to include the appropriate noise and vibration abatement measures. Noise and vibration abatement measure details shall be considered at the detailed design stage of individual development proposals.

Section 7.3.2.3 New Development

Council shall require all new developments to have full municipal infrastructure available, or agreements in place to provide such infrastructure, as a condition of approving a development proposal.

Full municipal infrastructure is presently available to support the development of the subject lands for employment land uses.

Section 7.3.3.1 Infilling Given Priority

Council shall encourage the development of existing serviced, underutilized or undeveloped lands within Windsor prior to the extension of municipally owned and/or operated infrastructure to vacant areas within Windsor.

The development of the surplus airport lands represents an opportunity to develop lands that will not require the extension of municipal infrastructure and are currently underutilized. The subject lands are supported by appropriate access and municipal services to facilitate the development of employment land uses in support of attracting increased economic activity to the airport lands.

Section 7.3.3.6 Consolidation of Infrastructure

Council shall require the consolidation of infrastructure within rights-of-ways.

All proposed infrastructure to support the development of the surplus airport lands shall be consolidated within the proposed rights-of-ways to help minimize any negative effects on the development pattern quality or the natural environment.

Section 7.3.3.7 Integrate with Development Pattern

Council shall encourage the coordinated planning of future physical service routes, easements and corridors in cooperation with other physical service providers to ensure their integration within the established or anticipated pattern of development.

The development of the subject lands will require the coordinated planning of all services and service-related infrastructure through the integration of a thoughtful development pattern. The development pattern of the subject lands will be in keeping with the goals and objectives of the employment land uses, will be provided with full municipal services and emergency services, and will be feasible having regard for the Official Plan and other relevant legislation and guidelines.

Section 7.3.4.3 Implement Measures

Council shall provide for the implementation of preventative measures that reduce demands on the sewerage system by:

- (a) Promoting the disconnection of roof drainage systems, weeping tiles, where appropriate, and other sources of inflow or infiltration into the sewerage system;*
- (b) Requiring that new development be constructed with devices to assist in the prevention of potential surcharging and basement flooding;*
- (c) Separating road drainage from combined systems and directing road drainage to new storm sewers or storm relief sewers; and*
- (d) Other measures as may be appropriate.*

Development occurring within the subject lands will consider the implementation of preventative measures to reduce demands on the municipal sewerage system. Consideration of the above criteria will be determined at the detailed design stage of individual development proposals.

Section 7.3.4.6 Stormwater Management for Proposed Development

Council, in consultation with appropriate public agencies may require a proponent of development to submit studies of stormwater runoff and its impact on the water quality and quantity of receiving watercourse based on the Ministry of Environment's current provincial guideline manual for stormwater management design.

Development occurring within the subject lands will include facilities to address stormwater runoff and any impacts on the water quality of receiving watercourses. These studies will be forthcoming as individual development proposals are brought forth. All studies will be required to adhere to the Ministry of Environment's current guidelines.

Section 7.3.4.7 Development Proposals

Council shall require proponents of development that require stormwater management systems to:

- (a) Use stormwater management measures to manage the storage and controlled flow of water to receiving watercourses;*
- (b) Use stormwater management measures which prevent siltation and erosion and do not negatively impact the water quality of receiving watercourses;*
- (c) Consider, where appropriate, enhancing the vegetation, wildlife habitats and corridors in and along the stormwater management system and the receiving watercourse; and*
- (d) Consider, where appropriate, providing public access to and along the stormwater management system and receiving watercourses for recreation.*

The proposed development will include systems to manage stormwater runoff and prevent negative impacts on the water quality of receiving watercourses, as determined through the required technical reports. The subject lands are currently assessed to the existing Rivard Drain, which flows east into the Little River Drain and is then conveyed into the Detroit River. A Functional Servicing Report has been completed by Dillon Consulting Limited (2023) outlining the proposed stormwater management servicing. It is noted that there is also ongoing work with the Sandwich South Master Servicing Plan to determine a comprehensive stormwater management solution for the Sandwich South Planning District. All stormwater management solutions relating to the development of the subject lands shall consider the above noted criteria as outlined in the Official Plan.

Section 7.3.4.8 Best Available Methods

Council, in consultation with appropriate public agencies shall require proponents of development to employ the best available methods in the planning, construction and eventual use of storm water management systems.

The proposed development will employ the best available methods in the planning, construction and eventual use of the stormwater management systems to support the proposed employment uses on the subject lands, as determined through the required technical reports.

Section 7.3.6.6 Major Water Users

Council shall encourage uses requiring large volumes of water to:

(a) Locate in areas of Windsor where there is sufficient capacity in the water distribution network to accommodate such uses; and

The subject lands are not currently connected to a municipal watermain service. A Functional Servicing Report has been completed by Dillon Consulting Limited (2023) outlining the proposed servicing of the subject lands. The report determined that the adjacent services have been found to be sufficient for the proposed development of the subject lands. The design of the proposed internal services will be finalized during detailed design. Pressure testing of the existing watermain on County Road 42 may be required to confirm that there is sufficient pressure / flow.

Section 8.2.2.5 Gateways

Council will promote gateways at the major entry points into Windsor identified on Schedule G: Civic Image and at other strategic locations within Windsor as appropriate. Such gateways will be designed to:

(a) provide a sense of welcome and arrival;

(b) assist in orientation;

(c) create a memorable image; and

(d) contribute to the social, cultural, historic or thematic character of the area being defined.

A Gateway is identified just west of the subject lands at the Walker Road and County Road 42 intersection. The subject lands are conveniently located nearby to a major entry point into the City and will contribute to the sense of arrival as it relates to employment uses. Lauzon Road is also planned to extend to Highway 401 and may provide the potential for another gateway opportunity into the City. In this case, the subject lands would be located directly between two gateways and will contribute to the character of the Sandwich South Planning District and Windsor International Airport as a primary business gateway and major logistics cluster. The Windsor International Airport also functions as a major gateway into the City and will provide convenient access to the subject lands for the movement of both people and goods. The development of the subject lands for a range and mix of employment uses will create a memorable image for those entering the City as this investment is demonstrative of Windsor's heritage as a manufacturing hub and representative of the future of industry within the City including investments to the service sector and a more light and advanced manufacturing in a knowledge based economy.

Section 8.2.2.7 Development or Infrastructure Evaluation

Council will ensure that a proposed development or infrastructure undertaking enhances the image of Windsor, its districts and/or its neighbourhoods by complementing and contributing to:

- (a) the activity of the area together with the character, scale, appearance and design features of existing buildings (Added by OPA #66–11/05/07-B/L209-2007)*
- (b) the landmarks in the area;*
- (c) the consistency and continuity of the area with its surroundings;*
- (d) the edges of the area;*
- (e) linkages within, to and from the area; and*
- (f) sustainable design and maintenance. (Added by OPA #66–11/05/07-B/L209-2007).*

The development of the surplus airport lands will enhance the image of Windsor by contributing to the overall development activity expected to occur in the area. The subject lands are located within the Regional Employment Centre and adjacent to the Regional Institutional Centre. These areas are planned as community nodes and will function as destination points within the City. With the Windsor International Airport acting as a hub, and a strong transportation network, the subject lands have the potential to develop as a primary business gateway and a major logistics cluster for International business. The development of the subject lands for employment uses will define the edge of the County Road 42 Planning Area and the Sandwich South Planning District. Linkage between the proposed employment lands and other areas of industry and major business routes is provided through the existing transportation network including E.C Row Expressway and Provincial Highways 401 and 3.

Section 8.3.2.2 Pedestrian Scale

Council will encourage buildings and spaces that establish a pedestrian scale by promoting:

- (a) the placement of continuous horizontal features on the first two storeys adjacent to the road;*
- (b) the repetition of landscaping elements, such as trees, shrubs or paving modules; and*
- (c) the use of familiar sized architectural elements such as doorways and windows.*

Given the size and scale of the proposed development of the surplus airport lands, it is important to maintain a comfortable pedestrian environment. Development on the subject lands will consider the pedestrian scale by implementing horizontal features adjacent to the road such as windows and other architectural elements. Development designs should also consider pedestrian access to each individual site and the complete pedestrian network. The appropriate use of trees and other landscaping elements should be emphasized to maintain the pedestrian scale and elevate the attractiveness of the employment lands.

Section 8.12.2.3 Civic Responsibility

Council will promote designs which provide a sense of public ownership and civic responsibility by:

- (a) reinforcing existing natural surveillance and access control strategies with additional symbolic or social cues such as signs or barriers;*

- (b) *minimizing the creation of ambiguous spaces;*
- (c) *allowing for the continued use of the space in keeping with its intended purpose; and*
- (d) *ensuring that the lighting of the area is appropriate for its intended use.*

The development pattern of the subject lands shall make use of access control strategies and signs or barriers to ensure safety for both vehicular and pedestrian traffic. The development pattern shall be clearly delineated using design measures to ensure that spaces are used with purpose and intention. The subject lands shall be appropriately lit and will need to ensure that there is a comprehensive development plan for providing lighting to both public and private spaces.

Section 8.12.2.4 Emergency Access

Council shall promote the design of circulation systems which ensure prompt access to adjacent buildings and properties for effective emergency services.

The subject lands shall be planned to provide safe and efficient emergency access to all areas. Individual development proposals will consider site layout design as it relates to the adjacent development proposals. Given the high-density employment use proposed and the location adjacent next to a major facility it is critical that emergency access be a priority as the subject lands develop.

Section 8.13.2.1 Transportation System

Council will promote lighting that improves safe movement along the transportation system.

Any transportation networks or facilities proposed on the subject lands will provide adequate lighting to facilitate the safe movement of goods and people and allow for safe access to the proposed employment uses during all hours of operation.

Section 9.3.2.1 Archeological Master Plan

(a) Maintaining and updating the inventory of registered archaeological sites or lands of archaeological potential, as identified in the Windsor Archaeological Master Plan and Schedule 'C-1': Development Constraint Areas – Archaeological Potential; (added by OPA 55 – 07/24/2006).

The subject lands are identified on *Schedule C-1: Development Constraint Areas – Archaeological Potential* as containing High Potential throughout the site. At the time of this report, a Stage 1 Archaeological Assessment has been undertaken for the entirety of the subject lands and recommends a Stage 2 be undertaken for all the lands.

Section 11.6.3.1 Zoning By-law Amendments Must Conform

All amendments to the Zoning By-law(s) shall conform with this Plan. The Municipality will, on each occasion of approval of a change to the zoning by-law(s), specify that conformity with the Official Plan

is maintained or that the change will be in conformity upon the coming into effect of an amendment to the Official Plan.

The proposed Zoning By-law Amendment for the subject lands to be zoned similar to the Manufacturing District 1.4 (MD1.4) and Manufacturing District 2.2 (MD2.2) categories will be in conformity with the Official Plan Business Park and Industrial land use designations, subject to the proposed amendment to the Official Plan receiving approval from Council. The final configuration of the zoning category boundaries is to be determined.

4.2.2 Policy Analysis Conclusions

Based on this analysis, we are of the opinion that the proposed development of the surplus airport lands for a range and mix of employment uses conforming with the Airport, Industrial, and Business Park land use designations conforms with and is supported by the above Official Plan policies – as proposed to be amended. The portion of the subject lands designated as Airport and Industrial are to remain as currently designated. The OPA to redesignate the portion of the subject lands designated as Future Employment Area to an Industrial or Business Park land use designation is intended to meet the objectives and align with the policies of the applicable designation. The final configuration of the land use designation boundaries is to be determined. There are a number of goals, objectives, and policies in the Official Plan that support economic investment and growth of the employment sector. The proposed employment land uses are aligned with the economic investment and growth goals of the Sandwich South Planning District and City of Windsor.

The Official Plan policies are included in **Appendix B – City of Windsor Official Plan Policies**.

4.3 City of Windsor Zoning By-law

The City of Windsor Zoning By-law 8600 implements the policies of the City of Windsor Official Plan by regulating built form and land uses throughout Windsor.

The subject lands have multiple zoning categories including Manufacturing District 2.2 (MD2.2) in the City of Windsor Zoning By-law 8600 and Institutional (I) in the Sandwich South Zoning By-law 85-18. The current zoning categories do not permit the development of employment uses on the entirety of the proposed subject lands. The proposed Zoning By-law Amendment (ZBA) to repeal the zoning category under the Sandwich South Zoning By-law 85-18 and to amend the zoning category under the City of Windsor's Zoning By-law 8600 will be brought forward to the City Council for consideration. The proposed rezoning is for the subject lands to be zoned similarly to the Manufacturing District 1.4 (MD1.4) and Manufacturing District 2.2 (MD2.2) categories. The final configuration of the zoning category boundaries is to be determined. The proposed ZBA will facilitate the availability of a large area of land suitable for the development of employment land uses in the City of Windsor.

Further to the provisions outlined in the City of Windsor Zoning By-law 8600, registered zoning is currently in place for the Windsor International Airport. The registered zoning is entitled *Windsor Airport Zoning Regulations* and are pursuant to Section 5.4 of the Aeronautics Act of Canada. The zoning regulations found within this section include the following:

- Preventing lands adjacent to or in the vicinity of an Airport site from being used or developed in a manner that is incompatible with the safe operation of an aerodrome or aircraft; and
- Preventing land uses that would cause interference with signals or communications to and from aircraft from locating adjacent to or in the vicinity of equipment of facilities used to provide services relating to aeronautics.

Further, protective regulations are established around certain Airport facilities, components, and stations to protect the safety and security of aircraft operations. These requirements include physical zoning around the Airport, including off-Airport lands, electronic zoning, and noise projections. TP 312 (Transport Canada’s Aerodrome Standards and Recommended Practices) and TP 1247 (Land Use in the Vicinity of Aerodromes) identify the relevant zoning criteria in detail.

A copy of the permitted uses and regulations under the Manufacturing District 1.4 (MD1.4) and Manufacturing District 2.2 (MD2.2) zone are included in **Appendix C – City of Windsor Zoning By-law Policies**.

Further consideration will be given at the Site Plan Control stage to ensure design details are considered and the proposed use is compatible.

4.4 Other Legislation

In addition to fulfilling the requirements under the Planning Act, approval may be required under the following legislation:

- Windsor International Airport Master Plan (2010);
- Windsor Airport Zoning Regulations;
- Transport Canada – Aerodrome Standards and Recommended Practices (TP312);
- Transport Canada – Aviation: Land Use in Vicinity of Aerodromes (TP1247); and
- Compliance with D6 Guidelines.

4.4.1 Windsor International Airport Master Plan (2010)

The Windsor International Airport Master Plan is the overall planning document used to guide development of the Airport and assist the City and private sector in making land use decisions involving the surrounding lands. The Master Plan is to be used to facilitate long range planning and development on the lands surrounding the airport in an effort to support the City’s investment in the airport and stimulate cost effective development.

The Master Plan identified approximately 250 hectares of land on the Windsor International Airport property which are currently designated as “Future Employment Area” in the City of Windsor Official Plan. The report recommends that these lands are suitable for future development and should be redesignated to accommodate the development of employment uses. The land on the airport property is appropriate for a range of employment uses including airport and non-airport related uses, with recommendations for potential synergies to be developed between the proposed uses on the airport property and local industry.

The Master Plan includes a recommended Land Use Plan to address short-, medium- and long-term development potential of the airport lands. The intent of the Land Use Plan is to provide maximum flexibility in the use of the airport lands to allow for event-driven development that reacts to the evolving employment needs of the City. A key objective of the Land Use Plan is to ensure that any future development is compatible and safe with all airport related operations and that development occurs in a logical and efficient manner.

Majority of the subject lands are designated as Employment Lands in the recommended Land Use Plan. These lands are intended for airport and non-airport uses, either private or public, which do not require direct airside access and are accessible to the general public. A portion of the subject lands, west of the Concession Road 8 extension, are designated as Airport Employment. Airside Employment includes general aviation facilities and aviation support functions on land requiring airside access and are not accessible to the general public. While these lands are generally intended for employment uses requiring airside access, the City of Windsor Official Plan does allow for uses permitted in Employment Areas, provided that they do not conflict with aircraft operations, to be developed on lands designed as Airport / Airside Employment.

The overall intent of developing the surplus airport lands is to create a primary business gateway with the potential to serve as a major multi-modal hub and logistics cluster. The proposed Official Plan and Zoning By-law Amendments are intended to facilitate the goal of attracting economic activity to the airport lands by providing additional lands available for development with the appropriate access and municipal services.

Appendix D – Windsor International Airport Master Plan (2010).

4.4.2 Windsor Airport Zoning Regulations

The Windsor Airport Zoning Regulations provide further guidance on development on and in the vicinity of airport lands. The zoning regulations include regulations to prevent development that is incompatible with the operation of the airport, the safe operation of an aircraft, and the operation of signals and communications to and from aircraft or to and from airport facilities. The zoning regulations apply to all the lands, including public road allowances, adjacent to or in the vicinity of an airport; the specific lands are described in Part II of the Windsor Airport Zoning Regulations. Any new development should consult

the zoning regulations to ensure compatibility.

Appendix E – Windsor Airport Zoning Regulations.

4.4.3 Transport Canada – Aerodrome Standards and Recommended Practices (TP 312)

The Aerodrome Standards and Recommended Practices (TP 312) serves as the authoritative document for airport specifications, including physical characteristics, obstacle limitation surfaces, lighting, markers, marking and signs. The standards outlined in TP 312 are considered to have a direct impact on the safety of flight. The recommended practices outlined in TP 312 are considered to effect only operational efficiency. Particular consideration should be given to obstacle limitation surfaces, where the erection of structures which violate any of the defined plane surfaces is prohibited.

The standards and recommended practices included in this document will help guide development of the surplus airport lands to ensure the safe operation of both airport and non-airport activities.

4.4.4 Transport Canada – Aviation: Land Use in Vicinity of Aerodromes (TP 1247)

The Aviation: Land Use in Vicinity of Aerodromes serves to assist planners and legislators on planning considerations related to land use in the vicinity of aerodromes. Land use around aerodromes can have significant impacts on safety and can negatively impact the operation viability of the aerodrome. Compatible land use planning should be the focus development on lands in the vicinity of aerodromes. The document includes guidance relating to telecommunications and electric systems, bird hazards and wildlife, aircraft noise, and restrictions to visibility.

Appendix F – Aviation: Land Use in Vicinity of Aerodromes (TP 1247).

4.4.5 D6 Guidelines

The Ministry of Environment provides guidelines to ensure land use compatibility between employment uses which are adjacent to sensitive land uses. The Guidelines recommend separation distances and other control measures for land use planning proposals to prevent or minimize adverse effects from the encroachment of incompatible land uses where a facility either exists or is proposed. This guideline is intended to be applied in the land use planning process to prevent or minimize future land use problems due to the encroachment of sensitive land uses and industrial land uses on one another. The separation distance should be sufficient to permit the functioning of the two incompatible land uses without an 'adverse effect' occurring. Separation of incompatible land uses should not result in freezing or denying usage of the intervening land. The distance shall be based on a facility's potential influence area or actual influence area if it is known.

Through case studies and past experience, the Ministry has categorized three industrial classifications to prevent or minimize the adverse effect from incompatible land uses. Based on the classifications, the

Ministry provides the potential influence area and recommended minimum in which incompatible development should not normally take place. These guidelines are as follows:

- Class I: 70 metre potential influence area, 20 metre recommended minimum in which incompatible development should not normally take place;
- Class II: 300 metre potential influence area, 70 metre recommended minimum in which incompatible development should not normally take place; and
- Class III: 1000 metre potential influence area, 300 metre recommended minimum in which incompatible development should not normally take place.

The conceptual development for the subject area designates lands for Industrial and Business Park development. Additionally, a hospital has been planned to be developed adjacent to the subject area. With potential for future conflicts in land use, the D6 guidelines will be referenced to relieve the conflicting land uses. This includes the recommended 300 metre minimum buffer for Class III industrial use (refer to **Figure 2.0 – Proposed Conceptual Development Plan**). Future development proponents will be further considered under the D6 Guidelines to prevent incompatible development.

Appendix G – D6 Guidelines.

5.0

Additional Studies

To facilitate the establishment of the proposed land use, there are a number of additional supporting studies required to address specific details associated with the servicing and upgrading of infrastructure in the general area. The following technical reports are presently underway:

- Functional Servicing Report;
- Stormwater Management Memorandum;
- Spices at Risk (SAR) Considerations Memorandum;
- Traffic Impact Memorandum; and
- Archaeological Stage 1 Assessment.

During Site Plan Control Approval additional studies may be requested to ensure compatibility with the surrounding land uses.

6.0

Justification Overview

In Ontario, municipalities are required under Section 3 of the *Planning Act* to ensure that planning matters and decisions are consistent with the Provincial Policy Statement (PPS). The Provincial Policy Statement includes policies designed to build strong and healthy communities and are intended to direct efficient and resilient development and land use patterns. According to the PPS, healthy, livable and safe communities are sustained by: promoting efficient development and land use patterns, accommodating a range and mix of housing, avoiding development and land use patterns which cause environmental or public health and safety concerns, and promote cost effective development patterns to minimize land consumption and servicing costs (PPS, 1.1.1 (a)(b)(c)(e)).

The proposed employment land uses are supported by the proposed Zoning By-law Amendment and Official Plan Amendment. The development of the subject lands is intended to be compatible with airport operations and the existing and planned surrounding land uses. The proposed employment land uses will provide significant employment opportunities within the Sandwich South Planning District to accommodate the project needs of the City. Further, the proposed development will lend to the efficient use of nearby major roads and highways for a land use that is freight-intensive.

6.1.1

Location

With respect to settlement areas, the PPS recognizes that the vitality of these areas is critical to the long-term economic prosperity of communities. According to the PPS, settlement areas should be the focus of growth and development and that their regeneration shall be promoted (PPS, 1.1.3.1). The subject lands are fully within the settlement area boundary of Windsor and are to be the focus of substantial development.

The subject lands are surrounded by Industrial, Business Park, Airport, and Future Employment Area designated lands. The Industrial lands to the far north of the subject lands have been developed for a mix of employment uses such as freight and cargo facilities, manufacturing, and warehousing. Approximately 105 hectares (260 ac.) of lands directly north of the subject lands are currently occupied by the Windsor Solar energy project. The Business Park lands at the southwest intersection of County Road 42 and Eight Concession Road are currently developed and include uses such as storage facilities, truck serve centres, and contractor's offices. The lands south of County Road 42 remain undeveloped and largely vacant. These lands are subject to the County Road 42 Secondary Plan and are intended to be developed as an Urban Area.

The proposed Business Park and Industrial land uses are not intended to jeopardize the orderly planning and development of the subject lands or the greater Sandwich South Planning Area. The subject lands are located in an area that has historically been intended for employment land uses and are currently designated as Future Employment Area. As previously noted, a portion of the subject lands along County

Road 42 were previously subject to a City-initiated Official Plan and Zoning By-law Amendment to redesignate the lands as Industrial given the need for additional employment lands in Windsor. The proposed Official Plan and Zoning By-law Amendments to bring the entirety of the subject lands under the Business Park / Industrial designation is consistent with the development objectives of the area and the City.

The subject lands are suitably located to support the development of large-scale employment land uses given the existing multi-modal transportation infrastructure (PPS, 1.6.7). The subject lands have access to air, road, rail, and port networks to facilitate the movement of goods and people. Directly adjacent to the subject lands is the Windsor International Airport. Just north of the subject lands, abutting the airport property, is the Canadian Pacific (CP) Railway and the CP Railway's Windsor Subdivision. The CP Railway Windsor Subdivision has direct access to the CP's international rail tunnel for rail cargo traffic. The airport lands also abut the Canadian National (CN) Railway's Pelton Spur line along the west property line, providing a rail link between the CP and CN rail lines including the Essex Terminal Railway further to the north. The Port of Windsor provides a connection to sea and Great Lakes shipping lanes. Access to the Port of Windsor is currently possible by road with potential access via rail pending improvements to the existing rail facilities. The surrounding road network including County Road 42, Lauzon Parkway, Walker Road, E.C. Row Expressway, and Highways 401 and 3 will be used efficiently by the proposed development with a number of planned upgrades to accommodate the increased transportation network demand. The subject lands are uniquely located to allow for investment opportunities which require multi-modal and international transportation facilities (PPS, 1.6.7.3).

To the south of the subject lands is the County Road 42 Planning Area. There are a number of land uses proposed within this area including employment, commercial, institutional, and residential. The proposed employment, commercial, and institutional land uses are planned along County Road 42, with the more sensitive residential uses located towards the south of the planning area and away from the subject lands. There are no compatibility issues anticipated as the development of the subject lands includes the less intensive business park land uses along County Road 42. As such, the more intensive industrial uses are intended to be isolated away from the County Road 42 Planning Area. Any potential impacts to the surrounding uses including noise, vibration, and pollution shall be considered as proponents of development come forth and will require mitigation measures.

Given the location and size of the subject lands, there presents a unique opportunity to accommodate the large-scale employment uses for both business park and industrial uses. There are no other locations within the City that would be able to accommodate the scale and size of development desired to accommodate the employment needs of the City of Windsor.

6.1.2 Land Use

The proposed land use pattern, along with infrastructure and municipal servicing, will promote development that will sustain the financial well-being of the Province and municipalities (PPS, 1.1.1).

The proposed employment use development on the subject lands will minimize and mitigate any potential adverse effects stemming from operations at the facilities, minimizing any risk to public health and safety while maintaining the long-term economic viability of the employment use development (PPS, 1.3.2.2). The development of the subject lands will include the appropriate transition and separation from the nearby non-employment uses to ensure compatibility with any nearby sensitive land uses (PPS, 1.3.2.3 & OP, 6.4).

The subject lands are currently split designated as designated as Airport, Industrial, and Future Employment Area in the City of Windsor Official Plan. The proposed Official Plan Amendment will maintain the Airport and Industrial designations, while redesignating the Future Employment Area to a split Business Park and Industrial designation. The proposed employment land uses, including Business Park and Industrial, are compatible with existing and planned land uses in the surrounding area. The subject lands are capable of supporting the suggested employment land uses in accordance with the Official Plan policies. At present, much of the surrounding lands remain vacant although they are designated as Future Employment Area and Future Urban Area. Given the proposed employment land uses, separation from any existing and planned sensitive uses will be pertinent to maintain as this area in the City of Windsor develops.

The proposed Business Park and Industrial land use designations are intended to accommodate a range of employment uses based on the operational characteristics and scale of the use (OP, 6.2, 6.4.3 & 6.4.4). The Zoning By-law Amendment proposes to rezone the subject lands to zones similar to the Manufacturing District 1.4 (MD1.4) and Manufacturing District 2.2 (MD2.2) categories. The proposed development of the subject lands will be appropriately clustered within other nearby employment land uses with adequate separation or buffers from sensitive land uses (PPS, 1.2.6).

6.1.3 Economic Prosperity

The PPS speaks to providing for an appropriate mix and range of employment uses to meet long-term needs (PPS, 1.3.1a). The proposed development of the subject lands will provide for an employment use on the lands proposed to be designated Business Park and Industrial.

The proposed development provides an opportunity for economic development on the subject lands and is a means to expand Windsor's employment base (OP, 3.2.2, 6.1). The subject lands are located adjacent to other existing and planned employment uses which contribute to the use of the land as an active, compatible employment landscape. The configuration of the subject lands will accommodate the need for larger-scale employment uses in the City to assist in meeting long-term economic development needs (PPS, 1.1.1 & 1.7.1).

Being located in close proximity to transportation infrastructure, the subject lands are a strategic site for economic investment that will support the current and projected needs of employment uses (PPS, 1.3.1). The employment land use development represents an opportunity for significant job creation for

the City of Windsor and residents within the County of Essex (OP, 4.2.6).

6.1.4 Infrastructure

The PPS encourages development that promotes a dense land use pattern which minimizes the length and number of vehicle trips, and encourages the use of transit and active transportation methods (PPS, 1.6.7.4 & 1.8.1 (b)). The subject lands are well serviced by the existing multi-modal transportation system and are transit supportive as the intensification of the subject lands will promote the expansion of transit services to the Sandwich South Planning Area (OP, 7.2.5.2). The close proximity to the existing road network, such as E.C. Row Expressway and Highways 401 and 3, will help to reduce the length of trips taken by both passenger and freight vehicles from the subject lands and may facilitate the use of other means of travel to and from the area (OP, 7.2.2).

Due to the operational characteristics of the proposed employment land uses at a large scale, the surrounding road network will be efficiently used to support the anticipated frequent movement of goods (PPS, 1.6.7.2). Any future infrastructure upgrades will be carried out in a manner to optimize the continued use of the roadways to support any increased demand on the transportation network (PPS, 1.6.3). The existing roadway network in proximity or with direct access to the subject lands are appropriately classified through the Official Plan to support the proposed development and anticipated traffic volumes associated with the large-scale manufacturing facility (OP, 7.2.6). All statements regarding the capacity of infrastructure to support the proposed development will be confirmed once the necessary technical reports are completed.

The proposed development makes efficient use of the existing municipal services, including water and sanitary sewers (OP, 7.3.3 & 7.3.2). The subject lands will be supported by stormwater management facilities, which will be determined through the Site Plan Control Application process (OP, 7.3.4). In addition, the proposed development will incorporate appropriate waste facilities and have adequate access to all other necessary utilities for operations at the facility (OP, 7.3.5 & 7.3.6). All statements regarding the capacity of infrastructure and necessary facilities to support the proposed development will be confirmed once the required technical reports are completed.

Given the close proximity to a major transportation route (E C. Row Expressway), along with the integration of this transportation route with adjacent systems (Highway 401) and in other jurisdictions, the proposed development is appropriately located and supports the movement of goods and people (PPS, 1.7.1 & OP, 7.2.6). A Traffic Impact Study will be completed to the satisfaction of the City of Windsor to ensure that safe efficient vehicular access is provided as well as appropriate connections to the wider transportation network.

6.1.5 Sustainability

The proposed land use and development promotes energy conservation and efficiency as the freight-intensive use will be well-served by the existing transportation network and connections to major highways (PPS, 1.8.1). Future development of the subject lands will be able to take advantage of the area's strong transportation connections as the lands are located in a high-profile area adjacent to major facilities and corridors. The proposed employment uses will be well serviced by the nearby Provincial Highways 401 and 3, the future improved County Road 42 and Lauzon Parkway, the Windsor International Airport, and the Canadian Pacific Railway. The existing supportive transportation network provides an opportunity for energy conservation and efficiency, improved air quality, and reduced greenhouse gas emissions. The development contributes to sustainability as it promotes a compact form and creation of corridors through the continuation of an employment use in an area that contains a variety of employment uses (PPS 1.8.1(a) & OP, 3.2.3).

7.0

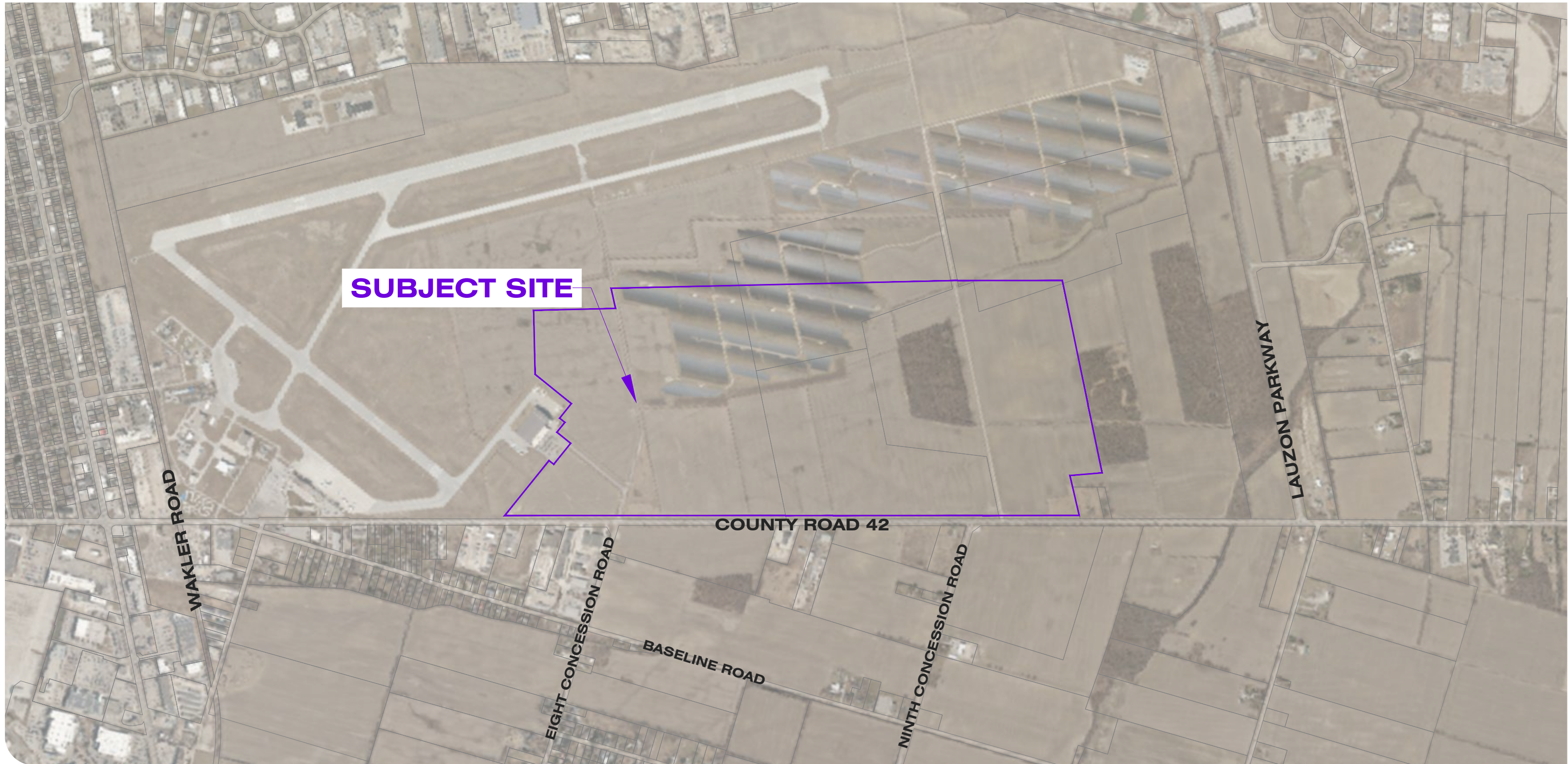
Conclusions

Based on an extensive review of the technical planning and policy related issues, the proposed Official Plan and Zoning By-law Amendments to facilitate the preparation of lands available for employment uses are appropriate for the subject lands and consistent with good planning principles. We recommend that the City Official Plan and Zoning By-Law Amendments applications, as submitted, be approved for the following reasons:

1. The proposed development is consistent with the Provincial Policy Statement;
2. The proposed development conforms with the policies of the City of Windsor Official Plan as recommended for amendment;
3. The proposed development can be compatible with the surrounding land uses in the surrounding area, which is to be confirmed once all technical reports are completed;
4. The proposed Official Plan Amendment for the subject lands will establish a mix of Business Park and Industrial designations which will support the City's goal of attracting economic development opportunities and expanding the employment base;
5. The proposed Zoning By-law Amendment will implement zoning districts similar to the Manufacturing District 1.4 (MD1.4) and Manufacturing District 2.2 (MD2.2) categories. The final configuration of the zoning category boundaries is to be determined;
6. The proposed development of the subject lands will utilize existing and planned municipal infrastructure. The subject lands location near major transportation routes and international borders makes it an ideal hub for business opportunities as the movement of goods and supply chain efficiencies are enhanced;
7. The proposed development may contribute to economic diversification by attracting businesses and industries. The subject lands are located just a few kilometers from the Canada-US border to facilitate cross-border trade and business travel;
8. The subject lands are located near the Windsor-Detroit metropolitan area which provides convenient access to a large population base, making it an attractive location for businesses;
9. The proposed development provides the opportunity for synergistic development with the surrounding land uses and the existing airport uses; and
10. The proposed Official Plan and Zoning By-law Amendments represent "good" planning.

Karl Tanner, MCIP RPP

Figures



SUBJECT SITE

WAKLER ROAD


COUNTY ROAD 42

LAUZON PARKWAY

EIGHT CONCESSION ROAD

BASELINE ROAD

NINTH CONCESSION ROAD

 SUBJECT SITE
±187.74 ha (± 463.95 ac)

SOURCE: THE CITY OF WINDSOR AERIAL (2019)

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: MRU

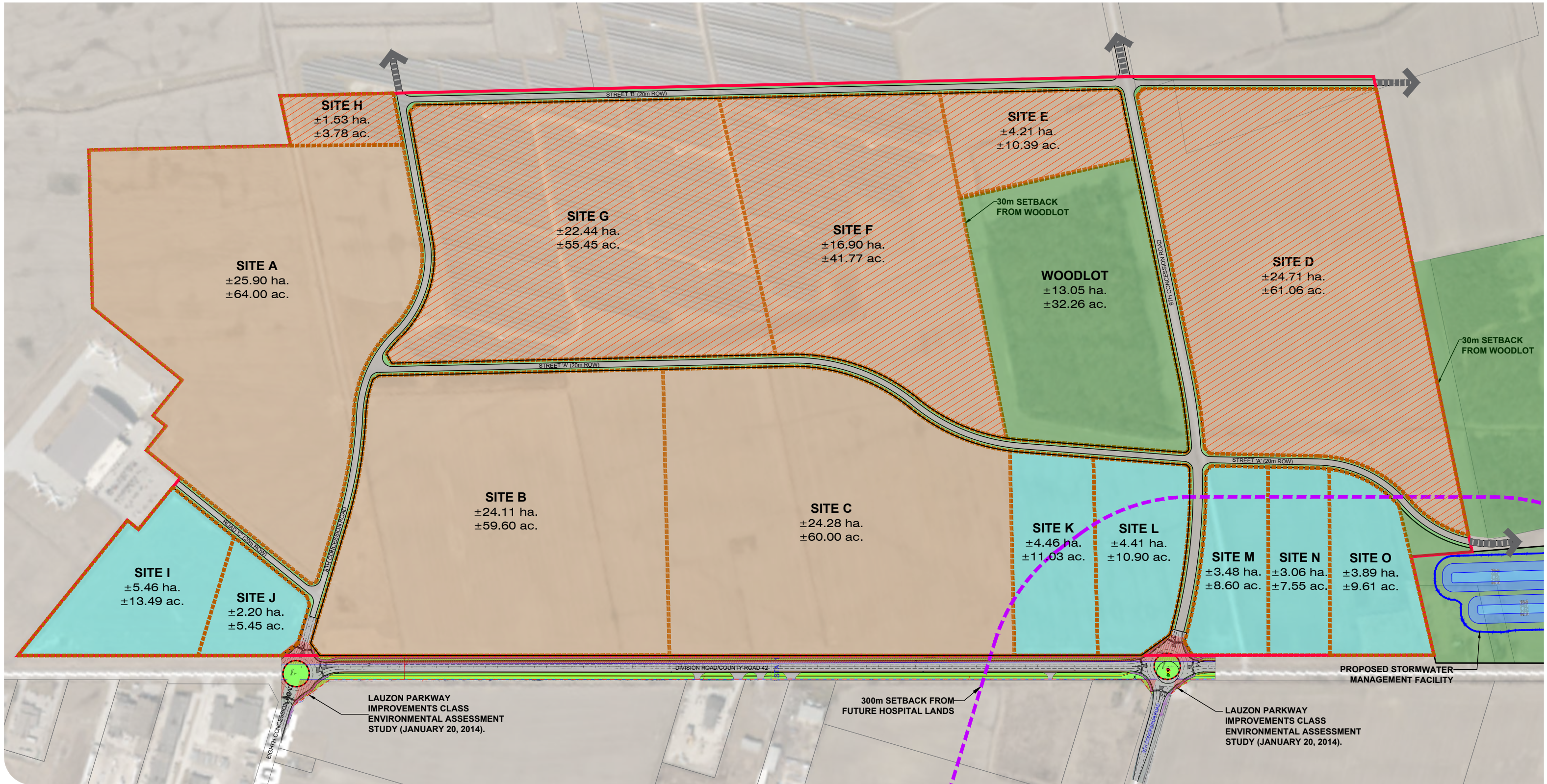
SCALE: 1:15,000 (11X17)



PROJECT: 23-5796
STATUS: DRAFT
DATE: 08/01/2023

CORPORATION OF THE CITY OF WINDSOR
SURPLUS AIRPORT LANDS
PLANNING JUSTIFICATION REPORT

LOCATION MAP
FIGURE 1.0



**THE CORPORATION OF THE CITY OF WINDSOR
FUTURE AIRPORT LAND DEVELOPMENT**

**CONCEPTUAL DEVELOPMENT PLAN
FIGURE 2.0**

PROPOSED SUBJECT AREA
(±187.74 ha / 463.93 acre)

PHASE 1 PROPOSED INDUSTRIAL SITES
(±74.30 ha / 183.60 ac)

PHASE 2 PROPOSED INDUSTRIAL SITES
(±69.79 ha / 172.45 ac)

PHASE 1 PROPOSED BUSINESS PARK SITES
(±26.96 ha / 66.63 ac)

PROPOSED SWM PONDS

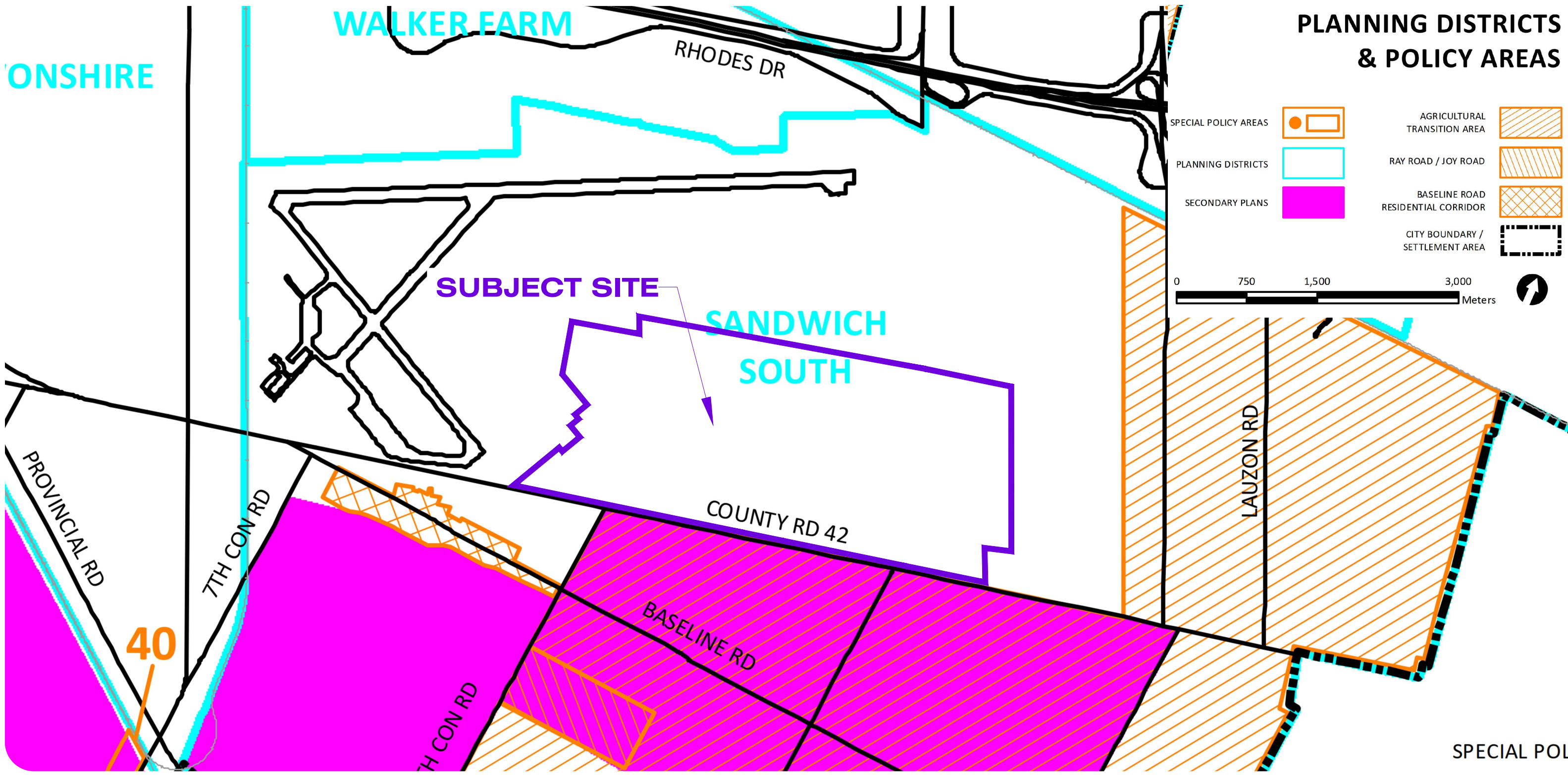
File Location:
c:\pw working directory\projects 2023\dillon_32ss\dms10133\23-5796 - airport lands development - concept plan - aug 2023.dwg
August, 14, 2023 8:15 AM

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSES ONLY. ALL DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: KDT/MMM/EB

SCALE: 1:6000 (11x17)



PROJECT: 23-5796
STATUS: FINAL
DATE: 08/02/2023



CORPORATION OF THE CITY OF WINDSOR
 SURPLUS AIRPORT LANDS
 PLANNING JUSTIFICATION REPORT

PLANNING DISTRICTS & POLICY AREAS
 FIGURE 3.0

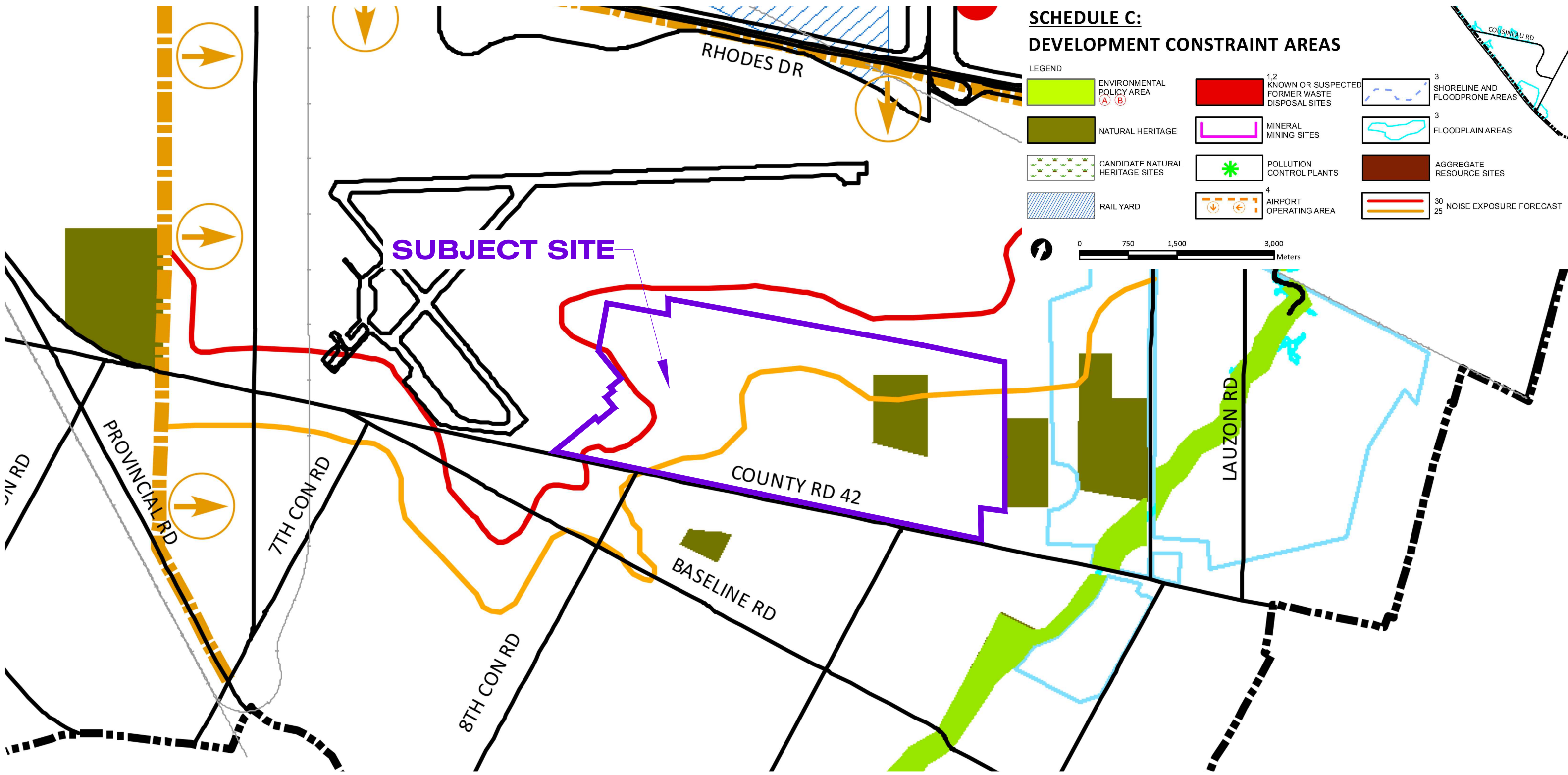
SUBJECT SITE
 ±187.74 ha (± 463.95 ac)

MAP/DRAWING INFORMATION
 THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
 CREATED BY: MRU
 CHECKED BY: KDT
 DESIGNED BY: MRU

SCALE: N.T.S

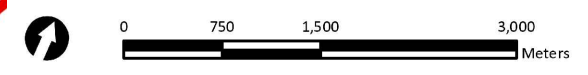
SOURCE: CITY OF WINDSOR OFFICIAL PLAN - SCHEDULE 'A'

PROJECT: 23-5796
 STATUS: DRAFT
 DATE: 08/01/2023



**SCHEDULE C:
DEVELOPMENT CONSTRAINT AREAS**

- LEGEND
- ENVIRONMENTAL POLICY AREA (A, B)
 - 1,2 KNOWN OR SUSPECTED FORMER WASTE DISPOSAL SITES
 - 3 SHORELINE AND FLOODPRONE AREAS
 - NATURAL HERITAGE
 - MINERAL MINING SITES
 - 3 FLOODPLAIN AREAS
 - CANDIDATE NATURAL HERITAGE SITES
 - POLLUTION CONTROL PLANTS
 - AGGREGATE RESOURCE SITES
 - RAIL YARD
 - 4 AIRPORT OPERATING AREA
 - 30 NOISE EXPOSURE FORECAST
 - 25 NOISE EXPOSURE FORECAST



SUBJECT SITE

SUBJECT SITE
±187.74 ha (± 463.95 ac)

**CORPORATION OF THE
CITY OF WINDSOR**
SURPLUS AIRPORT LANDS
PLANNING JUSTIFICATION REPORT

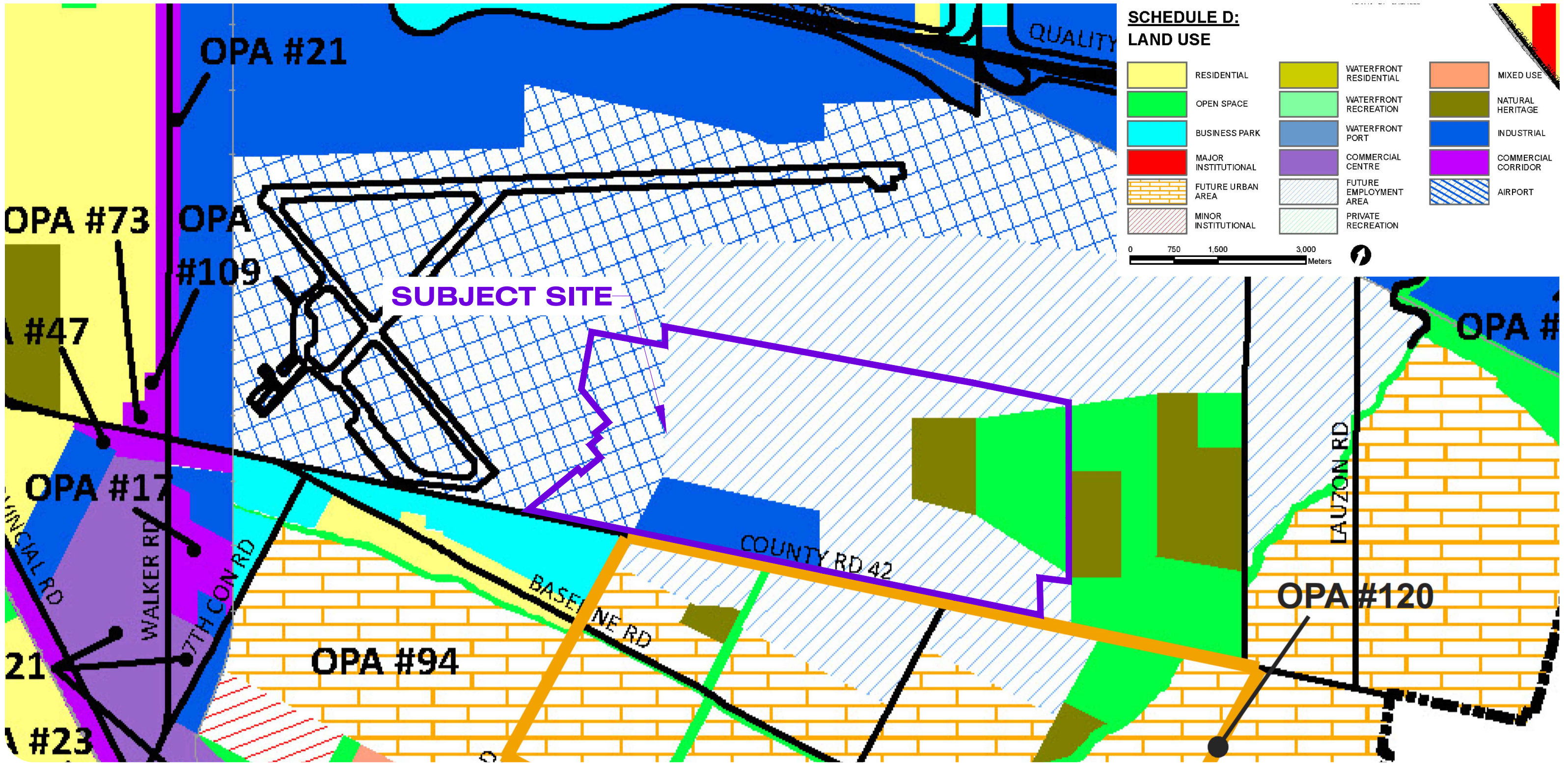
**DEVELOPMENT CONSTRAINT AREAS
FIGURE 4.0**

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: MRU

SCALE: N.T.S


SOURCE: CITY OF WINDSOR OFFICIAL PLAN - SCHEDULE 'C'

PROJECT: 23-5796
STATUS: DRAFT
DATE: 08/01/2023



**CORPORATION OF THE
CITY OF WINDSOR**
SURPLUS AIRPORT LANDS
PLANNING JUSTIFICATION REPORT

**EXISTING OFFICIAL
PLAN DESIGNATIONS**
FIGURE 5.0

 SUBJECT SITE
±187.74 ha (± 463.95 ac)

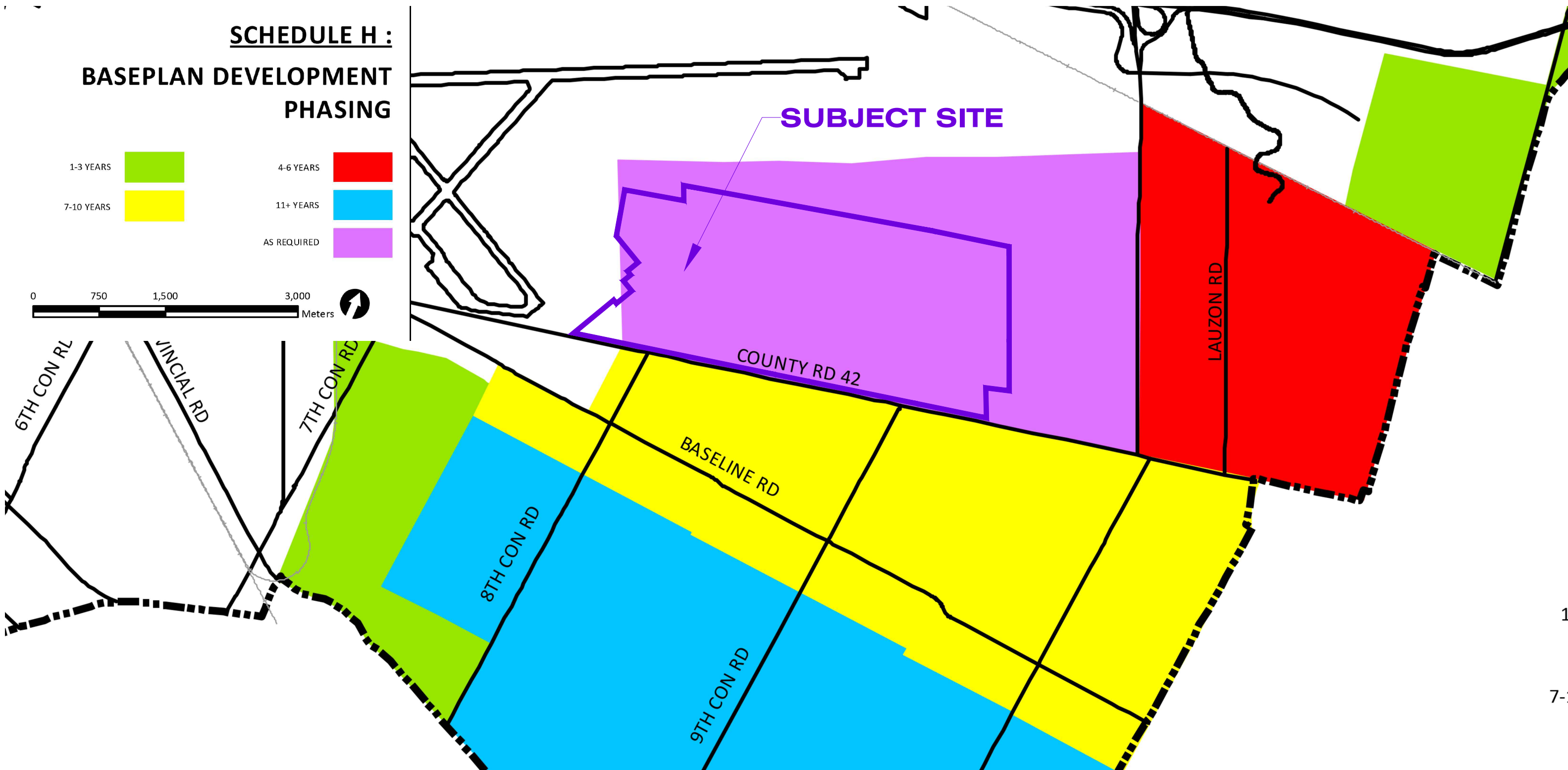
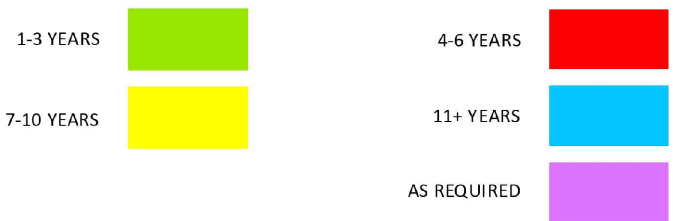
SOURCE: CITY OF WINDSOR OFFICIAL PLAN - SCHEDULE 'D'

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL
DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE
VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: MRU

SCALE: N.T.S


PROJECT: 23-5796
STATUS: DRAFT
DATE: 08/01/2023

**SCHEDULE H :
BASEPLAN DEVELOPMENT
PHASING**



**CORPORATION OF THE
CITY OF WINDSOR**
SURPLUS AIRPORT LANDS
PLANNING JUSTIFICATION REPORT

**BASEPLAN DEVELOPMENT PHASING
FIGURE 6.0**

 SUBJECT SITE
±187.74 ha (± 463.95 ac)

SOURCE: CITY OF WINDSOR OFFICIAL PLAN - SCHEDULE 'H'

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL
DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE
VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: MRU

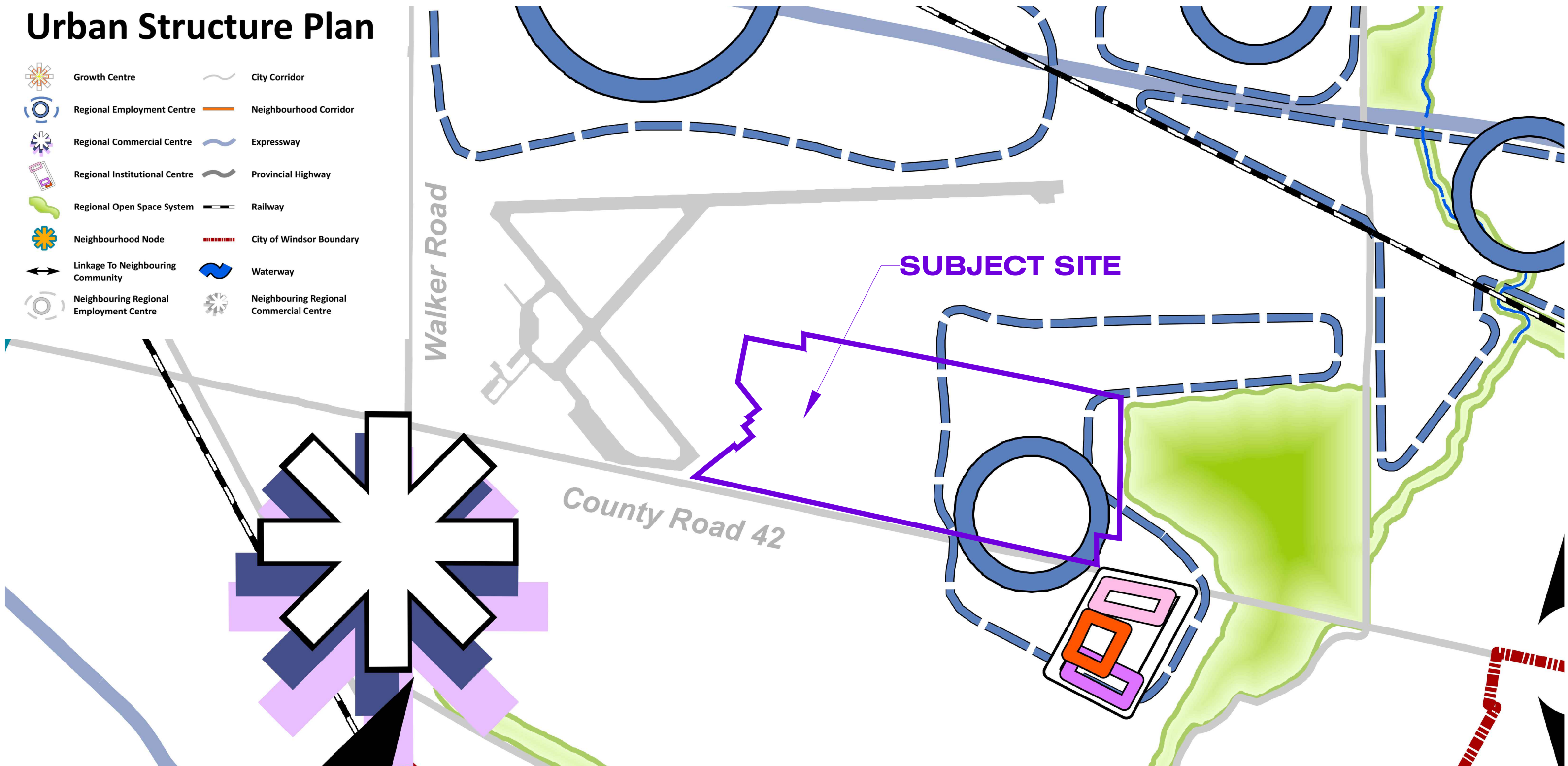
SCALE: N.T.S


PROJECT: 23-5796
STATUS: DRAFT
DATE: 08/01/2023

1.
7-1

Urban Structure Plan

-  Growth Centre
-  Regional Employment Centre
-  Regional Commercial Centre
-  Regional Institutional Centre
-  Regional Open Space System
-  Neighbourhood Node
-  Linkage To Neighbouring Community
-  Neighbouring Regional Employment Centre
-  City Corridor
-  Neighbourhood Corridor
-  Expressway
-  Provincial Highway
-  Railway
-  City of Windsor Boundary
-  Waterway
-  Neighbouring Regional Commercial Centre



 SUBJECT SITE
±187.74 ha (± 463.95 ac)

SOURCE: CITY OF WINDSOR OFFICIAL PLAN - SCHEDULE 'J'

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: MRU

SCALE: N.T.S

PROJECT: 23-5796
STATUS: DRAFT
DATE: 08/01/2023

CORPORATION OF THE CITY OF WINDSOR
SURPLUS AIRPORT LANDS
PLANNING JUSTIFICATION REPORT

URBAN STRUCTURE PLAN
FIGURE 7.0

LEGEND:

- Zone Boundary¹
- ▬▬▬▬▬ Specific Zoning Exemptions²
- - - - - Specific Temporary Zoning Exemptions³
- Registered Plan Parcel Limits
- Ownership Parcel Limits
- Municipal Boundary Line
- Inland Watercourse Flood Prone Area⁴
- Detroit River/Lake St.Clair Flood Prone Area⁴
- Township of Sandwich South Zoning By-law 2002-55

NOTES:

1. Each Zoning District symbol corresponds to a zoning district set out in the text of By-law 8600 (i.e. CD1.1 - Commercial District 1.1.)

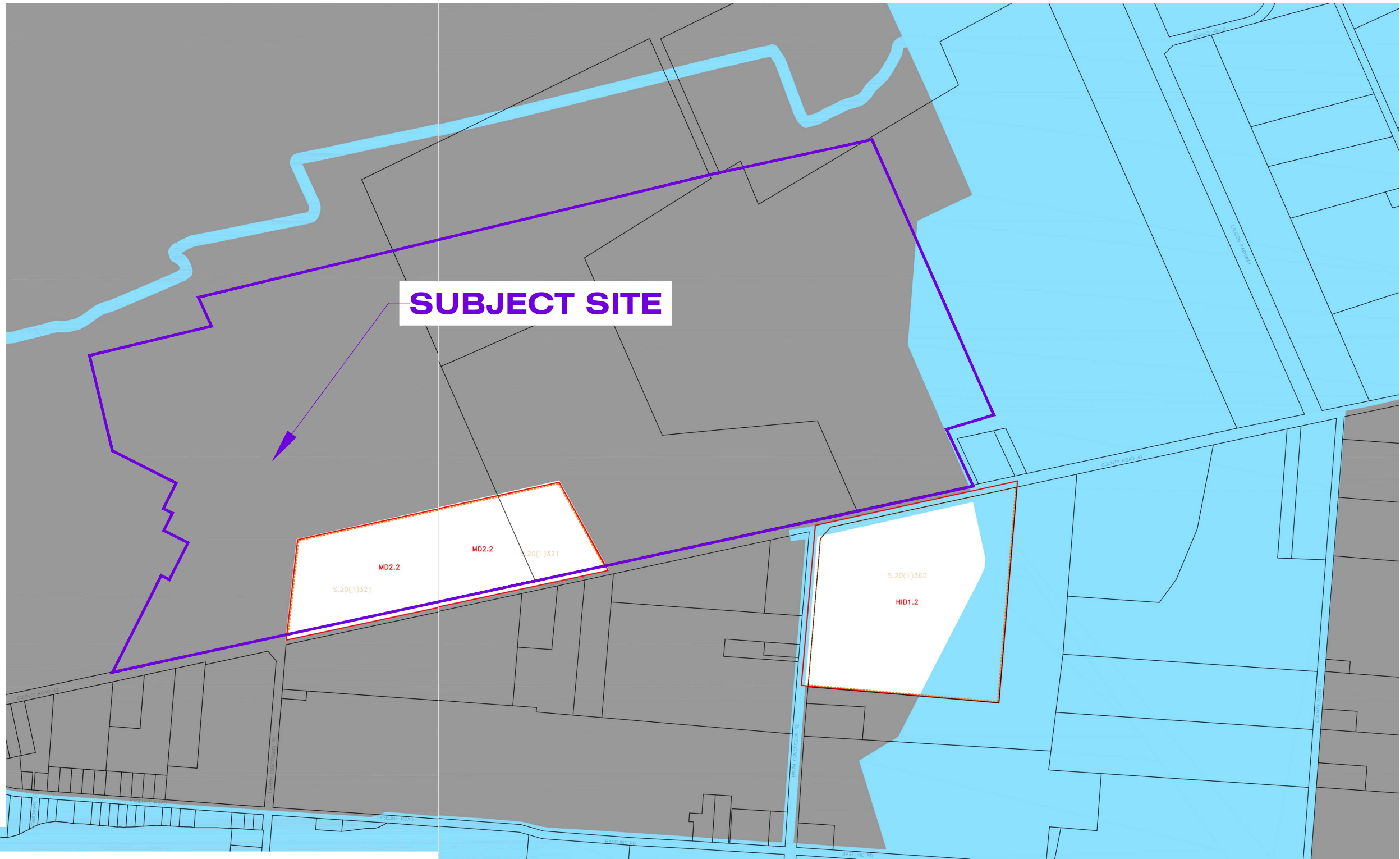
DRD 1._	- Development Reserve District	- See Section 8
GD1._	- Green District	- See Section 9
RD1._	- Residential Districts (Low Density)	- See Section 10
RD2._	- Residential Districts (Medium Density)	- See Section 11
RD3._	- Residential Districts (High Density)	- See Section 12
ID1._	- Institutional District	- See Section 13
CD1._	- Commercial Districts (Neighbourhood)	- See Section 14
CD2._	- Commercial Districts (General)	- See Section 15
CD3._	- Commercial Districts (Major)	- See Section 16
CD4._	- Commercial Districts (Highway/Restricted Use)	- See Section 17
MD1._	-Industrial District (Light/Business Park)	-See Section 18
MD2._	-Industrial District (Heavy)	-See Section 19

An H symbol preceding the zoning district symbol represents a hold on the issuance of a building permit until specific development preconditions have been satisfied. Subsection 5.4 specifies the uses permitted until such time as the H symbol is removed by an amending by-law approved by Council.

2. See Subsection 20(1) and the relevant clause for the specific special provisions.

3. See Subsection 20(2) and the relevant clause for the specific special provisions.

4. Represents the approximate limits of land subject of potential flooding along the Detroit River, Lake St. Clair and inland watercourses as determined by the Essex Region Conservation Authority (ERCA). Within these areas, buildings or structures are generally restricted and possibly prohibited. Application for building permits will be referred to ERCA for its review and the issuance of permits prior to the issuance of any building permit by the City of Windsor.



SUBJECT SITE
±187.74 ha (± 463.95 ac)

CORPORATION OF THE CITY OF WINDSOR
SURPLUS AIRPORT LANDS
PLANNING JUSTIFICATION REPORT

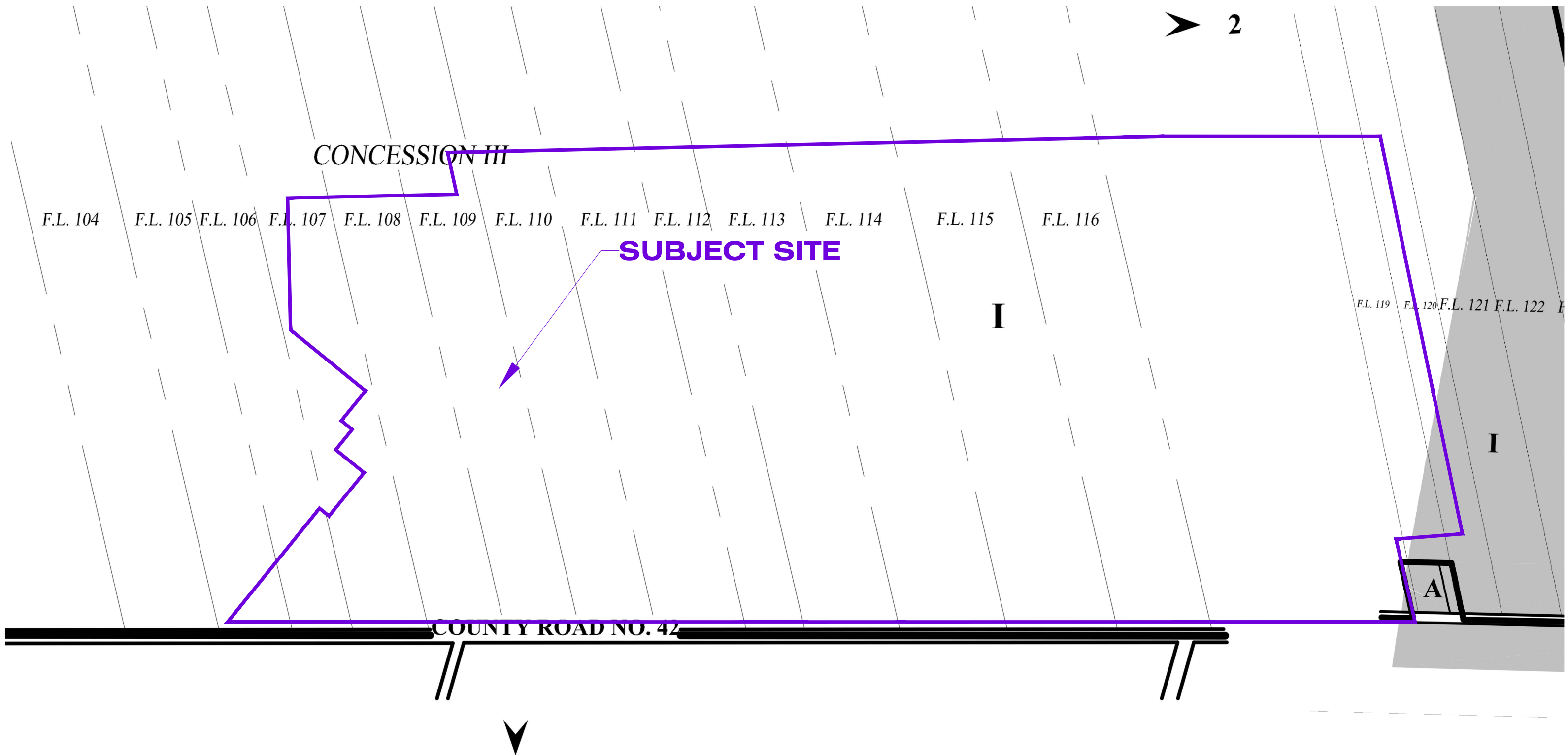
CITY OF WINDSOR ZONING BY-LAW
FIGURE 8.0

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.
CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: MRU

SCALE: N.T.S


SOURCE: CITY OF WINDSOR ZONING BY-LAW 8600 : MAP 12 & 16

PROJECT: 23-5796
STATUS: DRAFT
DATE: 08/01/2023



**CORPORATION OF THE
CITY OF WINDSOR**
SURPLUS AIRPORT LANDS
PLANNING JUSTIFICATION REPORT

SANDWICH SOUTH ZONING BY-LAW
FIGURE 9.0

 SUBJECT SITE
±187.74 ha (± 463.95 ac)

I = INSTITUTIONAL

MAP/DRAWING INFORMATION
THIS DRAWING IS FOR INFORMATION PURPOSE ONLY. ALL
DIMENSIONS AND BOUNDARY INFORMATION SHOULD BE
VERIFIED BY AN O.L.S PRIOR TO CONSTRUCTION.

CREATED BY: MRU
CHECKED BY: KDT
DESIGNED BY: MRU

SCALE: N.T.S

SOURCE: TOWNSHIP OF SANDWICH SOUTH
ZONING BY-LAW 8600 : MAP 1 & 2

PROJECT: 23-5796
STATUS: DRAFT
DATE: 08/01/2023

Appendix A

Provincial Policy Statement 2020 Policies



Provincial Policy Statement, 2020

Under the *Planning Act*

Part V: Policies

1.0 Building Strong Healthy Communities

Ontario is a vast province with urban, rural, and northern communities with diversity in population, economic activities, pace of growth, service levels and physical and natural conditions. Ontario's long-term prosperity, environmental health and social well-being depend on wisely managing change and promoting efficient land use and development patterns. Efficient land use and development patterns support sustainability by promoting strong, liveable, healthy and resilient communities, protecting the environment and public health and safety, and facilitating economic growth.

Accordingly:

1.1 Managing and Directing Land Use to Achieve Efficient and Resilient Development and Land Use Patterns

1.1.1 Healthy, liveable and safe communities are sustained by:

- a) promoting efficient development and land use patterns which sustain the financial well-being of the Province and municipalities over the long term;
- b) accommodating an appropriate affordable and market-based range and mix of residential types (including single-detached, additional residential units, multi-unit housing, affordable housing and housing for older persons), employment (including industrial and commercial), institutional (including places of worship, cemeteries and long-term care homes), recreation, park and open space, and other uses to meet long-term needs;
- c) avoiding development and land use patterns which may cause environmental or public health and safety concerns;
- d) avoiding development and land use patterns that would prevent the efficient expansion of *settlement areas* in those areas which are adjacent or close to *settlement areas*;
- e) promoting the integration of land use planning, growth management, *transit-supportive* development, *intensification* and *infrastructure* planning to achieve cost-effective development patterns, optimization of transit investments, and standards to minimize land consumption and servicing costs;
- f) improving accessibility for persons with disabilities and older persons by addressing land use barriers which restrict their full participation in society;
- g) ensuring that necessary *infrastructure* and *public service facilities* are or will be available to meet current and projected needs;
- h) promoting development and land use patterns that conserve biodiversity; and
- i) preparing for the regional and local impacts of a changing climate.

1.1.2 Sufficient land shall be made available to accommodate an appropriate range and mix of land uses to meet projected needs for a time horizon of up to 25 years, informed by provincial guidelines. However, where an alternate time period has been established for specific areas of the Province as a result of a provincial planning exercise or a *provincial plan*, that time frame may be used for municipalities within the area.

Within *settlement areas*, sufficient land shall be made available through *intensification* and *redevelopment* and, if necessary, *designated growth areas*.

Nothing in policy 1.1.2 limits the planning for *infrastructure*, *public service facilities* and *employment areas* beyond a 25-year time horizon.

1.1.3 Settlement Areas

Settlement areas are urban areas and rural settlement areas, and include cities, towns, villages and hamlets. Ontario's settlement areas vary significantly in terms of size, density, population, economic activity, diversity and intensity of land uses, service levels, and types of infrastructure available.

The vitality and regeneration of settlement areas is critical to the long-term economic prosperity of our communities. Development pressures and land use change will vary across Ontario. It is in the interest of all communities to use land and resources wisely, to promote efficient development patterns, protect resources, promote green spaces, ensure effective use of infrastructure and public service facilities and minimize unnecessary public expenditures.

1.1.3.1 *Settlement areas* shall be the focus of growth and development.

1.1.3.2 Land use patterns within *settlement areas* shall be based on densities and a mix of land uses which:

- a) efficiently use land and resources;
- b) are appropriate for, and efficiently use, the *infrastructure* and *public service facilities* which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion;
- c) minimize negative impacts to air quality and climate change, and promote energy efficiency;
- d) prepare for the *impacts of a changing climate*;
- e) support *active transportation*;
- f) are *transit-supportive*, where transit is planned, exists or may be developed; and
- g) are *freight-supportive*.

Land use patterns within *settlement areas* shall also be based on a range of uses and opportunities for *intensification* and *redevelopment* in accordance with the criteria in policy 1.1.3.3, where this can be accommodated.

- 1.1.3.3 Planning authorities shall identify appropriate locations and promote opportunities for *transit-supportive* development, accommodating a significant supply and range of *housing options* through *intensification* and *redevelopment* where this can be accommodated taking into account existing building stock or areas, including *brownfield sites*, and the availability of suitable existing or planned *infrastructure* and *public service facilities* required to accommodate projected needs.
- 1.1.3.4 Appropriate development standards should be promoted which facilitate *intensification, redevelopment* and compact form, while avoiding or mitigating risks to public health and safety.
- 1.1.3.5 Planning authorities shall establish and implement minimum targets for *intensification* and *redevelopment* within built-up areas, based on local conditions. However, where provincial targets are established through *provincial plans*, the provincial target shall represent the minimum target for affected areas.
- 1.1.3.6 New development taking place in *designated growth areas* should occur adjacent to the existing built-up area and should have a compact form, mix of uses and densities that allow for the efficient use of land, *infrastructure* and *public service facilities*.
- 1.1.3.7 Planning authorities should establish and implement phasing policies to ensure:
- a) that specified targets for *intensification* and *redevelopment* are achieved prior to, or concurrent with, new development within *designated growth areas*; and
 - b) the orderly progression of development within *designated growth areas* and the timely provision of the *infrastructure* and *public service facilities* required to meet current and projected needs.
- 1.1.3.8 A planning authority may identify a *settlement area* or allow the expansion of a *settlement area* boundary only at the time of a *comprehensive review* and only where it has been demonstrated that:
- a) sufficient opportunities to accommodate growth and to satisfy market demand are not available through *intensification, redevelopment* and *designated growth areas* to accommodate the projected needs over the identified planning horizon;
 - b) the *infrastructure* and *public service facilities* which are planned or available are suitable for the development over the long term, are financially viable over their life cycle, and protect public health and safety and the natural environment;
 - c) in *prime agricultural areas*:
 1. the lands do not comprise *specialty crop areas*;
 2. alternative locations have been evaluated, and

1.2.6 Land Use Compatibility

1.2.6.1 *Major facilities and sensitive land uses* shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential *adverse effects* from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of *major facilities* in accordance with provincial guidelines, standards and procedures.

1.2.6.2 Where avoidance is not possible in accordance with policy 1.2.6.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other uses that are vulnerable to encroachment by ensuring that the planning and *development* of proposed adjacent *sensitive land uses* are only permitted if the following are demonstrated in accordance with provincial guidelines, standards and procedures:

- a) there is an identified need for the proposed use;
- b) alternative locations for the proposed use have been evaluated and there are no reasonable alternative locations;
- c) *adverse effects* to the proposed *sensitive land use* are minimized and mitigated; and
- d) potential impacts to industrial, manufacturing or other uses are minimized and mitigated.

1.3 Employment

1.3.1 Planning authorities shall promote economic development and competitiveness by:

- a) providing for an appropriate mix and range of employment, institutional, and broader mixed uses to meet long-term needs;
- b) providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses;
- c) facilitating the conditions for economic investment by identifying strategic sites for investment, monitoring the availability and suitability of employment sites, including market-ready sites, and seeking to address potential barriers to investment;
- d) encouraging compact, mixed-use development that incorporates compatible employment uses to support liveable and resilient communities, with consideration of housing policy 1.4; and
- e) ensuring the necessary *infrastructure* is provided to support current and projected needs.

1.3.2 Employment Areas

1.3.2.1 Planning authorities shall plan for, protect and preserve *employment areas* for current and future uses and ensure that the necessary *infrastructure* is provided to support current and projected needs.

1.3.2.2 At the time of the official plan review or update, planning authorities should assess *employment areas* identified in local official plans to ensure that this designation is appropriate to the planned function of the *employment area*.

Employment areas planned for industrial and manufacturing uses shall provide for separation or mitigation from *sensitive land uses* to maintain the long-term operational and economic viability of the planned uses and function of these areas.

1.3.2.3 Within *employment areas* planned for industrial or manufacturing uses, planning authorities shall prohibit residential uses and prohibit or limit other *sensitive land uses* that are not ancillary to the primary employment uses in order to maintain land use compatibility.

Employment areas planned for industrial or manufacturing uses should include an appropriate transition to adjacent non-*employment areas*.

1.3.2.4 Planning authorities may permit conversion of lands within *employment areas* to non-employment uses through a *comprehensive review*, only where it has been demonstrated that the land is not required for employment purposes over the long term and that there is a need for the conversion.

1.3.2.5 Notwithstanding policy 1.3.2.4, and until the official plan review or update in policy 1.3.2.4 is undertaken and completed, lands within existing *employment areas* may be converted to a designation that permits non-employment uses provided the area has not been identified as provincially significant through a provincial plan exercise or as regionally significant by a regional economic development corporation working together with affected upper and single-tier municipalities and subject to the following:

- a) there is an identified need for the conversion and the land is not required for employment purposes over the long term;
- b) the proposed uses would not adversely affect the overall viability of the *employment area*; and
- c) existing or planned *infrastructure* and *public service facilities* are available to accommodate the proposed uses.

1.3.2.6 Planning authorities shall protect *employment areas* in proximity to *major goods movement facilities and corridors* for employment uses that require those locations.

1.3.2.7 Planning authorities may plan beyond 25 years for the long-term protection of employment areas provided lands are not designated beyond the planning horizon identified in policy 1.1.2.

1.6.3 Before consideration is given to developing new *infrastructure* and *public service facilities*:

- a) the use of existing *infrastructure* and *public service facilities* should be optimized; and
- b) opportunities for adaptive re-use should be considered, wherever feasible.

1.6.4 *Infrastructure* and *public service facilities* should be strategically located to support the effective and efficient delivery of emergency management services, and to ensure the protection of public health and safety in accordance with the policies in Section 3.0: Protecting Public Health and Safety.

1.6.5 *Public service facilities* should be co-located in community hubs, where appropriate, to promote cost-effectiveness and facilitate service integration, access to transit and *active transportation*.

1.6.6 Sewage, Water and Stormwater

1.6.6.1 Planning for *sewage and water services* shall:

- a) accommodate forecasted growth in a manner that promotes the efficient use and optimization of existing:
 - 1. *municipal sewage services* and *municipal water services*; and
 - 2. *private communal sewage services* and *private communal water services*, where *municipal sewage services* and *municipal water services* are not available or feasible;
- b) ensure that these systems are provided in a manner that:
 - 1. can be sustained by the water resources upon which such services rely;
 - 2. prepares for the *impacts of a changing climate*;
 - 3. is feasible and financially viable over their lifecycle; and
 - 4. protects human health and safety, and the natural environment;
- c) promote water conservation and water use efficiency;
- d) integrate servicing and land use considerations at all stages of the planning process; and
- e) be in accordance with the servicing hierarchy outlined through policies 1.6.6.2, 1.6.6.3, 1.6.6.4 and 1.6.6.5. For clarity, where *municipal sewage services* and *municipal water services* are not available, planned or feasible, planning authorities have the ability to consider the use of the servicing options set out through policies 1.6.6.3, 1.6.6.4, and 1.6.6.5 provided that the specified conditions are met.

1.6.6.2 *Municipal sewage services* and *municipal water services* are the preferred form of servicing for *settlement areas* to support protection of the environment and minimize potential risks to human health and safety. Within *settlement areas* with existing *municipal sewage services* and *municipal water services*, *intensification* and *redevelopment* shall be promoted wherever feasible to optimize the use of the services.

sufficient *reserve sewage system capacity* shall include ~~treatment capacity~~ for hauled sewage from *private communal sewage services* and *individual on-site sewage services*.

1.6.6.7 Planning for stormwater management shall:

- a) be integrated with planning for *sewage and water services* and ensure that systems are optimized, feasible and financially viable over the long term;
- b) minimize, or, where possible, prevent increases in contaminant loads;
- c) minimize erosion and changes in water balance, and prepare for the *impacts of a changing climate* through the effective management of stormwater, including the use of *green infrastructure*;
- d) mitigate risks to human health, safety, property and the environment;
- e) maximize the extent and function of vegetative and pervious surfaces; and
- f) promote stormwater management best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development.

1.6.7 Transportation Systems

1.6.7.1 *Transportation systems* should be provided ~~which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.~~

1.6.7.2 Efficient use should be made of existing and planned *infrastructure*, including through the use of *transportation demand management* strategies, where feasible.

1.6.7.3 As part of a *multimodal transportation system*, connectivity within and among *transportation systems* and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.

1.6.7.4 A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and *active transportation*.

1.6.8 Transportation and Infrastructure Corridors

1.6.8.1 Planning authorities shall plan for and protect corridors and rights-of-way for *infrastructure*, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs.

1.6.8.2 *Major goods movement facilities and corridors* shall be protected for the long term.

1.6.8.3 Planning authorities shall not permit *development in planned corridors* that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.

1.6.11 Energy Supply

- 1.6.11.1 Planning authorities should provide opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, district energy, and *renewable energy systems* and *alternative energy systems*, to accommodate current and projected needs.

1.7 Long-Term Economic Prosperity

1.7.1 Long-term economic prosperity should be supported by:

- a) promoting opportunities for economic development and community investment-readiness;
- b) encouraging residential uses to respond to dynamic market-based needs and provide necessary housing supply and range of *housing options* for a diverse workforce;
- c) optimizing the long-term availability and use of land, resources, *infrastructure* and *public service facilities*;
- d) maintaining and, where possible, enhancing the vitality and viability of downtowns and mainstreets;
- e) encouraging a sense of place, by promoting well-designed built form and cultural planning, and by conserving features that help define character, including *built heritage resources* and *cultural heritage landscapes*;
- f) promoting the redevelopment of *brownfield sites*;
- g) providing for an efficient, cost-effective, reliable *multimodal transportation system* that is integrated with adjacent systems and those of other jurisdictions, and is appropriate to address projected needs to support the movement of goods and people;
- h) providing opportunities for sustainable tourism development;
- i) sustaining and enhancing the viability of the *agricultural system* through protecting agricultural resources, minimizing land use conflicts, providing opportunities to support local food, and maintaining and improving the *agri-food network*;
- j) promoting energy conservation and providing opportunities for increased energy supply;
- k) minimizing negative impacts from a changing climate and considering the ecological benefits provided by nature; and
- l) encouraging efficient and coordinated communications and telecommunications infrastructure.

1.8 Energy Conservation, Air Quality and Climate Change

- 1.8.1 Planning authorities shall support energy conservation and efficiency, improved air quality, reduced greenhouse gas emissions, and preparing for the *impacts of a changing climate* through land use and development patterns which:

- a) promote compact form and a structure of nodes and corridors;
- b) promote the use of *active transportation* and transit in and between residential, employment (including commercial and industrial) and institutional uses and other areas;
- c) focus major employment, commercial and other travel-intensive land uses on sites which are well served by transit where this exists or is to be developed, or designing these to facilitate the establishment of transit in the future;
- d) focus freight-intensive land uses to areas well served by major highways, *airports, rail facilities and marine facilities*;
- e) encourage *transit-supportive* development and *intensification* to improve the mix of employment and housing uses to shorten commute journeys and decrease transportation congestion;
- f) promote design and orientation which maximizes energy efficiency and conservation, and considers the mitigating effects of vegetation and *green infrastructure*; and
- g) maximize vegetation within *settlement areas*, where feasible.

2.0 Wise Use and Management of Resources

Ontario's long-term prosperity, environmental health, and social well-being depend on conserving biodiversity, protecting the health of the Great Lakes, and protecting natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits.

Accordingly:

2.1 Natural Heritage

2.1.1 Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems*, should be maintained, restored or, where possible, improved, recognizing linkages between and among *natural heritage features and areas, surface water features and ground water features*.

2.1.3 *Natural heritage systems* shall be identified in Ecoregions 6E & 7E¹, recognizing that *natural heritage systems* will vary in size and form in *settlement areas, rural areas, and prime agricultural areas*.

2.1.4 *Development and site alteration* shall not be permitted in:

- a) *significant wetlands* in Ecoregions 5E, 6E and 7E¹; and
- b) *significant coastal wetlands*.

2.1.5 *Development and site alteration* shall not be permitted in:

- a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E and 7E¹;
- b) *significant woodlands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)¹;
- c) *significant valleylands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)¹;
- d) *significant wildlife habitat*;
- e) *significant areas of natural and scientific interest*; and
- f) *coastal wetlands* in Ecoregions 5E, 6E and 7E¹ that are not subject to policy 2.1.4(b)

unless it has been demonstrated that there will be no *negative impacts* on the natural features or their *ecological functions*.

¹ Ecoregions 5E, 6E and 7E are shown on Figure 1.

- 2.1.6 *Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.*
- 2.1.7 *Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.*
- 2.1.8 *Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*
- 2.1.9 Nothing in policy 2.1 is intended to limit the ability of *agricultural uses* to continue.

2.2 Water

- 2.2.1 Planning authorities shall protect, improve or restore the *quality and quantity of water* by:
- a) using the *watershed* as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development;
 - b) minimizing potential *negative impacts*, including cross-jurisdictional and cross-*watershed* impacts;
 - c) evaluating and preparing for the *impacts of a changing climate* to water resource systems at the watershed level;
 - d) identifying water resource systems consisting of *ground water features, hydrologic functions, natural heritage features and areas, and surface water features* including shoreline areas, which are necessary for the ecological and hydrological integrity of the *watershed*;
 - e) maintaining linkages and related functions among *ground water features, hydrologic functions, natural heritage features and areas, and surface water features* including shoreline areas;
 - f) implementing necessary restrictions on *development and site alteration* to:
 - 1. protect all municipal drinking water supplies and *designated vulnerable areas*; and
 - 2. protect, improve or restore *vulnerable* surface and ground water, *sensitive surface water features* and *sensitive ground water features*, and their *hydrologic functions*;
 - g) planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality;
 - h) ensuring consideration of environmental lake capacity, where applicable; and
 - i) ensuring stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces.

amendment, rezoning, or development permit under the *Planning Act* in all areas, except those areas of existing development or particular environmental sensitivity which have been determined to be incompatible with extraction and associated activities.

2.6 Cultural Heritage and Archaeology

2.6.1 *Significant built heritage resources and significant cultural heritage landscapes shall be conserved.*

2.6.2 *Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.*

2.6.3 *Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.*

2.6.4 *Planning authorities should consider and promote archaeological management plans and cultural plans in conserving cultural heritage and archaeological resources.*

2.6.5 *Planning authorities shall engage with Indigenous communities and consider their interests when identifying, protecting and managing cultural heritage and archaeological resources.*

Appendix B

City of Windsor Official Plan Policies

close proximity. Mixed use developments will be encouraged with strong pedestrian orientations and to support public transit. This concept will enable Windsor to continue its growth and foster a vibrant economy, while ensuring a safe, caring and diverse community and a sustainable, healthy environment.

In order to manage growth consistent with the community vision, the following key policy directions are provided for in the other chapters of this Plan.

3.2.1 Safe, Caring and Diverse Community

NEIGHBOURHOOD CENTRES

3.2.1.1 Windsorites want to be a part of neighbourhoods that meet their needs as places to live, shop and play. Each neighbourhood will have a central area that provides a focus for activities and is within a convenient walking distance. Here, people will find shops, jobs, neighbourhood based services, public places that are safe and inviting, and a place to meet with neighbours and join in community life. The neighbourhood centre will provide a variety of housing types for all ages and incomes.

NEIGHBOURHOOD HOUSING VARIETY

3.2.1.2 Encouraging a range of housing types will ensure that people have an opportunity to live in their neighbourhoods as they pass through the various stages of their lives. Residents will have a voice in how this new housing fits within their neighbourhood. As the city grows, more housing opportunities will mean less sprawl onto agricultural and natural lands.

DISTINCTIVE NEIGHBOURHOOD CHARACTER

3.2.1.3 Windsor will keep much of what gives its existing neighbourhoods their character – trees and greenery, heritage structures and spaces, distinctive area identities, parks, and generally low profile development outside the City Centre. Around the neighbourhood centres, the existing character of the neighbourhood will be retained and enhanced. Newly developing areas will be planned to foster their own unique neighbourhood identities with a mixture of homes, amenities and services.

COMMUNITY DESIGN

3.2.1.4 The design of buildings and spaces will respect and enhance the character of their surroundings, incorporating natural features and creating interesting and comfortable places. Streets, open spaces and the greenway system will serve as public amenities connecting and defining neighbourhoods and contributing to Windsor’s image. New development in Windsor will accommodate the needs of pedestrians, cyclists and other recreational activities.

3.3.2 Vibrant Economy

EMPLOYMENT

3.2.2.1 Windsor’s economy will be stimulated by active employment centres that

<i>CENTRES</i>		serve the larger Census Metropolitan Area. These centres will cluster appropriate large scale employment, shopping and entertainment uses together to create exciting areas for employment and investment. With convenient access to major transportation routes, these centres will be transit friendly and poised to take advantage of Windsor's role as an international gateway.
<i>CITY CENTRE</i>	3.2.2.2	The City Centre will continue to be the major focus of cultural, social and economic activities. The City Centre is and will remain the heart of Windsor, serving as the visual symbol of the entire community. A diverse mixture of businesses, cultural venues, major government offices and entertainment destinations will strengthen downtown as a major economic centre. The heart of our community will also provide a liveable residential environment for a variety of people and be a welcoming arrival point for visitors.
<i>COMMUNITY IMPROVEMENT</i>	3.2.2.3	Revitalizing areas in need of improvement will improve Windsor, while protecting the community's investment in infrastructure and other services. Community improvement initiatives will strengthen neighbourhoods by providing new businesses, homes and public spaces and by creating unique opportunities for reinvestment in the community.
3.2.3 Sustainable, Healthy Environment		
<i>TRANSPORTATION SYSTEM</i>	3.2.3.1	Windsor will work toward achieving a sustainable transportation system where all modes of transportation can play a more balanced role. The creation of mixed use and employment centres will allow businesses and services to be closer to homes and allow greater opportunities for walking, cycling and transit.
<i>WATERFRONT</i>	3.2.3.2	The Detroit River and Lake St. Clair waterfront will continue to be cherished as a community asset. A mixture of open spaces, residences and businesses will continue to provide the waterfront with its character and support a healthy environment, economic growth and the community's desire for public access to the water's edge.
<i>THE GREENWAY SYSTEM</i>	3.2.3.3	The Greenway System will connect Windsor's neighbourhoods, parks, natural areas and the waterfront. The system will foster recreational activities, contribute to community health, enhance the natural environment and link Windsor to its neighbouring municipalities.
<i>HEALTHY ECOSYSTEM</i>	3.2.3.4	Windsor will achieve greater harmony between human activities and natural systems. Attention will be given to establishing a flourishing natural environment, with clean air, land and water.

*ENERGY
EFFICIENCY*

3.2.3.5 Windsor will encourage the design and construction of energy efficient buildings and landscapes to reduce air, water and land pollution and environmental impacts of energy production and consumption.

3.2.4 Responsive, Effective Local Government

*COMMUNITY
BASED
PLANNING*

3.2.4.1 People will be involved in the municipal processes that shape Windsor and its neighbourhoods. Residents will be encouraged to work with municipal staff to identify and resolve city-wide and neighbourhood issues. New ways will be found to build consensus within the community to ensure that Windsor advances toward its desired future.

*SERVICE
DELIVERY*

3.2.4.2 Windsorites want a planning process that is responsive, effective and fiscally responsible. Planning services will be efficiently delivered and carefully targeted to achieve the community vision.

3.3 Urban Structure Plan

The Urban Structure Plan identifies the key structural elements within the municipality. These key structural elements and the linkages between these elements establish the strategic framework within which more detailed land use designations can be established.

3.3.1 Nodes

Nodes in this context are existing or future locations of concentrated activity on the Urban Structure Plan that serve the societal, environmental and economic needs at a neighbourhood and/or regional scale. The most successful nodes are the ones that exhibit a wide variety of land uses, including higher density residential and employment uses, and have access to frequent public transit service. Smaller scale community and neighbourhood nodes play an important role in providing services to the surrounding neighbourhoods, providing a range of housing opportunities and, providing a recognized sense of place for these neighbourhoods.

*GROWTH
CENTRES*

3.3.1.1 Growth Centres are the highest in the hierarchy of nodes in Windsor due to their scale, density, range of uses, function and current or future identity. Growth Centres should be planned:

- (a) To serve as focal areas for investment in institutional and region-wide public services, as well as commercial, recreational, cultural and entertainment uses;
- (b) To accommodate and support major transit infrastructure;
- (c) To serve as high density major employment centres;
- (d) To accommodate a significant share of households and employment growth; and,

- (e) To accommodate a minimum density of 200 residents and 200 jobs per net hectare;

The minimum density for new residential-only development is 80 units per net hectare.

*MAJOR
ACTIVITY
CENTRES*

3.3.1.2 Major Activity Centres are second in the hierarchy of nodes in Windsor. The following comprise Windsor’s Major Activity Centres:

- (a) Regional Commercial Centres;
- (b) Regional Institutional Centres;
- (c) Regional Employment Centres; and
- (d) Regional Open Space System.

These types of nodes are considered to be sub-regional in the context of Windsor and were originally planned as single-use facilities that have evolved into multi-use urban areas with a variety of densities. Typically, these nodes are currently or have the potential to be important destinations within the regional public transit network. Future residential development and redevelopment at Major Activity Centres should be medium (30 units per net hectare) to high-density (80+ units per net hectare). Residential intensification is desired at or near Major Activity Centres. Development surrounding these locations will be subject to the preparation of a Secondary Plan or plan of subdivision.

(a) Regional Commercial Centres

Regional Commercial Centres are a type of Major Activity Centre where commercial services are provided to residents across the city and region. This type of node also provides the location for serving the daily and weekly shopping needs of residents living within or near the node. Regional Commercial Centres may also function as employment centres providing population serving offices, retail, personal services and local institutions.

In the future these nodes should function as vibrant mixed-use commercial-residential neighbourhoods serving a higher density of population. Ideally, the predominant form of new or redeveloped housing should be medium and high-density residential buildings with ground floor and possibly second floor commercial uses and upper floor residential dwellings.

(b) Regional Institutional Centres

Regional Institutional Centres are a type of Major Activity Centre where institutional services are provided to residents across the

city and region. This type of node typically serves as a location for the provision of hospital-based health care and/or major post-secondary institutions. Regional Institutional Centres can also function as employment centres providing jobs in the health care, education, research and development, offices, retail and personal service sectors.

(c) Regional Employment Centres

Regional Employment Centres are a type of Major Activity Centre where a large number of jobs are located. This type of node typically serves as a location for the large scale manufacturing or distribution of goods. Additionally, retail, office and personal service uses may be established as ancillary uses.

(d) Regional Open Space System

The Regional Open Space System includes the major natural and open space features that form part of a continuous system throughout Windsor. Some components of the Regional Open Space System are also designated as Natural Heritage in the Official Plan although not all Natural Heritage features are components of the Regional Open Space System. The Regional Open Space System includes an existing and future natural and naturalized corridor around Windsor with opportunities for future recreation and recreational pathways.

3.3.2 Corridors

Corridors represent the backbones of the urban network structure. Neighbourhoods gravitate towards these corridors to serve their everyday needs or to connect with larger nodes, commercial centres and employment centres to access a wider range of services and opportunities. Corridors have opportunities for intensification that would provide a wider range of services and opportunities for adjacent neighbourhoods but also more opportunities to live and work in the area. Corridors may connect with nodes and extend along roadways radiating away from a central point. Some corridors exist without such connections and represent stand alone sections.

Corridors are located along transit routes, with City Corridors having the most frequent service. Ideally, corridors are walkable, providing neighbourhoods and those who use transit with easy access to services along main streets. Corridors provide residents with opportunities to travel by bus, bicycle or on foot to their desired destination within or

beyond their neighbourhood. Increased employment and residential densities along corridors support more frequent transit, and in turn more frequent transit supports and attracts higher density land uses along the corridor. This symbiotic relationship between transit, pedestrians and corridor intensification is key to the success of any corridor. Thus, corridors and transit should be planned and fostered together.

*CITY
CORRIDORS*

3.3.2.1 City Corridors serve to connect the City Centre Growth Centre and Regional Commercial Centres. City corridors radiate from these Centres following numerous high frequency transit corridors. City corridors connect to Regional Commercial Centres along selected arterial roads but do not extend as far outward or as numerous as corridors connected to the City Centre. These corridors are intended to provide services for those living in close proximity to the area but also those who may arrive by transit, bicycle and by car.

There are higher density employment and residential opportunities, with a significant amount of retail to support both every day needs, but also needs beyond the day such as furniture and appliance stores, home improvement stores, and stores that carry specialty items.

Pharmacies and medical service are available with multiple choices for specialized care including doctors who specialize in specific types of care.

Government services and buildings associated with the municipality, province or federal government are also found in these areas.

Entertainment facilities, designed to attract people from well beyond the immediate area are also found on corridors that radiate from the City Centre.

Transit service is frequent (10-20 minute peak headways) and offers multiple connections to other nodes and corridors throughout the city by a main transfer location or transit station. Regional transit connections are also available.

Residential development may include high profile (26 to 58 metres in height), medium profile (14 to 26 metres in height) and residential over retail at street, as well as row housing and lofts.

*NEIGHBOURHOOD
CORRIDORS*

3.3.2.2 The purpose and function of neighbourhood corridors is to link street sections to neighbourhood nodes or as standalone sections of community retail and services. These corridors provide for the day to day needs of the immediate neighbourhood that surrounds them. While employment is not the major focus, these corridors create a sense of community by

providing places for residents to walk such as local retail businesses and services. Local services may also include pharmacies, convenience stores and retail to serve the day to day needs of residents.

Transit service is available and multiple routes may converge within the corridor and provide a few connections to other corridors and to Regional Commercial Centres.

3.3.3 Neighbourhoods

Neighbourhoods are the most basic component of Windsor's urban structure and occupy the greatest proportion of the City. Neighbourhoods are stable, low-to-medium-density residential areas and are comprised of local streets, parks, open spaces, schools, minor institutions and neighbourhood and convenience scale retail services.

The three dominant types of dwellings in Windsor's neighbourhoods are single detached, semi-detached and townhouses. The density range for Windsor's neighbourhoods is between 20 to 35 units per net hectare. This density range provides for low and some medium-density intensification to occur in existing neighbourhoods. Multiple dwelling buildings with medium and high-densities are encouraged at nodes identified in the Urban Structure Plan.

3.3.4 Structural Elements in Neighbouring Communities

Several urban structural elements are included for the neighbouring communities of Detroit, Michigan, United States of America; and the towns of Tecumseh and LaSalle in Essex County, Ontario. These communities are beyond Windsor Council's jurisdiction and the structural elements are included on Official Plan Volume I – Schedule „J“ for reference purposes only.

4.2.6 Economic Opportunity

EMPLOYMENT OPPORTUNITIES 4.2.6.1 To provide for a wide range of employment opportunities at appropriate locations throughout Windsor.

ECONOMIC DEVELOPMENT 4.2.6.2 To encourage a range of economic development opportunities to reach full employment.

4.2.7 Safety

SAFETY & SECURITY 4.2.7.1 To foster personal safety throughout Windsor.

EMERGENCY PLAN 4.2.7.2 To support and maintain an emergency preparedness plan.

EMERGENCY SERVICES 4.2.7.3 To encourage emergency services in close proximity to where people live.

SALT SOLUTION
MINING

5.4.3.6

Council shall require that proponents of development within or immediately adjacent to the Mineral Mining Area designated on Schedule C: Development Constraint Areas where there is known present or past underground salt or salt solution mining activity to successfully complete a geo-technical study prepared by a qualified professional to confirm that the site is suitable for the proposed development.

5.4.4 Wayside Pits and Quarries and Portable Asphalt Plants Policies

DEFINITION

5.4.4.1

Wayside Pits and Quarries and Portable Asphalt Plants shall be defined in accordance with provincial policy.

NEW PITS,
QUARRIES &
PORTABLE
ASPHALT
PLANTS

5.4.4.2

Council may permit Wayside Pits and Quarries and Portable Asphalt Plants in any land use designation on Schedule D: Land Use without requiring an amendment to this Plan provided:

- (a) the use is in keeping with provincial legislation, policies and appropriate guidelines; and
- (b) the proponent mitigates potential negative impacts of the extraction and/or operation on surrounding and/or sensitive land uses.

5.4.5 Noise and Vibration Policies

REGARD FOR
NOISE &
VIBRATION

5.4.5.1

Council shall require the proponent of development in proximity to existing or proposed sources of noise and vibration, or the proponent of development that may be a source of noise or vibration, to evaluate the potential negative impacts of such noise and vibration on the proposed future land use. In determining the exact distances for the application of this policy, the Municipality shall have regard to provincial legislation, policies and appropriate guidelines.

(Amended by OPA 43 – 06/13/2006 – OMB Order 1695)

REQUIRE STUDY

5.4.5.2

If a proposed development is expected to be subject to noise or vibration, or to cause noise or vibration, the proponent shall be required to complete a noise and/or vibration study to the satisfaction of the Municipality to support the feasibility of the proposal in accordance with the Procedures chapter of this Plan.

(Amended by OPA 43 – 06/13/2006 – OMB Order 1695)

<i>ABATEMENT MEASURES</i>	5.4.5.3	<p>Abatement measures may include one or more of the following, depending on the physical characteristics of the specific location and the source of the noise and/or vibration:</p> <ul style="list-style-type: none"> (a) increased setbacks from the noise or vibration source; (b) sound barriers such as landscaped berms, walls, buildings, and fences; (c) building design, including specific attention to height, massing, internal layout and fenestration; (d) building construction, including materials for acoustical and/or vibration insulation, glaze or ventilation; (e) registered notice on title of possible excessive noise and/or vibration, and; (f) any other appropriate attenuation measures.
<i>IMPLEMENTATION</i>	5.4.5.4	Council shall require that appropriate noise and/or vibration abatement measures be implemented by the proponent as a condition of development approval.
<i>AIRPORT OPERATING AREA DEFINITION</i>	5.4.5.5	For the purpose of this Plan, the Airport Operating Area includes those lands within the Noise Exposure Forecast and Noise Exposure Projection contours approved by the federal government and extended to the nearest right-of-way.
<i>REFER TO TRANSPORTATION CHAPTER</i>	5.4.5.6	Council shall evaluate a proposed development within the Airport Operating Area designated on Schedule C: Development Constraint Areas in accordance with the Transportation chapter of this Plan.
<i>RAIL YARD DEFINITION</i>	5.4.5.7	For the purpose of this Plan, Rail Yard includes the lands associated with a designated rail yard. (amended by OMB order 1485 – 11/01/2002)
<i>REFER TO TRANSPORTATION CHAPTER</i>	5.4.5.8	Council shall evaluate a proposed development adjacent to a Rail Yard designated on Schedule C: Development Constraints, in accordance with the Transportation chapter of this Plan. (amended by OMB order 1485 – 11/01/2002)

6. Land Use

6.0 Preamble

A healthy and livable city is one in which people can enjoy a vibrant economy and a sustainable healthy environment in safe, caring and diverse neighbourhoods. In order to ensure that Windsor is such a city, Council will manage development through an approach which balances environmental, social and economic considerations. As such, the Land Use chapter of this Plan promotes a compact urban form and directs compatible development to appropriate locations within existing and future neighbourhoods.

This chapter of the Official Plan provides goals, objectives and policies for the land use designations identified on Schedule D: Land Use and Schedule E: City Centre Planning District and should be read in conjunction with the other parts of the Plan.

6.1 Goals

In keeping with the Strategic Directions, Council's land use goals are to achieve:

<i>NEIGHBOURHOODS</i>	6.1.1	Safe, caring and diverse neighbourhoods.
<i>ENVIRONMENTALLY SUSTAINABLE</i>	6.1.2	Environmentally sustainable urban development.
<i>RESIDENTIAL</i>	6.1.3	Housing suited to the needs of Windsor's residents.
<i>EMPLOYMENT</i>	6.1.4	The retention and expansion of Windsor's employment base.
<i>COMMERCIAL</i>	6.1.5	Convenient and viable areas for the purchase and sale of goods and services.
<i>INSTITUTIONAL</i>	6.1.6	An integration of institutions within Windsor's neighbourhoods.
<i>OPEN SPACE</i>	6.1.7	A variety of open space areas.
<i>WATERFRONT</i>	6.1.8	An accessible Detroit River, Lake St. Clair and a healthy waterfront.
<i>NATURAL HERITAGE</i>	6.1.9	The protection and conservation of environmentally significant and sensitive natural heritage features and functions.
<i>MIXED USE</i>	6.1.10	Pedestrian oriented clusters of residential, commercial, employment and institutional uses.

<i>CITY CENTRE PLANNING DISTRICT AIRPORT</i>	6.1.11	The City Centre as the vibrant focal point and symbol of Windsor.
	6.1.12	Protection and enhancement of Windsor Airport's role in serving passenger and cargo needs. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)
<i>FUTURE GROWTH AREAS</i>	6.1.13	The provision of sufficient land in appropriate locations to accommodate future population and employment growth in Windsor. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

6.2 General Policies

<i>SCHEDULE D: LAND USE</i>	6.2.1.1	The following land use designations shall be identified on Schedule D: Land Use:
		(a) Residential;
		(b) Industrial;
		(c) Business Park;
		(d) Commercial Centre;
		(e) Commercial Corridor;
		(f) Major Institutional;
		(g) Open Space;
		(h) Natural Heritage;
		(i) Mixed Use;
		(j) Waterfront Residential;
		(k) Waterfront Recreation; and
		(l) Waterfront Port.
		(m) Windsor Airport (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)
		(n) Future Urban Area (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

compatibility, employment land uses are provided under two designations on Schedule D as either Industrial or Business Park.

The following objectives and policies establish the framework for development decisions in Employment areas.

6.4.1 Objectives

<i>POSITIVE BUSINESS ENVIRONMENT</i>	6.4.1.1	To ensure Windsor continues to be an attractive place to establish businesses and locate employees.
<i>ASSESSMENT BASE</i>	6.4.1.2	To expand Windsor's assessment base by attracting employers and economic development.
<i>COMPATIBLE DEVELOPMENT</i>	6.4.1.3	To ensure that employment uses are developed in a manner which are compatible with other land uses.
<i>RANGE OF USES</i>	6.4.1.4	To accommodate a full range of employment activities in Windsor.
<i>SUPPORT SERVICES</i>	6.4.1.5	To enhance the quality of employment areas by providing for complementary services and amenities.
<i>ACCESSIBLE</i>	6.4.1.6	To locate employment activities in areas which have sufficient and convenient access to all modes of transportation.
<i>SUFFICIENT LAND SUPPLY</i>	6.4.1.7	To ensure that a sufficient land supply for employment purposes is maintained over the 20 year period of this Plan.
<i>INFRASTRUCTURE</i>	6.4.1.8	To ensure that adequate infrastructure services are provided to employment areas.
<i>VIABLE AREAS</i>	6.4.1.9	To maintain and develop viable industrial areas.
<i>VISIBLE LOCATIONS</i>	6.4.1.10	To provide highly visible and attractive locations for business park development.
<i>COMPREHENSIVELY PLANNED</i>	6.4.1.11	To promote comprehensively planned employment areas.

6.4.2 General Policies

<i>SUFFICIENT SUPPLY</i>	6.4.2.1	Council shall designate a sufficient supply of appropriately located Industrial and Business Park lands to meet the projected 20 year employment demands.
<i>ATTRACT BUSINESS</i>	6.4.2.2	Council shall encourage businesses and industries to locate and expand in Windsor.
<i>CITY PARTICIPATION</i>	6.4.2.3	<p>Council shall facilitate economic investment by:</p> <ul style="list-style-type: none"> (a) planning and developing Industrial and Business Park areas; (b) participating in the development or redevelopment of strategic areas of Windsor; (c) fostering public-private partnerships to facilitate economic development; and (d) other measures as may be appropriate.
<i>SITE PLAN CONTROL</i>	6.4.2.4	Council shall require all development within areas designated as Industrial and Business Park to be subject to site plan control, with the exception of Public Open Space uses.
<i>HERITAGE CONSERVATION</i>	6.4.2.5	Council shall encourage the conservation and adaptive reuse of historic and/or architecturally significant buildings within areas designated as Industrial or Business Park in accordance with the Heritage Conservation chapter of this Plan.
<i>CONTAMINATED SITES</i>	6.4.2.6	Council shall encourage the redevelopment of contaminated Industrial or Business Park sites in accordance with section 5.4.8 of the Environment chapter of this Plan.
<i>AREAS IN TRANSITION</i>	6.4.2.7	<p>Council may support the redevelopment of older and/or abandoned Industrial or Business Park areas to other land uses provided:</p> <ul style="list-style-type: none"> (a) the proponent can demonstrate that: <ul style="list-style-type: none"> (i) the redevelopment of the area would not be detrimental to other Industrial or Business Park uses still operating in the area; and

(ii) the redevelopment of the area is in keeping with the long term transition of the entire area to similar uses;

(b) the environmental conditions of the site do not preclude development (see Environment chapter); and

(c) subject to an amendment to this Plan that is consistent with the appropriate policies for the desired land use.

HIGH QUALITY
DESIGN

6.4.2.8

Council shall require a high standard of architectural and landscape design for Industrial and Business Park designations adjacent to the Highway 401 corridor given its visibility along an international gateway, in accordance with the Urban Design chapter of this Plan. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

6.4.3 Industrial Policies

The Industrial land use designation provides for a broad range of industrial uses which, because of their physical and operational characteristics, are more appropriately clustered together and separated from sensitive land uses. This designation is also applied to certain older industrial areas of Windsor where such a separation may not have been achieved.

PERMITTED
USES

6.4.3.1

Uses permitted in the Industrial land use designation identified on Schedule D: Land Use include establishments which may exhibit any or all of the following characteristics:

(a) large physical size of site or facilities;

(b) outdoor storage of materials or products;

(c) large production volumes or large product size;

(d) frequent or continuous shipment of products and/or materials;

(e) long hours of production and shift operations;

(f) likelihood of nuisances, such as noise, odour, dust or vibration;

(g) multi-modal transportation facilities;

- (h) is dependent upon, serves or otherwise complements the industrial function of the area; and (amended by OPA #22 – 07/16/02)
- (i) service and repair facilities. (amended by OPA #22 – 07/16/02)

ANCILLARY
USES

6.4.3.2

In addition to the uses permitted above, Council may also permit the following ancillary uses in areas designated as Industrial on Schedule D: Land Use without requiring an amendment to this Plan:

- (a) Open Space uses;
- (b) convenience stores and restaurants provided that:
 - (i) by their size the uses are designed to serve the employees in the Industrial area; and
 - (ii) the evaluation criteria of policy 6.5.3.7 are satisfied.
- (c) adult entertainment parlours provided that:
 - (i) such uses are a minimum of 150 metres from lands used or zoned for residential, institutional or open space purposes; and
 - (ii) the evaluation criteria of policy 6.5.3.7 are satisfied, with the exception of the requirement that the proponent demonstrate that market impacts on other commercial areas is acceptable.
- (d) Motor vehicle sales; club; athletic or sports facility; wholesale store; the sale of goods produced by an industrial use and accessory thereto; retail sale of building supplies and materials, home improvement products, nursery products. (amended by OPA #22 – 07/16/02)

- (e) ~~Methadone Clinics provided that:—~~
- ~~(i) such uses are located a minimum of 150 metres from—~~
 - ~~• lands used or zoned for residential, institutional or open space purposes, excluding lands used for Hospitals, Universities, and Community Colleges; and~~
 - ~~• any lands used for a Methadone Clinic~~
 - ~~(ii) such uses satisfy the evaluation criteria set out in Section 6.5.3.7 of the Commercial Corridor Policies, with the exception of the requirement that the proponent demonstrate that a proposed commercial development is acceptable in terms of the proposal's market impact on other commercial areas; and~~
 - ~~(iii) the use is supported by a Planning Rationale Report, provided by the applicant/agent, containing details of the application including proximity to public transit and supporting reasons why the application should be approved, to the satisfaction of the Municipality.~~
- ~~(Added by OPA #82 – June 20, 2011, B/L 117-2011)
(Deleted by OPA #106 – November 6, 2015, B/L 143-2015)~~

*LOCATIONAL
CRITERIA*

6.4.3.3

Industrial development shall be located where:

- (a) the industrial use can be sufficiently separated and/or buffered from sensitive land uses;
- (b) there is access to an arterial road;
- (c) full municipal physical services can be provided;
- (d) industry related traffic can be directed away from residential areas;
- (e) peak period public transportation service can be provided; and
- (f) there is access to designated truck routes.

*EVALUATION
CRITERIA*

6.4.3.4

At the time of submission, the proponent shall demonstrate to the satisfaction of the Municipality that a proposed industrial development is:

- (a) feasible having regard to the other provisions of this Plan, provincial legislation, policies and appropriate guidelines and support studies for uses:
 - (i) within or adjacent to any area identified on Schedule C: Development Constraint Areas and described in the Environment chapter of this Plan;
 - (ii) within a site of potential or known contamination;
 - (iii) where traffic generation and distribution is a provincial or municipal concern; and
 - (iv) adjacent to sensitive land uses and/or heritage resources.
- (b) in keeping with the goals, objectives and policies of any secondary plan or guideline plan affecting the surrounding area;
- (c) capable of being provided with full municipal physical services and emergency services;
- (d) provided with adequate off-street parking; and
- (e) compatible with the surrounding area in terms of siting, orientation, setbacks, parking and landscaped areas.

*DESIGN
GUIDELINES*

6.4.3.5

The following guidelines shall be considered when evaluating the proposed design of an Industrial development:

- (a) the ability to achieve the associated policies as outlined in the Urban Design chapter of this Plan;
- (b) the provision of appropriate landscaping or other buffers to enhance:
 - (i) all parking lots, and outdoor loading, storage and service areas; and
 - (ii) the separation between the industrial use and adjacent sensitive uses, where appropriate.

- (c) motorized vehicle access is oriented in such a manner that industry related traffic will be discouraged from using Local Roads where other options are available;
- (d) pedestrian and cycling access is accommodated in a manner that is distinguishable from the access provided to motorized vehicles and is safe and convenient;
- (e) loading bays and service areas are located to avoid conflict between pedestrian circulation, service vehicles and movement along the public right-of-way; and
- (f) the design of the development encourages and/or accommodates public transportation services.
- (g) The design of the development encourages the retention and integration of existing woodlots, vegetation and drainage corridors where feasible to provide amenity areas for employees and to create a positive visual image of industry in Windsor. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

TRANSPORT
TERMINAL
GUIDELINES

6.4.3.6

In addition to the policies in Sections 6.4.3.3, 6.4.3.4, and 6.4.3.5, the following additional policies shall be considered when evaluating a Transport Terminal:
(Amended by OPA139 - APPROVED May 4, 2021, B/L#53-2021)

- (a) Prohibit the location of a Transport Terminal adjacent to, or near, sensitive land uses, such as residential uses, unless appropriate mitigation measures such as a berm, noise barrier, or other buffering are in place to mitigate noise, dust, and light pollution, and odours from the Transport Terminal;
(Amended by OPA139 - APPROVED May 4, 2021, B/L#53-2021)
- (b) Discourage direct driveway access to/from a Transport Terminal from/to Class II Arterial Road that serves as a major commercial corridor to minimize traffic, noise, and dust conflicts;
(Amended by OPA139 - APPROVED May 4, 2021, B/L#53-2021)
- (c) Encourage adjacency of a Transport Terminal to the truck route network, including any designated long combination vehicle route;
(Amended by OPA139 - APPROVED May 4, 2021, B/L#53-2021)

- (d) Encourage proximity of a Transport Terminal to rail, airport, and water port facilities to maximize freight intermodal opportunities;
(Amended by OPA139 - APPROVED May 4, 2021, B/L#53-2021)
- (e) Encourage proximity of a Transport Terminal to land uses that generate freight trips to allow for efficient use of land and infrastructure.
(Amended by OPA139 - APPROVED May 4, 2021, B/L#53-2021)

6.4.4 Business Park Policies

The Business Park land use designation provides for business and industrial uses of a similar quality and character to locate together in highly visible areas according to a comprehensive development plan.

*PERMITTED
USES*

6.4.4.1

Uses permitted in the Business Park land use designation include:

- (a) establishments devoted to research, development and information processing, ~~business~~ (deleted by OPA 58, 24 07 2006) offices, ~~business~~ (deleted by OPA 58, 24 07 2006) services, industrial research and/or training facilities, communication, production uses, printing and publishing; and
- (b) selected industrial uses which:
 - (i) do not create nuisances such as noise, dust, vibration or odour;
 - (ii) confine industrial operations within a building and/or structure; and
 - (iii) do not require outside storage.

*ANCILLARY
USES*

6.4.4.2

In addition to the uses permitted above, Council may permit the following ancillary uses in areas designated Business Park on Schedule D: Land Use without requiring an amendment to this Plan:

- (a) Open Space uses;

- (ii) the evaluation criteria established in policy 6.5.3.7 are satisfied, with the exception of the requirement that the proponent demonstrate that market impacts on other commercial areas is acceptable.
- (f) Clubs, health studios. (amended by OPA #22 – 07/16/02)
- ~~(g) Methadone Clinics provided that:

 - ~~(i) such uses are located a minimum of 150 metres from

 - lands used or zoned for residential, institutional or open space purposes, excluding lands used for Hospitals, Universities, and Community Colleges; and
 - any lands used for a Methadone Clinic~~
 - ~~(ii) such uses satisfy the evaluation criteria set out in Section 6.5.3.7 of the Commercial Corridor Policies, with the exception of the requirement that the proponent demonstrate that a proposed commercial development is acceptable in terms of the proposal's market impact on other commercial areas; and~~
 - ~~(iii) the use is supported by a Planning Rationale Report, provided by the applicant/agent, containing details of the application including proximity to public transit and supporting reasons why the application should be approved, to the satisfaction of the Municipality.
(Added by OPA #82 – June 20, 2011, B/L 117-2011)
(Deleted by OPA #106 – November 6, 2015, B/L 143-2015)~~~~

LOCATIONAL
CRITERIA

6.4.4.3

Business Park development shall be located where:

- (a) the business park use can be sufficiently separated and/or buffered from sensitive land uses;
- (b) the site will be accessible and highly visible from Controlled Access Highway or a Class I or Class II Arterial Road;
- (c) full municipal physical services can be provided;
- (d) business park related traffic can be directed away from residential areas;

- (e) public transportation service can be provided; and
- (f) there is access to designated truck routes.

*EVALUATION
CRITERIA*

6.4.4.4

At the time of submission, the proponent shall demonstrate to the satisfaction of the Municipality that a proposed business park development is:

- (a) feasible having regard to the other provisions of this Plan, provincial legislation, policies and appropriate guidelines and support studies for uses:
 - (i) within or adjacent to any area identified on Schedule C: Development Constraint Areas and described in the Environment chapter of this Plan;
 - (ii) adjacent to sources of nuisance, such as noise, odour, vibration and dust;
 - (iii) within a site of potential or known contamination;
 - (iv) where traffic generation and distribution is a provincial or municipal concern; and
 - (v) adjacent to sensitive land uses and/or heritage resources.
- (b) in keeping with the goals, objectives and policies of any secondary plan or guideline plan affecting the surrounding area;
- (c) capable of being provided with full municipal physical services and emergency services;
- (d) provided with adequate off-street parking; and
- (e) compatible with the surrounding area in terms of scale, massing, height, siting, orientation, setbacks, parking and landscaped areas.

*DESIGN
GUIDELINES*

6.4.4.5

The following guidelines shall be considered when evaluating the proposed design of a Business Park development:

- (a) the ability to achieve the associated policies as outlined in the Urban Design chapter of this Plan;
- (b) the massing and scale of buildings, and the extent to which their orientation, form and siting help to enhance the well landscaped setting of the business park;
- (c) the provision of functional and attractive signage;
- (d) the provision of appropriate landscaping or other buffers to enhance:
 - (i) all parking lots, and outdoor loading and service areas; and
 - (ii) the separation between the use and adjacent sensitive uses, where appropriate;
- (e) motorized vehicle access is oriented in such a manner that business park related traffic will be discouraged from using Local Roads where other options are available;
- (f) loading bays and service areas are located to avoid conflict between pedestrian circulation, service vehicles and movement along the public right-of-way;
- (g) pedestrian and cycling access is accommodated in a manner which is distinguishable from the access provided to motorized vehicles and is safe and convenient; and
- (h) the design of the development encourages and/or accommodates public transportation services.
- (i) The design of the development encourages the retention and integration of existing woodlots, vegetation and drainage corridors where feasible to provide amenity areas for employees and to enhance the visual appearance of business parks in Windsor. (added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

6.5 Commercial

Commercial lands provide the main locations for the purchase and sale of goods and services. In order to strengthen Windsor's economy, ensure convenient access and address compatibility concerns, Commercial land uses are provided

6.12 Windsor Airport

(added by OPA #60-05/07/07-B/L85-2007-OMB Decision/Order No.2667, 10/05/2007)

The Windsor Airport is an important component of the City's transportation and economic system, linking the movement of goods and people. It is utilized by a wide spectrum of aircraft which serve both passenger and freight customers, including the automotive industry. Protection of the Windsor Airport from incompatible uses is essential to minimize future conflicts between the airport and surrounding land uses.

The following objectives and policies establish the framework for development decisions in the Airport designation.

6.12.1 Objectives

- 6.12.1.1 To recognize and strengthen the airport's role in the City of Windsor as an important component of the transportation system.
- 6.12.1.2 To provide for suitable groundside and airside uses and services.
- 6.12.1.3 To minimize the potential for conflicting or incompatible land uses.

6.12.2 Policies

- 6.12.1.1 Uses permitted in the Airport land use designation identified on Schedule D: Land Use are as follows:
 - (a) Civilian or military airport
 - (b) Airport terminal facilities and communications structures
 - (c) Uses permitted in Employment Areas, as described by Section 6.4, provided that they do not conflict with aircraft operations
 - (d) Hotels and related commercial uses
 - (e) Other uses in accordance with the Windsor Airport Master Plan, Land Use and Reserve Land Plan, as amended from time to time.

- (c) For Future Urban Areas, where the area is of a sufficient size to provide for a complete community, incorporating a full range of housing and supportive uses such as schools, parks, neighbourhood commercial and institutional;
- (d) For Future Employment Areas, where the area is of a sufficient size to accommodate a range of employment uses;
- (e) The area can be adequately accessed from and integrated with the existing or planned transportation network;
- (f) Consideration of the cost implications to the City of Windsor for the provision of physical services, transportation and community services required for development of the area.

6.13.3 Future Urban Area Policies

- 6.13.3.1 Lands within the Future Urban Area designation shall generally develop for Residential uses but will also include associated community supportive uses such as parks and open space, institutional, commercial and small-scale employment upon completion of Secondary Plans and other appropriate studies relating to servicing, transportation, stormwater management, Class Environmental Assessment as required by this Official Plan.
- 6.13.3.2 Future Urban Areas shall develop on full municipal physical services.
- 6.13.3.3 Exceptions to full servicing will only be permitted in situations where a new dwelling is constructed on an existing lot, where residential zoning existed prior to redesignation to Future Urban Area, with the understanding that such dwellings will connect to full municipal services when available with costs of connection to be borne by the property owner.

6.13.4 Future Employment Area Policies

- 6.13.4.1 The Future Employment Area designation is intended to accommodate future Industrial and Business Park designations.

6.13.4.2 Redesignation or development of Future Employment Areas shall require completion of Secondary Plans and other appropriate studies relating to physical servicing, transportation, Class Environmental Assessment or others as required by this Official Plan.

6.13.4.3 Council may consider site-specific Official Plan Amendments for a Future Employment Area without requiring a Secondary Plan provided the proposed development is of a large-scale, single use nature such as a multi-modal transportation facility or large manufacturing plant. Site specific exceptions will only be considered where all studies relating to physical servicing, transportation, environmental evaluation or others as required by this Plan are completed as part of an alternative planning process and where the absence of a Secondary Plan will not jeopardize the orderly planning and development of the site or surrounding lands.

6.13.4.4 Future Employment Areas shall develop on full municipal physical services in accordance with the policies contained in Section 7.3 of this Plan.

6.13.4.5 Exceptions to the requirement for full municipal physical services in Future Employment Areas will only be considered where commercial or employment designations or uses were in existence prior to their designation as a Future Employment Area and where it can be demonstrated that:

- (a) The proposed use is “dry” in nature;
- (b) There are no other viable options for connections to municipal servicing and full physical services are not anticipated in a reasonable timeframe
- (c) On-site servicing will not jeopardize the provision of full municipal servicing in the future or conflict with the City’s long-term servicing strategy;
- (d) The proposed on-site servicing complies with all applicable regulations and standards;
- (e) The property owner agrees to connect to full physical services when they are available and in accordance with applicable City policies regarding costs of servicing

(e) Establishes the preferred solution and corresponding implementation measures; and

(f) Includes a comprehensive public participation program.

COOPERATION & COORDINATION 7.2.2.4 Council shall work to achieve the coordinated planning, expansion and maintenance of the transportation system in cooperation with other public agencies and private organizations to promote increased density of development.

ALTERNATIVE DEVELOPMENT PATTERNS 7.2.2.5 Council shall promote development patterns that support an increase in walking, cycling and public transportation in accordance with the Land Use and Urban Design chapters of this Plan.

BALANCED TRANSPORTATION SYSTEM 7.2.2.6 Council shall develop a balanced transportation system by:

- (a) Adopting strategies and programs that increase public transportation use, cycling and walking;
- (b) Implementing the land use policies of this Plan that provide for a more compact urban form and are intended to reduce the growth in home based trip making;
- (c) Maintaining a road level-of-service that optimizes the use of the existing network;
- (d) Directing the expansion of existing roads or the construction of new ones in association with the application of transportation demand management strategies; and
- (e) Implementing the urban design policies of this Plan that provide for an improved street environment.
- (f) Implementing traffic calming devices in existing neighbourhoods and requiring traffic calming in new neighbourhoods consistent with the Traffic Calming Policy.

TRAFFIC CALMING DEVICES 7.2.2.7 Council may require traffic calming devices on:

- (a) Existing roads;
- (b) All proposed development;
- (c) Infrastructure undertakings;

consistent with the Traffic Calming policy.

<i>MULTI-MODAL FACILITIES</i>	7.2.2.8	Council shall encourage the development of multi-modal transportation facilities at appropriate locations.
<i>TRUCK ROUTE SYSTEM</i>	7.2.2.9	Council shall establish and manage a truck route system to minimize the intrusion of trucks into sensitive areas while providing acceptable access to business and industries.
<i>TRUCK ACCESS</i>	7.2.2.10	Council recognizes that while truck access is necessary for some properties, the adverse effects of truck traffic shall be minimized by: <ul style="list-style-type: none">(a) Discouraging truck traffic in residential and pedestrian oriented areas;(b) Directing land uses which generate substantial truck traffic to appropriate areas in accordance with the Land Use chapter of this Plan;(c) Ensuring the proper design of roads intended to carry truck traffic;(d) Implementing other measures as may be appropriate and necessary.
<i>HAZARDOUS GOODS</i>	7.2.2.11	Council shall restrict the movement of hazardous goods to transportation routes which avoid high risk areas and provide safe and direct access to their intended destination.
<i>PARKING & LOADINGS FACILITIES</i>	7.2.2.12	Council shall require adequate off-street parking and loading facilities as a condition of development approval in accordance with the Land Use chapter of this Plan.
<i>PARKING LOT DESIGN</i>	7.2.2.13	Council shall require parking lots to be designed in accordance with the Urban Design chapter of this Plan.
<i>PUBLIC ON-STREET PARKING</i>	7.2.2.14	Council may allow, restrict or partially restrict on-street parking on specific roads as follows: <ul style="list-style-type: none">(a) On street parking shall not be permitted on Expressways, Class I Arterial Roads and Scenic Drives;(b) On street parking will be discouraged on Class II Arterial Roads and Class I Collector Roads and may only be allowed in areas where adequate and convenient off-street parking is not available; and

- (c) On street parking may be permitted on Class II Collector Roads and Local Roads provided there is sufficient paved road width.
- RESTRICT ON-STREET PARKING* 7.2.2.15 Council may restrict on-street parking in a manner that does not conflict with future and planned uses of the right of way by:
- (a) Removing on-street parking where the added roadway space is required to install left or right turn lanes;
 - (b) Removing on-street parking where the added roadway space may be required to install bicycle lanes;
 - (c) Removing on-street parking where the added roadway space is required for transit purposes;
 - (d) Removing on-street parking where there is a need to move traffic more efficiently;
 - (e) Removing on-street parking where the City has constructed off street lots to offset the loss of on-street parking.
- ON STREET PARKING – STREET SCAPING* 7.2.2.16 Council may permit on-street parking as part of a streetscaping plan designed to create a buffer between road traffic and pedestrian sidewalk areas.
- BICYCLE PARKING* 7.2.2.17 Council shall make provision for bicycle parking spaces by requiring bicycle spaces at all developments.
- LAND USE AND TRANSPORTATION* 7.2.2.18 Council shall recognize the link between land use and transportation systems by:
- (a) Focusing office development and high-density employment and high density residential in areas which have access to transit and pedestrian amenities;
 - (b) Encouraging commercial and employment uses within 400 metres to 800 metres of residential areas to promote the use of active transportation and to promote transit service.
- SUSTAINABLE SITE DESIGN* 7.2.2.19 Council shall require the use of sustainable site design during the Site Plan Control process to ensure accessibility for all pedestrians and cyclists by:
- (a) Requiring buildings and access points to buildings be placed to provide convenient access to the public right of way;

- (b) Ensuring the provision of sidewalk and cycling connections to and from the entrances of the development and cycling facilities;
- (c) Ensuring that sidewalk and cycling connections are barrier free throughout the seasons;
- (d) Ensuring that the sidewalk and cycling connections minimize the walking and cycling distance to and from the right of way and
- (e) Encouraging a more street level design and access by planning parking lots in such a way to not adversely impact such access.

*TRANSIT
SUPPORTIVE
DEVELOPMENT*

7.2.2.20 Council shall support transit by planning for compact mixed-use, higher density residential, commercial and employment development within concentrated nodes and corridors that are adjacent to higher order transit corridors.

*MINIMIZING
VEHICLE TRIPS
AND TRAVEL
DISTANCES*

7.2.2.21 Council shall implement land use patterns that promote sustainable travel by locating land uses within reasonable walking or cycling distance by:

- (a) Encouraging development that include an appropriate mix of residential, commercial and employment lands within reasonable walking distance of each other;
- (b) Planning higher density developments in areas along major transportation corridors and nodes;
- (c) Integrating land use and transportation planning decisions by ensuring each fit the context of each other's specific needs.

*TRAVEL
DEMAND
MANAGEMENT*

7.2.2.22 Council and Transit Windsor will encourage employers to manage their travel demand by:

- (a) Promoting the use of ride sharing and car-pooling to reduce parking demand and to reduce vehicles on nearby streets;
- (b) Promoting the use of bulk or special transit pass purchases by employers for employees that offer discounts over regular transit pass prices and encourage transit usage;
- (c) Encouraging companies to alternate hours of work to reduce the peak hour traffic and parking demand.

*POST
SECONDARY
STUDENT
TRANSPORTATION*

7.2.2.23 Council shall encourage post secondary institutions to implement tuition-based bus pass programs to reduce travel and parking demand.

COMMERCIAL SCHOOLS 7.2.2.24 Council shall encourage commercial schools to locate along roadways with transit.

TRANSIT SUPPORTIVE DESIGN 7.2.2.25 Council shall support transit friendly design by:

- (a) Planning for compact, higher density developments along nodes and corridors;
- (b) Creating street layouts that can accommodate transit vehicles;
- (c) Considering transit in the early stages of planning;
- (d) Creating grid networked streets;
- (e) Promoting urban design that encourages walking and cycling; and
- (f) Requiring entranceways proximate to the public right of way to reduce walking distances for pedestrians, particularly those who are mobility impaired.

SCHOOL AREA TRANSPORTATION 7.2.2.26 Council and the School Boards shall promote a safe travel environment near schools by:

- (a) Ensuring that new elementary school locations are central to the area that they intend to serve to reduce the need for buses to transport students;
- (b) Ensuring that the location of new schools limits the need for children to cross Arterial Roads;
- (c) Encouraging the use of traffic calming near elementary schools constructed in new neighbourhoods;
- (d) Coordinating the location of new schools with transit.
- (e) Maintaining a policy for school areas that may include:
 - (i) Reduced speed limits in school zones;
 - (ii) No stopping areas near school crossings to ensure visibility of crossing guards and children;
 - (iii) Appropriate parking and stopping restrictions along school frontages in consultation with the affected School Board and local residents.

*SCHOOL
ACTIVE
TRANSPORTATION
PLANS*

7.2.2.27

(f) Requiring all schools to provide adequate on-site parking and loading/unloading facilities.
Council shall require that school boards implement active transportation plans for new or refurbished schools that include:

- (a) Safe walking routes including new sidewalk connections, street crossing improvements and other pedestrian infrastructure within the school property or municipal road allowance fronting the school property;
- (b) Appropriate way finding signage where necessary; and
- (c) Sufficient bicycle parking facilities for all students.

*CONTROLLED
ACCESS
DESIGNATION*

7.2.2.28

Council may designate any road as a controlled access road, regardless of classification for the purpose of protecting said roadway from driveway accesses that would be detrimental to the road's intended purpose or function.

*SCHEDULE F-1
AND OPA #43*

7.2.2.29

Schedule F-1 to the Plan designates those elements that consist of rail corridors and some rail yards. The uses permitted on the lands so designated are those currently in existence and those uses permitted by the zoning by-law.

These elements of the transportation system, while important to broader economic goals, have historically resulted in significant land use impacts on adjacent uses. It is a policy of this Plan that, for uses other than those permitted by the zoning by-law:

- (a) No change to rail uses on, and
- (b) No expansions for non-rail uses of

those rail corridors and rail yards designated on Schedule F-1 will be made without amendment to this Plan as may be required by s. 7.2.8.4.

7.2.3 Pedestrian Network Policies

*PEDESTRIAN
MOVEMENT*

7.2.3.1

Council shall require all proposed developments and infrastructure undertakings to provide facilities for pedestrian movements wherever appropriate by:

- (a) Requiring safe, barrier free, convenient and direct walking conditions for persons of all ages and abilities;

- (b) Ensuring that all residents have access to basic community amenities and services and public transit facilities without dependence on car ownership; and
- (c) Providing a walking environment within public rights-of-ways that encourages people to walk to work or school, for travel, exercise, recreation and social interaction.

PEDESTRIAN NETWORK

7.2.3.2 Council shall make pedestrian movement safer and more convenient by:

- (a) Requiring the provision of sidewalks in new developments as follows:
 - (i) On both sides of all Class I and Class II Arterial Roads, Class I and Class II Collector Roads and Scenic Drives; and
 - (ii) On at least one side of all Local Roads.
- (b) Giving priority to the completion of the pedestrian network in areas where there is significant vehicular and pedestrian traffic and policy clause (a) her-in has not been met;
- (c) Installing signalized pedestrian refuge median islands where warranted;
- (d) Maintaining the structural integrity of all existing pedestrian network and walkway connections in neighbourhoods;
- (e) Ensuring the natural surveillance of all existing pedestrian walkway connections in neighbourhoods to optimize safety such that the amount of unobservable space is minimized;
- (f) Requiring street lighting;
- (g) Requiring that all new residential subdivisions incorporate traffic calming measures consistent with the Traffic Calming Policy; and
- (h) Providing special sidewalk treatments at all intersections to make visible the location of the pedestrian crossing to drivers and to provide a tactile warning to visually impaired pedestrians that they are about to cross a roadway.

RECREATIONWAY

7.2.3.3 The Recreationway is designated on Schedule B: Greenway System.

RECREATIONWAY DEVELOPMENT

7.2.3.4 Council shall provide for the development of the Recreationway by:

- (a) Providing for its construction and maintenance;
- (b) Ensuring that the design of the Recreationway complements and connects with the Greenway System, other areas of the city and neighbouring communities;
- (c) Ensuring that new development proposals and infrastructure undertakings include extensions and improvements to the Recreationway; and
- (d) Ensuring that Recreationways are installed concurrently with other transportation infrastructure in new developments.

7.2.4 Cycling Network Policies

CYCLING

7.2.4.1 Council shall require all proposed developments and infrastructure undertakings to provide facilities for cycling movement and parking wherever appropriate.

*BIKEWAY
DEFINITION*

7.2.4.2 For the purpose of this Plan, the Bikeway is a planned network of on and off road cycling facilities.

*BIKEWAY
DEVELOPMENT*

7.2.4.3 Council shall provide for the development of Bikeways by:

- (a) Designating Bikeways on Schedule F: Roads & Bikeways;
- (b) Implementing, monitoring and updating the cycling master plan;
- (c) Providing for the construction and maintenance of both on and off-road cycling facilities;
- (d) Ensuring that the design of Bikeways compliments and connects with the Recreationway and neighbouring communities;
- (e) Ensuring that all new development proposals and infrastructure undertakings include extensions and improvements to Bikeways; and
- (f) Ensuring that Bikeways are installed concurrently with other transportation infrastructure developments.

*CYCLING
MASTER PLAN*

7.2.4.4 Council shall require the implementation, monitoring and updating of a cycling master plan that:

- (a) Addresses the engineering, education, enforcement and

encouragement of commuter and recreation cycling within Windsor;

(b) Provides principles, policies and strategic plans which address commuter and recreation cycling needs from a comprehensive perspective including the integration with other transportation modes and facilities; and

(c) Identifies priorities for new Bikeways and Recreationways.

SAFETY

7.2.4.5

Council shall encourage the separation of cyclists and pedestrians wherever possible to avoid potential conflicts.

7.2.5 Public Transportation Policies

*PUBLIC
TRANSPORTATION*

7.2.5.1

Council shall require all proposed developments and infrastructure undertakings to provide facilities for public transportation wherever appropriate.

*IMPROVE
PUBLIC
TRANSPORTATION*

7.2.5.2

Council shall require that the design of development proposals and infrastructure undertakings facilitate easy access to public transportation. In this regard, Council shall:

- (a) Ensure that all new development patterns are supportive of public transportation in accordance with the land use and transportation policies in this Plan;
- (b) Require that the street pattern in new developments allows for the extension of public transportation services;
- (c) Require that sidewalks and other pedestrian facilities connect major traffic generators to public transportation services;
- (d) Encourage the provision of benches, lighting, rest areas and climate shelters for the safety, comfort and convenience of public transportation users;
- (e) Support the coordination and integration of local public transportation services and facilities with inter-regional, regional and international services and facilities;
- (f) Ensure that the design of roads accommodate the requirements of public transportation;
- (g) Encourage transit routes to be within new major employment areas;

- (h) Encourage transit stops to be located within a 400 metre walking distance of high density residential development.

*REGIONAL
PUBLIC
TRANSIT
SYSTEM*

7.2.5.3 Council encourages the creation of a Regional Public Transit System.

7.2.6 Road Network Policies

*ROAD
CLASSIFICATION*

7.2.6.1 The road network within Windsor is classified as follows:

- (i) Provincial Highways;
- (ii) Expressways;
- (iii) Class I Arterial Roads;
- (iv) Class II Arterial Roads;
- (v) Class I Collector Roads;
- (vi) Class II Collector Roads;
- (vii) Scenic Drives; and,
- (viii) Local Roads.

*PROVINCIAL
HIGHWAYS*

7.2.6.2 Council recognizes Provincial Highways as follows:

- (a) Provincial Highways shall be designated on Schedule F: Roads and Bikeways and in secondary plans, where appropriate; and
- (b) The Ministry of Transportation exercises its mandate adjacent to Provincial Highway corridors; as such land abutting Provincial Highways are subject to permit control process of the Ministry of Transportation.

EXPRESSWAYS

7.2.6.3 Council shall provide for Expressways as follows:

- (a) Expressways are designated on Schedule F, as controlled access highways and are to be designated in any secondary plan or master plan where appropriate.

(b) Operational and design characteristics:

- (i) Expressways shall be designed on as a Controlled Access Highway and have a minimum right-of-way width of 100 metres;
- (ii) Expressways shall be designed to carry high volumes of traffic;
- (iii) On street parking shall not be permitted on Expressways;
- (iv) Access to Expressways shall only be facilitated through interchanges or partial interchanges;
- (v) New interchanges shall only be permitted with Class I Arterial Roads and Class II Arterial Roads, Expressways or Provincial Highways;
- (vi) Direct property access shall not be permitted; and
- (vii) Cycling facilities shall not be permitted on Expressways.

*CLASS I
ARTERIAL
ROADS*

7.2.6.4 Council shall provide for Class I Arterial Roads as follows:

- (a) Class I Arterial Roads shall be designated on Schedule 'F' and in any secondary plan or master plan where appropriate.
- (b) Operational and design characteristics:
 - (i) Class I Arterial Roads shall be designated as Controlled Access Highways and shall have a minimum right of way width of 46 metres;
 - (ii) Class I Arterial Roads shall be designed to carry high volumes of traffic;
 - (iii) New intersections shall only be permitted with Provincial Highways, Expressways, Class I Arterial Roads, Class II Arterial Roads or Class I Collector Roads;
 - (iv) Direct property access shall not be permitted to Class I Arterial Roads;
 - (v) Cycling facilities may be permitted on Class I Arterial Roads; and

(vi) On Street parking shall not be permitted on Class I Arterial Roads.

*CLASS II
ARTERIAL
ROADS*

7.2.6.5 Council will provide for Class II Arterial Roads as follows:

- (a) Class II Arterial Roads shall be designated on Schedule 'F' and in any secondary plan or master plan where appropriate.
- (b) Operational and design characteristics:
 - (i) Class II Arterial Roads may be designated as Controlled Access Highways and shall have a minimum right-of-way of 42 metres;
 - (ii) Class II Arterial Roads shall be designed to carry high volume of traffic;
 - (iii) New intersections shall not be permitted with Provincial Highways;
 - (iv) New intersections with local roads shall be discouraged;
 - (v) Cycling facilities may be permitted on Class II Arterial Roads;
 - (vi) On street parking may be removed to facilitate the installation of turn lanes where turn lanes are warranted for capacity or safety reasons; and
 - (vii) Direct property access will be discouraged where other alternatives exist. Where direct property access is required, the use of shared driveways and interconnected on-site circulation systems with adjacent properties may be required to limit the number and spacing of driveways, and where appropriate the City may require support studies and additional information to demonstrate the need for additional access.

*CLASS I
COLLECTOR
ROADS*

7.2.6.6 Council will provide for Class I Collector Roads as follows:

- (a) Class I Collector Roads shall be designated on Schedule 'F' and in any secondary plan or master plan where appropriate.
- (b) Operational and design characteristics:
 - (i) Class I Collector Roads shall be designed to carry moderate volumes of traffic and shall have a minimum right-of-way width of 28 metres;

(f) All proponents of new development abutting a rail yard, which require a rezoning (exclusive of a zoning by-law consolidation), plan of subdivisions, plan of condominium or site plan approval, shall incorporate appropriate safety measures such as setbacks, berms and security fencing to the satisfaction of the Municipality, in consultation with the relevant public agency and the appropriate railway company.

SAFETY MEASURES 7.2.8.10 All proposed development adjacent to a railway right-of-way or rail yard shall be required to incorporate appropriate safety measures such as setbacks, berms and security fencing to the satisfaction of the Municipality in consultation with relevant public agencies and the appropriate railway company.

CONSULT RAILWAYS 7.2.8.11 All proponents of development within 500 metres of a railway right-of-way are encouraged to consult with the appropriate railway company prior to the finalization of any noise and vibration abatement study or development proposal.

7.2.9 Water Transportation Policies

ECONOMIC BENEFITS 7.2.9.1 Council shall maximize the economic development potential provided by the Port of Windsor by promoting the development of Waterfront Port and Employment uses, including multi-modal facilities, at appropriate locations within Windsor.

SUFFICIENT PORT LANDS 7.2.9.2 Council shall ensure that sufficient Waterfront Port lands are available for the Port of Windsor to maintain and expand its operations and protect the existing and future port facilities from the incompatible development in accordance with the land use policies in this Official Plan.

ACCESS 7.2.9.3 Council shall require that all waterfront land uses and port facilities have adequate access to and from the land transportation system.

7.2.10 Air Transportation Policies

ECONOMIC BENEFITS 7.2.10.1 Council shall maximize the economic development potential provided by the Windsor Airport by promoting the development of Commercial and Employment uses, including multi-modal facilities in the vicinity of the airport.

DEVELOPMENT WITHIN THE AIRPORT OPERATING AREA 7.2.10.2 Council shall protect the Windsor Airport from incompatible development. Accordingly, all proponents of development within the Airport Operating Area designated on Schedule ‘C’: Development Constraint Areas shall be subject to the following:

- (a) New sensitive land uses shall not be permitted in areas above 30 NEP/NEF as set out on maps approved by Transport Canada;
- (b) Redevelopment of existing sensitive land uses may only be considered above 30 NEF/NEP provided the proponent successfully completes a noise study to:
 - (i) Support the feasibility of the proposal;
 - (ii) Identify and implement appropriate mitigation measures (refer to Procedures chapter);
- (c) Redevelopment of existing residential uses and other sensitive land use in areas above 30 NEF/NEP may only be considered if it has been demonstrated that there will be no negative impacts on the long-term function of the airport;
- (d) Land uses which may cause a potential aviation safety hazard are discouraged;
- (e) Other land uses may be permitted within the Airport Operating Area provided the proponent completes a noise study to support the feasibility of the proposal and, if feasible identify and implement appropriate mitigation measures.

*NOISE AND
VIBRATION
ABATEMENT*

7.2.10.3 Council shall ensure that new development in the vicinity of the Windsor Airport includes appropriate noise and vibration abatement measures in accordance with established off-airport land use planning practices.

7.2.11 Detroit Windsor Tunnel Constraint Area Policies

The following policies apply to lands identified on Schedule ‘C’: Development Constraint Areas and Schedule ‘E’: City Centre Planning District and should be read in conjunction with Land and Infrastructure chapters of this Plan.

*GENERAL
BOUNDARIES*

7.2.11.1 For the purpose of this plan, the Detroit-Windsor Tunnel Development Constraint Area is defined as the triangular area of land beginning at the portal of the Detroit-Windsor Tunnel and Park Street East, extending Northeast to the Detroit River, as shown on Schedule ‘C’: Development Constraint Areas and Schedule ‘E’: City Centre Planning District.

*INCOMPATIBLE
DEVELOPMENT*

7.2.11.2 Council shall protect the integrity of the Detroit-Windsor Tunnel from damage as a result of incompatible construction and maintenance activities in the Detroit-Windsor Tunnel Development Constraints Area.

7.3.2 General Policies

- INFRASTRUCTURE DEFINITION* 7.3.2.1 For the purpose of this Official Plan, infrastructure include sewerage, stormwater management and water works, waste management systems, electric power, communications, telecommunications, transit corridors, transportation corridors, and oil and gas pipelines and associated facilities.
- MANAGEMENT PLAN* 7.3.2.2 Council may require the preparation, implementation and monitoring of an Infrastructure Management Plan for Municipally owned and/or operated infrastructure, such as sewerage and stormwater management works, as a basis to:
- (a) Prioritize strategies for the maintenance and rehabilitation of existing infrastructure and the provision of new infrastructure; and
 - (b) Monitor available capacity for new development.
- NEW DEVELOPMENT* 7.3.2.3 Council shall require all new developments to have full municipal infrastructure available, or agreements in place to provide such infrastructure, as a condition of approving a development proposal.
- INDIVIDUAL ON-SITE SEWAGE SERVICES* 7.3.2.4 Council shall not permit development on individual on-site sewage services beyond existing farm living lots.
- NEW INDIVIDUAL ON-SITE SEWAGE SERVICES* 7.3.2.5 Council shall not permit the installation of individual on-site sewage services in new developments.
- MONITOR CAPACITY* 7.3.2.6 Council shall monitor the available uncommitted reserve capacity of existing Municipally owned and/or operated infrastructure to ensure that they can accommodate projected long-term growth.

7.3.3 Infrastructure Provision Policies

- INFILLING GIVEN PRIORITY* 7.3.3.1 Council shall encourage the development of existing serviced, underutilized or undeveloped lands within Windsor prior to the extension of municipally owned and/or operated infrastructure to vacant areas within Windsor.
- EVALUATING A PROPOSED EXTENSION* 7.3.3.2 Council shall only approve the extension of municipally owned and/or operated infrastructure within Windsor when the following factors have been addressed:

		<ul style="list-style-type: none"> (a) The need for the extension of infrastructure has been clearly demonstrated through a comprehensive analysis and public consultation process completed in accordance with relevant provincial legislation; (b) The resulting extension provides infrastructure to areas which are currently designated and planned for development in accordance with the Land Use chapter of this Plan and secondary plans, where appropriate; (c) The extension of infrastructure provides for a logical phasing of development.
<i>ADJACENT MUNICIPALITIES</i>	7.3.3.3	Council shall consider the provision of municipal infrastructure to adjacent municipalities and/or County of Essex in accordance with section 10.5 of this Plan.
<i>NATURAL & RECREATION OPPORTUNITIES</i>	7.3.3.4	Council shall promote the integration of the natural environment, the Greenway System, Bikeways and Recreationways with physical service corridors where appropriate. New corridors will not be promoted within natural environment areas.
<i>MINIMIZE NEGATIVE EFFECTS</i>	7.3.3.5	Council shall require that the provision, expansion or modification of infrastructure minimize negative effects on existing neighbourhoods, adjacent land uses and the natural environment.
<i>CONSOLIDATE INFRASTRUCTURE</i>	7.3.3.6	Council shall require the consolidation of infrastructure within rights-of-ways.
<i>INTEGRATE WITH DEVELOPMENT PATTERN</i>	7.3.3.7	Council shall encourage the coordinated planning of future physical service routes, easements and corridors in cooperation with other physical service providers to ensure their integration within the established or anticipated pattern of development.
<i>INFRASTRUCTURE PLANS</i>	7.3.3.8	<p>Council shall require an infrastructure plan or other suitable study completed in accordance with relevant provincial legislation prior to the approval of a development proposal that determines:</p> <ul style="list-style-type: none"> (a) The routing, sizing, cost sharing and timing of infrastructure; (b) How any negative impacts on existing infrastructure, the environment and the surrounding area will be addressed; and (c) Other issues as appropriate (see Part V: Implementation).
<i>INTERIM INFRASTRUCTURE</i>	7.3.3.9	Council may allow interim servicing solutions prior to the provision of

full municipal infrastructure in order for a development to proceed, but shall ensure that:

- (a) Such interim infrastructure solutions will not create adverse capacity problems elsewhere in the system or prejudice the Municipality's achievement of an infrastructure solution for the surrounding area; and
- (b) Any interim infrastructure solution will not create any adverse effects on public health, safety or the environment.

*INTERIM
INFRASTRUCTURE
AGREEMENT*

7.3.3.10 As a condition of approval of interim infrastructure, Council shall require an agreement which addresses issues such as the installation and termination of the interim infrastructure, and the installation of permanent infrastructure.

7.3.4 Sewerage and Stormwater Management Works Policies

*COMBINED
SEWER
SEPARATION*

7.3.4.1 Council shall provide for the continued phasing-in of the separation of combined sewers based on the direction in the Infrastructure Management Plan.

*DETERMINING
NEEDS*

7.3.4.2 Council shall provide for the rehabilitation of the existing sewerage system with priority given to those areas identified in an Infrastructure Management Plan where:

- (a) The existing sewer is in a state of physical collapse posing a hazard to personal property, health, safety and/or the environment;
- (b) The existing sewer is in danger of imminent collapse and where other immediate physical service or road construction is required within the same right-of-way; and
- (c) The rehabilitation of the sewer is required to prevent backup of domestic sewage from existing overtaxed sewers or where required to reduce demands on the pollution control plants.

*IMPLEMENT
MEASURES*

7.3.4.3 Council shall provide for the implementation of preventative measures that reduce demands on the sewerage system by:

- (a) Promoting the disconnection of roof drainage systems, weeping tiles, where appropriate, and other sources of inflow or infiltration into the sewerage system;
- (b) Requiring that new development be constructed with devices to

assist in the prevention of potential surcharging and basement flooding;

(c) Separating road drainage from combined systems and directing road drainage to new storm sewers or storm relief sewers; and

(d) Other measures as may be appropriate.

<i>POLLUTION CONTROL PLANTS</i>	7.3.4.4	Council shall protect pollution control plants from incompatible development in accordance with the Environment chapter of this Plan.
<i>STORMWATER MANAGEMENT FOR DEVELOPED AREAS</i>	7.3.4.5	The Municipality may develop stormwater management plans for developed areas of Windsor to control and improve the quality and quantity of runoff.
<i>STORMWATER MANAGEMENT FOR PROPOSED DEVELOPMENT</i>	7.3.4.6	Council, in consultation with appropriate public agencies may require a proponent of development to submit studies of stormwater runoff and its impact on the water quality and quantity of receiving watercourse based on the Ministry of Environment's current provincial guideline manual for stormwater management design.
<i>DEVELOPMENT PROPOSALS</i>	7.3.4.7	Council shall require proponents of development that require stormwater management systems to: <ul style="list-style-type: none">(a) Use stormwater management measures to manage the storage and controlled flow of water to receiving watercourses;(b) Use stormwater management measures which prevent siltation and erosion and do not negatively impact the water quality of receiving watercourses;(c) Consider, where appropriate, enhancing the vegetation, wildlife habitats and corridors in and along the stormwater management system and the receiving watercourse; and(d) Consider, where appropriate, providing public access to and along the stormwater management system and receiving watercourses for recreation.
<i>BEST AVAILABLE METHODS</i>	7.3.4.8	Council, in consultation with appropriate public agencies shall require proponents of development to employ the best available methods in the planning, construction and eventual use of storm water management systems.

be permitted in all land use designations without amendment to this Plan, provided the planning of all such facilities area approved under, and satisfy the provisions of relevant federal and provincial legislation and Industry Canada's procedures.

CONSULTATION 7.3.6.5 Utility providers, including electric power supply companies, communication companies, and telecommunication companies shall be encouraged to consult with the Municipality and the affected residents during the planning of new facilities, where applicable.

MAJOR WATER USERS 7.3.6.6 Council shall encourage uses requiring large volumes of water to:

- (a) Locate in areas of Windsor where there is sufficient capacity in the water distribution network to accommodate such uses; and
- (b) Utilize water recycling procedures to reduce the demand for water, and lower the volume of waste water discharge and to reduce the impact of effluents on receiving watercourses.

- (i) the interconnected landscape features, such as the Ganatchio Trail, waterfront parks, Riverside Drive and bikeways;
- (ii) the distinctive neighbourhoods and vibrant commercial areas such as Walkerville, Sandwich, Erie Street, Ottawa Street and City Centre; and
- (iii) the natural areas within Windsor, such as Ojibway Park, Devonwood Conservation Area and the Herb Gray Nature Reserve.

SCHEDULE G:
CIVIC IMAGE

8.2.2.2

The following civic image designations shall appear on Schedule G: Civic Image:

- (a) Heritage Area;
- (b) Heritage Conservation District;
- (c) Gateway;
- (d) Mainstreets (refer to section 8.11);
- (e) Civic Way (refer to section 8.11); and
- (f) Future Community Nodes.

HERITAGE
AREAS AND
HERITAGE
CONSERVATION
DISTRICTS

8.2.2.3

Council will ensure that a proposed development or infrastructure undertaking maintains, reinforces and enhances the character of Heritage Areas and Heritage Conservation Districts in accordance with the Heritage Conservation chapter of this Plan.

HERITAGE
AREAS

8.2.2.4

Council will ensure that a proposed development or infrastructure undertaking maintains, reinforces and enhances the character of a Heritage Area in accordance with the Heritage Conservation chapter of this Plan.

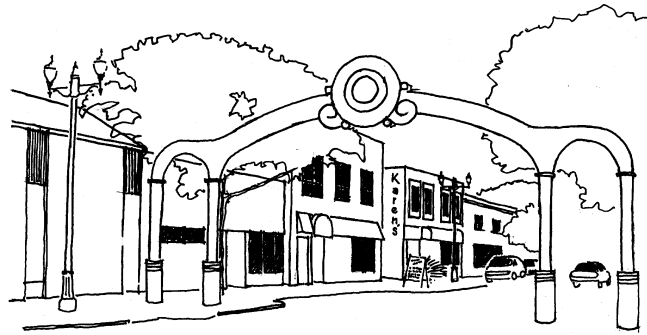
GATEWAYS

8.2.2.5

Council will promote gateways at the major entry points into Windsor identified on Schedule G: Civic Image and at other strategic locations within Windsor as appropriate. Such gateways will be designed to:

- (a) provide a sense of welcome and arrival;

- (b) assist in orientation;
- (c) create a memorable image; and
- (d) contribute to the social, cultural, historic or thematic character of the area being defined.



*URBAN DESIGN
STUDIES*

8.2.2.6

~~Council may require an urban design study as a part of a development approval in accordance with section 10.2 of this Plan.~~

*DEVELOPMENT
OR
INFRASTRUCTURE
EVALUATION*

8.2.2.7

Council will ensure that a proposed development or infrastructure undertaking enhances the image of Windsor, its districts and/or its neighbourhoods by complementing and contributing to:

- ~~(a) the activity and character of the area;~~
(Deleted by OPA #66-11/05/07-B/L209-2007)
- (a) the activity of the area together with the character, scale, appearance and design features of existing buildings
(Added by OPA #66-11/05/07-B/L209-2007)
- (b) the landmarks in the area;
- (c) the consistency and continuity of the area with its surroundings;
- (d) the edges of the area; and
- (e) linkages within, to and from the area.
- (f) sustainable design and maintenance .
(Added by OPA #66-11/05/07-B/L209-2007)

8.3 Design For People

8.3.1 Objectives

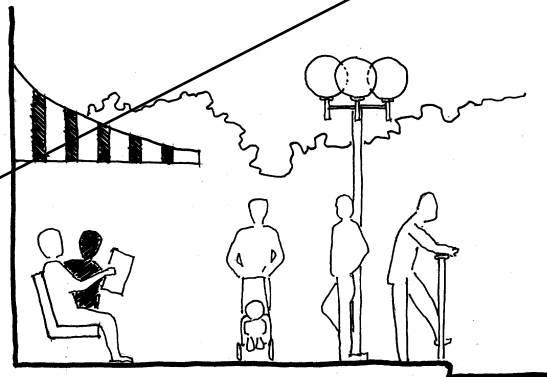
<i>COMFORT</i>	8.3.1.1	To achieve maximum user comfort in the design of new development.
<i>PEDESTRIAN SCALE</i>	8.3.1.2	To foster development that provides a pedestrian scale.
<i>SENSE OF PLACE</i>	8.3.1.3	To foster a sense of place within Windsor and its neighbourhoods.

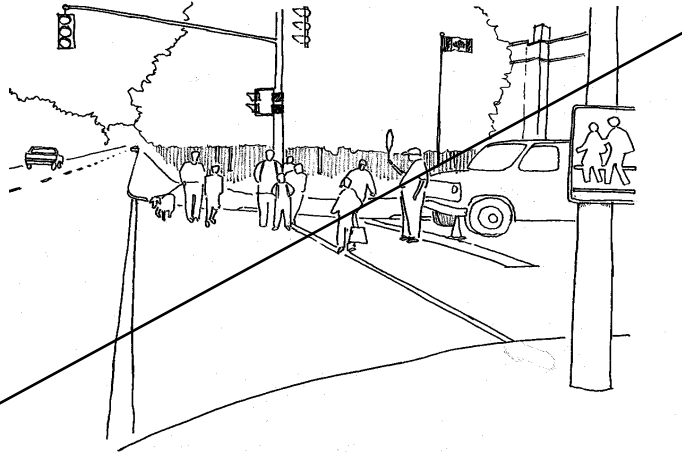
8.3.2 Policies

<i>INTERPERSONAL COMMUNICATION & OBSERVATION</i>	8.3.2.1	Council will encourage buildings and spaces to be designed to accommodate interpersonal communication and observation.
--	---------	--

<i>PEDESTRIAN SCALE</i>	8.3.2.2	Council will encourage buildings and spaces that establish a pedestrian scale by promoting: <ul style="list-style-type: none">(a) the placement of continuous horizontal features on the first two storeys adjacent to the road;(b) the repetition of landscaping elements, such as trees, shrubs or paving modules; and(c) the use of familiar sized architectural elements such as doorways and windows.
-------------------------	---------	--

<i>REST AREAS</i>	8.3.2.3	Council will support the provision of furniture, stairs, walls, and benches in public spaces that provide comfortable rest areas for pedestrians.
-------------------	---------	---





- (b) providing a limited number of access routes while allowing users some flexibility in movement; and
- (c) ensuring that access opportunities enhance and complement observation.

*CIVIC
RESPONSIBILITY*

8.12.2.3

Council will promote designs which provide a sense of public ownership and civic responsibility by:

- (a) reinforcing existing natural surveillance and access control strategies with additional symbolic or social cues such as signs or barriers;
- (b) minimizing the creation of ambiguous spaces;
- (c) allowing for the continued use of the space in keeping with its intended purpose; and
- (d) ensuring that the lighting of the area is appropriate for its intended use.

*EMERGENCY
ACCESS*

8.12.2.4

Council shall promote the design of circulation systems which ensure prompt access to adjacent buildings and properties for effective emergency services.

8.13 Lighting

8.13.1 Objectives

- | | | |
|---|----------|--|
| <i>VISIBILITY & SAFETY</i> | 8.13.1.1 | To ensure that lighting improves visibility and safety. |
| <i>PROMINENT BUILDINGS & SPACES</i> | 8.13.1.2 | To enhance prominent buildings and spaces through the use of lighting. |
| <i>MINIMIZE INTRUSION</i> | 8.13.1.3 | To minimize intrusive lighting. |

8.13.2 Policies

- | | | |
|---------------------------------|----------|--|
| <i>TRANSPORTATION SYSTEM</i> | 8.13.2.1 | Council will promote lighting that improves safe movement along the transportation system. |
| <i>PUBLIC SAFETY</i> | 8.13.2.2 | Council will promote adequate lighting in areas where public safety is of concern and would be appropriate. |
| <i>ORIENTATION</i> | 8.13.2.3 | Council shall promote the use of lighting to accent steps, turns, ramps, transit stops and other features frequently encountered in the urban environment. |
| <i>CIVIC IMAGE</i> | 8.13.2.4 | Council will promote the lighting of prominent buildings, monuments and features to accentuate civic and architectural design. |
| <i>COMPLEMENT NEIGHBOURHOOD</i> | 8.13.2.5 | Council will promote the use of lighting which complements and enhances the established character of an area or neighbourhood. |
| <i>COMPATIBLE</i> | 8.13.2.6 | Council will promote the use of lighting which is compatible in scale and intensity to the proposed activity, and tailored to the size, type and character of a development or space, where appropriate. |
| <i>INTRUSIVE LIGHTING</i> | 8.13.2.7 | Council will encourage the use of lighting that avoids intrusive lighting onto adjacent properties. |

9.3 Policies

9.3.1 General

*CULTURAL
HERITAGE
RESOURCES
DEFINITION*

9.3.1.1 For the purpose of this Plan, heritage resources include built heritage resources and cultural heritage landscapes that Council has identified as being important to the community.

*BUILT
HERITAGE
RESOURCES
DEFINITION*

9.3.1.2 Built heritage resources include buildings, structures, monuments, installations or remains associated with architectural, social, political, economic or military history.

*CULTURAL
HERITAGE
LANDSCAPE
DEFINITION*

9.3.1.3 Cultural heritage landscapes are defined geographical areas of heritage significance, which have been modified by human activities such as archaeological sites, heritage conservation districts, parks/gardens, golf courses, neighbourhoods, cemeteries, trail ways, streets, street patterns and industrial complexes of cultural heritage value.

*HERITAGE
AREA
DEFINITION*

9.3.1.4 For the purpose of this Plan, a Heritage Area is an area or neighbourhood where there are collections of important heritage resources.

9.3.2 Identification of Heritage Resources

9.3.2.1 Council will identify Windsor's heritage resources by:

*ARCHAEOLOGICAL
MASTER PLAN*

(a) Maintaining and updating the inventory of registered archaeological sites or lands of archaeological potential, as identified in the Windsor Archaeological Master Plan and Schedule 'C-1': Development Constraint Areas – Archaeological Potential; (added by OPA 55 – 07/24/2006)

AREA STUDIES

(b) Researching and documenting the history, and architectural and contextual merit of potential heritage resources on an area or neighbourhood basis in conjunction with Heritage Conservation District studies, secondary plans or other special studies as may be appropriate;

*INDIVIDUAL
SITES*

(c) Researching and documenting the history, and architectural and contextual merit of potential heritage resources on an individual property basis;

*PUBLIC
ASSISTANCE*

(d) Encouraging and supporting individuals and groups in recommending potential heritage resources.

11.6.3 Zoning By-law Amendment Policies

AMENDMENTS
MUST
CONFORM

11.6.3.1 All amendments to the Zoning By-law(s) shall conform with this Plan. The Municipality will, on each occasion of approval of a change to the zoning by-law(s), specify that conformity with the Official Plan is maintained or that the change will be in conformity upon the coming into effect of an amendment to the Official Plan.

REVIEW
PROCEDURE

11.6.3.2 All applications for Zoning By-law amendments shall be processed in accordance with the provisions of the *Planning Act*, and regulations pursuant thereto, and the procedural requirements of this Plan. In general, after an applicant's pre-application consultation meeting with municipal staff and submission of an application that is determined to be complete, all applications shall: Added by OPA 65 – 10/22/2007– By-law 192-2007

- (a) Be circulated to appropriate agencies and those agencies be provided with sufficient time to respond; Added by OPA 65 – 10/22/2007– By-law 192-2007
- (b) Be advertised and be presented to the public and the views of the public ascertained at a public meeting to be held in accordance with the Planning Act; and Added by OPA 65 – 10/22/2007– By-law 192-2007
- (c) Be given due and thorough consideration by Council. Added by OPA 65 – 10/22/2007– By-law 192-2007

EVALUATION
CRITERIA

11.6.3.3 When considering applications for Zoning By-law amendments, Council shall consider the policies of this Plan and will, without limiting the generality of the foregoing, consider such matters as the following:

- (a) The relevant evaluation criteria contained in the Land Use Chapter of this Plan, Volume II: Secondary Plans & Special Policy Areas and other relevant standards and guidelines;
- (b) Relevant support studies;
- (c) The comments and recommendations from municipal staff and circularized agencies;
- (d) Relevant provincial legislation, policies and appropriate guidelines; and
- (e) The ramifications of the decision on the use of adjacent or similar lands.

11.6.4 Bonusing Policies

Appendix C

City of Windsor Zoning By-law

19.2 MANUFACTURING DISTRICT 2.2 (MD2.2)

19.2.1 PERMITTED USES

Industrial Use

Ambulance Service

Building Materials Recycling Store

Food Catering Service

Micro-Brewery

Motor Vehicle Salvage Operation

Salvage Operation

Self-Storage Facility

Towing Facility

Any use accessory to the preceding uses, including a *Caretaker's Residence*.

19.2.5 PROVISIONS

- | | | |
|----|--|-----------------|
| .5 | Front Yard Depth – minimum | 6.0 m |
| .7 | Side Yard Width – minimum | |
| | a) From a <i>side lot line</i> that abuts a <i>lot</i> on which a <i>dwelling</i> or <i>dwelling unit</i> is located | 6.0 m |
| | b) From an <i>exterior lot line</i> | 3.0 m |
| .8 | Landscaped Open Space Yard – minimum | 15% of lot area |

Appendix D

Windsor International Airport Master Plan (2010)



MASTER PLAN 2010

WINDSOR INTERNATIONAL AIRPORT

December 3, 2010

Submitted by:





Windsor International Airport Master Plan

Prepared for:

Your Quick Gateway (Windsor) Inc.
Windsor International Airport
3200 County Rd. 42
Windsor, Ontario
N9A 6J3

Date

December 2010

Submitted by:

LPS Aviation Inc.
One Antares Drive, Suite 250
Ottawa, Ontario
K2E 8C4

Tel: (613) 226-6050 Fax: (613) 226-5236
e-mail: info@lpsaviation.ca
Web site: www.lpsaviation.ca

Dillon Consulting
235 Yorkland Blvd., Suite 800
Toronto, Ontario
M2J 4Y8

Tel: (416) 229-4647
Web site: www.dillon.ca

Executive Summary

1. The Windsor International Airport is owned by the City of Windsor and operated by Your Quick Gateway (Windsor) Inc.(YQG), a wholly owned Federal share corporation of the City of Windsor under a long-term management agreement.
2. The Windsor International Airport Master Plan is the overall planning document that will guide the development of the Airport and assist the City and private sector in making land use decisions involving surrounding lands.
3. The Master Plan provides an in-depth profile of the physical conditions and capacities of the Airport's facilities and infrastructure and determines requirements to meet future needs and development potential, while recognizing the financial implications of improvements.
4. The goal of the Master Plan is to stimulate cost effective development on the Windsor International Airport lands through the short (2010-2015), medium (2016-2020) and long-term (2021-2031) planning horizons.
5. The Master Plan builds on the vision of YQG and the City to also facilitate long range planning and development on the surrounding lands that support and reinforce the City's investment in Windsor International Airport.
6. Windsor International Airport has the potential to be a driver of economic activity and support businesses and industries that rely on air transportation.
7. In order to attract increased economic activity to the Airport lands, additional capacity needs to be provided in terms of land available for development with appropriate access and municipal services.
8. The Master Plan addresses these issues and aims to identify lands required for airport related commercial development as well as identify areas for non-airport related employment uses on lands deemed surplus to the projected long-term needs of the Airport.
9. The Windsor International Airport property is approximately 813 hectares in size and is located within the Sandwich South Planning District in the City of Windsor, approximately 8 km south of the Windsor Downtown area.
10. The Airport is part of the Windsor-Essex Region, composed of the City of Windsor and the County of Essex. The Windsor-Essex Region has a strategic gateway location on the Canada/U.S. border. Its proximity to the Metro Detroit area and the location of important transportation infrastructure has allowed Windsor-Essex to be a central focus for NAFTA trans-border business activity.
11. The Windsor-Detroit gateway is the busiest commercial land border crossing in North America – with approximately 3.5 million trucks crossing each year.
12. From a strategic market perspective, the Windsor-Essex Region is centrally located within an 8-hour drive from almost half of the North American population. Detroit's market accounts for an additional 4.5 million people within 65 kilometres of the Airport and about 25 million people can be reached within 400 kilometres.
13. Windsor's strategic gateway location creates opportunities for cross-border, multi-modal business between Detroit/Windsor, the Windsor International Airport and the Sandwich South Planning District. The City of Windsor is a focal point for traffic flows into Canada from the Detroit/Chicago corridor. Windsor is part of the Continental Gateway Initiative, which focuses on developing a sustainable, secure and efficient multi-modal transportation system, including roads, rail, ports, airports, inter-modal facilities and border crossings.

14. The Sandwich South Planning District, which includes the Windsor International Airport, has the potential to become Ontario's primary western business gateway and a major multi-modal hub and logistics cluster for products entering and leaving Canada to the United States. The multi-modal hub links the Airport to Highway 401 and the Lauzon Parkway extension, the Ambassador Bridge, the 3rd International Crossing and Windsor-Essex Parkway, the Detroit-Windsor Tunnel, the Detroit-Windsor Truck Ferry, the Windsor Port, CP Rail and Canadian National Railway.
15. The portion of the Windsor International Airport lands being used for the operating airport are designated "Airport" in the City of Windsor Official Plan.
16. Over 250 hectares of lands on the Airport property located to the east of the operating airport are designated "Future Employment Area" in the Official Plan. These lands are being planned by the City to accommodate non-airport related employment and business park uses in support of the gateway and multi-modal hub concept.
17. Windsor International Airport currently includes an air terminal building, two runways, seven taxiways and two public aprons as well as air navigation facilities, aviation service facilities and other airport support uses. The core development area is located in the southwest quadrant of the Airport property.
18. The existing runways, taxiways and aprons require regular maintenance and periodic resurfacing.
19. The City of Windsor recently invested \$1.2 million in infrastructure improvements to the air terminal building. The objective of the project was to improve circulation, provide additional aircraft gates, and expand the capacity of the passenger departure lounge. The interior of the air terminal building was renovated to reflect a modern, up-to-date interior design. The grounds were landscaped in the spring of 2008 to create a strong first impression and recognize the Airport's commitment to protecting the environment.
20. A passenger capacity assessment of the existing air terminal building indicated that space is limited in the international arrivals and baggage hall which affects international processing standards. The terminal building has the capacity to process one international passenger flight at a time within the arrivals hall. This lack of space creates congestion for international flights. The check-in area and concourse are also comparatively undersized, and cannot accommodate multiple departing flights, causing passengers to queue in the concessions and vending area.
21. Regarding air cargo, the Windsor International Airport currently does not provide dedicated cargo services. Any cargo arriving or departing the Airport is handled either on the ramp or through a private/charter flight company on an ad-hoc basis. The Airport has a temporary hangar with a loading dock to accommodate low volumes of cargo.
22. Regarding future business, Windsor International Airport is exploring multiple opportunities for the Airport lands, including an inter-modal cargo transfer facility called a "Cargo Village" and a maintenance/repair/operations facility (MRO) for aircraft. The Cargo Village project includes a cargo transfer facility, forwarding, customs brokers, distributors, warehouses and trucking activities. It is intended that additional non-airport related businesses will develop in the adjacent business park and on surrounding lands in the South Sandwich Planning District.
23. The Cargo Village and MRO projects have far reaching implications for the City of Windsor by helping to "kick start" the development of the multi-modal hub and create new attendant employment opportunities for residents of Windsor-Essex. The Cargo Village's indirect economic benefits include an increase in passenger traffic activity and additional revenue for the Airport.
24. Developing passenger forecasts for Windsor International Airport is difficult because passenger choice of airport is highly sensitive to fare differentials. It is especially significant that travel to high volume Canadian destinations has often been considerably cheaper from Detroit than from Windsor. Services to Canada from

Detroit are often more direct than from Windsor and competition is stronger. These factors make the traffic volumes of any airport in a multi-airport region such as Windsor-Detroit problematic. Traffic depends primarily on the scheduling and pricing decisions of the airlines. It is difficult to quantify latent traffic and actual airport traffic volumes severely underestimate the market size. Therefore a passenger traffic market study is required to determine the true size of the Windsor-Essex market for the Windsor International Airport. There are no satisfactory statistics available to estimate this market in the absence of this type of study.

25. The Master Plan made the following recommendations regarding improvements and major upgrades to airport facilities:

Airfield System

Runways

- Land be reserved for extension of Runway 07-25 to 3,048m (10,000 ft.) in the event of regular use by B747-400 cargo aircraft and these aircraft have a requirement to carry higher loads over longer distances than may be undertaken with the current runway length.
- It is recommended that the Airport continue regular maintenance of runway facilities, particularly Runway 12-30.

Taxiways

- Land be reserved to allow future extension of Taxi 'H' to serve an extension of Runway 07-25 and to provide access to airside commercial land.
- Taxiway be constructed north of Runway 07-25 to provide access to the planned employment lands.
- Taxiway be developed on the east side and parallel to Runway 12-30 to provide access to the new south employment areas. This taxiway will also provide access for heavy aircraft to/from these employment lands to Runway 07-25.

Aprons

- Apron I be expanded in the vicinity of Taxi 'G' in the event parking is required on a regular basis for B747-400 cargo aircraft. This will protect the precision approach zoning surface supporting Runway 12-30.
- Land be reserved for westerly expansion of Apron III in the event passenger growth beyond the traffic forecasts is achieved.
- Land reserve be established in the infield adjacent to Taxi 'H' for ultimate development of a new apron and associated air terminal complex.

Capacity

- Due to the current and expected aircraft movement volumes at the Windsor International Airport, the current airside capacity is expected to meet the needs of the Airport for the planning horizon.
- Additional runways will not be required within the planning horizon as current capacity is adequate. The addition of taxiways paralleling Runways 07-25 and 12-30 will further increase the maximum throughput capacity of the runway system.

Air Navigation Facilities

Air Traffic Control Tower

- Land reserve be established in the infield near the intersection of Runways 07-25 and 12-30 for construction of a new control tower should this be required due to development of higher buildings and structures in certain portions of the infield.

Air Terminal Building

Current Air Terminal Capacity

- Estimated that departing passengers in the air terminal are currently experiencing LOS 'B' Level (Conditions of stable flow; high level of comfort); there is adequate space for travelers in pre-boarding security and departure lounge areas.

Operational Deficiencies

- Passengers arriving on international flights are currently experiencing a LOS 'E' or lower during peak periods as the arrival and baggage hall is smaller than the recommended size, suggesting that unstable flow and capacity limiting conditions are present.
- Air terminal building requires a larger capacity for international and trans-border passengers arriving at Windsor International Airport.
- Immediate expansion program be undertaken to provide additional space for passenger check-in queuing, international and trans-border arrivals, related amenities and concessions.
- Current building configuration is not considered optimal as some functions meet or exceed space requirements.
- To achieve a better level of service, the air terminal building be modestly expanded from its current size of 4,716m² to 5,250m² along with some minor reconfigurations to optimize functional space assignment.

Short-Term Requirements (2010 – 2015)

- Air terminal building ground floor area be expanded to a minimum of 5,800m² to serve the projected growth in peak passenger volumes in the short-term (to 2015). Some reconfiguration is also required to achieve an acceptable level of service.
- Areas requiring expansion include Check-in, Passenger Screening, Departures Holdroom, Domestic Arrivals and International Arrivals.
- Given the age of the air terminal building (opened in 1958), an engineering study of the complete building be undertaken to confirm the need, identify costs and develop the optimum strategy for making the required improvements.

Medium-Term (2020) and Long-Term (2030) Requirements

- There is adequate space for significant air terminal expansion in both westerly and southerly directions as existing roads and parking can be realigned.
- Medium-Term and Long-Term expansion follow a westerly axis paralleling the current and future Apron III layout and that expansion proceed southerly towards the groundside to increase the overall width of the air terminal building.

Access Roads and Parking

- The Lauzon Parkway Improvements Environmental Assessment study will confirm the preferred solutions for roadway improvements including the suitability of site access locations to the Airport lands.
- Complete traffic impact studies to confirm external roadway improvement measures to accommodate development.
- Parking study be undertaken immediately to determine current and future demand characteristics and requirements at the Airport.
- Additional lands be reserved in the general vicinity of the air terminal building to accommodate long-term parking growth.

Utilities and Services

Water Supply

- Assessment of the Airport's existing on-site water distribution system be carried out to identify opportunities to modify/expand the existing system.

Stormwater Drainage

- Environmental studies of the woodlot and provincially significant wetlands be updated and compiled in a more comprehensive biological inventory for flora, fauna and aquatic species.
- Comprehensive functional stormwater management study be completed to identify an appropriate strategy for implementing the necessary runoff control and mitigating measures for the development of these lands, including the phased implementation of the stormwater management facilities.

Electrical and Communications

Field Electrical Centre

- Engineering study be undertaken in the short-term to assess the existing systems, equipment and components in the field electrical centre to determine the life expectancy of the facility.

Aircraft Services

Fuel Facilities

- Develop a bulk fuel storage facility on a lot in the employment lands located at the west end of Phelps Drive to permit both airside and/or groundside access for fuel tankers with minimal disruption to Airport operations.

De-icing Facilities.

- Designated de-icing area be established on Apron III as operations increase in the future.

Airport Maintenance

Maintenance and Fire Hall Building

- As airport maintenance requirements increase, that consideration is given to constructing a new maintenance building at an alternate location, including consideration for combining this with emergency response services.

26. The Master Plan provided the following recommendations regarding improvements and major upgrades to general aviation facilities:

Air Cargo

- Develop air cargo facilities in two (2) phases along with a Cargo Village as recommended in Air Cargo Development Study (Lufthansa Consulting).
- Airside service road be constructed linking Apron III to Apron I, and Apron I to the north employment lands as required to support air cargo facilities development.

Cargo Village

- Develop cargo village in accordance with Air Cargo Development Study (Lufthansa Consulting).

Multi-Modal Port

- Lands be reserved for a multi-modal port with a configuration of roughly 235 ha.

Pre-Clearance Facility

- A pre-clearance facility could be located in or adjacent to the air cargo building. If it also serves truck traffic, it would need to be near in or adjacent to the Cargo Village.
- Sufficient land is also available in the Sandwich South area to accommodate a pre-clearance facility.

Aircraft Maintenance and Support

- Lands be reserved for the development of a maintenance, repair and overhaul facility in the airside employment lands.

Airport Business Park

- Lands be reserved for the development of a business park on the lands deemed surplus to the operating airport.

General Aviation

- Lands be set aside to attract new and expand existing general aviation uses.

Airport Related Commercial

- Lands be reserved within the infield area of the Airport property for major Airport related business and employment uses.
- Development of high structures in certain portions of the infield area may interfere with sight lines from the current air traffic control tower. All proposed infield development projects be subject to review by Airport management and if a sight line issue is identified, relocation of the air traffic control tower to a new infield location may be necessary in order for the development to proceed.

27. The Master Plan recommended a Development Plan to meet the current and future airside, air terminal and groundside requirements of Windsor International Airport. The plan allocates sufficient land to accommodate Airport growth beyond the planning horizon.

28. The Development Plan recommended certain projects along with the trigger points when each project will be required.

Development Plan

Project	Phasing Trigger	ROM Cost	Refer. Sect.
Airport Lands			
Construct partial parallel taxiway north of Runway 07-25.	To provide access to new north employment lands, as demand develops.	\$ 10 million	5.1.2
Construct taxiway on the east side and parallel to Runway 12-30.	To provide access to the new south employment lands and access by heavy aircraft from these lands to Runway 07-25, as demand develops.	\$ 3.5 million	5.1.2
Expand Apron I in the vicinity of Taxi 'G' to accommodate Code E aircraft.	To provide parking for B747-400 cargo aircraft as demand develops and Runway 12-30 requires precision approach zoning protection.	\$ 2 million	5.1.3
Maintain Runways to extend the life of these assets.	Short-term repaving of Runway 12-30 (2016).	\$ 1.5 million	5.1.1
Construct airside service road linking Apron III to Apron I, and Apron I to the north employment lands.	As required to support air cargo facilities developments.	\$210,000	6.2
Expand ATB to approximately 5,250m ² to provide additional space for passenger check-in queuing, international and trans-border arrivals, related amenities, and concessions.	Immediate requirement to serve current peak hour passengers (TPHP) of 157.	\$2.0 million	5.3.3
Expand ATB to 5,800m ² to meet projected growth in passenger traffic in the short-term.	Expansion anticipated in the short-term (5 years) to serve projected peak hour passenger (TPHP) growth to 253.	\$2.5 million	5.3.4
Prepare engineering study of the ATB.	Prepare prior to embarking on ATB improvement programs.	\$50,000	5.3.4
Complete drainage and pavement resurfacing of private groundside and airside roadways serving the Airport operations.	Short-term to medium-term need, subject to roadway conditions.	\$ 1.5 million	5.4.1
Prepare Airport parking study.	Immediate requirement to determine current and future demand characteristics and requirements for parking.	\$35,000	5.4.2
Prepare engineering study of the FEC.	Short-term requirement to assess the existing systems, equipment and components in the FEC and the life expectancy of the facility.	\$15,000	5.6.3
Construct a new maintenance building at another location on site, including consideration for combining this with emergency response services needs.	Medium-term, as maintenance requirements increase.	\$ 2.5 million	5.9.3
Develop a Secondary Plan/Official Plan Amendment to re-designate future employment area to permit employment uses including a Business Park and establish road and servicing network.	Short-term.	By City Planning & Eng. Depts.	6.6

Project	Phasing Trigger	ROM Cost	Refer. Sect.
Develop Phase I air cargo facility.	Immediate investment to foster air cargo development.	\$ TBD	6.3
Develop North Side Employment Lands.	Development of Phase II air cargo facilities, or shortage of general aviation development land.	\$ TBD	6.3
Develop South Side Employment Lands.	Development of large MRO and/or aerospace manufacturing on adjacent employment lands.	\$ TBD	6.8
Develop Cargo Village.	Assemble as critical mass of related businesses develops on Airport lands in vicinity of each other	\$ TBD	6.3
Develop Multi-Modal Port.	Development of Multi-Modal Rail/Truck Facility.	\$ TBD	6.4
Complete a stormwater management (SWM) plan for the Airport lands and implement stormwater management measures.	Immediate need for SWM Plan. Short-term to longer-term implementation of SWM facilities in stages as development proceeds.	\$50,000 \$15.6 million	5.5.3 and 5.10
Protect and maintain environmental sensitive area adjacent the Airport Woodlot.	Immediate to short-term.	N/A	5.5.3 and 5.10
Complete environmental studies to confirm the significance of the natural environment and mitigating measures resulting from development impacts.	Short-term.	\$ TBD	5.5.3 and 5.10
Surrounding Lands			
Complete environmental assessment studies for County Road 42 and Lauzon Parkway.	Immediate.	\$ TBD	2.4.2
Implement the preferred road improvement alternatives arising from the above environmental assessment studies.	Short to medium-term.	\$ TBD	2.4.2
Complete traffic impact studies to confirm external roadway improvement measures to accommodate development.	Progressive studies as development opportunities arise.	\$ TBD	2.4.2
Confirm existing water distribution system capacity and associated improvements in the interim until trunk feeder mains are completed by WUC.	Immediate to short-term. Trunk watermain facilities from Banwell (North of EC Row) to Cabana (East of Howard).	\$ 26.3 million	5.5.1
Complete a sanitary servicing study to confirm the opportunities to expand the drainage area boundary for the trunk sanitary.	Medium-term.	\$ 50,000	5.5.2
Complete improvements to the Little River Pollution Control Plant, as required to meet sewage flow demands from the expanded service area.	Longer-term.	\$ TBD	5.5.2

29. The Recommended Land Use Plan shown on Figure 7.1 of the Master Plan addresses the short, medium and long-term development potential of the Windsor International Airport.
30. The Recommended Land Use Plan:
- Provides sufficient land to meet the long-term requirements of all essential aviation activities at Windsor International Airport;
 - Provides flexibility to accommodate targeted airport and non-airport related business investments that support the development of a strategic gateway and multi-modal hub centred on the Windsor International Airport and the Sandwich South employment area;
 - Ensures that land is developed for uses that are compatible with the safe and efficient operation of aircraft at the Windsor International Airport;
 - Ensures that land is developed in a manner that is compatible with the adjacent Community;
 - Guides the development of Windsor International Airport in a logical and orderly manner ; and
 - Protects the interests of the City as well as the tenants within boundaries of the Windsor International Airport property.

Table of Contents

		<u>Page No.</u>
1	<i>Introduction</i>	1-1
1.1	Plan Objectives	1-1
1.2	Community Goals and Objectives	1-1
2	<i>Catchment Area Profile</i>	2-1
2.1	Geographic Context	2-1
2.2	Population and Employment Forecast	2-3
2.3	Activity and Outlook	2-4
	2.3.1 Provincial Economy	2-4
	2.3.2 Windsor-Essex Region Economy.....	2-4
	2.3.3 Windsor Economy	2-4
2.4	Transportation System	2-5
	2.4.1 Air	2-5
	2.4.2 Road	2-5
	2.4.3 Rail.....	2-7
	2.4.4 Water	2-7
	2.4.5 Multi-modal Opportunities.....	2-8
2.5	Municipal Planning Context.....	2-8
	2.5.1 Sandwich South Planning District.....	2-8
	2.5.2 City of Windsor.....	2-12
	2.5.3 Essex County.....	2-12
	2.5.4 Windsor-Detroit.....	2-12
2.6	Community Concerns.....	2-14
	2.6.1 Airport Physical Development.....	2-14
	2.6.2 Aviation Related Businesses	2-14
	2.6.3 Non-Aviation Related Businesses.....	2-14

Table of Contents – Cont’d

		<u>Page No.</u>
3	<i>Airport Profile</i>	3-1
3.1	Role and Designation	3-1
	3.1.1 Role	3-1
	3.1.2 Designation	3-1
3.2	History	3-1
3.3	Current Infrastructure	3-3
	3.3.1 Runways	3-3
	3.3.2 Taxiways	3-4
	3.3.3 Aprons.....	3-4
	3.3.4 Air Navigation Facilities.....	3-6
	3.3.5 Aviation Service Facilities	3-7
	3.3.6 Passenger Facilities.....	3-8
	3.3.7 Cargo Facilities	3-8
3.4	Land Use.....	3-8
	3.4.1 Site Opportunities and Constraints	3-8
	3.4.2 Current Airport Land Use Plan.....	3-9
	3.4.3 On-Airport Land Use Regulations	3-9
	3.4.4 Vicinity Land Use	3-9
3.5	Airport Standards and Zoning	3-10
	3.5.1 Airport Physical Standards.....	3-10
	3.5.2 Physical Zoning.....	3-10
	3.5.3 Electronic Zoning	3-10
	3.5.4 Vicinity Land Use Zoning	3-10
	3.5.5 Noise Projections	3-11
3.6	Meteorological Assessment	3-12

Table of Contents – Cont'd

	<u>Page No.</u>
4 Aviation Activity and Forecasts	4-1
4.1 Introduction	4-1
4.2 Future Traffic Determinants	4-1
4.3 Economic Environment	4-3
4.4 Passenger Traffic and Fares	4-5
4.4.1 Fares	4-5
4.4.2 Passenger Traffic	4-6
4.4.3 Inter-modal Competition	4-8
4.4.4 Implications for Forecasting	4-8
4.5 Approach and Assumptions	4-9
4.5.1 Baseline Case	4-9
4.5.2 Porter Airlines	4-9
4.5.3 WestJet	4-9
4.5.4 Augmented Charter Services	4-9
4.5.5 New Services by Air Canada	4-9
4.5.6 Trans-border Flights	4-10
4.5.7 Most Likely Case	4-10
4.6 Air Cargo Potential	4-10
4.6.1 Current Air Cargo Activity	4-10
4.6.2 Future Air Cargo Activity	4-11
4.7 General Aviation Trends	4-12
4.7.1 General Aviation Forecasts	4-12
4.7.2 Categories and Recent Trends	4-12
4.7.3 Forecasting Methodology	4-14
4.8 Conclusions	4-15

Table of Contents – Cont’d

		<u>Page No.</u>
5	<i>Airport Facilities, Opportunities & Recommendations</i>	5-1
5.1	Airfield System	5-1
5.1.1	Runways	5-1
5.1.2	Taxiways	5-1
5.1.3	Aprons.....	5-2
5.1.4	Capacity.....	5-2
5.2	Air Navigation Facilities.....	5-3
5.2.1	ATC Tower.....	5-3
5.2.2	Flight Service Station	5-3
5.2.3	Navigation and Landing Aids	5-3
5.2.4	Aviation Meteorology	5-4
5.3	Air Terminal Building	5-4
5.3.1	Assessment Methodology	5-4
5.3.2	Current Air Terminal Capacity.....	5-5
5.3.3	Operational Deficiencies	5-5
5.3.4	Short-Term Requirements	5-6
5.3.5	Medium and Long-Term Requirements	5-8
5.4	Access Roads and Parking	5-16
5.4.1	Access Roads.....	5-16
5.4.2	Terminal Frontage and Parking.....	5-16
5.4.3	Future Requirements	5-16
5.5	Utilities and Services	5-17
5.5.1	Water Supply	5-17
5.5.2	Sanitary Sewerage.....	5-17
5.5.3	Stormwater Drainage.....	5-17

Table of Contents – Cont'd

	<u>Page No.</u>
5.6	Electrical and Communications 5-18
5.6.1	Airfield 5-18
5.6.2	Air Terminal 5-20
5.6.3	Field Electric Centre (FEC) 5-20
5.6.4	Supply and Distribution 5-20
5.6.5	Telecommunications 5-20
5.7	Aircraft Services 5-20
5.7.1	Fuel Facilities 5-20
5.7.2	De-icing Facilities 5-21
5.8	Emergency Response 5-21
5.8.1	Current Services 5-21
5.8.2	Current Facilities 5-21
5.8.3	Future Requirements 5-22
5.9	Airport Maintenance 5-22
5.9.1	Services 5-22
5.9.2	Facilities 5-22
5.9.3	Future Requirements 5-22
5.10	Environmental 5-23
5.10.1	Environmental Concerns 5-23
5.10.2	Constraints to Development 5-23
5.10.3	Impact of Development Plan 5-24

Table of Contents – Cont'd

	<u>Page No.</u>
6	<i>General Aviation Facilities Opportunities & Recommendations..... 6-1</i>
6.1	Current Inventory 6-1
6.2	Air Cargo 6-2
6.3	Cargo Village..... 6-3
6.4	Multi-modal Port..... 6-3
6.5	Pre-Clearance Centre 6-4
6.6	Airport Business Park..... 6-4
6.7	Aircraft Maintenance and Support..... 6-4
6.8	General Aviation..... 6-5
6.9	Airport Related Commercial Land Supply 6-5
7	<i>Recommended Land Use Plan 7-1</i>
7.1	Land Assignment 7-1
7.2	Recommended Plan..... 7-1
8	<i>Airport Infrastructure Development Plan 8-1</i>
9	<i>Public and Agency Consultation..... 9-1</i>

Table of Contents – Cont'd

List of Figures

	<u>Page No.</u>
Figure 2-1 City of Windsor Location	2-1
Figure 2-2 Location of the Windsor Airport	2-2
Figure 2-3 Existing External Transportation.....	2-9
Figure 2-4 Sandwich South District: Official Plan Designations.....	2-11
Figure 2-5 Land Use in Airport Vicinity	2-13
Figure 3-1 Site Plan.....	3-5
Figure 3-2 Airport Physical Zoning	3-11
Figure 3-3 Airport Electrical Zoning	3-12
Figure 3-4 Airport Noise Exposure Forecast Contours	3-15
Figure 3-5 Annual Wind Rose.....	3-16
Figure 3-6 Wind Rose Analysis by Quarter.....	3-17
Figure 3-7 Frequency of Ceilings and Visibilities	3-19
Figure 4-1 Determinants of Airport Traffic.....	4-2
Figure 4-2 Windsor International Airport Enplaned and Deplaned Passengers.....	4-7
Figure 4-3 Cargo Terminal / Cargo Village Development – Cargo Forecast	4-14
Figure 4-4 Historical and Projected General Aviation Activity.....	4-16
Figure 5-1 Current Apron Management Plan.....	5-13
Figure 5-2 Apron Expansion	5-14
Figure 5-3 Current Terminal Floor Plan	5-15
Figure 5-4 Existing Servicing External.....	5-19
Figure 5-5 Development Constraints	5-25
Figure 7-1 Recommended Land Use Plan.....	7-2
Figure 8-1 Recommended Development Plan.....	8-4

Table of Contents – Cont’d

List of Tables

	<u>Page No.</u>
Table 2-1 Population Growth, Windsor-Essex, 2006-2031	2-3
Table 2-2 Population Growth, City of Windsor, 2006-2031, Reference Scenario	2-3
Table 3-1 Aerodrome Data	3-3
Table 3-2 Runway 07-25 Declared Distances	3-3
Table 3-3 Runway 12-30 Declared Distances	3-3
Table 3-4 OLS Runway 07-25 and 12-30	3-4
Table 3-5 Community Noise Response Predictions	3-11
Table 3-6 Percent Frequencies of Ceiling and Visibility Categories at YQG 1980-2009	3-18
Table 4-1 Growth Projections for the Canadian Economy	4-5
Table 4-2 Lowest Return Fares to Selected Destinations (CDN \$, Taxes Included)	4-5
Table 4-3 E/D Cargo Windsor (Tonnes)	4-11
Table 4-4 Cargo Terminal and Cargo Village Development – Market Potential Analysis	4-13
Table 5-1 ATB Levels of Service	5-5
Table 5-2 Current ATB Space Assessment (TPHP 157, LOS=C)	5-9
Table 5-3 Recommended ATB Space Requirements	5-11
Table 5-4 Rental Company Parking	5-16
Table 5-5 Airport ERS Categories	5-21
Table 6-1 Phased Cargo Terminal Development	6-2
Table 6-2 Air Cargo Facility Requirements	6-2
Table 8-1 Development Plan	8-1
Appendix A – Passenger Demand Forecast Methodology	A-1
Appendix B – Passenger Statistics and Forecasts	B-1
Appendix C – Aircraft Movement Statistics and Forecasts	C-1
Appendix D – GA Forecasts	D-1
Appendix E – Multi-modal Port – Land Use Options Presentation	E-1
Appendix F – Public and Agency Consultation	F-1

1.1 Plan Objectives

The Windsor International Airport Master Plan is the overall planning document that will guide the development of the Airport and assist the City and private sector in making land use decisions involving surrounding lands. The Master Plan provides an in-depth profile of the physical conditions and capacities of the Airport's facilities and infrastructure and determines requirements to meet future needs and development potential, while recognizing the financial implications of improvements.

The master planning process builds on the vision of YQG and the City to facilitate long range planning and development on the surrounding lands that support and reinforce the City's investment in Windsor International Airport. The goal of the Master Plan is to stimulate cost effective airport development throughout the short, medium and long-term planning horizons.

The objectives of the Master Plan are:

- to ensure safe operation of all aircraft that utilize the facility;
- to ensure that sufficient land area is reserved for both commercial and non-commercial uses;
- to ensure that Airport development is, to the extent possible, in harmony with the surrounding physical environment;
- to provide guidance to Airport management in day-to-day decisions that protect the Airport's long-term development goals; and
- to provide a strong communication tool to key stakeholders, such as airlines, the aviation industry, industries, and government officials.

1.2 Community Goals and Objectives

The City of Windsor Community Strategic Plan was adopted by Council in 2007. The Plan includes a vision, mission statement, pillars and priorities for the City. It assists in identifying a common vision to guide all future planning, including the Windsor International Airport Master Plan. The Strategic Plan has been linked with the City's five year Review of the Official Plan, departmental business plans and the 2007 budget process reflecting Council's priorities for the 2007-2010 term. The City's vision and mission statement are, respectively:

- **Vision** - Windsor – Dream, Dare, Do: Windsor is a desirable City full of history and potential, with a diverse culture, a durable economy, and a healthy environment, where citizens share a strong sense of belonging and a collective pride of place.
- **Mission** - Our City is built on relationships – between citizens and their government, businesses and public institutions, City and region – all interconnected, mutually supportive, and focused on the brightest future we can create together.

The Community Strategic Plan defines four pillars, each one containing a set of objectives. The following objectives are very relevant to the Windsor International Airport Master Plan:

Pillar 1 - Our Economy: Cultivated & Competitive

- **Grow Business** – Cultivate a positive and diverse economic environment for business growth.
- **Capitalize on Our Strengths** – Promote tourism and hospitality, making the most of our advantages as a key Canadian gateway.

Pillar 2 - Our Society: Diverse & Caring

- Invest in Quality Living – Invest in the common good, maintaining convenient City services and enhancing our public spaces.

Pillar 3 - Our Environment: Clean & Efficient

- Maintain Infrastructure – Improve the physical infrastructure, buildings, and public structures.
- Make Transportation Efficient and Convenient – Provide transportation systems that enhance physical mobility and better serve the economic and social needs of all citizens.

Pillar 4 - Our Government: Responsive & Responsible

- Improve Financial Success – Maintain and improve the City's financial health.
- Make Services Responsive – Be accountable for providing top quality municipal services that serve citizens better.
- Form Beneficial Partnerships – Develop innovative partnerships between the public, private, and not for profit sectors.

Consultations with airport stakeholders and staff at the City of Windsor suggest that local residents would like to position the Windsor International Airport as a greater economic driver within the community and the region as a whole.

Stakeholders expressed a desire for the airport to attract a wide variety of businesses, including those within the aviation industry, and non-aviation related businesses.

More specifically, the community wishes to position the Windsor International Airport as an inter-modal cargo facility by providing the capacity for air, road, and potentially rail services.

The Airport has the potential to be a driver of economic activity and support businesses and industries that rely on air transportation. In order to attract increased economic activity to Airport lands, additional capacity needs to be provided in terms of land available for development with appropriate access and municipal services. The Master Plan addresses these issues and aims to identify lands available for airport related commercial development within the short, medium and long-term planning horizons, as well as areas for non-Airport related employment uses on lands surplus to the projected long-term needs of the airport.

2.1 Geographic Context

The Windsor International Airport (CYQG) is situated in Southwestern Ontario, approximately 330 air km from Toronto, and 163 air km from London, Ontario. The Airport is located at 42° 16' 32" north latitude, 82° 57' 20" west longitude, at an elevation of 527.1m Above Sea Level (ASL).

The Airport lands encompass approximately 813 hectares and are located within the City of Windsor, approximately 8 km south of the Windsor Downtown area.

In addition, the Airport is located in the Windsor-Essex Region, composed of the City of Windsor and the County of Essex. The City of Windsor is located in the northwest portion of Essex County. The County is formed by seven municipalities, including LaSalle, Amherstburg, Essex, Kingsville, Leamington, Lakeshore and Tecumseh. The Windsor-Essex Region is located in the southwestern corner of Ontario and is part of a peninsula surrounded by water on three sides: Lake St. Clair located to the north, the Detroit River to the west and the Lake Erie to the south. The Municipality of Chatham-Kent is located to the east.

The Windsor-Essex Region has a strategic gateway location on the Canada/U.S. border. Its proximity to the Metro Detroit area and the location of important transportation infrastructure has allowed Windsor-Essex to be a central focus for NAFTA trans-border business activity. The area has an important concentration of research, innovation and advanced manufacturing for the automotive, aerospace, renewable and non-renewable energy and recreational products industries. In addition, its geographical location provides the area with milder winters and a long growing season. Consequently, Windsor-Essex has become one of Canada's most important agricultural areas including an important wine industry.

Figure 2-1 shows the geographic location of the City of Windsor within the North American context. Figure 2-2 shows the location of the Windsor International Airport within the context of the City of Windsor and the County of Essex.



FIGURE 2-1
City of Windsor Location

From a strategic market perspective, the Windsor-Essex Region is centrally located within an 8-hour drive from almost half of the North American population. Detroit's market accounts for an additional 4.5 million people within 65 kilometres of the Airport and about 25 million people can be reached within 400 kilometres. In addition, Windsor-Detroit is the busiest commercial land border crossing in North America – with approximately 3.5 million trucks crossing each year.



**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 2-2 - LOCATION OF THE WINDSOR AIRPORT

YQGG
YOUR
QUICK
GATEWAY
WINDSOR INTERNATIONAL AIRPORT

- WINDSOR AIRPORT
- WATERBODY
- HIGHWAY
- LOCAL ROADS
- SECONDARY ROADS

Base data provided by City of Windsor Official Plan
Map created by Alana Evers
Map checked by Karl Tanner

Map Projection: n/a
Project #: 09-2665
Status: n/a
Date: December 2010



File Location: \\atlantical\dillon_cdfs\data\windsor\PROJECTS\DMRAFT\2009\09-2665 Windsor Airport\09-2665 Graphics



There are two other major airports within the regional area - the London International Airport in London, Ontario, and the Detroit Metro Airport in Detroit, Michigan which are located approximately 170 km and 32 km respectively from the Windsor International Airport.

2.2 Population and Employment Forecast

This section provides a demographic profile of the Windsor-Essex Region.

Population influences the demand for air travel. As the Windsor-Essex Region grows, the demand for transportation will also increase. According to the 2008 *Windsor-Essex and City of Windsor Population and Housing Projections* Report completed in 2008 by Lapointe Consulting as part of the City of Windsor Official Plan Review, the Windsor-Essex Region had a population of 393,400 people in 2006 and a projected population of 491,821 persons by 2031. The Region is projected to grow by 98,426 persons in the 25-year projection period from 2006 to 2031. Table 2-1 shows projected population growth for Windsor-Essex.

Table 2-1 – Population Growth, Windsor-Essex, 2006-2031

Year	Population	5-Yr. Change	
		Change	% Change
2006	393,395		
2011	399,405	6,010	1.5%
2016	420,528	20,853	5.2%
2021	444,971	24,713	5.9%
2026	469,350	24,379	5.5%
2031	491,821	22,471	4.8%
20-Yr. Change 2006-2026		75,955	19.3%
25-Yr. Change 2006-2031		98,426	25.0%

Source: Lapointe Consulting, 2008

The City of Windsor had a population of 216,473 persons in 2006, with a projected population of 267,700 by 2031, an increase of 51,197 persons in the 25-year period. Average annual growth is expected to be low (0.33%) over the 2006 to 2011 period, but will subsequently increase to around 1% annually. These population projections were based on the 2006 census. Table 2-2 summarizes projected population for the City to 2031.

Regarding housing growth, the City is expected to achieve a total growth of 26,243 housing units by 2031, with an average annual growth rate of 1,040 units per year.

Table 2-2 – Population Growth, City of Windsor, 2006-2031, Reference Scenario

Year	Population	5-Yr. Change		Annual Growth Rate
		Change	% Change	
2006	216,473			
2011	220,037	3,564	1.6%	0.33%
2016	230,985	10,948	5.0%	0.98%
2021	243,055	12,070	5.2%	1.02%
2026	256,034	12,979	5.3%	1.05%
2031	267,670	11,636	4.5%	0.89%
20-Yr. Change 2006-2026				39,561
25-Yr. Change 2006-2031				51,197

Source: Lapointe Consulting, 2008

In terms of employment, EDP Consulting as part of the City's Official Plan Review estimated that the City of Windsor will be around 141,800 in 2026, an increase of 21,140 jobs from 2006 and 2026 (under the preferred Base Case Scenario). It is estimated that around 9,445 of the projected new jobs will locate on the employment lands in the Sandwich South Planning District which contains the Airport.

2.3 Activity and Outlook

The demand for air travel is largely influenced by the strength of the provincial, regional and local economy. Current and anticipated economic conditions, their impacts on labour force participation, and income all influence air travel, whether it is for business or personal purposes.

2.3.1 Provincial Economy

Ontario is home to approximately 13,069,182 (2009) people and is one of the fastest growing economies in Canada.

In 2009, the Ontario Real Gross Domestic Product (GDP) grew to \$567,199 (million, nominal), averaging about 37.1% of Canada's GDP. The service industry has become the fastest growing component of Ontario's GDP as there is an ever growing shift from goods production (resource and manufacturing) to service based businesses.

The economic recession of 2008-10 has affected every world region in a unique way. Ontario will likely witness the following economic impacts:

- Increased unemployment in the manufacturing sector;
- Weakened trans-border exports due to dollar parity; and
- Increased taxes on select goods and services (HST; in effect July 1, 2010).

Each economic sector faces a unique set of opportunities and constraints. While the motor vehicle and parts industry slowly recovers in certain areas of the Province, the construction sector is seeing a substantial rise in activity. The Province is a strong supporter of providing financial stimuli to kick start the economy through investment in public infrastructure renewal. That includes new and upgraded roads, public transit, water and sanitary services and public buildings. As well, residential construction activity is picking up as the demand for housing increases.

2.3.2 Windsor-Essex Region Economy

Compared to the Provincial average, the Windsor-Essex Region is more slowly emerging out of the recession of 2008-10. As a major industrial centre in Southwestern Ontario, over 25% of the population works within the manufacturing sector.

The largest percent of the population in Essex County are employed in sales and service occupations (approximately one in ten), followed closely by trades, transport and equipment operators, and related occupations.

A year over year comparison of housing starts in Essex County showed positive growth for the months of January and February 2010. The spring and summer housing market looks positive as borrowing costs stabilize and the resale market tightens.

Various infrastructure projects are underway or planned in the Windsor-Essex Region. Highway 3, which runs northwest to southeast through the County of Essex, is currently being widened to four lanes to accommodate a more efficient and smoother flow of traffic. Of strategic importance to the Southern Ontario economy, planning is well underway for the third border crossing between Windsor and Detroit and the Windsor-Essex Parkway connecting link to Highway 401.

2.3.3 Windsor Economy

The City of Windsor is a focal point for goods movement into and within the Windsor-Essex Region. Approximately one third of all trade between Canada and the United States passes through the City of Windsor. It is estimated that 40% of all truck traffic between the two Countries passed through Windsor. In 2008, 5,224,139 metric tonnes of freight moved through the City¹.

The forecasted growth in real gross domestic product (GDP) for the City of Windsor in 2010 is 2.6%. According to EDP Consulting Employment

¹Source: Windsor-Essex Development Commission – 2009 Community Profile: City of Windsor

Projections & Employment Lands Needs Analysis (2008), the City is currently undergoing substantial economic change as it adjusts to the global restructuring in the automotive manufacturing sector and related sectors. A decline occurred in the size of the employed labour force in 2007, due to closures and downsizing in the automotive manufacturing sector. In addition, the high Canadian dollar relative to the U.S. dollar also negatively impacted the manufacturing, retail and tourism sectors. The average size of the Windsor CMA labour force in 2007 was 156,200, slightly higher than the 2001 level, but around 5% lower than the 2006 level.

The City's economy is shifting from heavy manufacturing towards the service sector and more light and advanced manufacturing in a knowledge based economy.

Windsor is part of the Continental Gateway Initiative, which focuses on developing a sustainable, secure and efficient multi-modal transportation system, including roads, rail, ports, airports, inter-modal facilities and border crossings.

Opportunities exist for trans border business between Detroit/Windsor, the Windsor International Airport and the Sandwich South Planning District. With the Airport as the hub, the proposed employment lands in Sandwich South have the potential to become Ontario's primary western business gateway and a major logistics cluster for products entering Canada from the United States as well as cargo coming from or departing for Europe and Asia.

2.4 Transportation System

2.4.1 Air

The Windsor International Airport is served by four airlines providing scheduled and charter air services. Scheduled air services are available to the public, while charter operations generally serve tour wholesalers, private individuals and businesses. The Airport supports both jet and turbo-prop aircraft and can accommodate aircraft as large as a Boeing 747 and Antonov 225. Scheduled air services are provided by Air Canada Jazz and WestJet, while

charter services are provided by Sunwing and Cameron Air.

Air Canada provides daily scheduled service to and from Toronto's Lester B. Pearson Airport using their affiliated regional service carrier Jazz. The aircraft used for these short-haul flights are Dash 8-100/300. Air Canada Jazz operates seven flights per day on weekdays and six flights on weekends between Windsor and Toronto, catering to both origin/destination passengers between the two Cities as well as connecting traffic.

WestJet has signed a three year commitment to serve Windsor. It launched seasonal scheduled service from Windsor to Calgary daily, between May 31, 2010 and October 30, 2010 using a Boeing 737-700 aircraft.

Sunwing operates a weekly non-stop charter flight from Windsor to Varadero and Havana, Cuba during the winter months (December to April) using a Boeing 737-800 aircraft.

Cameron Air provides charter flights to Pelee Island during the winter months. The air service utilizes a variety of single and multi-engine, turbo-prop aircrafts for the short-haul flights. Ferry and private boat transit take over the task of providing transportation to and from the Island during the spring, summer and fall months. However, private charter flights are still available for individuals.

2.4.2 Road

The Windsor International Airport is easily accessed from the major roadway network and transportation facilities, including the International border crossings (the bridge and tunnel), the Windsor Port, the VIA Rail station, the Windsor Transit Terminal, and Provincial Highways 401 and 3 (see Figure 2.3). The Province of Ontario, the City of Windsor and the County of Essex are in the planning, design and/or implementation stages of roadway improvements that will benefit the regional economy including the Airport.

The existing road network and related road improvements that have been confirmed and/or are proposed, position the Airport well to meet the transportation needs of future development.

Environmental assessment studies will confirm the preferred solutions for the planned and proposed roadway improvements, including the suitability of site access locations to the Airport lands. As well, there will be a need to complete site specific traffic impact studies to confirm roadway and access improvements necessary to accommodate site specific development proposals on the Airport lands.

The existing area road network as shown on Figure 2-3, is described in further detail below:

County Road 42

County Road 42 directly abuts the southerly limit of the Airport property and provides the primary access to the Airport. County Road 42 is under the jurisdiction of the City of Windsor. County Road 42 becomes Division Road, west of the CN Pelton Spur railway crossing.

The Essex-Windsor Regional Transportation Master Plan (October 2005) identified the need for the widening of County Road 42 to a four lane cross-section within a 5 to 10 year time frame.

Recently, the Ministry of Transportation, Ontario (MTO) announced their intention to complete an Environmental Assessment for improvements to County Road 42 and Lauzon Parkway, including an extension of Lauzon Parkway to Highway 401 and Highway 3, the construction of a new east-west arterial roadway south of County Road 42, and the completion of a Secondary Plan for the Sandwich South Planning District. A large portion of the Planning District is planned for employment land uses.

The results of these planning and preliminary design studies will confirm the preferred roadway improvements, as well as access locations and corridor control provisions that are required to accommodate development of the Airport lands.

At this time, it is expected that no direct access for development of individual sites would be provided along County Road 42. Individual site access could be accommodated from an internal road network, with intersection locations along County Road 42, as generally shown on Figure 8-1.

Lauzon Parkway

Lauzon Parkway is an arterial road under the jurisdiction of the City of Windsor. It currently extends from County Road 42 northerly, and includes a full access interchange at the E C Row Expressway.

The Essex-Windsor Regional Transportation Master Plan (October 2005) identified the need for the widening of Lauzon Parkway to a four lane cross-section from E.C. Row Expressway to County Road 42 within a 5 to 10 year time frame. Furthermore, it was recommended that Lauzon Parkway be extended to Highway 401 and Highway 3 within a 5 to 10 year timeframe.

As noted earlier, the proposed Environmental Assessment being initiated by MTO will confirm the preferred roadway improvements, as well as opportunities for access from the Airport lands to Lauzon Parkway. The extension of Lauzon Parkway to Highway 401 and the broader Provincial Highway network is expected to stimulate future development opportunities at the Airport.

It is recommended that future access to Lauzon Parkway be provided to support the transportation needs of future development on the Airport lands.

E.C. Row Expressway

E.C. Row Expressway is a controlled access highway under the jurisdiction of the City of Windsor. Interchanges in close proximity to the Airport exist at Walker Road, Central Avenue, Jefferson Boulevard and at Lauzon Parkway.

The Essex-Windsor Regional Transportation Master Plan (October 2005) identified the need for the widening of the E.C. Row Expressway to six lanes from Huron Church Road to Banwell Road within a 10 to 20 year time frame.

Based on capacity limitations at the Central Avenue interchange, as well as property limitations and railway conflicts at the Jefferson Boulevard interchange, improved access from the Airport lands to the E.C. Row Expressway could be facilitated by providing the following roadway connections:

- New access to Lauzon Parkway;

- New access to Wheelton and Pillette near Walker Road; and
- Improved secure/controlled access to Jefferson Boulevard for limited use, as required to eliminate through-traffic use across the Airport lands.

Walker Road

Walker Road is a local arterial road under the jurisdiction of the City of Windsor. Walker Road provides access to Highway 401, Highway 3 and the E.C. Row Expressway. It was recently improved from Division Road to Highway 3. Based on recent funding announcements, it is expected that Walker Road will soon be improved from Division Road to north of the E.C. Row Expressway.

Walker Road connects to Highway 3 and southern Essex County.

Jefferson Boulevard

Jefferson Boulevard is a local collector road under the jurisdiction of the City of Windsor. Due to property limitations, including the location of the CP Railway corridor, a partial interchange exists at E.C. Row Expressway and Jefferson Boulevard. There are limited opportunities to further improve this interchange, thereby restricting opportunities to utilize this location to access Airport lands.

At this time, it is suggested that a secure/controlled access to Jefferson Boulevard be provided from the Airport lands, as outlined above.

Local Roads

Wheelton Road, Foster Avenue, Pillette Road, and Airport Road serve as available local roadway connections directly to the Airport lands. These roads are under the jurisdiction of the City and provide opportunities for access.

Connection to these roads will require further traffic impact studies to confirm the suitability for access and any associated roadway improvements required to accommodate the development needs.

Highway 401

As previously noted, Highway 401 is a controlled access provincial highway under the jurisdiction of the MTO. Access to Highway 401 from the Airport is currently via Walker Road to Division Road/County Road 42. In recent years, the MTO has widened and improved Highway 401 from Tilbury to Windsor.

Within the next three to five years, the Windsor-Essex Parkway and the proposed additional international crossing is expected to be implemented as a significant improvement to the Windsor-Detroit border crossing route, a major trade corridor between Canada and the U.S.

2.4.3 Rail

The Windsor Airport property directly abuts the existing Canadian Pacific (CP) Railway's Windsor Subdivision at the northeast corner of the property (see Figure 2.3). The CP Rail Windsor Subdivision has direct access to CP's international rail tunnel for rail cargo traffic. In recent years, road-rail grade separations have been completed along this rail corridor at Walker Road, Howard Avenue (currently underway) and at Tecumseh Road West.

CP is currently in the process of completing a federal Environmental Assessment study to implement the new Continental Rail Gateway, a rail tunnel under the Detroit River. The tunnel which currently handles double-stacked rail cars would be enlarged, further enhancing the significance of this rail corridor.

The Windsor Airport property also directly abuts the existing Canadian National (CN) Railway's Pelton Spur line along the west property line of the Airport lands. The Pelton Spur provides a rail link between CP and CN rail lines, including the Essex Terminal Railway further to the north.

2.4.4 Water

The Port of Windsor provides for a connection to sea and Great Lakes faring ships (see Figure 2.3). The Port is the third largest port on the Great Lakes in terms of volume. It contains inter-modal facilities and marine fuel facilities including the recently announced Sterling Fuels facility. Access between the Airport and

the Port of Windsor is currently possible by road via the E.C. Row Expressway and Huron Church Road.

The upcoming implementation of the Windsor-Essex Parkway will further facilitate this access.

Access between the Airport and the Port of Windsor could also be accomplished via rail corridors, utilizing the Essex Terminal Railway and connections to CN and CP rail lines. Improvements to rail facilities in proximity to the Airport, including an extension of rail lines into the Airport lands is required to accommodate this mode of transport.

2.4.5 Multi-modal Opportunities

Windsor's strategic gateway location raises opportunities for cross-border, multi-modal business between Detroit/Windsor, the Windsor International Airport and the Sandwich South Planning District. The City of Windsor is a focal point for traffic flows into Canada from the Detroit/Chicago corridor. Windsor is part of the Continental Gateway Initiative, which focuses on developing a sustainable, secure and efficient multi-modal transportation system, including roads, rail, ports, airports, inter-modal facilities and border crossings.

The Sandwich South planning area is strategically located for the potential development of a multi-modal hub linking the Windsor Airport; Highway 401, CP Rail and Canadian National Railway, the Ambassador Bridge, Detroit-Windsor Tunnel, the Detroit-Windsor Truck Ferry, the Windsor Port, the Lauzon Parkway extension and the 3rd International Crossing and Windsor-Essex Parkway. The employment lands in Sandwich South with the Airport lands at its centre have the potential to become Ontario's primary western business gateway and a major multi-modal hub and logistics cluster for products entering Canada from the United States.

The Community Based Strategic Rail Study, April 2008 (updated August 2008) confirmed the ability to physically accommodate a rail facility on Airport lands. The Master Plan should protect the flexibility to accommodate a future rail-truck multi-modal facility in the northeast corner of the Airport lands.

2.5 Municipal Planning Context

2.5.1 Sandwich South Planning District

The Windsor International Airport is located within the Sandwich South Planning District. The Planning District covers 2,530 hectares and is situated at the eastern limits of Windsor. This area was annexed into the City of Windsor in 2003. Official Plan Amendment (OPA #60), adopted by Council in 2007, incorporated these lands into the City of Windsor Official Plan.

The Sandwich South lands are needed by the City of Windsor to accommodate future population and employment growth, as noted in the Land Supply Report prepared by Dillon Consulting Limited.

Currently, the Sandwich South Lands, south and east of the Airport, are primarily used for agricultural purposes. This area represents a large supply of potentially serviced vacant lands in large holdings suitable for new residential and employment land uses, including industrial uses that require larger blocks of lands. Servicing is being extended into the Sandwich South area, as part of the Federal stimulus package (Canada's Economic Action Plan).

OPA #60 designated a variety of uses for the Sandwich South lands, with three main land uses accounting for most of the area: Future Urban Area, Future Employment Area and Airport. Other planned land uses in the area are Business Park, Industrial, Residential, Mixed Use, Open Space and Natural Heritage.

A large area towards the centre of Sandwich South is designated as "Future Urban Area". Areas south of the Airport boundary adjacent to Highway 401 are designated as "Future Employment Area". The "Airport" designation is approximately 431 hectares, and includes active Airport uses. The remainder of the Airport lands are designated Future Employment Area and Natural Heritage. Areas adjacent to the Airport, south of County Road 42 at the northeast corner of the Sandwich South Lands are designated "Business Park". Areas to the extreme east, adjacent to Banwell Road are designated "Mixed Use". A small area on Baseline Road, east of 8th Concession Road is designated "Residential". Figure 2-4 shows the land use designations in OPA #60.

OPA #60 defined "Future Urban Area" and "Future Employment Area" as unserved areas expected to be developed within 20 years. "Future Urban Areas" are generally to be developed for residential uses, but will also include associated community supportive uses, such as parks and open space, institutional, commercial and small-scale employment. "Future Employment Areas" are intended to accommodate future Industrial and Business Park designations.

OPA #60 requires that secondary planning be carried out to delineate in more detail the specific configuration of various land uses, road systems and servicing infrastructure prior to proceeding with development in the Future Urban Area and Future Employment Area.

A subsequent amendment to the Official Plan Amendment (OPA #74) for the lands in the East Pelton Secondary Plan Area was adopted by City Council in 2009. Initiated by private property owners, the amendment provides for the development of the new Southwest Detention Facility by the Ontario Realty Corporation.

The East Pelton area is located in the southwestern portion of the Sandwich South Planning District and covers approximately 206 hectares. The area is bounded generally by 7th Concession Road to the west, 8th Concession Road to the east, Highway 401 to the south and lands south of Baseline Road. The Secondary Plan redesignated the lands located in the southern part of the planning area from "Future Urban Area" to "Mixed Uses", "Major Institutional", "Commercial Centre", "Minor Institutional" and "Private Recreation". The balance of the East Pelton Planning Area remained as "Future Urban Area".

Pressure to redesignate the rest of the "Future Urban Area" and "Future Employment Area" within the Sandwich South area will likely occur in the short to medium-term, particularly since infrastructure services have been extended to the area. According to the Land Needs Study prepared by Dillon Consulting Limited as part of the Official Plan Review, the City of Windsor requires 333 gross hectares of residential land supply to meet projected 20 year housing demands. A significant portion of the Sandwich South lands will need to be redesignated

from Future Urban Area to residential land uses to satisfy the projected housing demand.

With respect to the City's employment lands needs, it is estimated that about 9,445 new jobs will be located on Business Park / industrial employment lands between 2007 and 2026 (EDP Consulting, 2008). Approximately 500 to 625 gross hectares of employment lands are needed to accommodate projected needs by 2026. The Land Supply Study indicated that the City has a shortfall of approximately 375-500 gross hectares of designated employment lands. Sandwich South has about 1,036 gross hectares of Future Employment Lands, which can accommodate the City's employment needs for the next 20 years.

Over 250 hectares of land on the Airport property are designated "Future Employment Area" in Sandwich South. These lands are located east of the operating Airport area and are being planned as a Business Park to accommodate non-Airport related employment uses. These uses will benefit from close proximity and connections to the Airport. These lands require an Official Plan Amendment to redesignate them from "Future Employment Area" to a Business Park type designation to accommodate development. It is recommended that these lands be redesignated for employment uses.


Land is available on the Airport property for a wide range of employment land uses – both Airport related and non-Airport related. Potential synergies could be developed between employment uses on the Airport and local industry (manufacturing, warehousing, etc.). This will further increase and diversify Airport revenues, as well as attract businesses to the Sandwich South Planning District.





**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 2-3 - EXISTING EXTERNAL
TRANSPORTATION

**PLANNED AND RECENTLY IMPLEMENTED
TRANSPORTATION IMPROVEMENTS**

-  WINDSOR BIIG (BORDER INITIATIVES IMPLEMENTATION GROUP)
- LET'S GET WINDSOR-ESSEX MOVING (LGWEM)
- DRIC

-  INFRASTRUCTURE STIMULUS FUND (ISF)
ROADWAY PROJECTS

-  PROPOSED TRANSPORTATION IMPROVEMENTS ARISING FROM:
- E-W RTMP (2005)
- WALT'S (1999)
- SANDWICH SOUTH PLANNING STUDY

Notes:
1. Conceptual Layout
2. All dimensions approximate





**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 2-4 - SANDWICH SOUTH DISTRICT:
OFFICIAL PLAN DESIGNATIONS

- RESIDENTIAL
- MIXED USE
- FUTURE URBAN AREA
- BUSINESS PARK
- INDUSTRIAL
- AIRPORT
- OPEN SPACE
- NATURAL HERITAGE
- FUTURE EMPLOYMENT AREA

YOQG
YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT



Base data provided by City of Windsor Official Plan
Map created by Paddy Kennedy
Map checked by Karl Tanner
File Location: \\30dillon.dillon.ca\toronto_data\PROJECTS\DRIFT\09\092665 Windsor Airport Master Plan

Map Projection: n/a
Project #: 09-2665
Status: n/a
Date: December 2010



2.5.2 City of Windsor

The Airport has an important role in the economic development of the City of Windsor. As such, the City's Official Plan mandates that "Council shall maximize the economic development potential provided by the Windsor International Airport by promoting the development of employment land uses, including multi-modal facilities, in the vicinity of the Airport". In addition, the City shall protect the Airport from incompatible development.

The City of Windsor Official Plan designates the lands around the Airport for various employment type uses. The areas west of the Airport are designated "Industrial, the areas along Walker Road are "Commercial Corridor" and the areas north of the Airport, along the E.C. Row Expressway, are designated "Industrial" and "Business Park".

2.5.3 Essex County

In terms of planned land uses, lands located to the east and south of the Sandwich South Planning District in Essex County are designated as "Agricultural Areas" in the County Official Plan. Lands south of the Highway 401, east of 9th Concession, are designated as "Settlement Areas".

At the local municipal level, the areas to the east and south of the Sandwich South Planning District are designated as "Agricultural Area" in the Town of Tecumseh Official Plan (formerly Township of Sandwich South), and the lands south of Highway 401 and east of 9th Concession are designated as "Business Park".

2.5.4 Windsor-Detroit

A new border crossing and connecting link to Highway 401 (the Windsor-Essex Parkway) are being proposed by the Border Transportation Partnership, which represents the Government of Canada (Transport Canada), the Province of Ontario (Ministry of Transportation), the United States (Federal Highway Administration) and Michigan (Michigan Department of Transportation).

The Windsor-Detroit corridor is highly significant to the economies of Canada and the U.S.

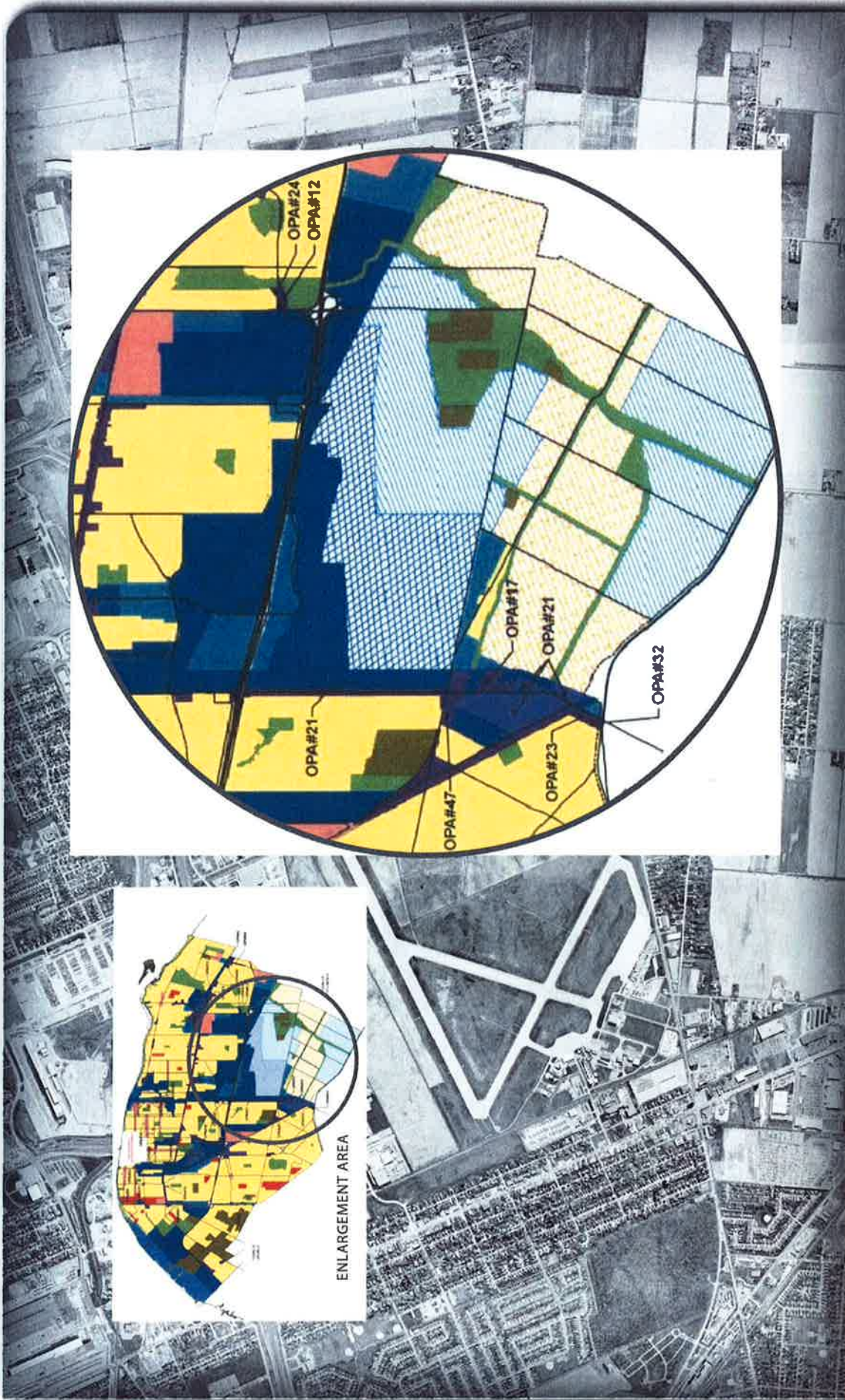
Approximately one third of Canada-U.S. surface trade passes through Windsor-Detroit and over 80% of all goods crossing the Detroit River are carried by truck. The current border crossings (Ambassador Bridge and Detroit-Windsor Tunnel) and associated connections are nearing capacity. Due to the significance of this border crossing to the national, provincial/state and local economies, both countries are taking the necessary steps to provide for the continuous flow of people, goods and services.

The Windsor-Essex Parkway will provide an access road to a new Canadian inspection plaza and river crossing in west Windsor. It will provide a direct route connecting Highway 401 in Windsor to Interstate 75 in Detroit. This project will be one of the most significant highway investments made in Ontario, with an estimated cost of \$1.6 billion. The Parkway will be a below-grade, six lane freeway with eleven tunnels and service roads. It will improve community linkages and provide extensive new trails, green space and other recreational areas.

Implementation of the Parkway, and the new plaza and crossing, will have a positive impact on the local, regional, provincial and national economies by facilitating the efficient and safe movement of goods, people and services between the two countries. This third international crossing will provide both Canada and the U.S. with more reliability in their cross-border transportation system and reduce the likelihood of disruption to transportation service in the corridor. This project will also create a significant amount of employment during the construction period (approximately 12,000 project-related jobs), thus helping to energize economies on both sides of the border.

The proposed Windsor-Essex Parkway and the Detroit River International Crossing are key elements for the improvement of the cross-border transportation system between the cities of Windsor and Detroit. This project will also bring new opportunities for growth to the Airport and Sandwich South Planning District.

Figure 2-5 illustrates land use in the vicinity of the Airport.



**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 2-5 - LAND USE IN AIRPORT VICINITY

YQGG YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT

- RESIDENTIAL
- MAJOR INSTITUTIONAL
- WATERFRONT RECREATION
- FUTURE EMPLOYMENT AREA
- MIXED USE
- OPEN SPACE
- FUTURE URBAN AREA
- WATERFRONT PORT
- NATURAL HERITAGE
- INDUSTRIAL
- BUSINESS PARK
- WATERFRONT RESIDENTIAL
- COMMERCIAL CENTRE
- COMMERCIAL CORRIDOR
- AIRPORT

Map Projection: N/A
Project #: 09-2665
Status: N/A
Date: December 2010



Base data provided by City of Windsor Official Plan
Map created by Alana Evers
Map checked by Karl Tanner

File Location: \\dillon.ca\DILLON_L\DFS\Oxville\VV\PROJECT\DRRAFT\2009\09-2665 Windsor Airport\09-2665 Graphics



2.6 Community Concerns

2.6.1 Airport Physical Development

Extensive stakeholder consultations were held during the preparation of the Windsor International Airport Master Plan. Stakeholder consultations included, but were not limited to, Airport tenants, private businesses and management, and staff at the City of Windsor. Consultations with Airport stakeholders indicated certain concerns with Windsor International Airport. Some individuals expressed concerns about the current age of the air terminal building; however, they also indicated that the current facility supports current passenger volumes. If air passenger traffic were to increase substantially, the air terminal's capability to process passengers may be affected. Further discussion of the Air Terminal Building is included in Chapter 5.

2.6.2 Aviation Related Businesses

Consultations with stakeholders of Airport related businesses revealed several concerns regarding the Airport. A commonly shared concern, with implications for all Airport related development, is limited traffic volume to and from the Windsor International Airport. The low traffic flow may impact future business for current and prospective tenants. Other issues expressed by stakeholders include:

- an increased need for more hangars, infrastructure and services;
- passenger congestion in the Air Terminal Building during peak hours;
- the need for additional maintenance facilities and equipment; and
- increased aircraft noise if the Airport is expanded.

2.6.3 Non-Aviation Related Businesses

Non-aviation development issues expressed by stakeholders included concerns regarding permit approvals from the City of Windsor, as well as the perceived high taxes currently being paid for operating on Airport property. Another issue associated with building and operating on Airport property, is the perceived unequal determination of market value for each structure. Stakeholders suggest that a fair market value is necessary to help foster new building land leases and construction activity. It is noted that MPAC is responsible for the market value assessments.

3.1 Role and Designation

3.1.1 Role

The Airport Role Statement is the fundamental starting point in classifying current activity and determining a future position in terms of long-term site activities and development.

The Windsor International Airport is certified in accordance with the requirements of Transport Canada Document TP312E – Aerodrome Standards and Recommended Practices. The Airport Certificate acknowledges that the Airport meets all regulatory and operational requirements of the Canadian Aviation Regulations (CARs), and enables the Airport to accept scheduled air services.

The Airport serves the needs of scheduled and charter air operators, general aviation users, and low volume cargo operations. In order to maximize the economic capabilities of the Airport, the role of the Windsor International Airport should be to provide:

- a point of service for local, regional and international air services;
- infrastructure to support air cargo and multi-modal freight operations;
- infrastructure to support an inter-modal cargo transfer facility;
- a business hub and tourist gateway to the Windsor-Essex region;
- a base for corporate and private aircraft owners and operators;
- infrastructure to support national and international aerospace manufacturing, aircraft overhaul and maintenance;
- a base for general aviation activities and support;
- a base for flying training activities; and

- utilization of Airport owned lands that are surplus to the long-term needs of the Airport to provide for an emerging Business Park, green economy and transportation related uses in the Sandwich South planning district.

3.1.2 Designation

The Windsor International Airport is owned by the City of Windsor and operated by Your Quick Gateway (Windsor) Inc., a wholly owned Federal share corporation of the City of Windsor under a long-term management agreement. It is not classified under Transport Canada's National Airports System.

3.2 History

The Airport has an extensive history dating back to 1920 when the Border Cities Aero Club was formed by local aviation enthusiasts. Inspired by Charles Lindbergh, local flyers attempted an aerial journey from the current Airport site, at that time a grass field, to Windsor, England. Although this flight was affected by inclement weather, the idea of establishing an Airport persisted within three local organizations: the Border Cities Aero Club, the Aviation Committee of the Chamber of Commerce and the Aerial League. The Airport was officially opened as Walker Field on September 8, 1928, with a large air show, including an international air race to Los Angeles.

In 1929, the site was declared a customs point of entry to Canada and the 113 hectare site was named Walker Airport. The Airport lands were donated by the Walker Family through a 5 year, no fee lease agreement. In 1931, the Airport was used by Canadian Airways on daily airmail routes which continued until 1932.

In 1934, the Aero Club advised the Department of Transportation's Civil Aviation Branch that they would

have to vacate the Airport lands as Walker Farms wanted the lands back due to financial difficulties during the depression. At this time, a large portion of the Airport lands were given back to the Walker family. The remaining portion of the site was licensed as an Airport on June 12, 1936.

The federal Department of Transport (DOT) and the local Chamber of Commerce continued discussions on Airport development in 1937 and the DOT agreed to build an Airport on a site to be provided by the City of Windsor. Following the rejection of a location on Huron Church Line, the Walker site was selected.

The DOT agreed to operate the Airport until December 31, 1941, at which point the City would take over.

In 1939, Walker Field was re-licensed in the name of the Border Cities Aero Club and the DOT submitted two proposals for Airport development. It asked for an early decision so Trans-Canada Airways (TCA) services could be extended to Windsor.

In 1940, the Department of National Defence located a flying school at the Walker site under the British Commonwealth Air Training Plan (BCATP) for World War II. Following this decision, 3 runways were constructed measuring 1,143m (3,750'), 1,037m (3,400'), and 915m (3,000') in length. All three runways were 60m (200') in width. An administration building and control tower were also constructed. Trans Canada Airways officially began operations on August 1, 1940, and the Airport was officially opened by Minister C.D. Howe in October of 1940.

Following World War II, the Royal Canadian Air Force buildings were transferred to the DOT after flying training ceased under the BCATP. In 1948, two runways were extended to 1,600m (5,250') and 1,585m (5,200') to permit operation of TCA's North Star (DC-4) Vickers aircraft. Runway 07-25 was further extended to 2,104m (6,900') in 1954 to accommodate TCA's Viscount Aircraft fleet.

In 1950, the City of Windsor informed the DOT that it did not intend to exercise the option to take over the Airport and ownership was transferred to the DOT. A new air terminal building was completed in 1958, similar to designs at the Saskatoon and Quebec City

Airports. Many war surplus buildings were removed during this period of time.

In the early 1960's, TCA began utilizing larger Vickers Vanguard aircraft to serve the Windsor Airport and Canadian Pacific Airlines even offered DC-8 services to Mexico City. This air service continued until 1970.

Runway 07-25 was extended to 2,409m (7,900') in 1969 to accommodate Air Canada's DC-9 aircraft and the air terminal building was expanded in 1976-77 to meet growing passenger demand.

During the recession from 1983 to 1985, the Airport went through extensive improvements as a result of the Federal Government's Special Recovery Capital Projects Program. Several infrastructure improvements were made including a fire hall addition, resurfacing for Runways 07-25, Foxtrot, and all taxiways, aprons, and car parks. Water and electrical distribution upgrades were also conducted during this time, along with the replacement of high intensity approach and runway edge lighting systems.

The Windsor International Airport was served by several air carriers between 1985 and 1992, including Air Canada, South West Air, Skycraft Aviation, Air Ontario, Ontario Express, Sims Air and Windsor Helicopters.

In 1998, the ownership of the Airport was transferred from Transport Canada to the City of Windsor.

At the time of transfer, the Windsor Airport property included a significant area of land not currently needed for Airport operations. The proceeds from the sale of lands revert to the Airport.

On January 1, 1999, Airport operations were contracted by the City of Windsor to Serco Aviation Services Ltd. Serco operated the Airport until 2007 when its contract was terminated and the City re-acquired control of the Airport and formed YQG to operate the Airport. The City is the sole shareholder of the corporation.

3.3 Current Infrastructure

Windsor International Airport includes two runways, seven taxiways, and two public aprons. The core development area is located in the southwest quadrant of the Airport property. The Airport is illustrated in Figure 3-1.

Airport information has been derived from various aeronautical references, including the Airport Operations Manual (AOM), Canada Flight Supplement (CFS), and the Canada Air Pilot (CAP). Table 3-1 shows key data specific to the Windsor International Airport. This data is generally used for aviation operations and Airport planning purposes.

Table 3-1 – Aerodrome Data

Reference Point (coordinates)	N 42° 16' 32" W 82° 57' 20"
Reference Point Elevation	189.6m ASL
Aerodrome Elevation	189.6m ASL
Aerodrome Magnetic Variation	7°W

3.3.1 Runways

The layout of an Airport's runways impacts the growth and development potential of the Airport, both with respect to their capability and dimensions and protective zoning areas (also known as obstacle limitation surfaces) required around the runway system, as described in the following sections.

Runway 07-25

Windsor's primary runway 07-25 is 2,743m x 61m (9,000 ft x 200 ft). The runway has a paved asphalt surface and is considered a Code 4E (P) Precision facility by Transport Canada. The runway includes a graded area width of approximately 180m (600 ft) which provides a flat, obstacle free area in the event of an aeroplane running off the runway. The runway strip associated with Runway 07-25 is 300m (984 ft) in width, (150m on either side of the runway centreline) and extends 60m beyond the runway thresholds. Fixed objects are not permitted within the

runway strip, except frangible visual aids required for air navigation purposes.

Runway 25 has a displaced threshold of 348m (1,143 ft) while Runway 07 has a displaced threshold of 275m (902 ft). Declared distances used for aircraft runway performance calculations are shown in Table 3-2.

Table 3-2 – Runway 07-25 Declared Distances

Declared Distances	07	25
Take-Off Run Available (TORA)	9,000 ft	9,000 ft
Take-Off Distance Available (TODA)	9,984 ft	9,330 ft
Accelerate Stop Distance Available (ASDA)	9,000 ft	9,000 ft
Landing Distance Available (LDA)	8,098 ft	7,857 ft

Runway 12-30

Windsor's secondary runway - Runway 12-30 measures 1,570m (5,150 ft) in length with a declared width of 46m (150 ft). This runway also has a paved asphalt surface and is considered a Code 3D (NP) Non-Precision facility by Transport Canada. Declared distances for Runway 12-30 are shown in Table 3-3.

Table 3-3 – Runway 12-30 Declared Distances

Declared Distances	RWY 12	RWY 30
Take-Off Run Available (TORA)	5,150 ft	5,150 ft
Take-Off Distance Available (TODA)	5,445 ft	5,445 ft
Accelerate Stop Distance Available (ASDA)	5,150 ft	5,150 ft
Landing Distance Available (LDA)	4,580 ft	4,829 ft

Obstacle Limitation Surfaces (OLS) are established for Runways 07-25 and 12-30, as shown in Table 3-4. These limit development and land use in the vicinity of the runway, and outside the Airport property boundary.

Table 3-4 – OLS Runway 07-25 and 12-30

Description	07-25	12-30
<i>Approach Surface</i>		
Length of Inner Edge	300m	150m
Distance from Threshold	07 – 0m 25 – 60m	60m
Divergence	15%	15%
Length	15,000m	3,000m
Slope	2% (1:50)	2.5% (1:40)
<i>Transitional Surface Slope: 14.3% (1:7)</i>		
<i>Outer Surface</i>		
Elevation	189.6m	189.6m
Dimensions	2,743m	1,570m

3.3.2 Taxiways

Several taxiways connect the Airport's core development area to both runways. Taxiway 'A' connects Apron I to Runway 12-30 and is classified as a Code E facility. Taxiway 'A' is 30m wide.

Taxiway 'D' connects Apron III to the threshold of Runway 30, measures 23m in width, and is also classified as a Code E facility.

Taxiway 'E' is an uncontrolled taxiway originating at Taxiway 'G' and connects to several commercial development areas. Taxiway 'E' measures 10.5m in width and is classified as a Code B pavement surface.

Taxiway 'F' connects the mid points of Runways 07-25 and Runway 12-30 from Taxiway 'G' and the public apron areas. This taxiway is classified as a Code E facility with a pavement width of 23m.

Taxiway 'G' runs parallel to Runway 12-30 and connects Aprons I and II. The portion of Taxiway 'G' to the east of Taxiway 'F' measures 23m in width, while west of Taxiway 'F', the pavement surface

measures 30m in width. Taxiway 'G' is classified as a Code E facility.

Taxiway 'H' was constructed in 2010 as a 23m wide asphalt paved facility that is located parallel to runway 07-25. Taxiway 'H' is a Code E facility from the threshold of Runway 25 to taxiway 'F'.

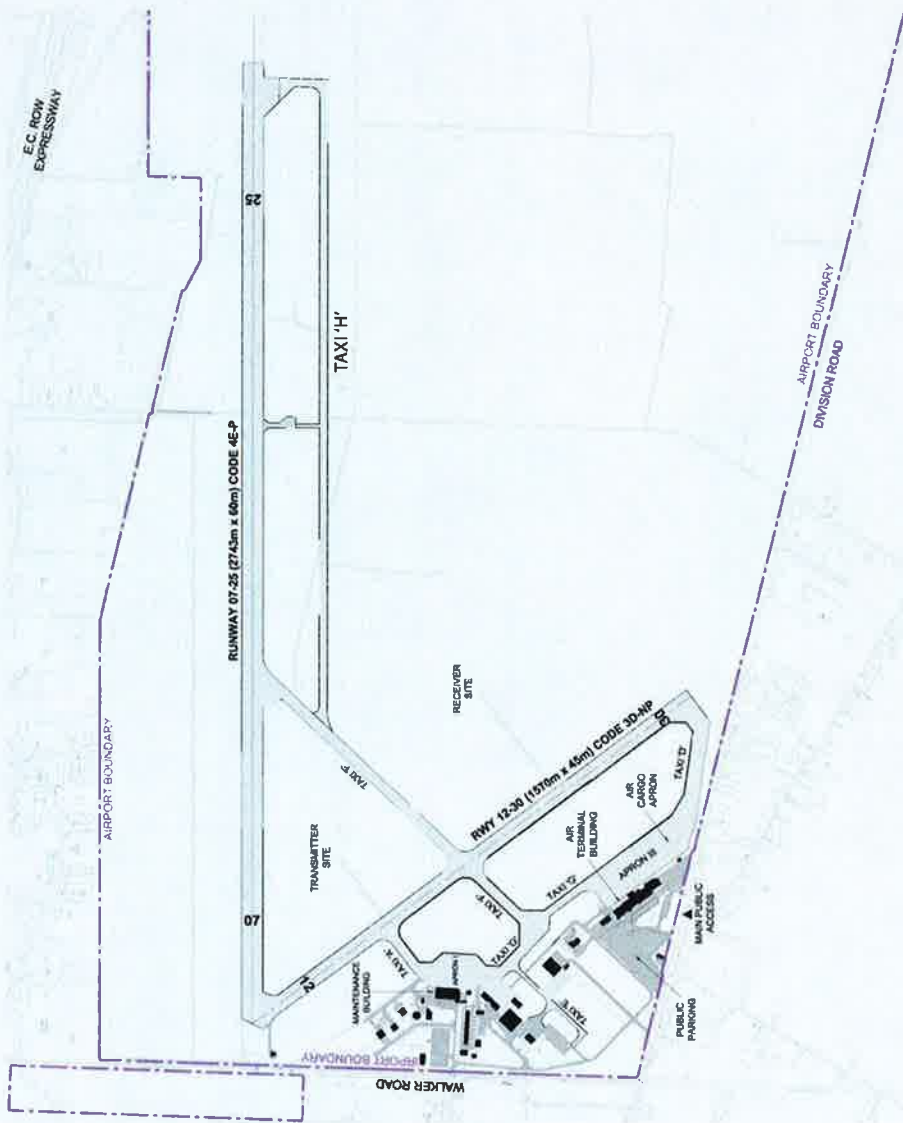
Taxiway 'I' was also constructed in 2010 as a 10.5m wide asphalt paved facility, located at the midpoint between the threshold of runway 25 and taxiway 'F', intersecting with taxiway 'H'. Taxiway 'I' is a Code B facility. Taxiway 'I' replaces the Holdbay near the midpoint of Runway 07-25.

3.3.3 Aprons

The Airport currently operates two public aprons. Apron I has an area of 20,805m² and is primarily used for itinerant aircraft operations, including low volume cargo services. Apron I is comprised of a paved asphalt surface with a Pavement Load Rating (PLR) of 10. Based on the size and strength of Apron I, a representative aircraft can be accommodated on Apron I, which can include, but is not limited to Boeing 737-800, Airbus 320-200, and business aircrafts, such as the Bombardier Global Express, Gulfstream V, and various other commuter and general aviation types.

Apron III is considered the Airport's primary passenger apron. This apron is situated adjacent to the Air Terminal Building (ATB) and Nav Canada's Air Traffic Control (ATC) tower. Unlike Apron I, Apron III is rigid concrete with a PLR of 10. Pavement markings for an aircraft stand taxi lane, a vehicle corridor, and several aircraft stands are provided. Apron III has sufficient capacity for several aircraft, depending on size and placement.

Several small aprons are situated within the Airport's core development area. These aprons are classified as private and used by Airport tenants for business and recreational flying purposes.



Map Projection: N/A
 Project #: 09-2665
 Status: N/A
 Date: December 2010



Base data provided by City of Windsor Official Plan
 Map created by Alana Evers
 Map checked by Karl Tanner

File Location: \dillon.ca\DILLON_DFS\Oakville\VA\PROJECTS\ORAF\2009\09-2665 Windsor Airport\09-2665 Graphics



**WINDSOR AIRPORT
 MASTER PLAN**

FIGURE 3-1 - SITE PLAN

YQGG YOUR QUICK GATEWAY
 WINDSOR INTERNATIONAL AIRPORT

3.3.4 Air Navigation Facilities

Air navigation facilities generally provide increased Airport reliability and availability, especially during periods of darkness, low visibility, and low cloud ceiling heights. Protective areas of varying degrees are required around each air navigation facility, depending on the equipment. Future developments must consider these protective requirements. The air navigation systems currently in operation at the Windsor International Airport are described in this section.

Non-Directional Beacon

A non-directional beacon (NDB) located approximately 3.8 Nautical Miles (NM) prior to the threshold supports a non-precision instrument approach to Runway 25. This navigational aid can be used by aircraft operators in isolation, or in combination with an Instrument Landing system when a precision approach is preferred.

The non-precision NDB approach offers a minimum descent altitude of 392 feet Above Ground Level (AGL), and visibility limits of greater than one statute mile.

RNAV/GPS

Non-precision instrument approach capability is also provided for Runway 07 using an RNAV Approach. An RNAV approach (which uses GPS satellites to aid navigation) allows an approaching aircraft to descend to a minimum descent altitude of 399 feet AGL, and has a standard visibility requirement of 1 ¼ statute miles.

VOR/DME

Runway 30 is provided with a published non-precision approach. Non-precision approaches can be executed on Runway 30 by utilizing the YQG VHF Omnidirectional Range (VOR), and its co-located Distance Measuring Equipment (DME). This installation is located approximately 3.6 NM prior to the threshold of Runway 30. The VOR/DME non-precision approach provides a minimum descent altitude of 379 feet AGL and visibility requirement of at least 1 ¼ statute miles.

Instrument Landing System

Windsor International Airport is equipped with an Instrument Landing System (ILS) supporting precision approaches to Runway 25. The ILS consists of a localizer antenna providing horizontal guidance to aircraft and a glide path antenna providing vertical guidance. The precision approach supporting Runway 25 provides a minimum descent altitude of 200 feet AGL, and can be utilized when the local visibility is greater than ½ statute miles, or the Runway Visual Range (RVR) is greater than 2,600 feet.

Visual Aids

Windsor International Airport is equipped with the following visual navigation aids assisting Airport availability during periods of darkness or low visibility:

- Aerodrome Beacon;
- Aircraft Radio Control Aerodrome Lighting – Type K (ARCAL);
- Lighted Wind Direction Indicators (5);
- High-Intensity Simplified Short Approach Lighting (SSLAR) (Rwy 25);
- Low-Intensity Centre Row Approach Lighting (Runways 07 and 12);
- Precision Approach Path Indicators (PAPIs) – P2 Type (All Runways);
- High-Intensity Runway Edge Lighting (Rwy 07-25);
- Medium-Intensity Runway Edge Lighting (Rwy 12-30);
- Runway Identification Lights (Rwy 07); and
- Guard Lighting for Low Visibility.

3.3.5 Aviation Service Facilities

Air Traffic Control

The Windsor International Airport is equipped with an Air Traffic Control (ATC) tower operated by Nav Canada. The ATC tower issues instructions and clearances to aircraft operating on the Airport, and within the designated Class D control zone extending 6NM from the Airport in all directions.

Air Traffic Control services are provided to operating aircraft within the normal operating hours of 0630 – 2230 local time via both 'Ground' and 'Tower' radio frequencies.

Flight Services

The Windsor International Airport is not equipped with a Flight Service Station (FSS), as the Airport is provided with ATC services. Pre-flight and in-flight information services, such as pilot weather briefings, meteorological and aeronautical information, aeronautical broadcasts, flight planning and visual flight rules (VFR) alerting, and other pre and en-route associated services are provided by Windsor ATC.

Pilots operating at or near the Windsor International Airport can also request flight planning information via a Remote Communications Outlet (RCO) connected to London Flight Services. Both Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) flight planning services are provided by the FSS. The London Flight Services station can also be contacted by landline at 1-866-992-7433.

Aviation Weather

An Automatic Weather Observation System (AWOS) has been installed at the Airport. However, as of January 2010, the system had not yet been commissioned.

An operational weather observation site is located south of the Air Terminal Building and provides local weather information to Environment Canada and Nav Canada. This site measures standard meteorological data, such as temperature, wind direction, barometric pressure, ceiling height, precipitation and other data.

Flight crews can obtain weather information through contacting the FSS in London. Local ATC staff provide meteorological aviation reports (METARs) as well as Terminal Area Forecasts (TAF).

Aviation Communications

Aviation communications are available using several aviation radio frequencies. An Automatic Terminal Information Service (ATIS) is provided at the Windsor International Airport.

The ATIS is a continuous broadcast, updated on a regular basis (usually hourly during normal hours of operation), conveying information related to active runways, altimeter settings, available approaches, notice to airmen (NOTAM) and other operational information pertinent to aircraft operations. The Windsor International Airport ATIS is available on 134.5 MHz.

A 'Ground' frequency is also operational at the Windsor International Airport. Pilots are required to communicate with ATC via this frequency when receiving IFR clearances, and taxiing to and from the active runways. The 'Ground' frequency is available on 121.7 MHz.

A 'Tower' frequency is provided and designated for pilots operating on active runways, and within the Class D airspace surrounding the Windsor International Airport. This frequency is available on 124.7 MHz and designated as an uncontrolled Mandatory Frequency (MF) outside Nav Canada's normal operating hours.

Detroit TRACON

The Detroit terminal radar control unit controls air traffic over Windsor International Airport between the altitudes of 3,000 ft. and 8,000 ft. This is coordinated with the Windsor ATC Tower.

Aviation Support Facilities

Several aviation support facilities are available at the Airport. These support facilities include:

- Hangar space provided by Mara-Tech Aviation;
- De-icing services by Airway Aviation and Mara-Tech Aviation;
- Minor aircraft repair works provided by WCS Aviation (adjacent to the Windsor Flying Club lease area);
- Airside maintenance services: rubber, snow and ice removal;

- Aircraft rescue and fire fighting services;
- Aircraft tie-down and plug-in services provided by Airway, Maratech and Windsor Flying Club (generally for members only);
- Short-term public aircraft parking available on Apron II, Apron III and on Apron I, beside Great Lakes Flight Centre; and
- Branded AVGAS (100LL) and Jet A aviation fuel through Esso (provided through Great Lakes Flight Centre).

3.3.6 Passenger Facilities

The Air Terminal Building (ATB) is a two-storey structure that houses air carriers, the travelling public (as well as “meeters and greeters”), concessions, and Airport-based employees. The second floor of the ATB is primarily used as an administrative space for Airport staff, and also leased to third parties. Nav Canada operates a control tower located above the second floor of the ATB. The total area of the ground floor of the ATB is approximately 4,478m².

The City of Windsor recently invested \$1.2 million in infrastructure improvements to the terminal. The objective of the project was to improve circulation, provide additional aircraft gates, and expand the capacity of the passenger departure lounge. The interior of the ATB was renovated to reflect a modern, up-to-date interior design. The grounds were landscaped in the spring of 2008 to create a strong first impression and recognize the Airport’s commitment to protecting the environment.

Space is limited in the international arrivals and baggage hall, which affects international processing standards. The current ATB has the capacity to process one international passenger flight (B737-800) at a time within the arrivals hall. This lack of space creates congestion for international flights. The check-in area and concourse are also comparatively undersized, and cannot accommodate multiple departing flights, causing passengers to queue in the concessions and vending area.

3.3.7 Cargo Facilities

Currently, the Windsor International Airport does not provide dedicated cargo services but do facilitate expedited cargo. Any cargo arriving or departing the Airport is handled either on the ramp or through a private/charter flight company on an ad-hoc basis. The Airport has a temporary hangar with a loading dock to accommodate low volumes of cargo.

3.4 Land Use

The Airport occupies approximately 813 hectares of land and is zoned ‘Airport’ in the City’s Zoning By-law.

3.4.1 Site Opportunities and Constraints

The Airport is both enhanced and constrained by human-made structures and natural features on-site and in the surrounding area.

- The CN Railway is located directly to the west of the threshold of Runway 07 and is considered a constraint to future development at the site, specifically the expansion of Runway 07-25 to the west. Although the Airport owns the parcel of land directly to the west of the railway, the use of this land for aviation related activities is unlikely.
- County Road 42 lies directly south of the Airport and is considered as a major transportation artery connecting the City of Windsor to parts of the County of Essex.
- An environmental protection area lies within the Airport boundary in the southeast quadrant. This area contains provincially significant wetlands and woodlots and is designated “Provincially Significant Wetland” in the City’s Official Plan.
- Lauzon Parkway lies to the east of the Airport and is a major north-south transportation artery. The future development of the Parkway, including new interchanges at Highway 401 and Highway 3, will improve access to the provincial transportation network and enhance opportunities for development on the operating Airport site, as well as the adjacent Business Park on surplus lands.

- The CP Railway also borders the Airport property to the northeast. Although Runway 07-25 can be extended in this direction, the registered zoning must be adhered to and the existing displaced threshold of Runway 25 maintained.
- The adjacent CP line also provides an opportunity for a potential multi-modal rail/truck facility on the Airport lands.
- An electrical substation operated by Hydro One is located east-northeast of the threshold of Runway 25. This facility also constrains the future expansion of Runway 07-25 to the east.
- The adjacent substation will provide sustained electrical power to potential industrial users in the Business Park.
- Existing hydro transmission towers and building structures located to the east of the Airport would encroach within the obstacle limitation surfaces should runway 07-25 be extended in the future.
- Commercial and industrial land uses are adjacent to the Airport on the north boundary. They will not be affected by increased aircraft flight activity on the Airport site. The location of new ground side facilities on the north side of the Airport in close proximity to the north boundary must address land use compatibility issues such as noise and lighting.
- The north property boundary limits opportunities to complete a proposed ring road system on the Airport lands.
- Enhanced air and ground services at the Airport will provide new opportunities for other businesses that benefit from locating in close proximity to the Airport.

3.4.2 Current Airport Land Use Plan

An Airside Land Reserve Plan was prepared by LPS Aviation Inc. in June, 2003 for Serco. The plan's key objective was to provide a rational and comprehensive framework for the use and development of Airport lands, permitting the balanced fulfilment of present, as well as short and long-term

needs. The plan also identified surplus land within the Airport property.

The Land Reserve Plan has been utilized by Airport management since 2003. Several recommendations were made for future land use and Airport expansion in the Airside Land Reserve Plan. These recommendations have been considered in developing the Master Plan, as well as a number of new issues and requirements.

3.4.3 On-Airport Land Use Regulations

Land use on the Airport property must respect the requirements of Transport Canada's TP312E. These aerodrome standards and recommended practices place various restrictions necessary within the Airport land area and include specific criteria for building structures on the property.

3.4.4 Vicinity Land Use

All lands in the vicinity of the Airport are subject to Windsor Airport Zoning Regulations pursuant to Section 5.4 of the Aeronautics Act of Canada. Zoning regulations in this section include:

- Preventing lands adjacent to or in the vicinity of an Airport or aerodrome site from being used or developed in a manner that is incompatible with the safe operation of an aerodrome or aircraft; and
- Preventing land uses that would cause interference with signals or communications to and from aircraft from locating adjacent to or in the vicinity of equipment or facilities used to provide services relating to aeronautics.

In the general vicinity, land use is governed by Transport Canada TP1247E Land Use in the Vicinity of Airports, and recent modifications by Nav Canada.

3.5 Airport Standards and Zoning

3.5.1 Airport Physical Standards

Canadian Airports that are 'Certified' are required to comply with national standards for Airport activities and construction.

All current operations and future expansion planning activities must observe Transport Canada's Aerodrome Standards and Recommended Practices (TP312). Compliance with these standards is compulsory to maintain the Airport's Operating Certificate.

Protective regulations are established around certain Airport facilities, components and stations to protect the safety and security of aircraft operations.

3.5.2 Physical Zoning

Physical zoning refers to the protection of the land and airspace of the obstacle limitation surface around an Airport.

An obstacle limitation surface is an area that defines the maximum permitted height of a structure in the airspace of an aerodrome so that aircraft operations can be conducted safely. Obstacle limitation surfaces include the take-off/landing zone, approach, transitional and outer surfaces. Zoning criteria are described in Transport Canada's Aerodrome Standards and Recommended Practices (TP312) and are based on runway reference codes.

Each runway has its own type of physical zoning, depending on the reference code assigned. Runway 07-25 is Code 4E-P and Runway 12-30, is Code 3D-(NP) standards.

Figure 3-2 illustrates both the Code 4E-P and Code 3D-(NP) physical zoning requirements established for both runways at the Airport.

3.5.3 Electronic Zoning

Future Airport developments and operations must also be compatible with a diverse range of electronic

transmissions taking place on or near the Airport, all of which are essential to the safety of aircraft and Airport operations. Electronic zoning is designed to protect the reliability of the electronic systems of the aerodrome.

Electronic zoning criteria are identified in Transport Canada's document entitled TP1247 – Land Use in the Vicinity of Aerodromes.

The Airport is equipped with several navigation aids: an Instrument Landing System (ILS) which includes a localizer and glide path indicator, two receiver/transmitters, as well as directions finding equipment such as a VHF Omni-directional Range / Distance Measuring Equipment (VOR/DME) and a Non-Directional Beacon (NDB). All of these systems have been identified in Section 3.3.4 of the Master Plan.

Future Airport developments must follow the electronic zoning restrictions for navigational aids first established by Transport Canada and now maintained by Nav Canada.

Figure 3-3 shows the current electronic zoning requirements stipulated by TP1247 necessary for protecting the integrity of the Airport's electronic systems from interference or disruption.

3.5.4 Vicinity Land Use Zoning

Physical zoning is not complete without protecting off-Airport land requirements. Complete zoning plans usually include zoning regulations for obstacle limitation surfaces (OLS) including an outer surface consisting of a circular plane with a 4,000m radius from the Airport Reference Point (ARP).

The Airport's airside system and surrounding airspace is normally protected by Federal Aeronautical Zoning Regulations. The Zoning Regulations prohibit the erection of any structure that may compromise unobstructed safe aircraft operations.

The maximum height of any structure is governed by its proximity to runways, taxiways and any electronic or navigational aid equipment.

Most Airports certified with Canada's National Airport System (NAS) have registered Federal zoning to protect land uses surrounding the Airport.

Although the Windsor International Airport was not designated as a NAS Airport by Transport Canada, registered zoning is currently in place and is entitled:

*Windsor Airport Zoning Regulations
Regulations Respecting Zoning at Windsor Airport,
Current to August 27, 2009*

Off-Airport land affected by these regulations is annotated on the Land Title to alert owners of the restrictions. All Airport development falling within the affected zones is subject to these restrictions and guidelines.

According to Airport management, the current Zoning Regulations require revision, primarily because the former Runway 02-20 is still included within the regulations, although the runway has been decommissioned and currently designated as Taxiway 'F'. It is recommended that the Registered Zoning at the Airport be revised to remove the former Runway 02-20 from the regulations and reconfirm protection for ultimate runway lengths in the future.

A review of the Regulations suggests that the zoning associated with Runway 12-30 has been configured based on a Precision Instrument runway, although Runway 12-30 is being operated as a Non-Precision Instrument facility.

Discussions with Airport management raised questions about changing the Registered Zoning of this runway to reflect the current non-precision designation. Analysis suggests that the Airport should retain the current Precision Instrument zoning associated with the runway as it provides more conservative protection for current runway operations.

Maintaining the current Precision Instrument zoning designation will also allow the Airport to designate the runway as a Precision Instrument facility in the future, without modifying the regulations once more sophisticated satellite based precision approach systems come into use.

Land uses surrounding the Airport property are also subject to policies and provisions of the City of Windsor and the Town of Tecumseh Official Plans and Zoning By-laws, as outlined in Section 2.5.

3.5.5 Noise Projections

One of the most significant environmental impacts of Airport activity can be noise generated by aircraft landing or taking off. To estimate potential noise impacts on areas in the vicinity of Airports, Noise Exposure Forecast contours (NEF) are prepared based on the types of aircraft operating at the Airport and flight frequencies. NEF contours are presented to measure the likely level of community response to aircraft noise.

Table 3-5 describes the NEF contour intervals and corresponding community response predictions, as per Transport Canada's document TP1247 – Land Use in the Vicinity of Airports.

A noise exposure forecast was prepared in November 2009 and provided to Airport management for review as part of the Master Plan.

NEF contours are presented in Figure 3-4. These contours were based on a high air traffic growth scenario, from which a representative peak day traffic distribution was calculated. The peak traffic was assumed to be primarily assigned to Runway 07-25, due to prevailing wind direction and availability of an Instrument Landing System (ILS).

Table 3-5 – Community Noise Response Predictions

Response Area	Response Prediction
Over 40 NEF	Repeated and vigorous individual complaints are likely. Concerted group and legal action might be expected.
35-40 NEF	Individual complaints may be vigorous. Possible group action and appeals to authorities.
30-35 NEF	Sporadic to repeated individual complaints. Group action is possible.
Below 30 NEF	Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident.

The NEF contours appear to be conservative since:

- The model represents the high growth scenario;
- Some of the aircraft used in the model may now be considered outdated, and
- New aircraft technologies are quieter.

Increased activity levels at the Windsor International Airport could impact the size and shape of the NEF contours, depending on the frequency and types of expected aircraft use. Given that the Airport is interested in developing an inter-modal transfer hub on Airport lands, air cargo activities may increase in the medium to long-term.

In general it is expected that the increased air cargo activities could impact noise exposure to the community. However, based on the cargo volumes presented in previous feasibility studies, such as those prepared by Lufthansa Consulting, increased air cargo activities are only expected to generate approximately three additional air cargo flights per day in the maximum growth scenario and will not affect the noise exposure forecast.

3.6 Meteorological Assessment

A detailed aviation meteorological study was prepared to support the Master Plan. The study was used to determine if the Master Plan should include any actions to improve the availability and/or usability of the Airport. Many climatological and geographic factors are typically considered in an Airport meteorological assessment.

The Airport is located to the south-southeast of the City Centre, with the primary Runway (07-25) oriented in a northeast/southwest direction. A secondary Runway (12-30) is also available and oriented in an east-southeast/west-northwest direction.

Factors that affect the ability of a runway to meet its design needs are:

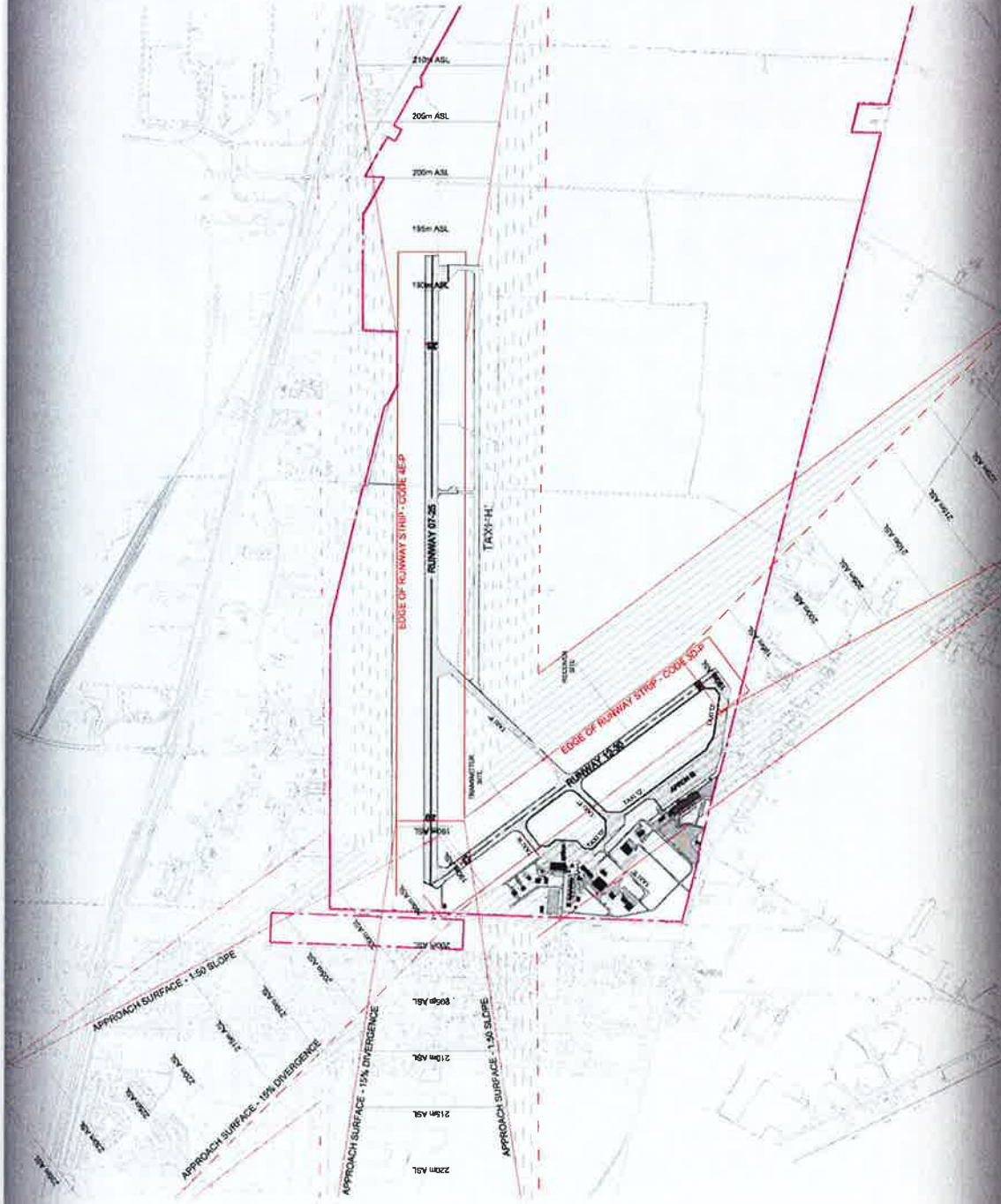
- ambient temperature (the higher the temperature the more runway length is required for the same aircraft);

- wind speed and direction (a cross-wind can affect the ability of an aircraft to land);
- precipitation characteristics (snow and rainfall accumulations); and
- cloud ceiling and horizontal visibility.

Custom-developed software was used to download, process and analyse very large Environment Canada database information.

Temperature

Based on more than 30 years of weather data accumulated at Windsor, the daily average temperature ranges from a low of -4.5°C in January to a high of $+22.7^{\circ}\text{C}$ in July. With this modest range (compared to other Airports in Canada) there is little variable effect on aircraft performance. In terms of average daily maximum temperature, the maximum is in July at $+27.9^{\circ}\text{C}$ and daily minimum values have been recorded in January at -8.1°C . There are only 8.1 days per year on average with a maximum high of above 30°C where aircraft performance could be particularly poor. The current runway alignments and supporting navigation systems are adequate for the types of aircraft proposed for the long-term and there is no need for runway modifications due to temperature.



**WINDSOR AIRPORT
MASTER PLAN**

**FIGURE 3-2 - AIRPORT PHYSICAL
ZONING**

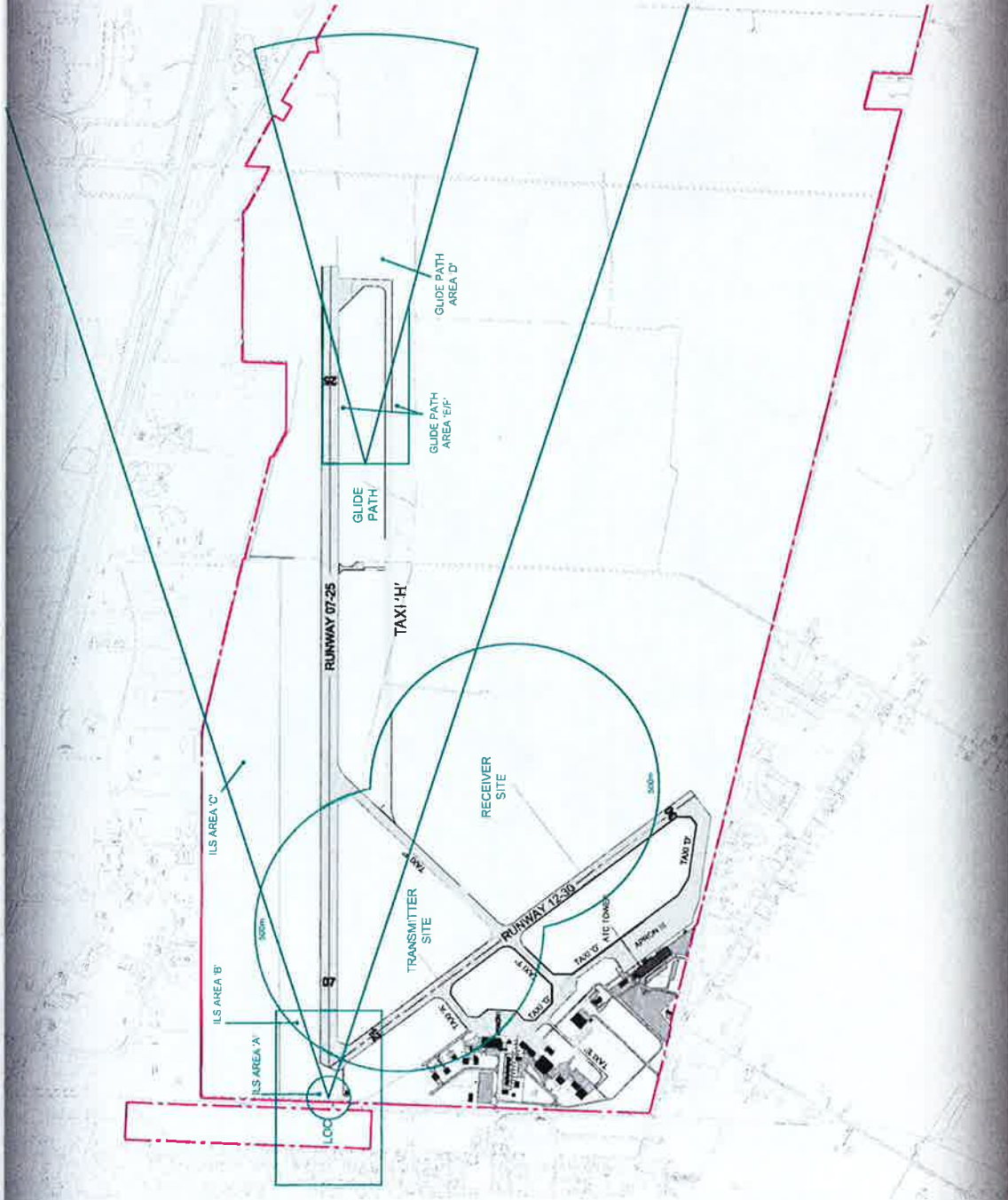


Base data provided by City of Windsor Official Plan
Map created by AIM
Map checked by EGL
File Location: \\z0dillon.dillon.ca\toronto data\PROJECTS\TRAFF\09\092665 Windsor Airport Master Plan

Map Projection: n/a
Project #: 09-2665
Status: n/a
Date: December 2010



- Notes
1. Conceptual Layout
 2. All dimensions approximate



**WINDSOR AIRPORT
MASTER PLAN**

**FIGURE 3-3 - AIRPORT
ELECTRICAL ZONING**

ILS LOCALIZER
 Area A: No objects > 1.2m
 Area B: No metallic objects > 1.2m
 Area C: No metal walled structure > 0.8 degrees subtended
 No structural steel work > 1.6 degrees subtended
 No non-metal object > 2.4 degrees subtended
 No service roads < 180m

ILS GLIDEPATH
 Area D: No metallic fences, power lines, telephone lines, buildings, roads, railroads
 Approach lighting horizontal bars to be avoided within 600m
 Area E: Same restrictions as Area D
 Area F: Same restrictions as Area D

RX/TX Site
 <500m: No electrical noise generators
 <1.6km: Recommended no electrical noise generators
 <8km: No high power broadcasting

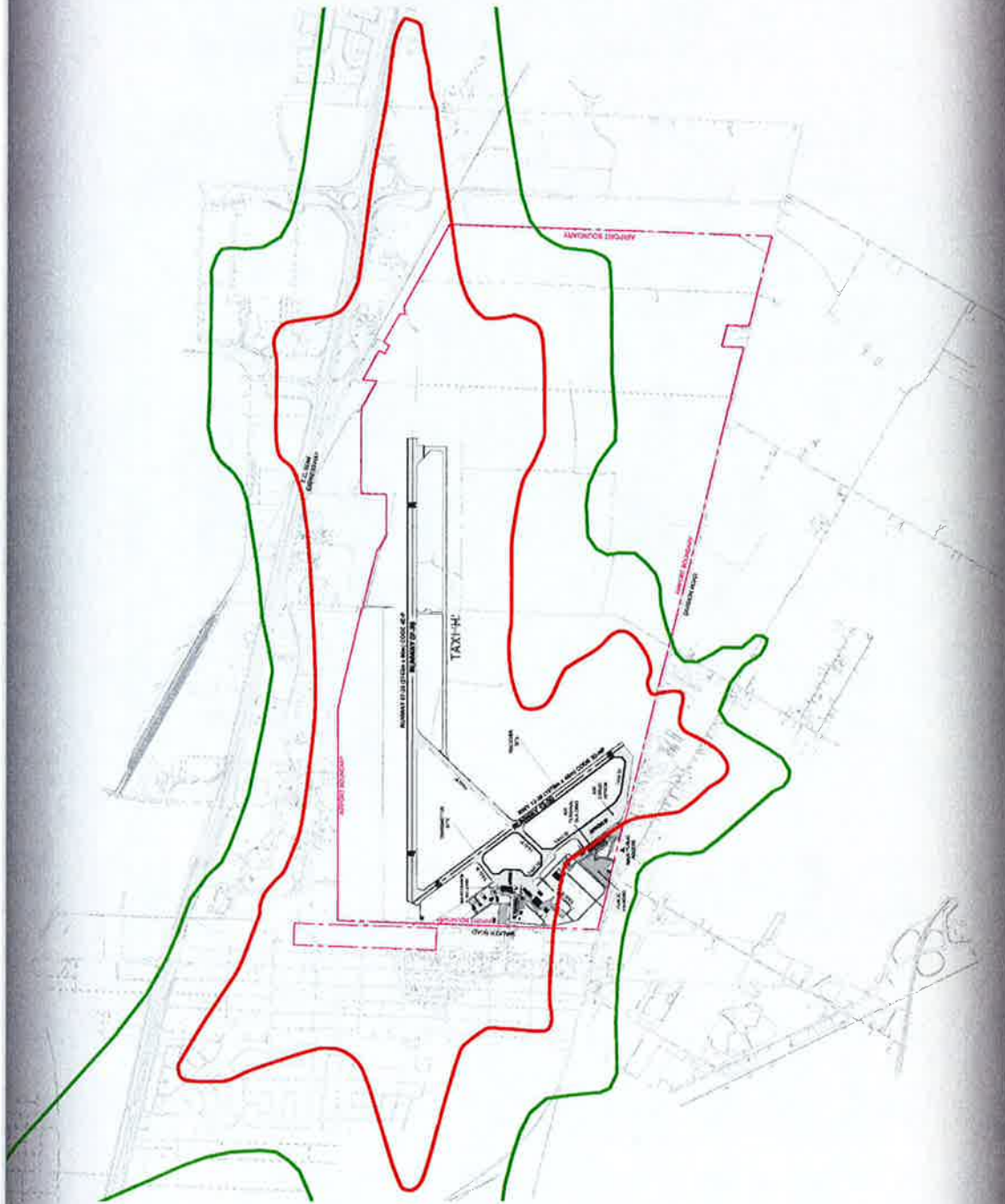


Notes
 1. Conceptual Layout
 2. All dimensions approximate

Base data provided by City of Windsor Official Plan
 Map created by AIM
 Map checked by EDL
 File Location: \\20billon.dillon.ca\toronto_data\PROJECTS\DRRAFT\091092665 Windsor Airport Master Plan

Map Projection: n/a
 Project #: 09-2665
 Status: n/a
 Date: December 2010





**WINDSOR AIRPORT
MASTER PLAN**

**FIGURE 3-4 - AIRPORT NOISE
EXPOSURE FORECAST CONTOURS**



— 30 NEF (NOISE EXPOSURE FORECAST)
— 25 NEF

- Notes
1. Conceptual Layout
 2. All dimensions approximate
 3. Noise Exposure Forecast provided by Windsor Airport Management

Base data provided by City of Windsor Official Plan
Map created by EDH
Map checked by EGL
File Location: \\30dillon.dillon.ca\toronto data\PROJECTS\DRIFT\091092665 Windsor Airport Master Plan



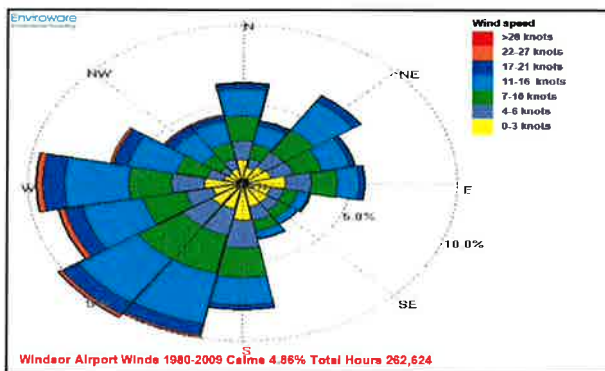
Map Projection: n/a TAXI 'H'
Project #: 09-2665
Status: No
Date: December 2010

Wind

Wind data was collected for Windsor for the period 1980-2009, and analyzed for seasonal and annual frequencies of wind directions and speeds. Specialized software was used to categorize and display wind frequencies in the form of a wind rose as shown in Figure 3-5. The wind rose displays the frequency of wind direction and uses concentric circles of wind speeds to illustrate frequency of wind speed categories for any direction.

Figure 3.5 shows the annual wind rose. The four seasonal wind roses are shown on Figure 3-6 depicting the variation of wind frequencies by season. Wind direction strongly favours the west and southwest for much of the year, with a northeast component also showing a strong tendency in the spring and summer months. These wind direction frequencies strongly correlate to the runway orientation. Therefore, wind conditions will not restrict the type of operations proposed for the Airport.

Figure 3-5 – Annual Wind Rose



Precipitation

Rainfall in the Windsor area is at a minimum in January with 21.7mm per month and at a maximum in June with 89.8mm per month. The maximum period for snowfall is in January at 35 cm. These are not considered as extreme accumulations of precipitation and the current runway structure (pavement, drainage etc.) has been reported by Airport management to be sufficient. Precipitation is not a limiting factor in terms of current or contemplated Airport operations.

Visibility

Data was collected for Windsor Airport for the period 1980-2009 (a standard 30 year climatological period) and analyzed for ceilings and visibility categories. Four categories of ceilings and visibilities were selected:

- Below VFR includes all ceilings or visibilities in each hourly report that were below 1000 feet and/or 3 miles visibility;
- Below 800 feet and/or 2 miles refers to a category of ceilings and visibilities below alternate limits;
- Below 500 feet and/or 1.5 miles as a special category; and
- Below IFR (instrument Flight Rules) includes all ceilings and visibilities below 200 feet and/or ½ mile.

There were 262,909 hours analyzed within the sample. Results of the analysis can be found in Table 3-6.

Figure 3-6 – Wind Rose Analysis by Quarter

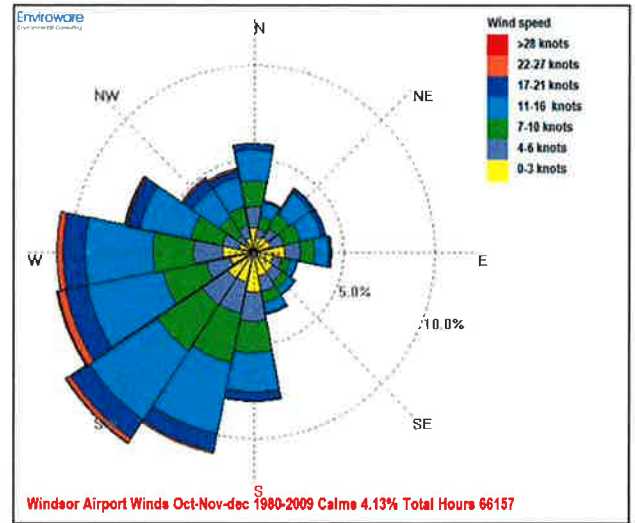
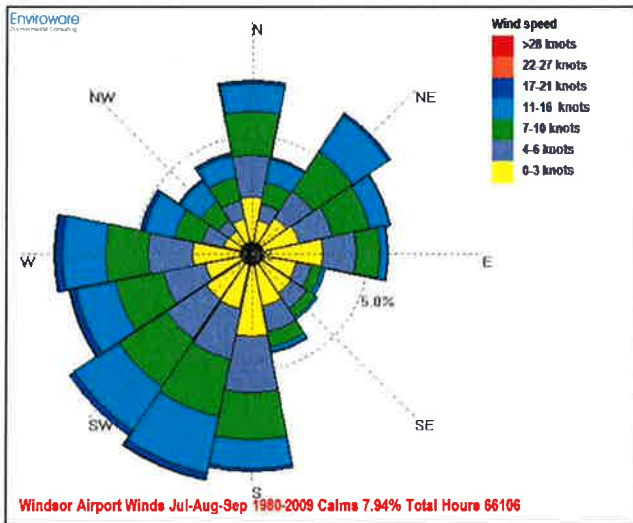
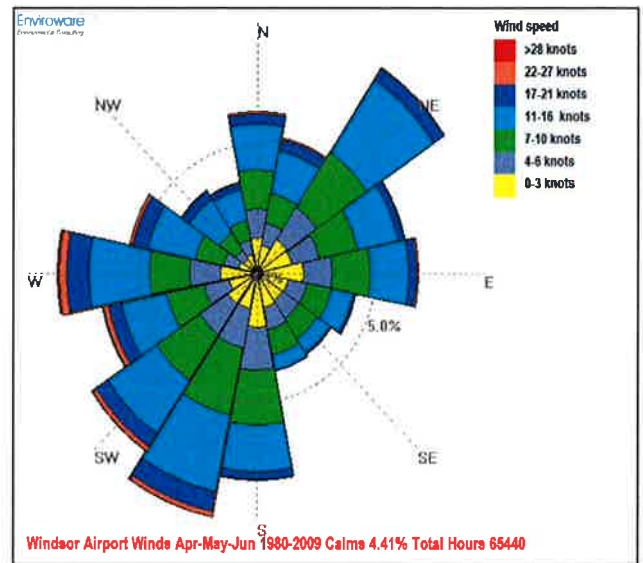
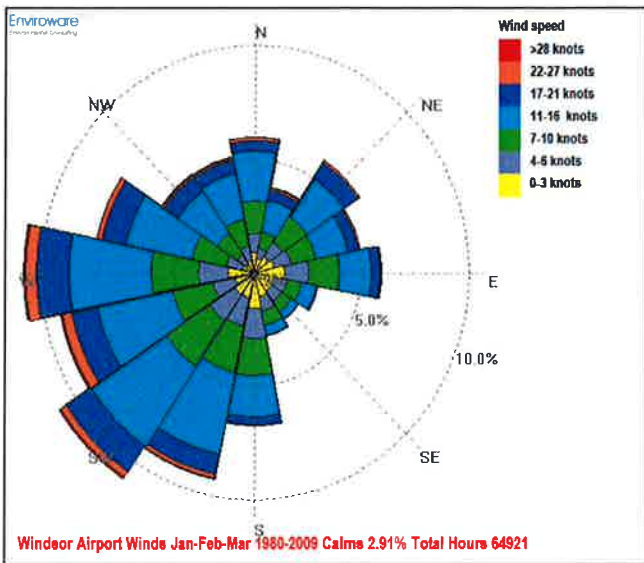


Table 3-6 – Percent Frequencies of Ceiling and Visibility Categories at YQG 1980-2009

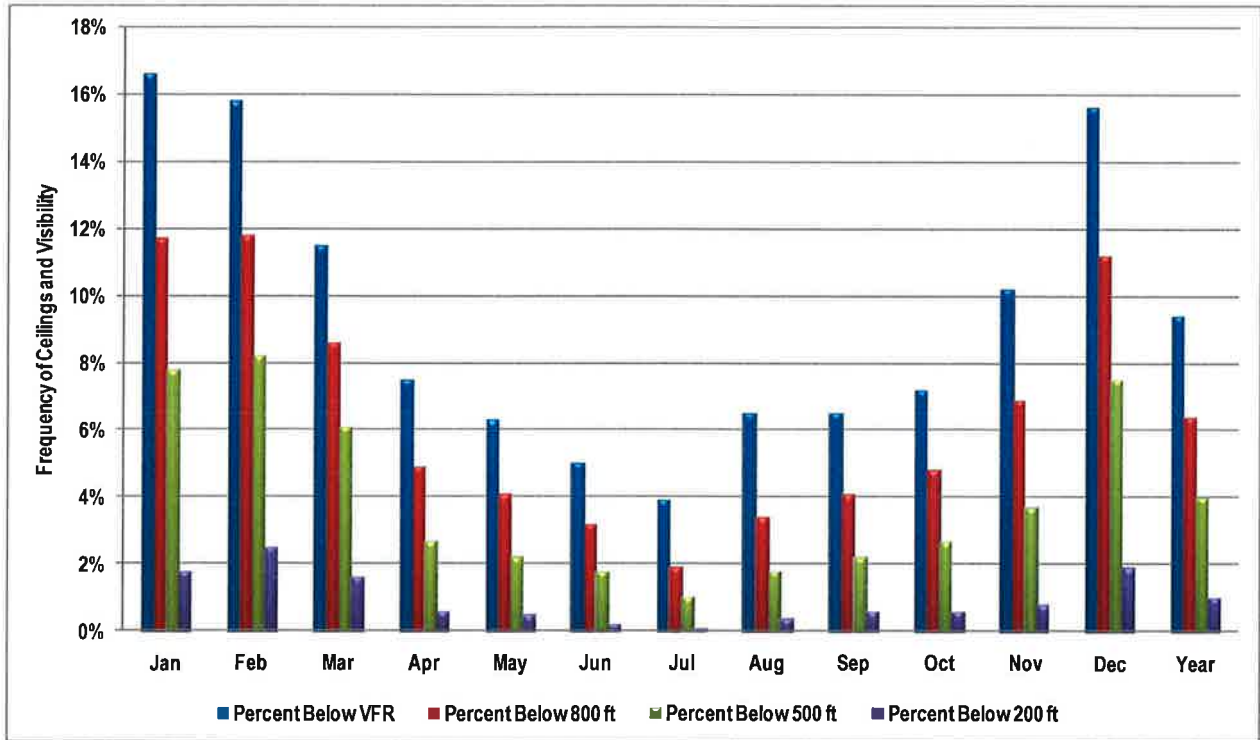
	Hours in Sample	% < VFR	% < 800 Ft &/or 2 Mi.	% < 500 Ft &/or 1.5 Mi.	% < 200 Ft &/or 0.5 Mi.
Jan	22,319	16.6%	11.7%	7.8%	1.8%
Feb	20,352	15.8%	11.8%	8.2%	2.5%
Mar	22,322	11.5%	8.6%	6.1%	1.6%
Apr	21,597	7.5%	4.9%	2.7%	0.6%
May	22,308	6.3%	4.1%	2.2%	0.5%
Jun	21,604	5.0%	3.2%	1.8%	0.2%
Jul	22,287	3.9%	1.9%	1.0%	0.1%
Aug	22,308	6.5%	3.4%	1.8%	0.4%
Sep	21,583	6.5%	4.1%	2.2%	0.6%
Oct	22,306	7.2%	4.8%	2.7%	0.6%
Nov	21,598	10.2%	6.9%	3.7%	0.8%
Dec	22,325	15.6%	11.2%	7.5%	1.9%
Year	262,909	9.4%	6.4%	4.0%	1.0%

The percent frequency of Below VFR ceilings and visibilities ranges from a high of 16.6 percent in January to a low of 3.9 percent in July. The trend is similar for the Below 800 feet and/or 2 mile visibility category. It peaks in January at 11.7 percent and drops to 1.9 percent in July. The highest frequency for ceilings and visibilities in the Below 500 feet and/or 1.5 miles is in February at 8.2 percent. The lowest frequency for this category is in July at 1.0 percent. The lowest category of Below 200 feet and/or ½ mile had the highest frequency in February of 2.5%. The lowest frequency for this category occurred in July at 0.1%.

The frequency of lower ceilings and visibilities at the Windsor Airport are comparable to those experienced at other Southern Ontario Airports.

Figure 3-7 illustrates the four ceiling and visibility categories displayed in a bar chart format.

Figure 3-7 – Frequency of Ceilings and Visibilities



4.1 Introduction

The Master Plan considers facility and infrastructure requirements and development needs within stipulated time frames, or planning horizons. The following planning horizons are considered for the Windsor International Airport:

- Short-Term – 2010-2015
- Medium-Term – 2016-2020
- Long-Term – 2021-2031
- Ultimate – Beyond 2031

The aviation activity forecasts to the Year 2030 for the Windsor International Airport serve as a critical component of the Airport Master Plan. They define the likely composition and scale of passenger, cargo and aircraft movement activity through the planning period. The High and Low forecasts together define the probable range of activity. The forecasts run to 2030 in annual increments. This two-decade interval allows the Airport to consider emerging trends in the community and Canadian economy, and to plan accordingly.

Forecasts help to define the expected timing of facility requirements and required capital expenditures. The schedule of investments will be **event-driven** - as traffic reaches a certain level, the Airport will make the appropriate investments.

YQG is exploring various opportunities to create a multi-modal hub on the Airport owned lands, including an inter-modal cargo transfer facility called a "Cargo Village" and a maintenance/repair/operations facility. It is intended that additional spinoff businesses will likely develop in the adjacent Business Park or on surrounding lands. The Cargo Village project includes a cargo transfer facility, forwarding, customs brokers, distributors, warehouses and trucking, among other activities.

This project has far reaching implications for the City of Windsor by helping to "kick start" a new industrial

opportunity, along with employment opportunities for residents.

The Cargo Village's indirect economic benefits include an increase in passenger traffic activity and additional revenue for the Airport. In addition, cargo activities in the Village will generate municipal tax revenue for the City of Windsor. Since the Cargo Village is important to both the City and the Airport's future, it has been provided for in the Master Plan. The plan can be updated accordingly as the proposal and financing is confirmed.

Other Airport projects could include other aviation related businesses, such as a Maintenance, Repair and Overhaul ("MRO") operation, FBO and increased general aviation (flight school, flying club, etc). Currently the general aviation accounts for the majority of the flight operations.

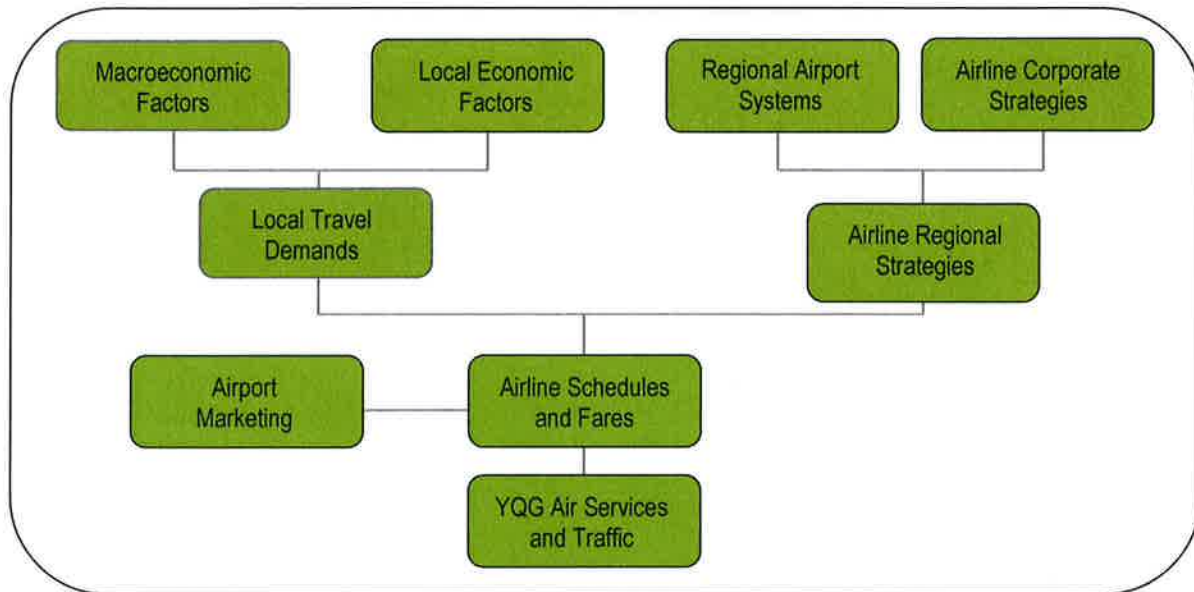
The aviation activity forecasts serve as the foundation for long-term Airport capital and land use planning. They give the Airport the flexibility to adapt to changing conditions and plan accordingly.

4.2 Future Traffic Determinants

The passenger and cargo traffic handled at an Airport depends on many factors, some operating on an industry-wide basis, and others unique to each facility. These elements determine raw traffic volumes, and the mechanisms and degree to which traffic will respond to outside stimuli. Figure 4-1 shows a simplified schematic diagram.

The "Macroeconomic Factors" box refers to all elements of the national and world economies. It incorporates current levels of output, exchange rates, capital stock, prices, unemployment, interest rates and capital markets. The GDP has widely demonstrated its power as a determinant of air traffic.

Figure 4-1 – Determinants of Airport Traffic



The “Local Economic Factors” box refers to economic variables unique to Windsor, including the strength of leading industrial sectors, unemployment rates, demographics, and government projects to stimulate the local economy. These Macroeconomic and Local Economic factors jointly determine local demand for travel. The “demand for travel” is a very broad variable reflecting all demand elements. It is not a simple quantity; rather it is a complicated function whose value depends on the totality of services and costs/fares for all modes at Windsor and Detroit.

The “Regional Airports System” refers to all Airports that serve Windsor demands. It includes the Windsor International Airport and Detroit Metropolitan Wayne County International Airport, and also the Airports of London (London International Airport) and Toronto (Pearson International Airport). Certain other Airports including those located in Flint, Willow Run, Sarnia and Toledo could also affect the Windsor-Detroit complex.

The “Airline Corporate Strategies” box refers to the planning and marketing processes of each airline that

presently does, or eventually might, serve the Windsor-Detroit area².

It reflects the airlines’ networks, cost structures, alliances, fleet plans, pricing approaches, yield management and network design (linear vs. hub and spoke). Each airline has a unique set of criteria it uses to decide to serve a particular destination. These consider traffic volumes, impacts on its flights at nearby Airports, airfares, competition, the need for community financial support, minimum service levels, whether to develop its own operation or hire third party contractors, etc.

In the box “Airline Regional Strategies,” the airline adapts its overall business practices to each locality. Air Canada has decided to serve the Windsor-Detroit

² The Master Plan considers many factors that the Detroit and Windsor communities have in common. They help explain the interactions between certain traffic segments at the Detroit Metro and Windsor International Airports. While Detroit and Windsor enjoy a close economic relationship, the international border, and the differences between a medium-sized Canadian City and a large U.S. Metropolis mean that the two Cities cannot be viewed as a single homogenous region.

area through flights by its commuter affiliate Air Canada Jazz with Toronto as the hub.

Air Canada Jazz's Windsor flights offer a limited capacity at relatively high fares. Lower fares are accessible through higher capacity flights at Toronto or Detroit. WestJet recently resumed direct flights to Windsor from Calgary. U.S. carriers could operate to Windsor but they have chosen to access Windsor through their extensive flights at Detroit Metro. These examples illustrate that the decisions of airlines can have a decisive impact on an Airport's traffic. They are especially important in areas served by several Airports, where airlines decide how the traffic will be distributed.

The "Airports System" and "Airline Strategies" elements determine how each airline will address a particular market – the "Regional Strategies." Most urban communities have only one Airport with scheduled services. The Airport's traffic will depend on the community's population, income, industrial base and other factors. If a community has several scheduled service Airports, the volume of traffic handled by each becomes problematic. Some airlines will concentrate services at one Airport, to avoid the higher costs of a split operation or self-diversion of revenues. Other airlines may elect to serve all facilities to maximize their market penetration. A new entrant might serve a small, underdeveloped Airport to distance itself from entrenched competition, or avoid ground and airspace delays.

These factors make the traffic volumes of any Airport in a multi-airport region such as Windsor-Detroit problematic. Traffic depends primarily on the scheduling and pricing decisions of the airlines. The Windsor International Airport's traffic therefore is indeterminate and it is difficult to quantify latent traffic. The Airport could conceivably attract large volumes of traffic from Michigan and serve a volume of traffic far larger than the Ontario market alone could support. Alternatively, it could lose most of its traffic to other Airports. The forecasting challenge is to define a set of reasonable outcomes that avoids either extreme.

The factors encompassed by "Local Travel Demands" and "Airline Regional Strategies" jointly determine how each airline will serve the market. The schedules and fares are determined simultaneously.

The schedule specifies the capacity and destinations served, and the fares maximize the potential of the given schedule. Each Airport, through its marketing efforts, can influence airline route decisions.

The most important factors driving Windsor International Airport's traffic are its ability to draw, attract traffic away from the Detroit Airport (including YQG Shuttle for business travellers going to downtown Detroit) and the flight and fare strategy of Air Canada/Air Canada Jazz for the Windsor service. The range of possible changes to these variables defines a very wide range of air passenger traffic. Other variables could change, but would generate much smaller changes in traffic.

4.3 Economic Environment

This section of the Master Plan sets the economic environment of the area served by the Airport, focusing on national and local economic conditions, important determinants of the demand for air transportation. However, business opportunities will also be secured through pro-active, targeted marketing by Airport management, supported by investment in infrastructure, buildings, facilities and area roads by the City with the aid of senior levels of government.

Air travel is driven by a need for people to move from location to location for business needs, to visit friends and families, or for tourism. Regardless of its purpose, the amount of travel that people undertake is determined by the economic vitality of the Country, region, and local area, and the economic and demographic characteristics of the people in the Airport catchment area. The economic downturn of 2008/10 has caused a widespread contraction in passenger air traffic and air services.

National Level

Canada's particularly strong dependence on international trade, its large commodities industries and the tightly integrated global capital markets have made the nation vulnerable to external factors. Fortunately, Canadian financial institutions have exercised conservative investment policies and limited exposure to the global financial crisis. The

Bank of Canada has maintained low short-term interest rates and the Federal Government has launched a large fiscal stimulus program. The consensus of Canadian and foreign institutions, calls for modest growth in 2010, with an accelerating recovery in 2011 (Table 4-1).

In addition, Ontario's proposed corporate income tax cuts, elimination of the Capital Tax and the proposed Harmonized Sales Tax will encourage investment.

Unlike our American counterparts, Canada has begun to experience an end to the recession in the second quarter of 2010. Stronger capital investment resulting from reduced marginal tax rates on dividend and capital gains income and modest increases in productivity will partially offset an aging and shrinking labour force. In the next decade, we can expect an average annual growth rate in GDP of 2 percent during 2009-2019 rather than the 3 percent of the last two decades³.

Regional-Local Level

Windsor is the major employment generator in the Windsor-Essex region, home to over 800 companies, with the majority working in automotive parts manufacturing, machine tools, plastics, robotics, food and beverage processing, pharmaceuticals and chemicals.

Windsor is the centre for Canada's automotive industry. However, in the last several years, the three Detroit automotive manufacturers have experienced a loss of market share to foreign-based companies. The close integration between the Canadian and U.S. automotive industries has resulted in layoffs in Ontario. Job losses have occurred in Windsor, St. Thomas and Chatham.

Tourism, once a significant contributor to the local economy, has also been adversely affected. In recent years, lower personal incomes, an appreciating Canadian dollar, increased border security, three Detroit casinos and declining

recreational travel has resulted in job losses for Caesars Windsor.

However, by the spring of 2010, growing evidence suggested that the Windsor economy was emerging from the worst of the contraction, and seeing its first growth in four years. The Conference Board believes that Windsor has good job creation prospects for the summer of 2010. In the first quarter of 2010, non-residential construction increased by approximately 45 percent over the previous year. Only Victoria and St. Catharines-Niagara exceeded this growth⁴. The \$400 million Continental Rail Gateway, announced in June 2010, will link Windsor and Detroit with a railroad tunnel capable of accommodating double-stack container cars, creating 2,200 jobs. The University of Windsor and the City of Windsor are at the centre of plans to develop a renewable energy industry. The Smart Community project links over 200 sites in Essex County with a high-grade optical fibre network. The third crossing and Windsor-Essex Parkway will create manufacturing and construction jobs in the short-term and new trans-border business in the longer-term. The Windsor-Essex Parkway has been launched and is planned to be under construction in 2011 creating 18,000 new jobs.

The demand for air travel largely depends on people and businesses' financial ability to travel. Purchasing power by businesses and individuals, and residual income can affect if passengers can afford to travel; or make passengers increasingly sensitive to fares, thereby causing users to turn to Airports with cheaper flights or to cheaper modes in times of economic instability. However, Windsor is starting to experience growth, which will increase the demand for commercial and passenger air travel.

³ See Toronto Dominion Bank Financial Group, A New Normal: [Canada's Potential Growth During Recovery and Beyond](#), (Toronto, November 10, 2009)

⁴ Source: Statistics Canada

Table 4-1 – Growth Projections for the Canadian Economy

Source	2010	2011	2012	Date
Scotiabank	3.1%	3.1%	2.6%	March 2011
Royal Bank of Canada	3.1%	3.2%	3.1%	March 2011
Bank of Canada	3.5%	2.9%	2.2%	July 2010
Bank of Montreal	3.1%	3.0%	2.7%	March 2011
Toronto Dominion Bank	3.1%	3.0%	2.5%	March 2011
CIBC	3.1%	2.8%	2.8%	February 2011
International Monetary Fund	3.1%	3.2%		April 2010
OECD	3.0%	2.3%	3.0%	November 2010
Conference Board of Canada	3.0%	2.0%	1.96%	March 2011

4.4 Passenger Traffic and Fares

4.4.1 Fares

Residents of the Windsor-Essex region primarily use the Airports of Windsor, Detroit, London and Toronto. However, both London and Detroit offer a wider range of carriers, more non-stop destinations, and more capacity than Windsor International Airport. Table 4-2 is a sample of the lowest return fares for selected destinations from each Airport, using common specifications for day of departure, length of stay and advance booking period. The table illustrates significant fare differences.

Table 4-2 – Lowest Return Fares to Selected Destinations (CDN \$, Taxes Included)

Destination	Originating Airport		
	Windsor	London	Detroit
Calgary	\$1,020	\$368	\$567
Edmonton	\$940	\$340	\$550
Halifax	\$779	\$496	\$721

Destination	Originating Airport		
	Windsor	London	Detroit
London UK	\$1,181	\$853	\$902
Los Angeles	\$908	\$560	\$332
Montreal	\$810	\$780	\$531
New York City	\$773	\$330	\$264
Orlando	\$884	\$421	\$313
Ottawa	\$725	\$678	\$524
St. John's	\$885	\$764	\$863
Tokyo	\$1,272	\$1,126	\$1,004
Toronto	\$534	\$462	\$508
Vancouver	\$1,124	\$483	\$533
Winnipeg	\$859	\$280	\$511

Depart March 5, 2010. Return March 14 2010. Lowest available fare. Search on Orbitz, January 6, 2010

Passenger choice of Airport is highly sensitive to fare differentials. It is especially significant that travel to high volume Canadian destinations has often been considerably cheaper from Detroit than from Windsor. Services to Canada from Detroit are often more direct than from Windsor and competition is stronger. As a Canadian City, with many ties to areas throughout the nation, Windsor likely generates a significant volume of domestic travel. Canadian markets would figure prominently in any attempt to build volume at Windsor.

Air Canada Jazz provides less capacity to Windsor than when it flew 102-seat DC 9-30s and offered non-stop flights to Toronto, Winnipeg, London and occasionally Montreal and Ottawa. A lower capacity is now provided and the airline sets its fares to fill the limited capacity offered. The lower fare market segments are not broadly served.

These dynamics make it difficult to estimate the “true” size of the Windsor-Essex market. Actual Airport traffic volumes severely underestimate the market size. A traffic market study is required to determine the true size of the Windsor-Essex market. There are no satisfactory statistics available to estimate this market in the absence of a study.

4.4.2 Passenger Traffic

The Detroit and London Airports make future projections of Windsor International Airport’s traffic problematic. Current traffic volumes, recent inter-Airport fare differentials, and anecdotal evidence from interviews suggests high rates of “leakage.”

Conversely, the Airport has, in the past, captured traffic originating in Michigan that might otherwise use the Detroit Airport.

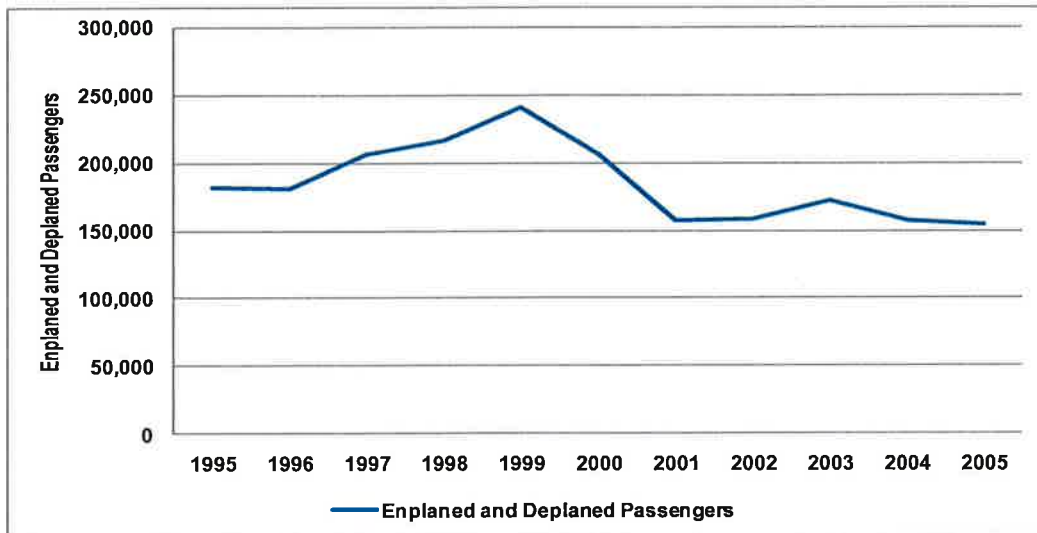
The complex multi-airport competition and inter-airport fare differentials mean that the Windsor International Airport serves only a portion of its region’s “true” traffic.

This is very common for small and medium-sized Airports, but the relationships governing Windsor are particularly sensitive to competitive conditions. The Statistics Canada Report 51-203, “Air Carrier Traffic at Canadian Airports” gives annual enplaned-deplaned traffic for the largest Airports. However, data is unavailable for 2006, 2007, 2008 and 2009. The Windsor International Airport reports 2007, 2008, 2009 and 2010 annual passenger traffic as 121,269, 116,397, 110,400, and 142,756 passengers respectively. In 1999, Statistics Canada discontinued its domestic origin-destination survey.

A cross-sectional econometric model suggests that the Windsor-Essex Region generates 611,103 inbound and outbound passengers annually (Appendix A). They use several Airports, including Windsor and Detroit. This demand is much greater than the number of passengers actually using the Airport, as shown in Figure 4-2, and displayed in Appendix B, Table B-1. With a 2007 traffic capture of 118,251 passengers, the Windsor International Airport is “spilling” 492,852 passengers per year. It is noted that the model does not consider any US catchment by Windsor International Airport. A true market study is required to validate these statistics.

The airlines serving Windsor responded to the new bilateral agreement of the late 1990’s with fares designed to minimize the loss of domestic passengers through Detroit. The market stimulation more than offset the loss of some traffic to Detroit. However, the subsequent declining traffic and large fare differentials suggests that Air Canada Jazz no longer wishes to compete with the Detroit airlines even for Canadian domestic passengers.

Figure 4-2 – Windsor International Airport Enplaned and Deplaned Passengers



Source: Statistics Canada Report 51-203X, “Air Carrier Traffic at Canadian Airports”, (Ottawa 1996-2009)

During 2006-2009, only one scheduled airline, Air Canada Jazz, continuously served Windsor. Statistics Canada follows strict rules about protecting proprietary data, and cannot report Windsor’s traffic for this period. Traffic reported by Windsor International Airport in this period includes both scheduled and charter traffic volumes. The table shows very unstable traffic through recent history. This is characteristic of Airports operating in multi-Airport regions, where individual airlines can impact wide fluctuations in traffic.

Earlier growth in the 1995-1999 period resulted from competition between Air Canada and Canadian Airlines International. The subsequent merger caused traffic to fall. Between April 1, 2003 and October 30, 2005, WestJet operated a non-stop Windsor-Winnipeg flight. When it discontinued the service, it redeployed the aircraft to London. Despite WestJet’s presence, the Airport’s 2005 volumes were 15 percent below those of 1995.

The traffic volumes in the period 2006-2008 reflected the subsequent loss of WestJet, the reduced capacity, resultant higher average fares, the recession, and Windsor’s weak economy.

Since 2008, Windsor has capitalized on opportunities in both the charter and commercial passenger market. YQG has become a departure point for the package vacation market to the Caribbean. For example, Sunwing offers a weekly charter service for vacation package travellers to Cuba during the winter season. In 2010, WestJet resumed its service to Windsor with a daily non-stop flight between Windsor and Calgary. It is expected that the traffic volumes for 2009-2010 will reflect this increase in flights out of Windsor International Airport. This increase in activity is a result of the change in management to YQG and their enhanced marketing efforts. A true market study is required to validate these statistics.

4.4.3 Inter-modal Competition

VIA Rail operates intercity passenger trains through the Windsor/Sarnia/Quebec City rail corridor.

The Government of Canada has assisted VIA Rail in upgrading its passenger services. In 2009, VIA Rail announced a \$17 million upgrade for the Chatham Subdivision. VIA Rail plans to construct a new station for Windsor for \$6 million. It will be located close to the existing station, and open in the fall of 2011.

VIA Rail offers four trains daily from Windsor to Toronto. As it upgrades its track, it may increase its services or operate its trains at faster speeds. The passenger trains could have positive or negative impacts on the Airport. A commercial airline might offer flights with sufficiently low fares to attract rail passengers. The forecasts recognize the possibility of new services by Porter Airlines to Toronto. These flights would appeal to many rail passengers because of the proximity of the Billy Bishop Toronto City Airport to Toronto Union Station. Passengers traveling onwards could also benefit. Alternatively, the trains might attract passengers who would otherwise fly. The traffic forecasts make no explicit allowance for VIA's market shares. However, the more aggressive forecasts would result in the shift of some rail traffic to the air mode.

4.4.4 Implications for Forecasting

The competitive dynamic in the region poses the following issues for developing forecasts:

- The volume of Windsor's scheduled traffic for 2006-2009 was not available when this analysis was prepared.
- Windsor International Airport's traffic has been falling since 1999. The volume for 2005 was 35.9 percent less than that of 1999. A continued decrease is untenable.
- The Airport's reported traffic has been very volatile, with significant swings in total traffic. Between 1986 and 1993, domestic origin-destination traffic fell by 49.2 percent. This could be partly due to non-reporting airlines.
- Windsor traffic is very sensitive to competition, particularly through its impact on fares and leakage.
- The current fares charged by Air Canada Jazz reflect a desire to serve only the highest fare paying segments at Windsor. The small traffic volumes fill Air Canada Jazz modest capacity. The segments paying lower fares are forfeited, mostly to U.S. carriers at Detroit.
- There is a link between competing carrier scheduling and pricing decisions. Air Canada's new London-Western Canada services closely followed the new WestJet flights to western Canada from the region.
- These competitive, price and leakage effects overwhelm the influences of national GDP and the Windsor-Essex economy.
- Information on Windsor's historical fares might enable development of a traffic determination model. Information on Detroit's domestic fares by carrier and destination is readily available. The model will require estimates of future fares.
- Forecasts for Windsor, therefore depend on assessing the competitive strategies and pricing practices of individual airlines.
- It is a challenge to predict the actions of airlines with any degree of accuracy. Statistical processes apply best to a large population, with each member acting independently. The number of airlines directly influencing traffic at Windsor is small, and their decisions are strongly interdependent. The units of response – new flights, are large in comparison to the total activity. An added problem is the scarcity of origin-destination and fare data. Consequently, it is a challenge to generate statistically rigorous forecasts for Windsor. Even with extensive traffic leakage data, comprehensive schedules, and an explicit modeling of Windsor/London/Detroit Airport choice, it is difficult to predict airline behaviour.
- A modeling process which bases forecasts on certain high probability events is therefore deemed appropriate for the Windsor International Airport.
- A traffic market study on the true size of the Windsor-Essex market is strongly recommended to validate the results of the model.

4.5 Approach and Assumptions

The future volume of passenger traffic at the Windsor International Airport will depend primarily on the interaction of carriers at the London, Windsor and Detroit Airports. The resulting fare differentials, which reflect carrier capacities, will determine if the region's passengers are served through the Windsor, Detroit or London Airports.

The complexity of the multi-airport traffic allocation process, limited data, and the decisions of airline managers preclude a rigorous and well structured forecasting methodology. The forecasts therefore include a base level of traffic reflecting current activity. It experiences steady organic growth. A series of incremental scenarios capture the impacts of several hypothetical but plausible air service changes and correspond to discrete changes in Windsor's air services. The baseline traffic, when combined with some or all of the scenarios, will span the likely range of passenger traffic at the Windsor International Airport.

4.5.1 Baseline Case

The Baseline Case assumes that Air Canada Jazz will continue to operate its Windsor-Toronto service. Beginning in 2014, Air Canada will introduce larger Q400 turboprops, with 70 seats, and adjusts its pricing to reflect the larger aircraft. This will encourage passengers to fly to Toronto, other Canadian destinations, the United States and overseas. The Q400 aircraft would operate at a 70 percent load factor.

The Baseline Case also includes the Caribbean and Mexican charters presently operating, which include WestJet and Sunwing flights. Total traffic will experience an annual growth of 3.2 percent⁵. Several incremental cases could generate additional traffic.

⁵ Source: Boeing Current Market Outlook, 2009-2028 (Chicago, 2009). Boeing predicts that the North America market will expand by 3.2 percent yearly through to 2028.

4.5.2 Porter Airlines

In 2011, Porter Airlines would provide two daily services to the Billy Bishop Toronto City Airport. This would increase short-haul capacity at the Airport for both Air Canada Jazz and Porter Airlines, increasing the number of flights to high volume destinations in Canada.

4.5.3 WestJet

On May 31, 2010, WestJet restored services to Windsor. The daily flight to Calgary will operate until October 30, 2010. The forecasts include the new service, and assume that a seasonal operation would continue in 2011. In 2012, it would upgrade its services to a single daily year-round. It would add one additional flight every three years, until reaching a maximum of four flights in 2021. WestJet's flights would operate primarily to western Canada. The service would restore competition to western Canada and recapture Canadian passengers who travel to western Canada through Detroit.

4.5.4 Augmented Charter Services

Additional charter flights by Sunwing or other potential carriers would also be implemented. In 2011, a charter carrier would add one additional weekly flight over and above the Airport's current services. Every three years, an additional flight would be added, to a maximum of seven flights each week. The charter flights would operate six months of each year and use 150 seat aircraft with a 90 percent load factor. Local charter flights, for example C-208 Caravans to Pelee Island, are expected to continue at current levels, or grow modestly.

4.5.5 New Services by Air Canada

Air Canada and its Jazz affiliate would continue to defend its market strength in eastern Canada. In 2005, it launched non-stop services from Montreal and Ottawa to Hamilton. The airline would also introduce air services at the Billy Bishop Toronto City Airport, to counter the growth of Porter Airlines. It expanded its direct London-Western Canada services in response to inroads by WestJet and would likely respond to any WestJet or Porter expansion at

Windsor. Air Canada would increase capacity in 2012 and increase frequency in 2016 and 2020. The flights would use 70-seat turboprops with a 70 percent load factor. An increase in frequency and expansion in air services by Air Canada would be initiated if new services by WestJet or Porter gain a successful foothold in the Windsor market.

4.5.6 Trans-border Flights

This scenario calls for 2 flights per day service by a 50-seat aircraft to a U.S. hub by 2014. Prospective destinations could include Cleveland (Continental), Philadelphia (US Airways), Newark (Continental), Chicago (United or American) and Minneapolis (Delta). The proposed frequency is characteristic of a new hub centered service by a regional jet to a low volume destination. The 75 percent load factor is equal to the average performance of regional jets operating to and from Detroit in 2008 on domestic routes⁶. An airline starting the service would consider the risks of diverting traffic from its parallel Detroit flights.

4.5.7 Most Likely Case

The scenarios can be combined in several ways to generate many future estimates of traffic. The following "Most Likely" combination offers the most plausible series of market events, and the most useful basis for preparing the Airport Master Plan:

- Baseline, with services by Air Canada Jazz and charter airlines;
- Inauguration of services to Toronto by Porter Airlines;
- Augmented charter services; and
- An introductory trans-border air service.

When Air Canada Jazz regains entry to the Billy Bishop Toronto City Airport, the resulting competition can lead to an increase in flight services.

The other scenarios are considered to be speculative. The capacities of the B737 types operated by

WestJet are somewhat large for the Windsor market and may limit the number of flights. Air Canada is considered likely to launch longer haul services in response to competition to WestJet and Porter. The limited Windsor traffic base, proximity to the Detroit Airport, and the high operating costs of regional jets will limit the likelihood of direct Windsor-United States services.

Appendix A provides the Passenger Demand Forecast Methodology used by LPS AVIA. Appendix B, Table B-2, summarizes the passenger forecasts. Appendix C shows the corresponding landings and takeoffs of commercial passenger flights.

4.6 Air Cargo Potential

Air cargo services provide an efficient and effective mode of travel for the shipment of goods and services, which affects supply chain management and contributes towards a strong contribution of the local economy.

4.6.1 Current Air Cargo Activity

Air cargo activity at the Windsor International Airport has been modest. Current air cargo activity is primarily expedited cargo for automobile companies. Table 4-3 shows cargo activity over the 1997-2008 period. The limited traffic (1,743 kilograms per day in 2008), reflects cargo status as a by-product of passenger services.

⁶ Source: United States Department of Transportation Domestic T-100 Segment Report, 2009

Table 4-3 – E/D Cargo Windsor (Tonnes)

Year	Enplaned and Deplaned Cargo (Tonnes)
1997	51
1998	416
1999	7,037
2000	2,569
2001	405
2002	706
2003	656
2004	420
2005	241
2006	230
2007	1,345
2008	638

Source: Statistics Canada Report 51-203X, "Air Carrier Traffic at Canadian Airports"

Air cargo volumes are very sensitive to equipment used on passenger flights. The airlines will attempt to fill any otherwise empty belly space with cargo. The regional airlines currently serving Windsor use aircraft with little cargo capacity.

Air Canada Jazz serves Windsor with Dash 8s. Depending on passenger loads, checked luggage and other factors, these aircraft can physically accommodate about 225 kilograms of cargo.

However, the timing of flights does not necessarily coincide with the needs of shippers. Sometimes, the airline cannot use the capacity because of the need to cycle aircraft quickly through the Pearson hub. The Dash 8s accept small, bulk-loaded items. Narrow body aircraft such as the 737 can carry about 1,360 kilograms; however, WestJet does not focus on a cargo product. Other B737 operators could carry air freight on southern charter services. However, the high density seating and seasonal, low frequency services limit this role.

Wide body passenger aircraft, such as the Boeing 777, offer considerable capacity and can accept standard air freight unit load devices. All-cargo aircrafts require very high unit revenues to be economical. Except for serving the integrators, they are economical only under very special circumstances.

The integrated carriers serve Windsor-Essex by trucking shipments to and from other airports. As the region's traffic grows, Windsor International Airport might obtain non-stop all-cargo flights to Toronto, Louisville, Memphis and Hamilton. These flights would use terminals specially constructed by the integrators.

4.6.2 Future Air Cargo Activity

The City of Windsor retained Lufthansa Consulting to prepare a Market Potential Analysis for Windsor International Airport and a concept for the cargo development facility.

Based on this report, the City of Windsor is considering the development of an air cargo terminal for road feeder service and freighter on lands adjacent to the active Airport. The first step would be construction of a Phase I air cargo terminal. This would alleviate the Airport's current of lack cargo facilities.

Eventually, the air cargo terminal has the opportunity to expand to a more comprehensive facility developed at the Airport. This could ultimately serve as the core of a "Cargo Village" for multi-modal transfer operations and logistics services. The Most Likely Case⁷ would rely primarily on trucking, and charter services by dedicated all-cargo aircrafts would increase in the long-term. Table 4-4 and Figure 4-5 summarize the cargo forecasts prepared by Lufthansa Consulting.

The Master Plan accommodates the proposed Phase I and subsequent terminals, the Cargo Village, and growth in air cargo volumes. The forecasts include large quantities of traffic traveling by truck.

A key goal of the Master Plan is to accommodate a wide range of future needs, and position the Airport to respond effectively once the Cargo Village plans become more solidified. As the Windsor-Essex economy strengthens, the Airport will be in a good position to also meet the needs of businesses and respond to growing shipping demands. In addition, if

⁷ Source: Market Potential Analysis for Windsor International Airport, Page 95, Section 6.2, (Windsor, September 2009). Prepared by Lufthansa Consulting

the airlines increase air services and serve various geographies, this will provide opportunities to ship to airports in cities that are geographically positioned to meet demand.

The Airport Master Plan does not include the Cargo Village forecasts because the Village would rely primarily on trucks, and the planning is in the early stages.

4.7 General Aviation Trends

4.7.1 General Aviation Forecasts

The term “General Aviation” includes a diverse mix of activities – corporate flights, small aircraft charter flights, pilot training, air ambulances, prospecting, pipeline inspection flights, forest fire fighting, banner towing, aerial sightseeing, non-scheduled services to remote camps, mines, and resorts, natural resources management, crop spraying, heavy lift helicopter services, and civil and military government activity.

A common definition of general aviation is that it encompasses all flight activity except air services by large aircraft operating on a unit-toll⁸. It thus excludes scheduled services⁹. The sector is therefore defined most commonly in terms of what it does **not** include.

4.7.2 Categories and Recent Trends

The Canadian Aviation Statistics divide general aviation into four segments:

Other Commercial

This definition includes any flights hired for commercial purposes. The operator holds a license issued by the Canadian Transportation Agency and receives compensation at an arm’s length from the

entity hiring the flight. This category includes some passenger and cargo charter flights, pipeline inspection, prospecting, crop spraying and many other activities. Statistics Canada defines this category by default as any commercial operation that does not include carriage of passengers or goods on a unit toll basis. Until 1991, this category included many scheduled flights.

Published databases still suffer from the wrongful inclusion of scheduled flights in reported general aviation totals.

This category includes the subsidized winter charter flights to Pelee Island. The Government of Ontario finances these services when ice blocks operation of the Leamington-Pelee Island ferry.

Private

Private flying involves any operation in which the entity that benefits from the flight also owns the aircraft. Recreational flyers who own their own aircraft and corporate aviation departments are the most common generators of “private” operations statistics.

Civil Government

Any flight undertaken by a civilian governmental organization is included in this category. Common applications include transportation of senior government officials and police operations such as enforcing speed limits, inmate transfers and recognisance.

Military

Flight operations by Canadian and foreign national defence forces are covered in this category.

The definitions operate on the basis of who owns the aircraft, rather than the purpose of the flight. A flight conveying senior corporate executives would be classified as “Other Commercial” if the aircraft is chartered, and “private” if owned by the company. Recreational flying is classified as private. Flights serving resource industries (e.g. prospecting or pipeline inspection) could also be classified as “Other Commercial” or “private.” The Statistics Canada document reveals little about the underlying purpose of the flight.

⁸ “Unit Toll” services are available to travelers and shippers at large. They operate according to published rates, and each user of the service pays according to the quantity of the service (e.g. per seat, per tonne-mile, etc.) used.

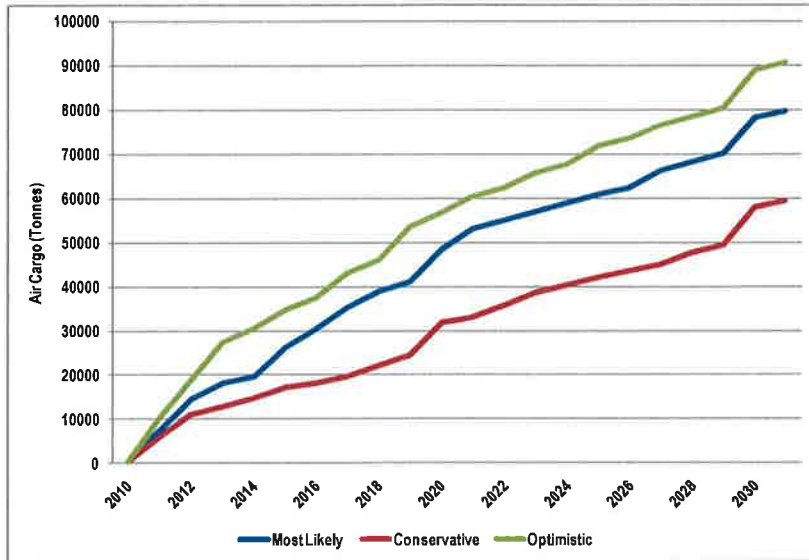
⁹ The Canadian definition of aviation does include some services of small charter aircraft in the “Other Commercial” of general aviation

Table 4-4 – Cargo Terminal and Cargo Village Development - Market Potential Analysis

	Most Likely (Tonnes)	Conservative (Tonnes)	Optimistic (Tonnes)
2009	161	161	161
2010	263	245	265
2011	7,391	5,975	10,393
2012	14,488	11,023	18,916
2013	18,133	12,859	27,461
2014	19,718	14,642	30,516
2015	26,121	17,240	34,748
2016	30,396	18,206	37,357
2017	35,283	19,542	43,106
2018	38,913	22,130	46,076
2019	41,173	24,459	53,596
2020	48,500	31,822	56,671
2021	53,175	33,144	60,366
2022	54,999	35,825	62,273
2023	57,010	38,638	65,693
2024	58,942	40,360	67,724
2025	60,907	42,113	71,868
2026	62,441	43,437	73,526
2027	66,316	45,017	76,486
2028	68,171	47,672	78,456
2029	70,057	49,326	80,459
2030	78,149	58,020	89,031
2034	79,708	59,349	90,713

Source: Lufthansa Consulting: Feasibility Study, Air Cargo Development at Windsor International Airport, Annex 1

Figure 4-3 – Cargo Terminal / Cargo Village Development - Cargo Forecast



Source: Lufthansa Consulting: Feasibility Study, Air Cargo Development at Windsor International Airport Annex 1

Statistics Canada reports annual flight operations by Airports in the publication 51-210 "Aircraft Movement Statistics." The document includes scheduled and charter flights of large passenger and cargo aircraft.

One category covers carriers in Groups IV-VI. These companies generated less than \$1 million in each of the two years preceding the report.

Recent Trends

Statistics Canada reports local movements at each Airport, but does not necessarily include any breakdown according to the other commercial/private/civil government/ military classification system. Local movements consist mostly of training flights at Windsor. Figure 4-6 depicts recent general aviation activity at the Windsor International Airport.

The graph highlights the importance of local movements to the Airport. This traffic has been very volatile. Local movements primarily involve flight training, and any changes in the Airport's flight school activity can have a pronounced impact on total traffic. The Airport has a flying club, and a flight training school which is an accredited private college.

4.7.3 Forecasting Methodology

Between 1996 and 2008, the general aviation statistics for Windsor did not reveal strong correlations between real Gross Domestic Product, Gross Capital Formation, Personal Income, Price of Aviation Gasoline or other macroeconomic variables. Some variables, such as private aviation, showed a downward trend.

This behaviour is common for general aviation at most airports. General aviation tends to be influenced less by macroeconomic variables than by local events, such as an operator's purchase of an aircraft, new mineral exploration activity, a local company's decision to purchase a corporate aircraft, or the expansion or closing of a flying school. This granularity often defeats macroeconomic based models.

Another estimation problem is that general aviation has been declining globally for decades. Between 1996 and 2007, the four major categories together fell by 24.2 percent¹⁰. At some airports, any trend, time series or regression analysis can theoretically predict that the sector might disappear altogether.

¹⁰ Source: Statistics Canada, [Aircraft Movement Statistics](#)

However, the very large economic value of many general aviation operations, the long-term need for airline pilots, and the efficiency of aircraft in many resource oriented activities, renders this finding counter-intuitive.

A second general aviation trend analysis conducted by Statistics Canada compared Windsor to airports throughout Canada, in southern Canada, and finally to Southern Ontario alone. A cross-sectional econometric model considered each community's population, economic base and income. It included a series of estimates to determine what level of general aviation activity each community "should" have. While the model produced statistically satisfactory results, the results for Windsor implied implausibly high growth rates.

A third approach, using a simplified cross-sectional method, considered the relationship between total regional incomes and general aviation activity for Southern Ontario. This method calculated target activity levels for Windsor and their implicit growth rates. Where the computed rates were either negative or excessively large, a 1 percent annual rate as recommended by the Federal Aviation Administration¹¹ was applied.

General aviation forecasts are illustrated in Figure 4-6 and provided in Appendix D.

4.8 Conclusions

Based on the analysis, assumptions and activities described, forecasts have been provided for:

- Enplaned and deplaned passengers (Most Likely, Maximum);
- Aircraft movements (Most Likely, Maximum);
- General Aviation operations (Most Likely, Maximum); and
- New Air Cargo (Conservative, Most Likely, Optimistic).

Passenger markets show considerable complexity. Air Canada Jazz has offered minimal services, and priced its products for premium travelers.

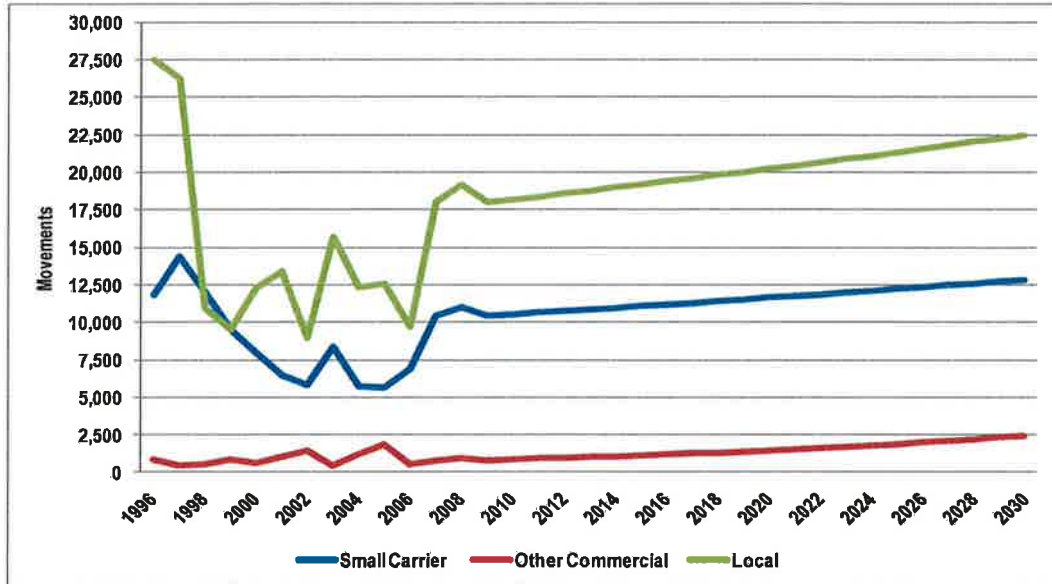
New entrants or any other factor that lowers Windsor's fares could have a dramatic impact on traffic. In the absence of such competitive action, the high fares at Windsor could persist, and frustrate traffic growth indefinitely. The "Maximum" scenarios call for aggressive traffic growth.

The cargo forecasts include the freight using the road feeder services of the proposed new Cargo facilities as documented in the Air Cargo Development Feasibility Study prepared by Lufthansa Consulting. This Airport Master Plan addresses both air freight services as well as truck freight services which normally do not affect airside operational requirements.

The general aviation forecasts call for slow and consistent evolutionary growth. Stronger growth could be expected if the Airport attracts new tenants, such as a flight school.

¹¹ Source: Ms. N. Shellabarger, Director, Aviation Policy and Plans, Federal Aviation Administration, presentation "National Forecast Overview 2009-2025" Slide 19, FAA and Contract Towered Operations, (Washington, March 31 2009)

Figure 4-4 – Historical and Projected General Aviation Activity



Source: Transport Canada TP577, Statistics Canada 51-210 "Aircraft Movement Statistics."

5.1 Airfield System

5.1.1 Runways

The Meteorological Assessment demonstrates that the current runway alignments remain appropriate for long-term planning purposes and that additional runways are not required. Consequently, the large tract of land on the east side of the Airport may be considered for aviation and supporting uses and/or Business Park and other employment uses.

The current runway system efficiently serves all current charter, scheduled, government and general aviation traffic. The primary Runway (07-25) is capable of accommodating all current traffic, as well as the aircraft types and frequencies in the forecasts. To increase the payload and/or range of large Code E cargo aircraft in the future, runway extension may be beneficial; however, site constraints limit the potential expansion to a maximum of 3,048m (10,000 ft.).

- **It is recommended that land be reserved for extension of Runway 07-25 to 3,048m (10,000 ft.) in the event of regular use by B747-400 cargo aircraft, and these aircraft have a requirement to carry higher loads over longer distances than may be undertaken with the current runway length.**

Based on forecasted aircraft movements, the expansion or modification of Runway 12-30 is not warranted. This runway is effective for current Airport use and should be adequate for the duration of the planning period.

Existing runway pavements will require regular maintenance in order to extend the life of these assets. In particular, Runway 12-30 will require repaving in the short-term (2016). Reconstruction of these assets is not expected to be required within the planning horizon of this Master Plan.

- **It is recommended that the Airport continue regular maintenance of runway facilities, particularly Runway 12-30.**

5.1.2 Taxiways

Consultations have revealed that the current taxiway infrastructure is sufficient to support the airside system throughout the planning period. The capacity analysis presented in Section 5.1.4 supports this statement. However, some expansion of the current taxiway system is required to expedite the quick movement of aircraft from one airside area to another and to limit possible congestion on the aprons.

A parallel taxiway (Taxi 'H') was completed in 2010 connecting the threshold of Runway 25 to Taxiway 'F'. In addition, the Holding Bay was upgraded to a taxiway (Taxi 'I') serving Runway 7-25 and Taxi H. These taxiways increase the capacity of the runway system and Taxi 'H' also provides access for development of adjacent airside commercial lands. In the event Runway 07-25 is extended to 10,000', Taxi 'H' could also be further extended to serve the new threshold of Runway 25 and facilitate aircraft circulation and to provide additional access to adjacent airside commercial land.

- **It is recommended that land be reserved to allow future extension of Taxi 'H' to serve an extension of Runway 07-25 and to provide access to airside commercial land.**

In the interests of runway safety, and to avoid opportunities for runway incursions, it is good planning practice to limit the number of access points to a runway. Consequently, development of airside employment lands in the northwest corner of the Airport will require construction of a taxiway serving this area. These lands could potentially be used for cargo and general aviation development and other employment activity.

- **It is recommended that a taxiway be constructed north of Runway 07-25 to provide access to employment lands.**

The new taxiway should provide access to the thresholds of Runways 07 and 12, and access to Runway 07-25 near the mid-point of this runway.

Development of airside employment lands in the southern portion of the Airport and adjacent to Runway 12-30 requires provision of taxiway access to these lots. In addition, use of this area for large aircraft maintenance and support activities will necessitate ready access to Runway 07-25 by larger aircraft which require a long runway for operations.

- **It is recommended that a taxiway be developed on the east side and parallel to Runway 12-30 to provide access to the new south employment areas. This taxiway will also provide access for heavy aircraft to/from these employment lands to Runway 07-25.**

All new taxiways should be constructed based on operational need.

Existing taxiways will require regular maintenance in order to extend the life of these assets. Reconstruction of these assets is not expected to be required within the planning horizon of this Master Plan.

5.1.3 Aprons

Apron expansion should be undertaken based on operational need. Apron I, which is currently used primarily for Airport maintenance purposes, may be expanded to serve air cargo requirements accommodating narrow body (Code C) freighter aircraft. An area for accommodating wide body (Code E) freighter aircraft might also be required in the future. To achieve this objective, the apron could be expanded to the east and south, away from the Runway 12-30 transitional surface, and to intersect with Taxiway 'G'.

- **It is recommended that Apron I be expanded in the vicinity of Taxi 'G' in the event parking is required on a regular basis for B747-400 cargo aircraft. This will protect the precision approach zoning surface supporting Runway 12-30.**

Apron III, the main public apron, is of sufficient size to support current and forecasted aircraft movements. Expansion of the apron will not likely be required in the short-term. Figure 5-1 illustrates the existing apron configuration and apron management plan. To

make provision for potential new air services at Windsor International Airport, an allowance for a westerly apron expansion is included in the Master Plan to accommodate several aircraft in each passenger category: Air Taxi + Commuter; Regional + Trans-border; and Mainline + International.

Protection of this land for apron expansion will make the Airport more attractive to a broad combination of air carriers in the future.

- **It is recommended that land be reserved for westerly expansion of Apron III in the event passenger growth beyond the traffic forecasts is achieved.**

Figure 5-2 - Apron Expansion Concepts, illustrates the recommended expansion of Aprons I and III when demand warrants these investments.

At some point beyond the planning horizon of this Master Plan, factors such as the growth in passenger traffic and related constraints to further building expansions, or the cost of ongoing repairs based on the age of the existing building may require the relocation of the air terminal core facilities to the infield of the Airport property. When this growth occurs, a new apron will be required in the infield, serving a new air terminal building. The most appropriate location for this apron would be near the centre of the Airport with access from Taxiway 'H'.

- **It is recommended that a land reserve be established in the infield adjacent to Taxi 'H' for ultimate development of a new apron and associated air terminal complex.**

Existing aprons will require regular maintenance in order to extend the life of these assets. Reconstruction of these assets is not expected to be required within the planning horizon of this Master Plan.

5.1.4 Capacity

Airside capacity was assessed to estimate the maximum throughput capability of the runway and taxiway system. Typical fleet mixes were developed from official 2008 movement statistics (Statistics Canada's document TP577 – Aircraft Movement Statistics).

Analysis suggests that the Airport runways can accommodate approximately 58 movements per hour under VFR conditions. This metric assumes that Air Traffic Control (ATC) and radar services are provided, at least one runway is equipped with an Instrument Landing System (ILS), and the number of aircraft arrivals and departures are equal.

Due to the current and expected aircraft movement volumes at the Windsor International Airport, the current capacity is expected to meet the needs of the Airport for the planning horizon. Additional runways will also not be required within the planning horizon of this plan as current capacity is adequate. The addition of taxiways paralleling Runways 07-25 and 12-30 will further increase the maximum throughput capacity of the runway system.

5.2 Air Navigation Facilities

5.2.1 ATC Tower

The Air Traffic Control (ATC) Tower is located in the centre of the ATB. The facility is owned by the Airport and operated by Nav Canada. Windsor ATC is in operation daily between 0630 hours and 2230 hours, local time. It provides Airport control services to all traffic on the manoeuvring area of the airfield and to all aircraft flying in the vicinity of the Airport below 3,000', including aircraft leaving or entering Canadian airspace from the Detroit Metropolitan Wayne County Airport (DTW).

Current traffic levels at Windsor do not require an ATC tower operation by Nav Canada. However, a number of unique factors justify operation of the tower. These factors include:

- adjacency of the Detroit Terminal Airspace control zone;
- the inter-relationship of ATC services in this Canada – US border zone;
- the presence of additional US Airports within the control zones;
- the participation of Windsor ATC controllers in cross-border ATC control; and

- the long time establishment and operation of an ATC tower at Windsor Airport.

Nav Canada undertakes modernization of ATC tower facilities periodically on a national basis. Airport management has identified a number of concerns with the current facility including its advanced age (the facility which was constructed with the original terminal building), the longevity of the building systems, and the relatively low height of the ATC cab. Development of certain facilities in the Airport infield (e.g. high structures) might potentially be limited by line-of-sight restrictions from the current ATC tower. In order to fully develop the infield of the Airport, the ATC tower facility may have to be relocated to the infield at some point in the future. A suitable ATC Tower Reserve has been identified in the Development Plan.

- **It is recommended that a land reserve be established in the infield near the intersection of Runways 07-25 and 12-30 for construction of a new control tower should this be required due to development of higher buildings and structures in certain portions of the infield.**

5.2.2 Flight Service Station

Windsor International Airport does not have a Flight Service Station (FSS) which normally provides advisory services to pilots. Advisory services to pilots are provided by the ATC tower (which provides both advisory and control services) and by the centralized London Flight Information Centre (FIC). Together, these Nav Canada facilities provide a more comprehensive service than would a stand-alone FSS. An FSS is not required in the foreseeable future; however, if the current ATC facility is downgraded to an FSS, the land reserve designated for the ATC would be an ideal location for an FSS.

5.2.3 Navigation and Landing Aids

The available instrument landing (ILS) approach is limited to Runway 25.

Visual aids include:

- SSLAR approach lighting RWY 25;

- Threshold and high intensity runway edge lighting RWY 07 and 25;
- Precision approach path indicator (PAPI) lights RWY 07 and 25;
- Runway Identification Lighting System (RILS) on RWY 07;
- Runway threshold and end lights on RWY 07 and 25; and
- Guard lights protecting entry to Runway 07-25 in low visibility conditions located on Taxiways 'F', 'H', 'I' and near the end of Runway 30.

Electronic aids include:

- Instrument Landing System (ILS) on RWY 25;
- Distance Measuring Equipment (DME);
- VHF Omni-Directional Range (VOR); and
- Non-Directional Beacon (NDB).

Medium and long-term requirements will depend on the demands of aviation operators, as well as the desired level of service and emerging new airborne and ground-based navigation and landing technologies.

5.2.4 Aviation Meteorology

The existing Meteorological Observation facility (MET) site is located on groundside, in front of the main terminal. This site is used to determine such meteorological events as wind speed and direction, barometric pressure and temperature, and other important atmospheric conditions. Currently, there are no known issues with the equipment or facility site at its present location. The weather observation capability at the Airport is sufficient to support operations for the short and medium planning horizons. As part of a national modernization program by Nav Canada, an Automated Weather Observation System (AWOS) has been installed beside Taxi 'H' near the intersection with Taxi 'I'.

5.3 Air Terminal Building

5.3.1 Assessment Methodology

The space requirements for Windsor International Airport's Air Terminal Building (ATB) were assessed using established methodologies. The assessment methodologies follow space and functionality requirements developed by Transport Canada (TC), the International Air Transport Association (IATA), the U.S. Federal Aviation Administration (FAA), as well as other industry sources and planning metrics.

Requirements were determined for various functions including, but not limited: check-in, airline operations, baggage screening, passenger screening, airside departure, government inspection, arrivals and baggage, and some administration areas.

The primary industry metric used to determine ATB space and functionality requirements is the Typical Peak Hour Passenger (TPHP). TPHP is defined as the critical number of passengers in the peak hour of the average peak day, of the peak month of the year. A review of air carrier schedules, combined with stakeholder consultations identified Tuesdays, between the hours of 1200 and 1600 as the average peak period.

Transport Canada developed the Systemized Terminal Expansion Program (STEP) as a guide for the design and progressive expansion of small air terminals such as Windsor. Space standards contained in the STEP program are based on peak passenger volumes, established through empirical studies of a large number of air terminals.

Key elements of the TC program are applicable to Windsor International Airport. Additional regulatory and operational requirements have been considered reflecting the recent requirements of Canadian Air Transport Security Authority (CATSA), facilities to support international flights, and expanded commercial facilities, among other issues impacting ATB design. In the absence of new Canadian standards in some areas, industry metrics and recommended standards promulgated by the FAA and IATA have also guided requirements for Windsor.

TPHP values are used in conjunction with IATA Level of Service (LOS) standards to assess typical space requirements within the ATB.

The Level of Services (LOS) delivered by an air terminal are typically classified on a letter scale from A to E as depicted in Table 5-1.

Table 5-1 - ATB Levels of Service

Level	Quality	Characteristics
A	Excellent	Conditions of free flow, no delays; excellent level of comfort.
B	High	Conditions of stable flow; high level of comfort.
C	Good	Condition of stable flow; acceptable throughput; systems in balance.
D	Adequate	Condition of unstable flow; delays for passengers; conditions acceptable for short periods.
E	Unacceptable	Unstable flow; conditions seriously limiting the capacity of the system.

Typically, an air terminal building designed to LOS 'A' is expensive and not necessary, particularly when the Airport experiences only brief periods of intense activity each day. Transport Canada typically sized air terminal buildings to operate at LOS 'B' after five years of service. Airports with limited access to capital funds may opt to size their facilities to LOS 'C' (Good). In addition to lower capital costs, this latter size will attract lower operations and maintenance expenditures on an annual basis.

5.3.2 Current Air Terminal Capacity

The Windsor International Airport ATB serves approximately **126,000** passengers per annum. The ATB currently has an area of **4,716m²** excluding the second floor which is occupied by Airport administration and others.

The following aircraft mix was considered in assessing the current TPHP of Windsor International Airport:

- 2 x B737-800; and
- 1 x DHC8-300

Based on air carrier schedules, analysis and consultations, a current **TPHP of 157** passengers has been identified for planning purposes for the current facility.

This value is based on modelling typical departing passenger arrival rates at the ATB facility. It assumes that departing passengers arrive at the ATB in 10 minute intervals, beginning at 120 minutes before scheduled departure times (T-120), until 30 minutes before departure time for domestic flights (T-30) and 60 minutes before international departures (T-60). These passenger arrival rates generally reflect the shape of a 'bell curve'. This type of modelling has been recognized by industry organizations such as IATA, the FAA and other international Airport authorities.

Based on the current volume of passengers, it is estimated that departing passengers are currently experiencing **LOS 'B' Level** as there is adequate space for travelers in pre-boarding security and departure lounge areas.

5.3.3 Operational Deficiencies

Air terminal developments should be sized and configured to efficiently support current and forecasted passenger movements, and generate adequate amounts of Airport revenue to support future developments. Air terminal development schematics are based on practices recommended by IATA supplemented with a modified version of the TC STEP program.

A detailed analysis examined the current areas provided for major air terminal functions including: check-in areas, airline operations area, baggage screening, passenger screening, airside departure areas, government inspection areas, arrivals and baggage, and administration areas. The areas required for each of these functions are based on industry standards and practices.

The current ATB space allocation is shown in Table 5-1. Deficiencies based on the current volume of peak passengers are identified. The existing air terminal ground floor plan and functional use assignments are illustrated in Figure 5-3.

There are several significant immediate deficiencies:

- The queuing area at check-in needs to be improved as it does not satisfy the space requirements of an Airport with a TPHP of 157.
- Passengers arriving on international flights are currently experiencing a LOS 'E' or lower during peak periods as the arrival and baggage hall are smaller than the recommended size, suggesting that unstable flow and capacity limiting conditions are present.

It is apparent that the ATB requires a larger capacity for international and trans-border passengers arriving at Windsor International Airport.

- **It is recommended that an immediate expansion program be undertaken to provide additional space for passenger check-in queuing, international and trans-border arrivals, related amenities and concessions.**

Generally speaking, the ATB is of adequate size to support a TPHP of 157; however, the current building configuration is not considered optimal as some functions currently meet or exceed space requirements. In order to achieve a better level of service for a TPHP of 157, the ATB could be modestly expanded to 5,250m², in addition to some reconfigurations. Detailed architectural assessments would be required to optimize each functional space assignment.

5.3.4 Short-Term Requirements

By the year 2015, the TPHP is projected to rise to 253. In order to achieve a LOS 'C' during the peak periods, most functional areas on the main floor of the terminal building will need to be expanded. Table 5-3 provides a space program for expanding existing areas to meet a LOS 'C' with a TPHP of 253.

The overall ATB ground floor area needs to be expanded in the short-term, to a minimum of 5,800m²

to serve the peak passenger volumes that are projected. Some reconfiguration is also required to achieve an acceptable level of service.

Short-term expansion of the ATB is illustrated schematically in Figure 5-3.

Key issues are described below.

Check-in

The check-in areas, which include check-in counters, queuing areas, offices and other necessary amenities, were assessed. Based on a TPHP of 253, four (4) additional check-in counters are required while the total check-in area needs to be increased by 60%, in order to meet the LOS 'C' criteria. A total of twelve (12) check-in counters and a total queuing area of 354m² will be required.

Passenger Screening

Areas related to passenger screening facilities currently include two metal detectors and two x-ray machines for carry-on luggage. With a typical peak hour passenger increase of 96 passengers (from 157 to 253), one additional metal detector and an additional x-ray machine will be required to maintain LOS 'C'. Approximately 50m² of space is recommended to support the additional metal detector, x-ray machine and supporting circulation area.

There are also areas provided for those passengers awaiting security screening, known as the security queue. Currently, an area of roughly 40m² is designated for the security queue. The required area will need to be increased to 105m² to support a TPHP of 253 passengers. This value is based on a recommended maximum wait time of 15 minutes.

CATSA Support

CATSA currently occupies office space within the ATB to support passenger and baggage screening operations. The current office space of 80m² is sufficient and no expansion or additional space is anticipated to be required for CATSA operations in the short-term.

Departures Holdroom

Based on a TPHP of 253, in addition to a standard circulation allowance per departure gate, the

departure lounge will need to be expanded by approximately 90% from the current size of 434m².

Currently, 80m² of this space is allocated for washrooms within this area. This meets the requirement for short-term development. There is no essential need for additional washrooms to be developed in the airside departures area.

Domestic Arrivals

Domestic arrivals areas include a baggage claim device, and a baggage claim area. Based on the projected flight schedule and an assumed load factor of approximately 75%, a domestic Peak Arriving Passenger (PAP) volume was established. A standard metric of approximately 0.3 linear metres of baggage claim frontage per passenger should be provided. Based on a projected PAP volume of 166 and a load factor of 75%, approximately 37m of baggage claim frontage should be provided. The existing baggage claim device provides an estimated 31 metres of claim frontage, suggesting that additional capacity should be provided for the short-term flight schedule. This suggests that the baggage claim device requires expansion by approximately 37.5m².

The domestic baggage claim area will need to increase to 166m² in the short-term to accommodate the increased passenger loads based on the recommendation that 1.0m² should be provided per PAP, at a 100% load factor in order to account for "meeters and greeters". The PAP as a result of the projected flight schedule remains the same throughout all planning horizons.

International Arrivals

The international baggage claim areas were evaluated based on the current flight schedule. The baggage claim device located adjacent to the government inspection provides approximately 37 linear meters of frontage. Based on a PAP of 189 passengers at a 75% load factor, approximately 42m of linear frontage should be provided. Providing this additional linear frontage would require an increase in area of the actual claim from its current size by approximately 40m².

The international baggage claim area will need to increase to 142m² in the short-term to accommodate

the increased passenger loads based on the recommendation that 1.0m² should be provided per PAP, at a 75% load factor. "Meeters and greeters" are not accounted for in the international baggage as they are not permitted in this area due to customs and immigration regulations.

Expansion Strategy

Short-term improvements and the expansion of amenities should build upon, and take advantage of, investments already made in the ATB facilities. Improvements should be undertaken progressively to avoid interruption to Airport operations and to limit inconvenience to passengers and other users.

Figure 5-3 illustrates expansion of certain passenger processing functions in the ATB, and provides a general guide as to how each functional activity may be expanded.

- **It is recommended that the air terminal be expanded to meet projected growth in passenger traffic in the short-term.**

The existing ATB was opened in 1958 and has undergone various expansions and modernization over the last 52 years. To properly assess the optimum strategy for each improvement identified, and to ascertain the need for building systems improvements, a detailed engineering study of the existing facility is required. Based on the results, architectural design concepts may be developed and detailed costs prepared to upgrade the ATB as found necessary, and to provide the necessary increases in capacity in certain functional areas.

- **It is recommended that an engineering study of the complete ATB be undertaken prior to embarking on any ATB improvement programs.**

5.3.5 Medium and Long-Term Requirements

Once the ATB has been expanded to meet the short-term (2015) requirements, further expansion will be required for the year 2020 assuming the growth projections contained in the forecasts are realized. In the medium-term, a TPHP of 276 is projected by the year 2020.

Long-term requirements are subject to many additional and as yet unforeseen factors. Peak hour passenger patterns, and traffic peaks cannot be reliably projected for the year 2030. Simple extrapolation is one means of estimating future long-term TPHP, assuming linear traffic growth, and other factors remain in balance. On this basis, a TPHP of 290 may be projected for the year 2030.

Table 5-3 provides space requirements for Current (2010), Short-Term (2015), Medium-Term (2020), and Long-Term (2030) expansion programs, assuming traffic grows as projected in Chapter 4.

Expansion Strategy

Expansion towards the airside is not recommended in the medium and long-term, due to the proximity of Runway 12-30 and the height limits runway zoning places on aircraft parked on Apron III. These restrictions impact the ability to park aircraft with high vertical tail surfaces near the terminal and reduce with increasing distance from the runway. Historically, aircraft tail heights have grown over the years as aircraft size and aerodynamic designs have evolved.

Significant expansion of the ATB in an easterly direction is not recommended due to the general narrowing of the available groundside site. It will become progressively more difficult to provide enlarged terminal approach roads, terminal frontage roads, traffic circulation and, if necessary, a major intersection at the public access point off County Road 42. Limited easterly expansion of the ATB could be undertaken to accommodate modifications to current facilities.

There is adequate space for significant ATB expansion in both westerly and southerly directions as existing roads and parking can be realigned.

- **It is recommended that Medium-Term and Long-Term ATB expansion follow a westerly axis paralleling the current and future Apron III layout and that expansion should proceed southerly towards the groundside to increase the overall width of the ATB.**

The strategy for progressive expansion of the ATB is indicated with arrows on Figure 5-3.

Table 5-2 – Current ATB Space Assessment (TPHP 157, LOS=C)

Terminal Elements	Actual Area	Recommended Area	Variance	Comments
<u>Check-in Area</u>	m²	m²	m²	
Check-In Counters	60.0	52.0	8.0	
Queuing	82.5	219.8	-137.3	Remedial action recommended
Offices	67.9	60.0	7.9	
Concessions	30.0	21.6	8.4	
Telephones	2.0	2.0	0.0	
Washrooms	47.4	40.0	7.4	
Baggage Belt Allowance	29.3	27.0	2.3	
Airport Security	18.4	18.4	0.0	
Vending	12.0	8.0	4.0	
Sub Total - Check-In Areas	349.5	448.8	-99.3	
<u>Airline Operations Area</u>				
Aviation Support Offices	162.0	162.0	0.0	
Indoor Ground Handling Equip. Storage	39.7	39.7	0.0	
Staff Washrooms	7.0	7.0	0.0	
Sub Total - Airline Operations Area	208.7	208.7	0.0	
<u>Passenger Security</u>				
Metal Detector & Carry-On X-Ray Inspection	135.8	100.0	35.8	
Security Queue	40.0	70.6	-30.6	Remedial action recommended
CATSA Security Office	73.4	80.0	-6.6	
Sub Total - Security	249.3	250.6	-1.3	
<u>Baggage Security</u>				
Outgoing Baggage Inspection & HBS	105.0	78.5	26.5	
Secure Outgoing Baggage Assembly	287.0	78.5	208.5	
Sub Total - Baggage Security	392.0	157.0	235.0	
<u>Airside Departure Areas</u>				
Departure Lounges	428.0	318.4	109.6	
Concessions	41.0	75.6	-34.7	Remedial action recommended
Washrooms	69.1	40.0	29.1	
Sub Total - Airside Departure Areas	538.1	434.0	104.1	
<u>Arrivals & Baggage</u>				
Baggage Claim Device (domestic)	62.1	21.0	41.1	

Terminal Elements	Actual Area	Recommended Area	Variance	Comments
Baggage Claim Area (domestic)	50.7	35.0	15.7	
Baggage Claim Device (int'l)	72.1	113.4	-41.3	Remedial action recommended
Baggage Claim Area (int'l)	112.2	141.8	-29.6	Remedial action recommended
Common Use Baggage	320.1	282.0	38.1	
Concessions	0.0	10.8	-10.8	Remedial action recommended
Telephones	2.0	2.0	0.0	
Washrooms	19.1	20.0	-0.9	
Car Rental Counters	37.4	20.0	17.4	
Sub Total - Arrivals & Baggage Areas	694.6	646	48.6	
Government Inspection				
Customs Queue	171.8	189.0	-17.2	Remedial action recommended
Immigration Inspection	19.6	19.8	-0.2	
Baggage Inspection	86.1	85.2	0.9	
Customs Office and Lunchroom	49.6	48.4	1.2	
Washrooms	29.7	20.0	9.7	
Customs Detention	25.4	25.0	0.4	
Sub Total - Government Inspection	382.3	387.4	-5.1	
Administration				
Meeting Room, Washrooms and ECC	149.6	15.0	134.6	
General Storage	41.6	40.0	1.6	
Kitchen/Coffee Area	18.1	15.0	3.1	
Subtotal - Administration	209.3	70.0	139.3	
SUBTOTAL	3023.6	2602.5	421.1	
Building Services, Equipment & Other	604.7	520.5	84.2	
SUBTOTAL	3628.3	3123	505.3	
Circulation Allowance	1088.5	936.9	151.6	
TOTAL	4716.8	4059.9	656.9	

Table 5-3 – Recommended ATB Space Requirements

Terminal Elements	Current TPHP 157 , LOS=C	Short-Term TPHP 253 , LOS=C	Medium-Term TPHP 276 , LOS=C	Long-Term TPHP 290 , LOS=C
Check-in Area	m²	m²	m²	m²
Check-In Counters	52.0	78.0	84.5	91.0
Queuing	219.8	354.2	386.4	406.0
Offices	60.0	120.0	140.0	140.0
Concessions	21.6	54.0	74.2	94.5
Telephones	2.0	2.0	2.0	2.0
Washrooms	40.0	40.0	40.0	40.0
Baggage Belt Allowance	27.0	40.5	44.0	48.0
Airport Security	18.4	18.4	18.4	18.4
Vending	8.0	8.0	8.0	8.0
Sub Total - Check-In Areas	448.8	715.1	797.5	847.9
Airline Operations Area				
Aviation Support Offices	162.0	162.0	162.0	162.0
Indoor Ground Handling Equip. Storage	39.7	39.7	39.7	39.7
Staff Washrooms	7.0	7.0	7.0	7.0
Sub Total - Airline Operations Area	208.7	208.7	208.7	208.7
Passenger Security				
Metal Detector & Carry-On X-Ray Inspection	100.0	150.0	150.0	200.0
Security Queue	70.6	105.0	112.5	127.5
CATSA Security Office	80.0	80.0	80.0	80.0
Sub Total – Security	250.6	335.0	342.5	407.5
Baggage Security				
Outgoing Baggage Inspection & HBS	78.5	126.5	138.0	145.0
Secure Outgoing Baggage Assembly	78.5	126.5	138.0	145.0
Sub Total - Baggage Security	157.0	253.0	276.0	290.0
Airside Departure Areas				
Departure Lounges	318.4	584.0	696.0	696.0
Concessions	75.6	189.0	259.6	330.8
Washrooms	40.0	40.0	40.0	40.0
Sub Total - Airside Departure Areas	434.0	813.0	995.6	1066.8
Arrivals & Baggage				
Baggage Claim Device (domestic)	21.0	99.6	99.6	99.6
Baggage Claim Area (domestic)	35.0	166.0	166.0	166.0
Baggage Claim Device (int'l)	113.4	113.4	113.4	113.4
Baggage Claim Area (int'l)	141.8	141.8	141.8	141.8

Terminal Elements	Current TPHP 157 , LOS=C	Short-Term TPHP 253 , LOS=C	Medium-Term TPHP 276 , LOS=C	Long-Term TPHP 290 , LOS=C
Common Use Baggage Areas	282.0	282.0	282.0	282.0
Concessions	10.8	27.0	37.1	47.3
Telephones	2.0	2.0	2.0	2.0
Washrooms	20.0	20.0	20.0	20.0
Car Rental Counters	20.0	20.0	20.0	20.0
Sub Total - Arrivals & Baggage Areas	646.0	871.8	881.9	892.1
<u>Government Inspection</u>				
Customs Queue	189.0	189.0	189.0	189.0
Immigration Inspection	19.8	19.8	19.8	19.8
Baggage Inspection	85.2	85.2	85.2	85.2
Customs Office and Lunchroom	48.4	48.4	48.4	48.4
Washrooms	20.0	20.0	20.0	20.0
Customs Detention	25.0	25.0	25.0	25.0
Sub Total - Government Inspection	387.4	387.4	387.4	387.4
<u>Administration</u>				
Meeting Room, Washrooms and ECC	15.0	15.0	15.0	15.0
General Storage	40.0	40.0	40.0	40.0
Kitchen/Coffee Area	15.0	15.0	15.0	15.0
Subtotal - Administration	70.0	70.0	70.0	70.0
SUBTOTAL	2602.5	3654.0	3959.6	4170.4
Building Services, Equipment & Other	574.1	750.2	884.6	922.8
SUBTOTAL	3123.0	4402.2	4844.2	5093.2
Circulation Allowance	936.9	1350.3	1592.3	1661.0
TOTAL	4059.9	5754.5	6436.5	6754.2

EDGE OF TAXIWAY STRIP - CODE E



WINDSOR AIRPORT MASTER PLAN

FIGURE 5-1 - CURRENT APRON MANAGEMENT PLAN



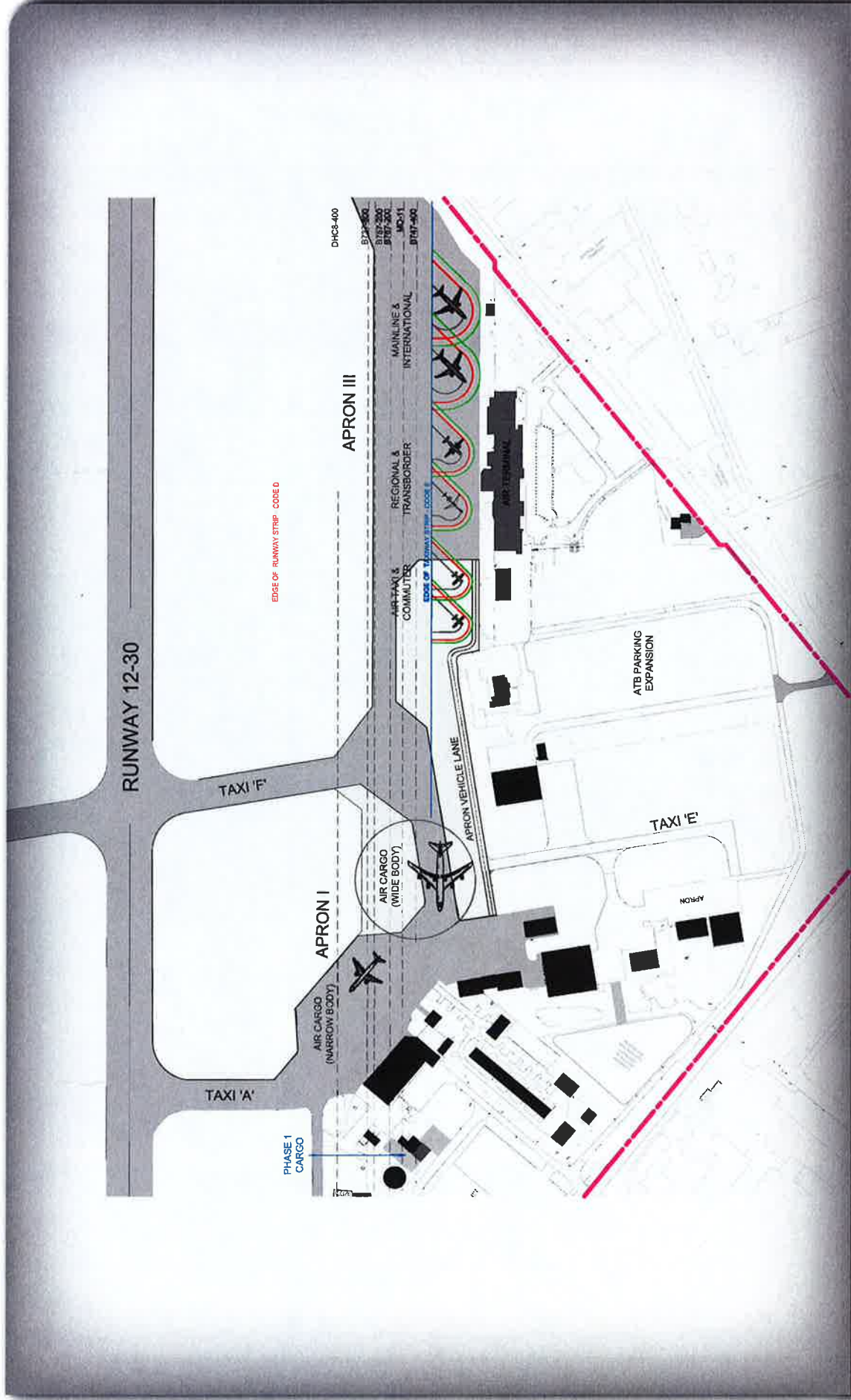
- Notes
1. Conceptual Layout
 2. All dimensions approximate



Map Projection: n/a
 Project #: 09-2665
 Status: n/a
 Date: December 2010

Base data provided by City of Windsor Official Plan
 Map created by EDH
 Map checked by RAM
 File Location: \\20dillon.dillon.ca\toronto\data\PROJECTS\DRIFT\09\092665 Windsor Airport Master Plan





**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 5-2 - APRON EXPANSION



Base data provided by City of Windsor Official Plan
Map created by AIM
Map checked by EGL

File Location: \\120dillon.dillon.ca\toronto\data\PROJECTS\DRIFT\09\092665\Windsor Airport Master Plan

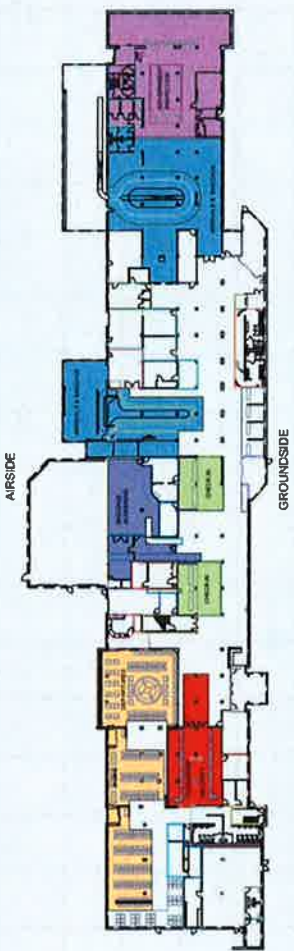
Notes

1. Conceptual Layout
2. Development areas may be subject to restrictions
3. Scale is approximate and for planning purposes only

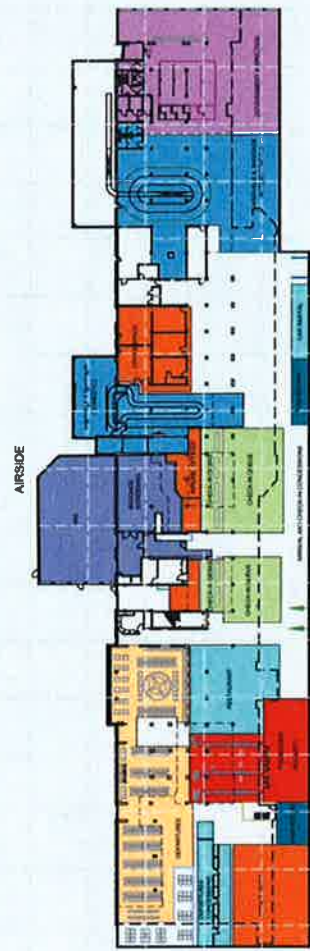
Map Projection: N/A
Project #: 09-2665
Status: n/a
Date: December 2010



CURRENT



SHORT TERM



LIMITED EXPANSION IF REQUIRED

AXIS OF MEDIUM / LONG TERM EXPANSION

- NEW BUILDING FOOTPRINT
- - - EXISTING BUILDING FOOTPRINT
- ARRIVING PASSENGERS
- ← DEPARTING PASSENGERS

WINDSOR AIRPORT MASTER PLAN

FIGURE 5-3 - CURRENT TERMINAL FLOOR PLAN

	CHECK-IN AREAS		AIRSIDE DEPARTURE AREAS		CONCESSIONS AND RESTAURANT
	BAGGAGE SCREENING		ARRIVALS AND BAGGAGE		WASHROOMS
	PASSENGER SECURITY		GOVERNMENT INSPECTION		OFFICE SPACE

YQGI YOUR QUICK GATEWAY

WINDSOR INTERNATIONAL AIRPORT



Base data provided by City of Windsor Official Plan
 Map created by Alana Evers
 Map checked by Karl Tanner

File Location: \\dillon.ca\DILLON_DFS\Oakville\A\PROJECTS\IDRAFT\2009\09-2665 Windsor Airport\09-2665 Graphics

Map Projection: n/a
 Project #: 09-2665
 Status: n/a
 Date: December 2010

5.4 Access Roads and Parking

5.4.1 Access Roads

Terminal Crescent is a private groundside access road that serves the Air Terminal Building, as well as the Airport tenant facilities. Donlon Way is a private airside access road that serves as access to navigational aids adjacent to the two runways.

The main public groundside road that serves the Airport, including the ATB is County Road 42, located along the south side of the Airport perimeter.

Additional private groundside roads serving the general aviation, maintenance and manufacturing areas that are located west of the ATB, include Duncan McColl, Hayes Road, Commercial Drive, Airport Road, and Phelps Drive.

Roadway improvements, including drainage and pavement restoration/resurfacing are expected to be required for all private roads in the short-term horizon, particularly for Hayes Road, Airport Road, and Commercial Drive.

5.4.2 Terminal Frontage and Parking

The entrance to the terminal is accessed via Terminal Crescent, located off of County Road 42. The terminal is fronted by a 3 lane vehicular loop to facilitate the efficient flow of automobiles. One lane is dedicated for dropping off and picking up passengers.

Designated areas are reserved for short and long-term parking, as well as car rentals. Using a common industry metric of one (1) stall per 1,000 enplaned / deplaned passengers, it is estimated that a minimum of 126 stalls are currently needed for short and long-term passenger parking.

Employee and public short-term parking is located on the southwest side of the terminal. There are approximately 67 employee parking stalls and 408 short-term and long-term public parking stalls.

Car rental services are provided by 3 companies. Two parking areas are dedicated for these services. The primary lot is located immediately east of the existing ATB, while the secondary lot is located south of

County Road 42. The breakdown of parking stalls by car rental company is provided in Table 5-4.

Table 5-4 - Rental Company Parking

Car Rental Company	Number of Parking Stalls
Budget	51 (included 27 stalls on south side of Division Road)
AVIS	34
National	47

Additional parking stalls have been provided for Nav Canada (10 stalls).

5.4.3 Future Requirements

There is additional space available to the west of the short-term public and employee parking. This space is approximately 2 ha and could be utilized for additional short-term and long-term parking stalls.

Based on the common parking metric in Section 5.4.2, 525 stalls will be required for passenger parking in 20 years, if traffic grows as projected.

Travel and parking characteristics vary among Airports. For example, some Airports enjoy high demand for parking as passengers drive long distances to the Airport to fly on a specific holiday charter and park their vehicle at the Airport for the duration of the holiday. A detailed parking study would identify the travel patterns and any unique parking characteristics for the Airport. This will provide a more accurate basis for planning future parking needs. Reservation of additional lands for significant expansion of existing parking might be prudent until the results of a parking study are known.

- **It is recommended that a parking study be undertaken immediately to determine current and future demand characteristics and requirements at the Airport.**
- **It is recommended that additional lands be reserved in the general vicinity of the ATB to accommodate long-term parking growth.**

5.5 Utilities and Services

5.5.1 Water Supply

The existing Airport property is currently serviced by two watermains; one for fire protection and one for potable water. The fire main is connected from an existing 400mm diameter watermain at Airport Road, while the potable water supply is connected from an existing 150mm diameter watermain on County Road 42. Water supply is provided by the Windsor Utilities Commission (WUC).

The WUC Windsor Water System Master Plan, October 2009, identified the need to construct a trunk watermain along County Road 42 across the frontage of the Airport lands by 2013. This watermain system expansion would consist of a 900mm diameter trunk watermain west of the 9th Concession Road, and a 750mm diameter trunk watermain east of the 9th Concession Road.

Until such time as the water distribution system is expanded, there will be a need to confirm the ability of the existing system to meet the water consumption and fire protection requirements as each development proposal within the Airport lands is identified.

- **It is recommended an assessment of the Airport's existing on-site water distribution system be carried out to identify opportunities to modify/expand the existing system.**

5.5.2 Sanitary Sewerage

The existing Airport property has an internal sanitary sewer system that includes a 200mm diameter gravity sewer collection system that directs wastewater to an on-site pump station. A 150mm diameter forcemain discharge from this pump station directs wastewater to the City of Windsor collection system on Airport Road.

The City of Windsor has recently completed the installation of a trunk sanitary sewer to service the Sandwich South Planning District, including a portion of the Airport lands. The 1200mm and 1350mm diameter trunk sanitary sewer system is located along

County Road 42 in an easement on the Airport lands, east of the 8th Concession Road.

Approximately 205 hectares of the Airport property has been allocated capacity within this trunk sanitary sewer system based on industrial sewage generation rates. The balance of the Airport lands is allocated to the existing sanitary collection system on Walker Road and Wheelton Road. The sanitary drainage area plan for the Airport lands is illustrated in Figure 5-4.

Depending on the nature of development within the Airport lands, opportunities may exist to adjust the drainage area boundary for the trunk sanitary sewer system on County Road 42 based on the proposed land uses and the corresponding sewage generation rates relative to the trunk sanitary sewer capacity.

5.5.3 Stormwater Drainage

The Airport lands are primarily located within the Little River watershed. Storm drainage on the Airport lands is currently being collected by five municipal drains, two of which originate on the Airport lands. The existing Airport pavements and facilities are primarily served by the Lappan Drain, while the Russette Drain serves a smaller portion of the existing pavement surfaces through a network of local enclosed storm sewers and surface drainage features.

To accommodate future development on the Airport lands, there will be a need to relocate and enclose a portion of these existing open drains to align with the proposed road networks and land use needs. These drainage improvements will have varying impacts based on the respective drain classifications, as established by the Department of Fisheries and Oceans (DFO).

The existing open drains on the Airport lands have all been identified as containing aquatic Species at Risk (SAR). As a result, any drain relocation or infilling requires further assessment to confirm whether the works are deemed a Harmful Alteration, Disruption of Destruction (HADD) of fish habitat. In those cases where a HADD is unavoidable, appropriate measures must be identified in consultation with DFO, MNR and ERCA to adequately compensate for those impacts.

In addition, stormwater management measures would be required to address both the quantity and quality of stormwater runoff. In particular, glycol that is used during de-icing operations must be adequately managed and contained within designated de-icing areas in order to limit any downstream impacts to existing watercourses.

In addition, the existing woodlots on the Airport lands have been identified as Provincially Significant Wetlands (PSW).

Several biological inventories of the woodlot and open drain areas on the Airport lands have been completed.

- **It is recommended that these environmental studies be updated and compiled in a more comprehensive biological inventory for flora, fauna and aquatic species.**

If the presence of aquatic SAR is confirmed in the existing open drains, it will be necessary to provide compensation measures for any impacts.

The woodlots and associated buffer areas will be protected within a comprehensive Environmental and Stormwater Management Reserve. The reserve will also provide an opportunity to provide appropriate compensation measures.

Stormwater management, including both quality and quantity controls, will be necessary for any proposed development on the Airport lands to lessen the impacts on Little River. Due to the sensitivity of wild life on airfields such as birds and water fowl, any proposed stormwater management system must achieve these objectives without having any permanent water pool for an extended period of time to deter the congregation of water fowl. A heavily planted/wooded wetland within the environmental reserve lands would not only provide SWM measures, but also provide linkage between the PSW's. Any proposed work shall maintain a minimum of a 120m setback from the PSW's.

- **It is also recommended that a comprehensive functional stormwater management study be completed to identify an appropriate strategy for implementing the necessary runoff control and mitigating measures for the development of these lands.**

5.6 Electrical and Communications

Most of the Airport property lies within the Hydro One distribution area with the exception of a small area at the northwest corner of the site which lies within Enwin's distribution area.

Hydro One has indicated that its existing system currently has excess capacity to service any potential development and would be highly dependent on the type of development. Hydro One does have the ability to accommodate any potential high power consumers on the Airport lands provided that sufficient time is allowed for the planning, design and construction of any required plant.

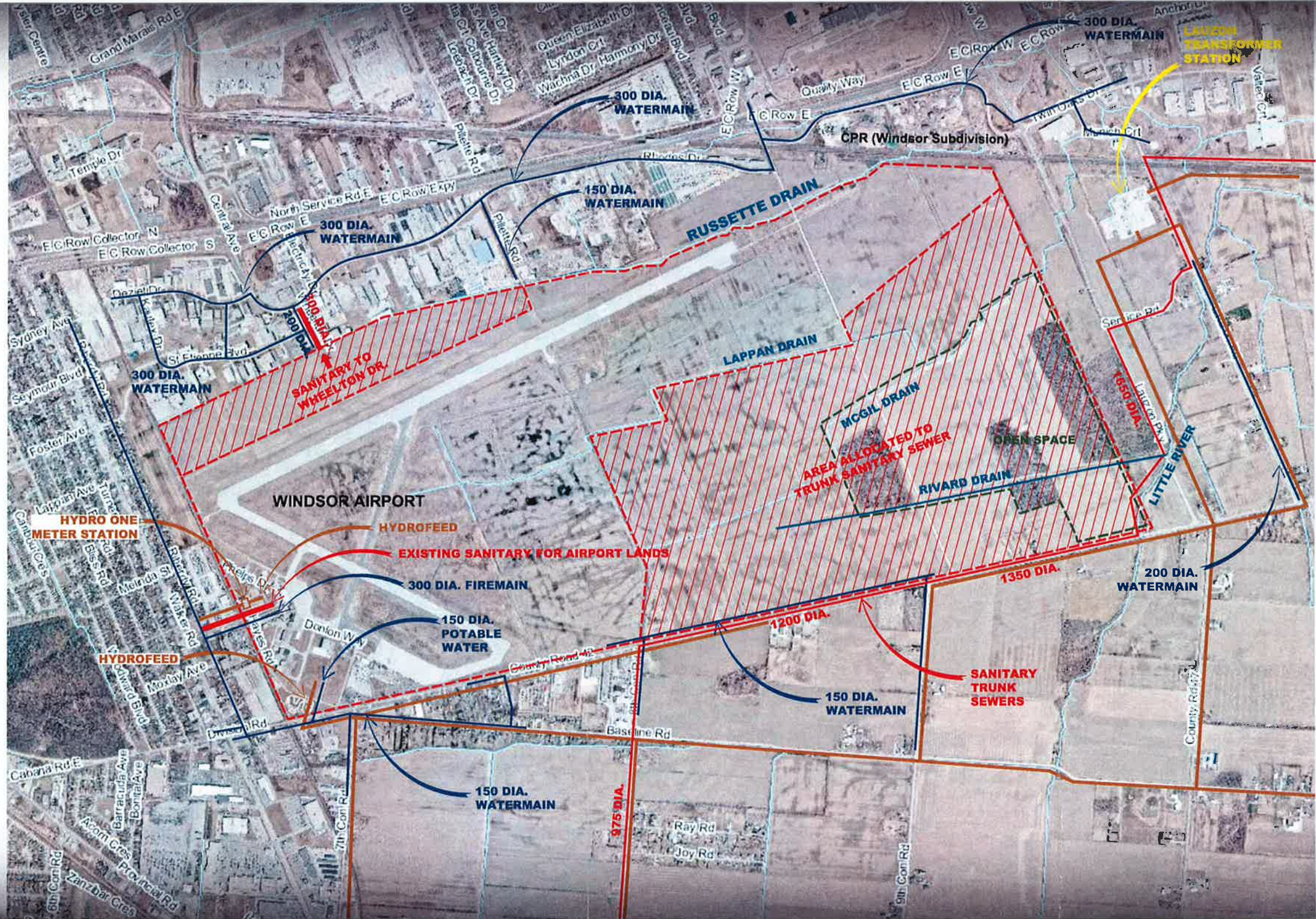
The site is also within Bell Canada and Cogeco Cable distribution area for telephone, internet and cable TV servicing.

5.6.1 Airfield

The current electrical installations are reported to be adequate to support the present runway configuration and operations.

As future changes, additions and upgrades are completed on the airfield infrastructure, the airfield lighting and other electrical components will need to be updated accordingly. This should be achievable without major operational disturbances.

As changes are made to the taxiway and runway system, upgrades to the airfield lighting will be required. As green technology becomes a major focus at airports around the world, energy efficient lighting systems for taxiways, runways and aprons (such as LED lighting) are increasingly popular. These energy efficient lighting solutions are becoming more and more recognized and some are available for use at certified Airports.



**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 5-4 - EXISTING SERVICING
EXTERNAL

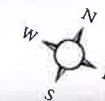
- WATERMAIN
- SANITARY SEWER
- MUNICIPAL DRAINS
- POWER DISTRIBUTION



Base data provided by City of Windsor Official Plan
Map created by DAM
Map checked by PMM/FRF

File Location: \\20dillon.dillon.ca\toronto\data\PROJECTS\IDRAFT\09\092665 Windsor Airport Master Plan

Map Projection: n/a
Project #: 09-2665
Status: n/a
Date: December 2010



Notes:
1. Conceptual Layout

5.6.2 Air Terminal

The ATB is currently serviced with hydro supplied from Hydro One's power distribution system on County Road 42.

Bell Canada also indicated that its service to the existing ATB is from its existing plant on County Road 42.

5.6.3 Field Electric Centre (FEC)

The FEC supports all airfield power requirements. It is currently reported to be operating well with additional capacity available.

The expected life of certain equipment and components which are understood to be aging must be assessed.

- **It is recommended that an engineering study be undertaken in the short-term to assess the existing systems, equipment and components in the FEC and to determine the life expectancy of the facility.**

5.6.4 Supply and Distribution

The Airport's electrical servicing is currently provided at two points, one from Airport Road from the Enwin distribution system and the other from County Road 42 from the Hydro One distribution system. Although the source of power is from Enwin at Airport Road, Hydro One indicated that all existing power users on the Airport property have accounts with Hydro One. Hydro One has a meter station at the point of where the power distribution system crosses the Airport property line on Airport Road from Enwin.

Hydro One has suggested that any power supply requirements associated with new development be confirmed as early as possible in order that this capacity may be reserved within their Lauzon Transformer Station, located to the east of the Airport lands.

The Airport is also protected in the event of a power failure by a standby diesel generator, which restores power through an automatic transfer panel.

5.6.5 Telecommunications

Both Bell Canada and Cogeco Cable have indicated that their existing plant on County Road 42 could readily accommodate the servicing requirements for future development within the Airport lands.

Bell Canada has indicated that its plant on County Road 42 is scheduled to be upgraded in the short-term to accommodate other developments in the area, while Cogeco Cable has indicated that its existing plant on County Road 42 consists of a fibre optic cable with excess capacity.

5.7 Aircraft Services

5.7.1 Fuel Facilities

Two types of aviation fuel are available: Jet A-1 and 100 Low-Lead (Avgas). Both types of fuel are provided through dispensers and fuel trucks (bowsers) upon request.

Aviation fuel is provided by an Esso-branded dealer that leases a below grade, fuel tank farm (two tanks) to Great Lakes Flight Centre. Airport FBOs draw fuel from this fuel farm. Each tank has a capacity of up to 50,000 litres. The tanks were installed in 1989 and have a lifespan of 30 years. Consequently, replacement of both tanks will be required in approximately 9 years, at the end of the short-term planning horizon.

The tank owner may wish to replace the tanks in their current location or install above ground tanks. If the current site is unsuitable for above ground tanks, the Airport may wish to designate an alternate area for bulk fuel storage.

One possible alternate location for bulk fuel storage could be on a lot in the employment lands, located at the west end of Phelps Drive. This site would permit both airside and/or groundside access for fuel tankers with minimal disruption to Airport operations.

- **It is recommended that an environmental site assessment study be undertaken to establish appropriate locations for a bulk fuel storage facility.**

5.7.2 De-icing Facilities

Currently, de-icing is performed on an ad-hoc basis, as requested by the airlines or private aircraft users. Several companies carry out this service using large dispensing trucks. These operations are currently conducted on Apron III, where de-icing chemicals can be contained.

As large aircraft traffic increases, a designated de-icing area could be established on Apron III. With a designated de-icing area, environmental mitigation measures can be more readily implemented such as a runoff collection tank or a vacuum truck operation. The runoff from the glycol used for de-icing, as well as snow and rain can then potentially be filtered and recycled.

- **It is recommended that a designated de-icing area be established on Apron III as operations increase in the future.**

5.8 Emergency Response

5.8.1 Current Services

Emergency Response Services (ERS) at the Windsor International Airport are provided by the City of Windsor. Response staff are located at the Airport in the event of an aircraft emergency, and additional support is provided by the City's Emergency Services Department, when necessary.

The Airport publishes ERS service levels within the Canada Flight Supplement and is required to provide these published services by the Canadian Aviation Regulations (CARs). The level of ERS is categorized at designated certified Airports according to aircraft size and fuselage width. In general, Airports with annual passenger volumes greater than 180,000 are required to provide ERS. Although the Windsor International Airport only processed 122,800 annual passengers in 2009, the Airport provides ERS. The ERS categories are provided Table 5-5.

Table 5-5 – Airport ERS Categories

Aircraft Category	Aircraft Length	Fuselage Width	Example Aircraft Types
1	Less than 9m	2m	PA-44, C206
2	At least 9m but less than 12m	2m	PC-6, BE58, C441
3	At least 12m but less than 18m	3m	BE20, B1900D, SW4
4	At least 18m but less than 24m	4m	ATR42, DH8A
5	At least 24m but less than 28m	4m	ATR72, DH8C, CRJ-200
6	At least 28m but less than 39m	5m	DH8D, EMB190, A319, A320-200,
7	At least 39m but less than 49m	5m	B737-800/900, B757-200
8	At least 49m but less than 61m	7m	B767-300, A330-200
9	At least 61m but less than 76m	7m	A330-300, A340-200, B777-300, B747-400

Source: Canadian Aviation Regulations (CARs), Section 303

ERS Category 3, 4, 5 and 6 are provided upon request at the Airport between the hours of 1100 and 0500 UTC on a daily basis for all scheduled and non-scheduled arrivals and departures with 3 hour prior notice.

5.8.2 Current Facilities

ERS are located at the Airport fire hall, co-located with the Airport maintenance building. The facility houses ERS equipment within the airside area of the Airport for expedient response times in the event of an emergency. While the building is reported to be in

good condition by users and supports the needs of the Airport at current levels, Airport management has expressed concern with the age of the building and expansion ability.

The Airport operates two ERS vehicles capable of dispensing water, foam and dry chemicals. One vehicle is capable of holding 6,000 litres of water, and 757 litres of foam, while the second vehicle carries 2,500 litres of water, 77 litres of foam, and 205 kg of dry chemical.

Based on the current ERS vehicle inventory, the Airport meets the requirements for Category 5 response protection but on a limited basis, provide a Category 6, when requested.

5.8.3 Future Requirements

Current ERS levels at Windsor International Airport are capable of supporting increased scheduled passenger traffic, provided that the traffic consists of similar aircraft types currently being operated. If the number of annual passengers exceeds 180,000 and scheduled aircraft sizes increase to a larger category, additional vehicles and personnel will be required.

A larger fire truck would likely be required if operations by aircraft in ERS Category 6 were to occur on a frequent, sustained and regular basis.

5.9 Airport Maintenance

5.9.1 Services

Windsor International Airport currently offers comprehensive airside maintenance services. A Snow and Ice Control Plan has been developed for winter operations. All staff members are briefed on this plan annually in order to maintain an optimal winter level of service.

Maintenance services are available for runway evaluation including Load Bearing Surface Evaluations and Friction Measurements. These services are executed by members of the Airport staff on a daily and as required basis.

Additional maintenance services include, but are not limited to:

- Safety Inspections;
- Wildlife Management;
- Fence Maintenance;
- Groundside and Airside Pavement Maintenance; and
- Exterior and Interior Building Maintenance.

Aesthetic services such as grass cutting and gardening are performed by Airport staff and are completed on a routine, seasonal and as required basis.

5.9.2 Facilities

The main Airport maintenance garage is approximately 15,000m² in area and houses equipment such as snow blowers, sweepers, lawn mowers, and related storage. The garage is attached to the fire hall, directly adjacent to Apron I. The sand shed is also located in the area of the maintenance garage. Vehicle access to the garage is provided at the end of the east side of Airport Road.

5.9.3 Future Requirements

Based on the growth forecast for airside traffic, and the surface areas currently being maintained year round, a substantial increase in maintenance facilities or services is needed during the planning horizon.

The existing facility is aging and there are constraints to further building expansions. Furthermore, this facility is located adjacent to an existing apron area, which could better serve a higher and better use as a cargo operations site, or other uses requiring airside access.

- **It is recommended that as airport maintenance requirements increase that consideration be given to constructing a new maintenance building at an alternate location, including consideration for combining this with emergency response services.**

5.10 Environmental

5.10.1 Environmental Concerns

The Annexed Lands Master Plan Study investigated the main natural features in the Sandwich South Planning District, including the Airport Woodlands ESA #39 (Jefferson Woodlot, Shooting Range Woodlot, East Perimeter Woodlot and St. Louis Woodlot) located within and directly adjacent to the Airport lands and the Sundrop Bend ESA # 40 (Little River Corridor) that runs from north to south in the eastern area of the annexed land. The Airport Woodlands cover approximately 40 hectares.

The report concluded that the three woodlots located at the Airport Woodlands meet the minimum size to be considered significant by the Province, City of Windsor and Essex Region Conservation Authority. The woodlots act as a core natural area and are connected to one another by drainage ditches which provide linkages for the movement of several species. They also function as a migratory stop over location for many migrants and raptors species.

In addition, the Master Plan report concluded that the diversity of the woodlots is relatively low but when considered with vegetation in the Little River Corridor and connecting drainage ditches, there is a substantial diversity of plant communities overall. The report stated that protection / recreation of natural habitat on both sides of the Little River would help improve the habitats and hydrologic conditions in the watershed. The development of pedestrian and cycling trails (separated where possible) along the Little River Corridor is also recommended. This would allow for the extension and continuation of existing recreational trail systems in Windsor and facilitate the use of alternative modes of transportation.

In July 2008, the Essex Region Conservation Authority completed an Update to the CNHS Inventory as part of the City of Windsor Official Plan Review (CNHS stands for Candidate Natural Heritage Site). The study used 10 evaluation criteria to evaluate 18 natural heritage sites in the City to determine if the sites are considered "significant" under the Provincial standards. The Airport Woodlands were considered as Provincially

Significant as they fulfilled the following four out of ten evaluation criteria:

- Significant Woodland: The three woodlots meet the minimum size (2 hectares) for being considered significant by the Province, City of Windsor and Essex Region Conservation Authority;
- Ecological Function: The woodlots increase the linkage provided by the Little River Corridor and contributes to the hydrological flow of the watercourse;
- Diversity: The woodlots present a diversity of plant communities and also aquatic communities in the linking agricultural drain and the adjacent Little River; and
- Significant Species: Eleven significant plant species were observed. No significant faunal species were observed.

Outside of the Airport lands and the Little River Corridor, there are no significant Natural Heritage Features located within the Sandwich South Planning Area that will be negatively impacted as a result of future development in the area. Area natural features can be protected and potentially enhanced through the Master Plan/Secondary Plan and Site Plan processes.

5.10.2 Constraints to Development

The Update to the CNHS Inventory report states that because of the danger of collision with aircraft, large bodied wildlife is discouraged from inhabiting the Airport Woodlots with the exception of Red-tailed Hawk and Great Horned Owl which are allowed to remain and control other animals. The woodlots should be considered in relation to aircraft movements since they are close to the main runway, as well as to other transportation corridors in the area.

The Airport Woodlots should be protected as Natural Heritage Areas in their entirety. Provincial legislation requires that significant features be protected over the long-term. Land development proposals must address compatibility with significant features. A buffer of 50 metres may be appropriate.

The size and location of the woodlots may constrain site design flexibility for potential industrial users on the Airport lands. In addition, any development adjacent to the Little River Corridor may require a detailed assessment to determine the need for bird studies and Fisheries Act approval. Compensation plans or restrictions on the timing of work are needed to ensure that fish habitat is not disrupted.

Schedule C: Development Constraints and Schedule D: Land Use, in the Windsor Official Plan, designate the Airport Woodlots as "Natural Heritage". (See Figures 2-3 in Chapter 2 and Figure 5-5 in next page).

These lands are Windsor's most environmental significant and sensitive natural areas. Policies in the Plan provide for their protection and conservation. Uses permitted in the "Natural Heritage" areas are natural reserves and wetland management. In addition, Council may permit ancillary recreation and leisure activities and facilities, provided that the ancillary use is incidental and secondary to, or complementary with the Natural Heritage use. The ancillary use must not negatively impact the site's natural features and functions.

To protect lands designated "Natural Heritage" lands, proponents of developments in adjacent areas may be required to complete an Environmental Evaluation Report or other study in accordance with the policies in the Official Plan.

The area adjacent to the Airport Woodlots and the Little River Corridor are designated as "Open Space" in the Official Plan Schedule D: Land Use. Uses permitted in the Open Space land use designation include recreation and leisure areas and facilities. Council may also permit ancillary residential, commercial or institutional in areas designated "Open Space" provided that the ancillary use is incidental and secondary to and complementary with, the main Open Space use. Development must conform to the Plan's policies for the proposed land use.

In addition, the Little River Corridor is identified as an "Environmental Policy Area". The Official Plan defines Environmental Policy Area (EPA) as "an environmental significant and/or sensitive natural area which may be able to tolerate appropriately designed development". EPAs are further classified as A or B. EPA A may be partially developed only when

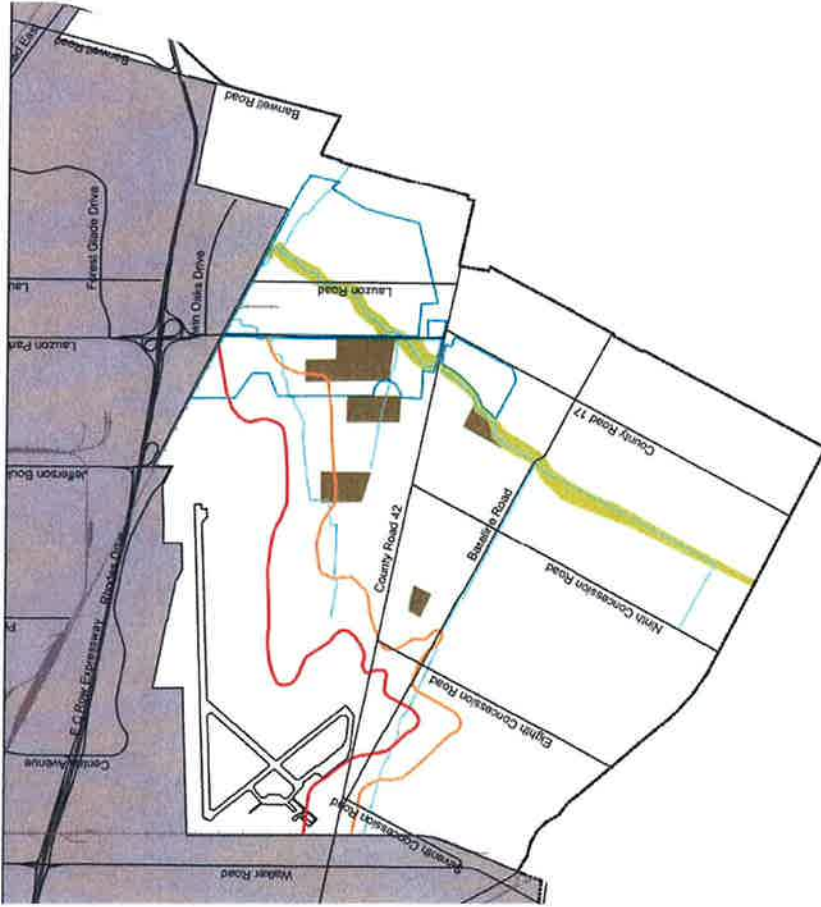
development provides for conservation of the significant natural features and/or functions. EPA B may be developed provided significant natural features are incorporated into the development.

Proponents of development or infrastructure undertakings within an Environmental Policy Area A or B are required to complete an Environmental Evaluation Report or other suitable study in accordance with Official Plan policies.

5.10.3 Impact of Development Plan

The Airport Master Plan considered the conservation and management of the woodlots located within the Airport lands. To minimize the impact of development on the woodlots, a significant area surrounding them has been zoned as "Environmental Reserve" in the Development Plan Concept. The Environmental Reserve incorporates a minimum buffer of 120 metres adjacent to the existing woodlots, while also allowing for the potential to include stormwater management facilities and measures to compensate for impacts to fish habitat associated with drainage improvements within classified watercourses.

AMENDMENTS TO
SCHEDULE C : DEVELOPMENT CONSTRAINTS
 OFFICIAL PLAN AMENDMENT #60



WINDSOR AIRPORT
 MASTER PLAN

FIGURE 5-5 - DEVELOPMENT CONSTRAINTS



- ENVIRONMENTAL POLICY AREAS
- NATURAL HERITAGE
- WATERWAY CORRIDORS
- 30
- 25
- NOISE EXPOSURE FORECAST

Base data provided by City of Windsor Official Plan
 Map created by Alana Evers
 Map checked by Karl Tanner



Map Projection: n/a
 Project #: 09-2665
 Status: n/a
 Date: December 2010

File location: \\dillon.ca\DILLON_DFS\Oakville\VA\PROJECTS\IDRAFT\2009\09-2665 Windsor Airport\09-2665 Graphics

6.1 Current Inventory

Airport related general aviation activity is concentrated in the southwest quadrant of the Airport site. Key businesses are identified as follows:

Air-Way Aviation provides ground handling, aircraft de-icing, cargo handling, and other aviation support services to air carriers and aircraft operators. Air-Way Aviation was established in Windsor in 1988 and its business is primarily driven by passenger and air cargo volumes at the Airport.

Canadian Historical Aircraft Association is a charitable, non-profit organization that restores vintage aircraft significant to Canadian aviation history. The Association operates from a World War II vintage hangar at the Airport, and has up to 200 active members who are involved in several aircraft restoration projects.

Eagle Air Services provides ad-hoc charter air services to various destinations.

Great Lakes Flight Centre / Journey Air provides aviation fuel services, flight training and ad-hoc air charter services. The Great Lakes Flight Centre branch provides services typical to a Fixed Base Operator (FBO). Great Lakes / Journey Air have a total of six aircraft ranging from C152 to C172 and Piper Seneca types. It leases administrative space and a 10,000 square foot hangar.

Mara-Tech Aviation provides ground handling, de-icing and other aircraft support services. Mara-Tech provides ground handling services for Jazz's DHC8 Windsor to Toronto service, sports team charters, corporate aircraft and other itinerant aircraft operators at the Windsor International Airport. Mara-Tech's facilities are located inside the Air Terminal Building. The organization also leases aircraft equipment parking space outside the Air Terminal as part of its lease agreement.

Windsor Flying Club operates a clubhouse complete with classrooms and offices, and several small General Aviation hangars at the Windsor International Airport. The Flying Club is home to approximately 275 members and specializes in flight training, aircraft charters, and a scheduled air cargo service to Pelee Island for Canada Post.

WCS Aviation is an aircraft maintenance organization specializing in service and maintenance of general aviation and other small aircraft. WCS is located near the Windsor Flying Club and is the only licensed aircraft maintenance organization at Windsor International Airport.

Air Terminal: Several Airport related businesses are also located in the Air Terminal Building to serve passengers, visitors and Airport staff. Businesses include National Car Rental/Alamo, Budget/Avis Rent a Car and a canteen serving sandwiches, drinks and other snack foods. Wizie, Inc. provides data management, travel booking engines and travel technology services from the second floor of the Air Terminal Building.

Private: Windsor International Airport holds lease agreements with other entities including private aircraft hangars operated by local businesses.

The Airport also leases land for farming purposes as an added source of outside revenue.

6.2 Air Cargo

Air Cargo is typically provided at Airports using dedicated all-cargo aircraft, and/or utilizing spare hold capacity on scheduled passenger air services. Limited air cargo activity is currently occurring at the Airport, primarily using all-cargo aircraft:

- The Windsor Flying Club operates a scheduled air cargo service on behalf of Canada Post to Pelee Island.
- The regional size scheduled aircraft serving the Airport offer modest capacity for transport cargo.
- Ad-hoc air cargo services operate at the Windsor International Airport on an occasional basis, primarily supporting the automotive industry.

Consultations have indicated that cargo volumes have been declining, likely due to a decrease in demand from the automotive industry and regional economic fluctuations.

The City of Windsor commissioned a Feasibility Study for Air Cargo Development at Windsor International Airport from Lufthansa Consulting. The Phase 1: Market Potential Analysis Report (September 4, 2009) projects that average air cargo will grow by 28.17% over 25 years in the Most Likely Scenario. From the current level of 161 tonnes in 2009, air cargo is projected to grow to:

Optimistic Scenario = 90,713 tonnes (2034);

Most Likely Scenario = 79,708 tonnes (2034); and

Conservative Scenario = 59,349 tonnes (2034).

- **Lufthansa Consulting has recommended (April 8, 2010) development of air cargo facilities in two (2) phases along with a Cargo Village as summarized in Table 6-1.**

A subsequent study by Lufthansa Consulting (Fall 2010) estimated the size of the facility and land area required for a dedicated air cargo terminal. These requirements are shown on Table 6-2, for the Most Likely Scenario.

Table 6-1 – Phased Cargo Terminal Development

Year	Tonnage	Terminal Floor Space	Landside Area	Airside Area	Total Footprint	Comments
Immediate Phase 1		180 sm	525 sm	540 sm	1,245 sm	Existing cold storage warehouse to be converted, airside access to aprons required.
2034 (Phase 2)	80,000	30,000 sm		15,000 sm	45,000 sm	Central facility, 2 Code F aircraft (A380), building height 16.0m.

Source: Lufthansa Consulting, April 2010

Table 6-2 – Air Cargo Facility Requirements

Year	Tonnage	Terminal Floor Space	Approx. Site Requirements	Comments
2017 (Phase 1)	35,283	5,400 sm	13,000 sm	Focal point for all air cargo business at YQG. Cater to requirements of general and special cargo (flown and trucked). Approximately 77% of freight to be trucked. Maximum size of aircraft Code E.
2022 (Phase 2)	54,999	7,560 sm	18,000 sm	
2034 (Phase 3)	79,708	9,720 sm	23,000 sm	

Source: Lufthansa Consulting, July 2010

Following the assessment of alternative sites, a site for immediate development of a dedicated air cargo capability was selected in the vicinity of the existing Airport maintenance building. Development involves the conversion of an existing warehouse and airside access using existing aprons and vehicle lanes. The facilities can be made secure.

As cargo traffic grows, a dedicated air cargo facility can be developed on the north land employment area, north of Runway 07-25 accessed by a new taxiway constructed from the threshold of Runway 07. Located within the security perimeter, this area has convenient access to local and regional road networks, as well as potential airside access for vehicles to Aprons I and III. Airside access could be enhanced by construction of an airside service road linking Aprons I and III with the north employment lands.

- **It is recommended that an airside service road be constructed linking Apron III to Apron I, and Apron I to the north employment lands as required to support air cargo facilities development.**

6.3 Cargo Village

The Market Potential Analysis for Windsor International Airport report by Lufthansa Consulting states: *“The medium to long-term objective should be to plan, design and develop a Cargo Village at YQG that will become a multi-modal gateway, incorporating Airport and surrounding industrial areas, together with rail links and trucking facilities, to attract, bundle and channel the international movement of cargo to and from points in North America”.*

A Cargo Village will accommodate cargo / logistics related facilities such as forwarder buildings, facilities for logistics service providers, distribution, processing, warehousing and assembly. It will be integrated with or have dedicated access to the cargo terminal and would be integrated with vital Airport functions.

It will require a secured access from public roads, an efficient internal road circulation system and require a proper technical infrastructure to support operations.

- **Development of a Cargo Village has been recommended by Lufthansa Consulting.**

Lufthansa Consulting has recommended a footprint size of approximately 20 to 25 acres to accommodate a zoned development for small, medium, and large cargo logistics businesses. Part of this area would have apron access.

The Master Plan has provided for a Cargo Village on the employment lands. These lands have suitable airside and groundside access at various locations.

6.4 Multi-modal Port

LPS AVIA undertook a Multi-modal Port Land Reserve Study (January 2010) to assess opportunities for developing a multi-modal port.

The study examined the opportunities and constraints of establishing and operating land-rail-air ports including the most common types of truck-truck, truck-air, and truck-rail operations.

The study included a survey of nine multi-modal ports in North America and Europe and a detailed case study of the Huntsville, Alabama multi-modal port based on similarities to Windsor International Airport. An Inland Port for rail was also considered based on a case study of the Virginia Inland Port.

Three Airport Land Reserve Options were developed potentially utilizing available employment lands at Windsor International Airport. These featured air, truck and rail access. The three options ranged from 100 ha. to 360 ha. in size and could be developed and accommodated on existing Airport lands.

- **It is recommended that lands be reserved for a multi-modal port with a configuration of roughly 235 ha.**

The Multi-modal Port – Land Use Options Report is included as an Annex to the Windsor International Airport Master Plan.

6.5 Pre-Clearance Centre

Development of a pre-clearance centre has been proposed by Lufthansa Consulting. This facility would permit pre-clearance of cargo destined for the United States and, once cleared would be trucked or flown non-stop to U.S. destinations.

A pre-clearance facility could be located in or adjacent to the air cargo building. If it also serves truck traffic, it would need to be near in or adjacent to the Cargo Village. The limitation of a truck shipment facility is that a dedicated and secure truck corridor would be required to the U.S. border from the Airport. This was considered unlikely to be achieved within the time-frame of this Master Plan.

Sufficient land is available in the employment land area surrounding the Airport to accommodate a pre-clearance facility

6.6 Airport Business Park

Building on the Multi-modal Port Land Reserve Study, the Master Plan explored a series of options for developing a Business Park on lands surplus to the operating Airport. The options were variously configured to attract and accommodate a series of new and emerging opportunities for employment including:

- solar energy manufacturing facilities;
- major aircraft maintenance repair and overhaul (MRO) facilities;
- aerospace manufacturing facilities;
- aircraft hangars; and
- other new opportunities.

Many opportunities require specific land capabilities which must be integrated with current and future Airport operations.

A total of five land use and development options were assessed, including those prepared in the Multi-modal Port Study. A Preferred Option was then finalized (Option 5).

The recommended Development Plan identified in Chapter 7, represents the preferred strategy for flexibly accommodating the best range of future employment opportunities at the Airport.

6.7 Aircraft Maintenance and Support

Aircraft maintenance activities include several support functions, some of which are currently being carried out at the Windsor International Airport. Typical aircraft maintenance activities include:

- Maintenance Repair and Overhaul (MRO) activities, including maintenance for scheduled airlines and maintenance for corporate aircraft;
- Engine overhaul;
- General aviation aircraft inspections and routine maintenance; and
- Airframe inspections.

WCS Aviation is currently the only business offering aircraft maintenance services at the Windsor International Airport.

The Airport is pursuing new large MRO businesses as a strategic market for Windsor. The Airport is in a good position to strengthen the presence of MRO businesses due in part to the availability of skilled labour in the region, and its strategic position in North America.

The Federal Government has recently announced that funding will be provided to attract a maintenance repair and overhaul (MRO) business to the Airport. The Master Plan includes provisions to accommodate this and other large scale facilities in airside employment lands.

6.8 General Aviation

General Aviation (GA) is defined as civil aviation activities operated by individuals, organizations, and businesses providing the following services:

- Public charter aircraft operations;
- Private charter operations serving the regional air transportation requirements of companies, organizations, and government departments;
- Private aircraft operations for business or personal use;
- Flight training;
- Public and private helicopter operations;
- Support activities for the above including repair, sale and inspection of aircraft and associated support material;
- Supply fuel and oil;
- Private office and hangar space for GA operators; and
- Medevac services.

A review of historical aircraft movements in the private category suggests GA operator activity has declined slightly over the past 10 years.

The Master Plan forecasts that general aviation will grow at an average annual rate of 1.36% over the next 20 years, from some 33,000 movements to 44,000 movements per annum.

To help attract new and expanded GA operations, additional serviced development areas for General Aviation activities are included in the Development Plan. High volume flight training has also been identified as a potential opportunity for the Windsor International Airport as an example of means to increase GA activity.

Business and corporate aviation activities are generally related to the transportation of company executives or large charter groups, such as sports teams. These individuals usually own or charter an aircraft for air transportation. Consultations and analysis indicates that several tenants at the Windsor International Airport are operating within the Business

and Corporate Aviation category. Consultations with an FBO operator suggest an increase in Business and Corporate Aviation activity would improve revenue streams at the Airport. This could require attracting additional industries to the Windsor-Essex region.

A limited volume of flight training is currently occurring at the Windsor International Airport, primarily through the Windsor Flying Club and Journey Air. The Windsor International Airport is well-positioned to attract additional flight training to the region. To attract this additional business, the Airport could market its extensive airside infrastructure, low levels of airside and airspace congestion, and suitable winter weather to potential flight training operators and markets. Educational facilities could be located at the Airport within the employment areas shown in the Development Plan. This could involve coordination with St. Clair College, the University of Windsor, or other post secondary institutions in Southwestern Ontario.

6.9 Airport Related Commercial Land Supply

Windsor International Airport has abundant land for Airport related development.

The Airport's current development area is concentrated within the southwest quadrant of the Airport site. Airport lands west of Runway 07 and Runway 12 are constrained by the presence of the CN Railway line. These areas are not considered suitable for future Airport development. The area to the east of Runway 25 has been identified for extension of the runway to 10,000 ft.

There is a significant land parcel of some 26.7 ha that is easily accessible from existing airside and groundside infrastructure, on the north side of the Airport property. It is subject to height and electronic zoning restrictions in certain areas.

A small parcel of land of 4.3 ha is also potentially available on the north side of Runway 07-25 at the east end.

Significant land is available within the infield area of the Airport property including more than 300 ha potentially available under various development scenarios. This land is ideal for major Airport related business and employment uses. Development of high structures in certain portions of the infield area may interfere with sight lines from the current ATC control tower. All proposed infield development projects should be subject to review by Airport management and if a sight line issue is identified, relocation of the ATC tower to a new infield location may be necessary in order for the development to proceed.

7.1 Land Assignment

The recommended Airport Land Use Plan proposed in this chapter has been prepared to address short, medium and long-term development potential.

The intent of the Land Use Plan is to identify and provide maximum flexibility in the use of Airport lands, thereby supporting broader City and Airport business objectives. The purpose of the Land Use Plan is to:

- Provide sufficient land to meet the long-term requirements of all essential aviation activities at the Airport;
- Provide flexibility to accommodate strategically targeted, opportunistic business investments;
- Ensure that land is developed for uses that are compatible with the safe and efficient operation of aircraft at the Windsor International Airport;
- Ensure that land is developed in such a way as to be compatible with adjacent Community land uses;
- Guide the development of the Airport in a logical and orderly manner ; and
- Protect the interests of all tenants within boundaries of Airport property.

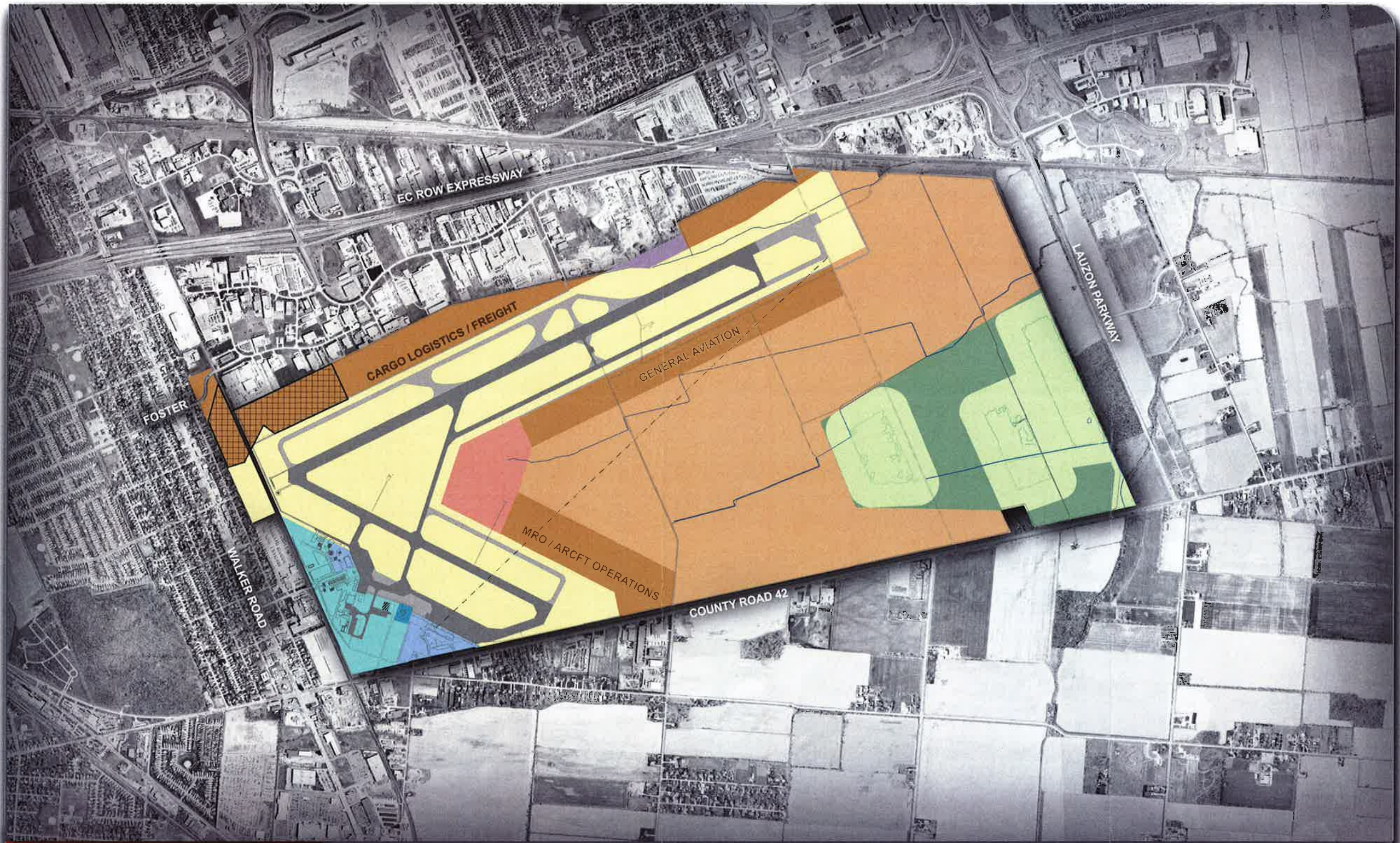
The Plan provides a rational, comprehensive and flexible framework for the development and use of Airport lands, permitting the balanced fulfilment of future needs.

The order of priority used in the systematic land assignment for Airport facilities, as well as a definition of each use follows:

- **Airfield** – fixed and rotary wing manoeuvring areas, taxiways, aprons and navigational aids at the Airport.
- **Air Terminal & Operations** – air terminal building, maintenance garage, security, fuel facilities, utilities, public facilities, terminal road system and public parking.
- **Airside Employment** – general aviation facilities and aviation support functions on land requiring airside access, including air cargo, MRO and helicopter facilities.
- **Groundside Employment** – public or private concerns not requiring direct airside access. Includes Airport and non-Airport uses and will accommodate strategically targeted, opportunistic business opportunities in a Business Park environment.
- **Airport Reserve** – lands for which it is not practical to designate more specific Airport uses at this time. The lands are held in reserve in order to accommodate Natural Heritage areas and surplus areas.

7.2 Recommended Plan

The Recommended Land Use Plan for the Airport is presented as Figure 7-1.



**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 7-1 - RECOMMENDED LAND USE PLAN

- | | | | |
|------------------------|---------------------------|-----------------------------|----------------------------|
| COMMUNICATIONS RESERVE | AIR TERMINAL RESERVE | OPEN SPACE/NATURAL HERITAGE | PROPOSED LAND ACQUISITIONS |
| AIRPORT EMPLOYMENT | EMPLOYMENT LANDS | EXISTING AIRCRAFT PAVEMENT | TOWER LINE OF SIGHT |
| AIRFIELD RESERVE | AIRPORT TERMINAL BUILDING | FUTURE AIRCRAFT PAVEMENT | DRAIN |
| GENERAL AVIATION | | EXISTING PAVEMENT (ROAD) | |



Base data provided by City of Windsor
Map created by Paddy Kennedy
Map checked by FRF



File Location: \\20dillon,dillon.ca\toronto data\PROJECTS\DRAFT\09\092665 Windsor Airport Master Plan

Map Projection: n/a
Project #: 09-2665
Status: n/a
Date: December 2010



The Development Plan is intended to meet the current and future airside, air terminal and groundside requirements of Windsor International Airport. The plan allocates sufficient land to accommodate Airport growth beyond the planning horizon.

Development projects are identified in Table 8-1 along with the trigger points when each project will be required.

Rough order-of-magnitude cost estimates are provided for immediate and short-term projects.

Several projects could be combined. Longer-term projects are not included in the capital project list as the scope will vary depending on actual growth rates experienced, and the attraction of new lines of business to the Airport.

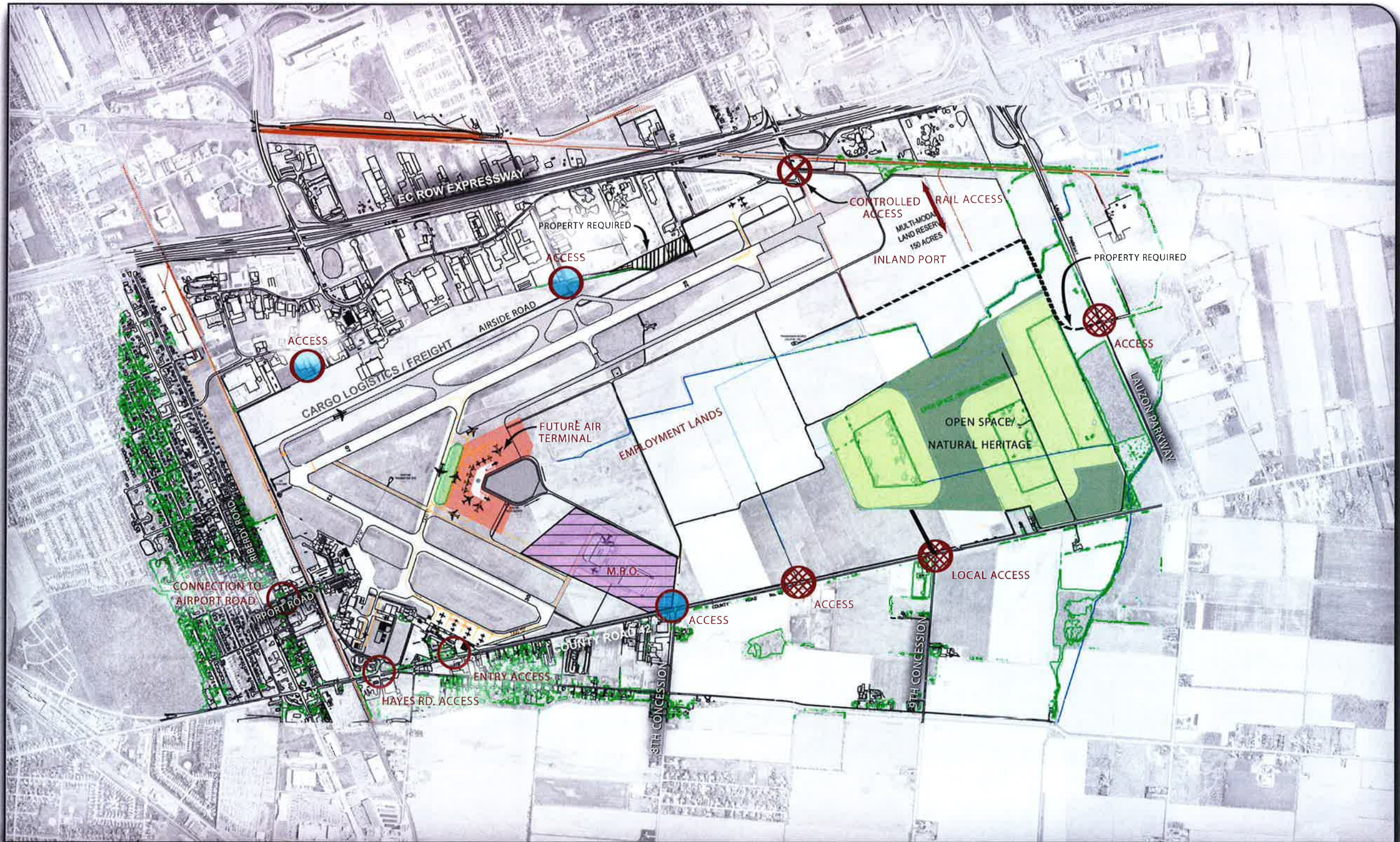
It is recommended that implementation of projects be demand driven as Airport marketing and growth objectives are achieved. The Development Plan is illustrated in Figure 8-1.

Table 8-1 – Development Plan

Project	Phasing Trigger	ROM Cost	Refer. Sect.
Airport Lands			
Construct partial parallel taxiway north of Runway 07-25.	To provide access to new north employment lands, as demand develops.	\$ 10 million	5.1.2
Construct taxiway on the east side and parallel to Runway 12-30.	To provide access to the new south employment lands and access by heavy aircraft from these lands to Runway 07-25, as demand develops.	\$ 3.5 million	5.1.2
Expand Apron I in the vicinity of Taxi 'G' to accommodate Code E aircraft.	To provide parking for B747-400 cargo aircraft as demand develops and Runway 12-30 requires precision approach zoning protection.	\$ 2 million	5.1.3
Maintain Runways to extend the life of these assets.	Short-term repaving of Runway 12-30 (2016).	\$ 1.5 million	5.1.1
Construct airside service road linking Apron III to Apron I, and Apron I to the north employment lands.	As required to support air cargo facilities developments.	\$210,000	6.2
Expand ATB to approximately 5,250m ² to provide additional space for passenger check-in queuing, international and trans-border arrivals, related amenities, and concessions.	Immediate requirement to serve current peak hour passengers (TPHP) of 157.	\$2.0 million	5.3.3
Expand ATB to 5,800m ² to meet projected growth in passenger traffic in the short-term.	Expansion anticipated in the short-term (5 years) to serve projected peak hour passenger (TPHP) growth to 253.	\$2.5 million	5.3.4
Prepare engineering study of the ATB.	Prepare prior to embarking on ATB improvement programs.	\$50,000	5.3.4
Complete drainage and pavement resurfacing of private groundside and airside roadways serving the Airport operations.	Short-term to medium-term need, subject to roadway conditions.	\$ 1.5 million	5.4.1

Project	Phasing Trigger	ROM Cost	Refer. Sect.
Prepare Airport parking study.	Immediate requirement to determine current and future demand characteristics and requirements for parking.	\$35,000	5.4.2
Prepare engineering study of the FEC.	Short-term requirement to assess the existing systems, equipment and components in the FEC and the life expectancy of the facility.	\$15,000	5.6.3
Construct a new maintenance building at another location on site, including consideration for combining this with emergency response services needs.	Medium-term, as maintenance requirements increase.	\$ 2.5 million	5.9.3
Develop a Secondary Plan/Official Plan Amendment to re-designate future employment area to permit employment uses including a Business Park and establish road and servicing network.	Short-term.	By City Planning & Eng. Depts.	6.6
Develop Phase I air cargo facility.	Immediate investment to foster air cargo development.	\$ TBD	6.3
Develop North Side Employment Lands.	Development of Phase II air cargo facilities, or shortage of general aviation development land.	\$ TBD	6.3
Develop South Side Employment Lands.	Development of large MRO and/or aerospace manufacturing on adjacent employment lands.	\$ TBD	6.8
Develop Cargo Village.	Assemble as critical mass of related businesses develops on Airport lands in vicinity of each other.	\$ TBD	6.3
Develop Multi-Modal Port.	Development of Multi-Modal Rail/Truck Facility.	\$ TBD	6.4
Complete a stormwater management (SWM) plan for the Airport lands and implement stormwater management measures.	Immediate need for SWM Plan. Short-term to longer-term implementation of SWM facilities in stages as development proceeds.	\$50,000 \$15.6 million	5.5.3 and 5.10
Protect and maintain environmental sensitive area adjacent the Airport Woodlot.	Immediate to short-term.	N/A	5.5.3 and 5.10
Complete environmental studies to confirm the significance of the natural environment and mitigating measures resulting from development impacts.	Short-term.	\$ TBD	5.5.3 and 5.10
Surrounding Lands			
Complete environmental assessment studies for County Road 42 and Lauzon Parkway.	Immediate.	\$ TBD	2.4.2
Implement the preferred road improvement alternatives arising from the above environmental assessment studies.	Short to medium-term.	\$ TBD	2.4.2
Complete traffic impact studies to confirm external roadway improvement measures to accommodate development.	Progressive studies as development opportunities arise.	\$ TBD	2.4.2

Project	Phasing Trigger	ROM Cost	Refer. Sect.
Confirm existing water distribution system capacity and associated improvements in the interim until trunk feeder mains are completed by WUC.	Immediate to short-term. Trunk watermain facilities from Banwell (North of EC Row) to Cabana (East of Howard).	\$ 26.3 million	5.5.1
Complete a sanitary servicing study to confirm the opportunities to expand the drainage area boundary for the trunk sanitary.	Medium-term.	\$ 50,000	5.5.2
Complete improvements to the Little River Pollution Control Plant, as required to meet sewage flow demands from the expanded service area.	Longer-term.	\$ TBD	5.5.2



**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 8-1 - RECOMMENDED DEVELOPMENT PLAN

-  CONTROLLED EXISTING ACCESS (JEFFERSON)
-  FUTURE PROPOSED ACCESS
-  POTENTIAL ACCESS
-  EXISTING ACCESS

An Open House and Public Information Centre (PIC) was held on May 30, 2011, to provide the public and agencies with an opportunity to review and provide comments on the findings and recommendations of the Airport Master Plan. The displays from the PIC are included in Appendix F. This PIC was held for information purposes only and was not conducted as a statutory public meeting under the Planning Act.

The public was notified of this PIC through a published advertisement in the Windsor Star on Saturday, May 21, 2011, a copy of which has been included in Appendix F. Relevant agencies were directly notified of this PIC through a letter dated May 10, 2011, the distribution list and copy of which has also been included in Appendix F. The Mayor and members of City of Windsor Council were invited to attend a presentation of the Airport Master Plan in advance of the PIC.

A total of 35 attendees recorded their signatures on the PIC sign-in sheet. A total of 4 comment sheets were returned. This information has been included in Appendix F.

In addition, comments were received from two residents of Riberdy Road, copies of which have also been included in Appendix F.

In addition, several public and agency representatives requested a copy of the PIC display panels, as well as an opportunity to review the draft Airport Master Plan report. This information was provided to these stakeholders through electronic mail on June 3, 2011, with a request to return any further comments by June 24, 2011. A list of those stakeholders has been included in Appendix F.

The Essex Region Conservation Authority submitted their comments relating to permits and authorizations, stormwater management, natural heritage restoration opportunities, and source protection planning considerations in a letter dated June 21, 2011. A copy of their letter has been included in Appendix F.

In addition, the Windsor-Essex County Environment Committee (WECEC) submitted their comments in a letter dated July 9, 2011, a copy of which has also been included in Appendix F.

No further public or agency input was received.

Appendix A – Passenger Demand Forecast Methodology

Appendix A – Passenger Demand Forecast Methodology

Traffic forecasts are usually based on past history. Previous traffic volumes are examined, and related through a mathematical model to various socioeconomic variables such as GDP. Good forecasts or projections of these “explanatory” variables are usually available. When “plugged in” to the mathematical model, they generate forecasts of future activity. This process, called a “time series analysis,” examines the behaviour of a single entity over a period of time.

The Airport has a limited data of scheduled services on which to develop such a model. Its services are too young to have generated any useful insights about the future. These limits call for a “cross-sectional” approach. Rather than examining previous years for the same Airport, the analysis looks at a sample of other Canadian Airports. These communities are considered “similar” to Windsor after correcting for several socioeconomic disparities. The sample excludes far northern communities and hub Airports.

The econometric model used a double-logarithm specification. Results of an ordinary least squares regression are shown in Table A-1. In some situations, the population and income statistics were consolidated for several communities located close to the Airport.

Table A-1 - Ordinary Least Squares Regression of Model

	Coefficients	Standard Error	T Statistic
Intercept	-0.27428	3.620173	-0.07576
Log of Population	0.911636	0.09977	9.137415
Log of Per Capita Income	0.284157	0.835257	0.340204

R-square 0.798021 Standard error 0.77966

Table A-2 - Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Square	F-Statistic
Regression	2	5.122826	2.561413	43.4612
Residual	22	1.296584	0.058936	
Total	24	6.41941		

The regression shows that population is a strong predictor of traffic. Per capita personal income exercises a positive influence, but the model does not indicate statistical significance. The model as a whole shows strong explanatory power, as measured by a highly significant “F” statistic.

The r-square statistic ranges from 0 to 1. It compares the variation explained and unexplained by the model. A value close to unity indicates that the model has explained almost all of the variation in the data. A large r-square does not necessarily indicate a “good” model. Some situations are inherently subject to large random variations. A high square can always be obtained through enough manipulation of the model, but the results are then genuinely misleading.

The r-square of .798 is relatively high for a cross-sectional model. Times series based models often have r-squares exceeding .9.

The model showed distortions from heteroscedasticity, as indicated by a significant Golfeldt-Quandt statistic. Heteroscedasticity is a common problem with cross-sectional models. The linear regression algorithm can produce estimates of coefficients that have many desirable properties. However, it requires that the dispersion of the error term, either negative or positive, does not depend on the underlying "X" variables. The models developed use population, income and a regional dummy as exogenous variables. There was a fear that large, populous communities would have large negative or large positive error terms, and small communities would have small negative and small positive error terms. This property would have rendered the T and F tests invalid. Other estimation procedures could then provide coefficients with optimal properties. A weighted least squares procedure produced the following unbiased, minimum variance estimates of the coefficients:

Table A-3 - Generalized Least Squares Regression of Model

	Coefficients	Standard Error	T Statistic
Intercept	-0.27058	2.791085	-0.09695
Log of Population	0.969332	0.627322	1.545191
Log of Per Capita Income	0.293696	0.722912	0.406268

Table A-4 - Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Square	F-Statistic
Regression	2	0.157467	0.078733	7.174185
Residual	22	0.24144	0.010975	
Total	24	0.398907		

The estimation procedures tested other potential explanatory variables, including household income, unemployment rates, regional dummy variables (e.g. a "1" if the community was in eastern Canada, otherwise a zero) and distances from a hub or international services Airport. These variables did not contribute to the explanatory power of the model.

Appendix B – Passenger Statistics and Forecasts

**Table B-1 - Windsor International Airport Passenger Forecasts
(Enplaned and Deplaned Passengers)**

	Current Services	WestJet	Porter	Aug-mented Charter	Air Canada	Oil Sands	Trans-border	Most Likely	Maximum
1996	180,602							180,602	180,602
1997	205,976							205,976	205,976
1998	216,675							216,675	216,675
1999	240,528							240,528	240,528
2000	206,675							206,675	206,675
2001	157,445							157,445	157,445
2002	158,213							158,213	158,213
2003	171,748							171,748	171,748
2004	157,114							157,114	157,114
2005	154,083							154,083	154,083
2006	136,093							136,093	136,093
2007	140,680							140,680	140,680
2008	122,804							122,804	122,804
2009	122,804							122,804	122,804
2010	126,734							126,734	126,734
2011	130,789		47,693	6,480				184,962	184,962
2012	134,974	58,030	71,736	12,960	25,620			219,670	303,321
2013	139,293	86,808	71,540	12,960	38,325	13,140	0	236,933	362,066
2014	153,397	86,808	95,387	12,960	38,325	13,140	54,750	274,883	454,766
2015	160,448	144,680	107,310	19,440	38,325	13,140	82,125	300,338	565,468
2016	174,552	174,091	107,604	19,440	64,050	26,352	82,350	327,948	648,439
2017	181,604	173,616	131,157	19,440	76,650	26,280	82,125	358,480	690,871
2018	195,707	231,488	143,080	25,920	76,650	26,280	82,125	390,987	781,250

Table B-1 - Windsor International Airport Passenger Forecasts (Cont'd)
(Enplaned and Deplaned Passengers)

	Current Services	WestJet	Porter	Aug-mented Charter	Air Canada	Oil Sands	Trans-border	Most Likely	Maximum
2019	202,759	260,424	143,080	25,920	76,650	26,280	82,125	398,039	817,237
2020	216,862	261,137	143,472	25,920	102,480	26,352	82,350	412,606	858,573
2021	223,914	318,295	143,080	32,400	114,975	26,280	82,125	425,674	941,069
2022	241,314	347,231	143,080	32,400	114,975	26,280	82,125	443,074	987,405
2023	249,036	347,231	143,080	32,400	114,975	26,280	82,125	450,796	995,127
2024	257,005	348,183	143,472	38,880	115,290	26,352	82,350	465,709	1,011,532
2025	265,229	347,231	143,080	38,880	114,975	26,280	82,125	473,469	1,017,801
2026	273,716	347,231	143,080	38,880	114,975	26,280	82,125	481,956	1,026,288
2027	282,475	347,231	143,080	45,360	114,975	26,280	82,125	497,195	1,041,527
2028	291,515	348,183	143,472	45,360	115,290	26,352	82,350	506,699	1,052,521
2029	300,843	347,231	143,080	45,360	114,975	26,280	82,125	515,563	1,059,895
2030	310,470	347,231	143,080	45,360	114,975	26,280	82,125	525,190	1,069,522
1996-2000	3.43%	-	-	-	-	-	-	3.43%	3.43%
2000-2010	-4.77%	-	-	-	-	-	-	-4.77%	-4.77%
2010-2020	5.52%	-	-	-	-	-	-	12.53%	21.08%
2020-2030	3.65%	2.89%	-0.03%	5.76%	1.16%	-0.03%	-0.03%	2.44%	2.22%
2010-2030	4.58%	-	-	-	-	-	-	7.37%	11.25%

Appendix C – Aircraft Movement Statistics and Forecasts

This information is outdated at the time of finalizing the Master Plan in December 2010 and does not reflect the introduction of WestJet in 2010 and Porter in 2011.

**Table C-1 - Windsor International Airport Charter and Scheduled Operations Forecasts
(Landings and Takeoffs)**

	Current Operations	WestJet	Porter	Charter	Air Canada	Oil Sands	Trans-border	Most Likely	Maximum
1996	9,555							9,555	9,555
1997	8,060							8,060	8,060
1998	13,836							13,836	13,836
1999	15,370							15,370	15,370
2000	13,176							13,176	13,176
2001	8,843							8,843	8,843
2002	8,778							8,778	8,778
2003	8,159							8,159	8,159
2004	8,167							8,167	8,167
2005	8,128							8,128	8,128
2006	7,179							7,179	7,179
2007	7,421							7,421	7,421
2008	6,478							6,478	6,478
2009	6,478							6,478	6,478
2010	6,685							6,685	6,685
2011	6,899		973	48				7,921	7,921
2012	7,120	488	1,464	96	488			8,680	9,656
2013	7,348	730	1,460	96	730	104		9,008	10,468
2014	7,348	730	1,947	96	730	104	1,460	9,495	12,415
2015	7,348	1,217	2,190	144	730	104	2,190	9,786	13,923
2016	7,348	1,464	2,196	144	1,220	209	2,196	9,897	14,777
2017	7,348	1,460	2,677	144	1,460	209	2,190	10,377	15,487
2018	7,348	1,947	2,920	192	1,460	209	2,190	10,668	16,265

Table C-1 - Windsor International Airport Charter and Scheduled Operations Forecasts (Cont'd)
(Landings and Takeoffs)

	Current Operations	West Jet	Porter	Charter	Air Canada	Oil Sands	Trans-border	Most Likely	Maximum
2019	7,348	2,190	2,920	192	1,460	209	2,190	10,668	16,508
2020	7,348	2,196	2,928	192	1,952	209	2,196	10,677	17,021
2021	7,348	2,677	2,920	240	2,190	209	2,190	10,716	17,773
2022	7,348	2,920	2,920	240	2,190	209	2,190	10,716	18,016
2023	7,583	2,920	2,920	240	2,190	209	2,190	10,952	18,252
2024	7,826	2,928	2,928	288	2,196	209	2,196	11,251	18,571
2025	8,076	2,920	2,920	288	2,190	209	2,190	11,493	18,793
2026	8,334	2,920	2,920	288	2,190	209	2,190	11,751	19,051
2027	8,601	2,920	2,920	336	2,190	209	2,190	12,066	19,366
2028	8,876	2,928	2,928	336	2,196	209	2,196	12,350	19,670
2029	9,160	2,920	2,920	336	2,190	209	2,190	12,625	19,925
2030	9,454	2,920	2,920	336	2,190	209	2,190	12,918	20,218
1996-2000	8.36%							8.36%	8.36%
2000-2010	-6.56%							-6.56%	-6.56%
2010-2020	0.95%							4.79%	9.80%
2020-2030	2.55%	2.89%	-0.03%	-	1.16%	-0.03%	-0.03%	1.92%	1.74%
2010-2030	1.75%	-	-	-	-	-	-	3.35%	5.69%

Appendix D – GA Forecasts

**Table D - Windsor International Airport General Aviation Forecasts
(Operations)**

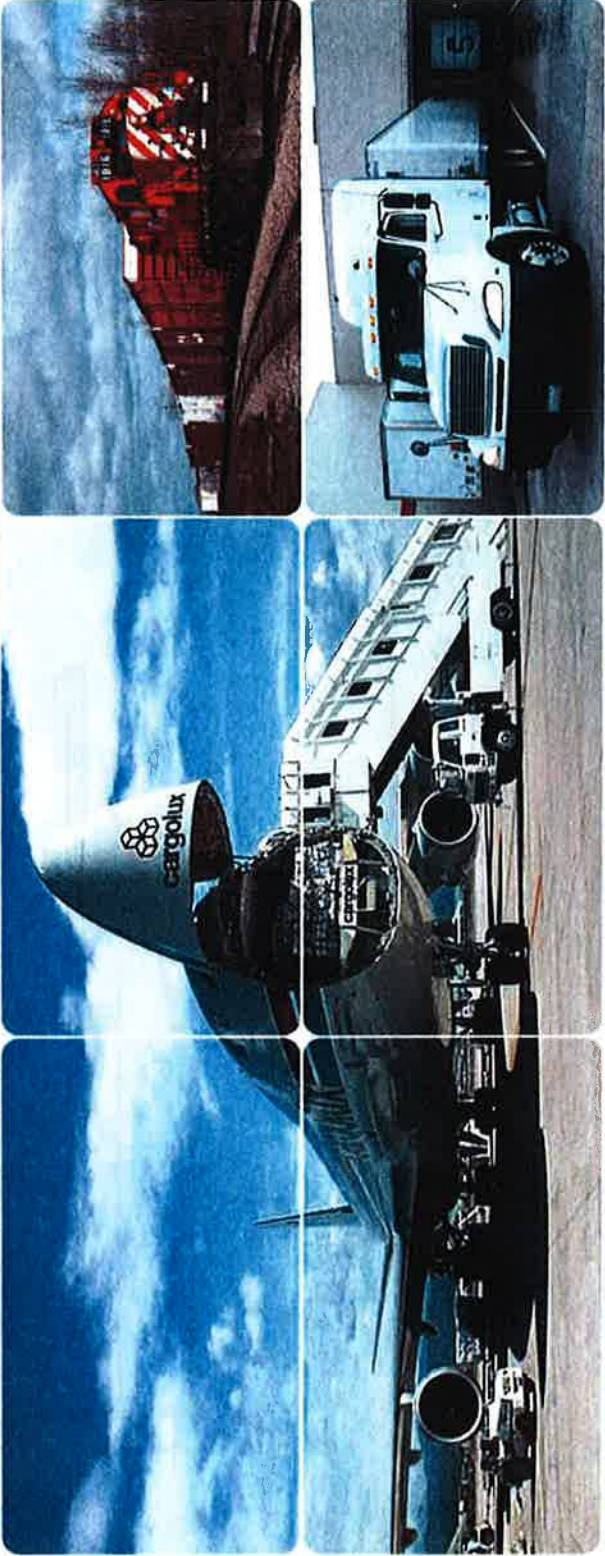
	Level IV- VI	Other Commercial	Private	Civil	Military	Local	Total
1996	11,818	889	5,669	309	155	27,480	46,320
1997	14,407	426	6,341	185	307	26,290	47,956
1998	11,996	498	7,687	230	155	10,900	31,466
1999	9,511	858	9,272	201	158	9,557	29,557
2000	7,946	654	8,061	257	399	12,333	29,650
2001	6,510	1,018	6,311	242	110	13,431	27,622
2002	5,851	1,476	6,957	284	95	8,915	23,578
2003	8,355	472	5,750	240	143	15,729	30,689
2004	5,755	1,192	4,941	312	37	12,356	24,593
2005	5,686	1,849	4,772	315	128	12,592	25,342
2006	6,920	533	4,042	298	75	9,652	21,520
2007	10,427	815	3,679	184	78	17,994	33,177
2008	11,043	923	3,716	212	56	19,145	35,095
2009	10,427	815	3,679	184	78	17,994	33,177
2010	10,531	859	3,755	189	83	18,186	33,604
2011	10,637	905	3,833	195	87	18,380	34,038
2012	10,743	954	3,913	200	93	18,576	34,480
2013	10,850	1,006	3,994	206	98	18,775	34,929
2014	10,959	1,060	4,077	212	104	18,975	35,387
2015	11,068	1,117	4,162	218	110	19,178	35,854
2016	11,179	1,177	4,249	224	117	19,382	36,329
2017	11,291	1,241	4,337	231	123	19,589	36,812
2018	11,404	1,308	4,427	237	131	19,799	37,306
2019	11,518	1,379	4,519	244	138	20,010	37,808
2020	11,633	1,453	4,613	251	147	20,223	38,320
2021	11,749	1,531	4,709	259	155	20,439	38,843
2022	11,867	1,614	4,807	266	164	20,658	39,375
2023	11,986	1,701	4,906	274	174	20,878	39,919
2024	12,105	1,793	5,008	281	185	21,101	40,474
2025	12,226	1,890	5,112	290	195	21,326	41,040
2026	12,349	1,992	5,219	298	207	21,554	41,618
2027	12,472	2,099	5,327	306	219	21,784	42,208
2028	12,597	2,212	5,438	315	232	22,017	42,811
2029	12,723	2,332	5,551	324	246	22,252	43,427
2030	12,850	2,458	5,666	334	260	22,489	44,057
1996-2000	-9.45%	-7.39%	9.20%	-4.50%	26.67%	-18.15%	-10.55%
2000-2010	2.86%	2.76%	-7.35%	-3.01%	-14.57%	3.96%	1.26%
2010-2020	1.00%	5.40%	2.08%	2.87%	5.91%	1.07%	1.32%
2020-2030	1.00%	5.40%	2.08%	2.87%	5.91%	1.07%	1.40%
2010-2030	1.00%	5.40%	2.08%	2.87%	5.91%	1.07%	1.36%

Appendix E – Multi-modal Port - Land Use Options Presentation

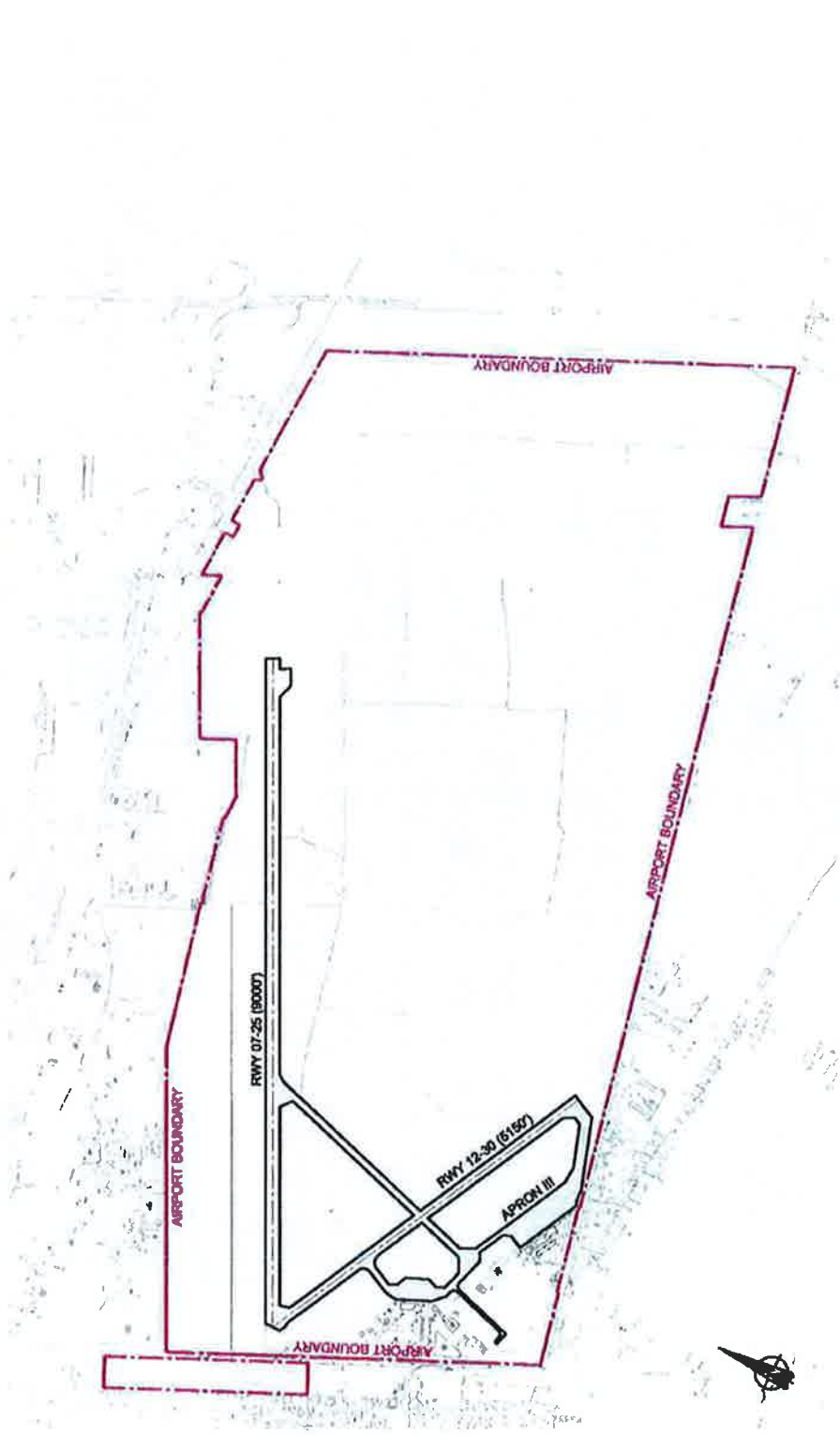


Multi-modal Port - Land Use Options

Windsor Airport Master Plan 2010



Airport Layout





Lufthansa Phase 1 Market Potential Analysis

Provides:

- Comprehensive analysis of Canada – U.S. trade and modality
- Analyses national and regional economies
- Quantifies existing air cargo activity within 350 km at 8 airports
- Projects **59,000 tonnes to 90,000 tonnes** of cargo by 2034
- Assumes capture/diversion of traffic from successful airports
- Other unspecified opportunities

Lufthansa Phase 2 Feasibility Study

Windsor needs to know:

- **Specific strategies for capture of traffic**
 - eg: superior location, unique facilities, logistics advantages, etc.
- **Assumptions of how much traffic will be captured from other airports**
 - either as an overall percentage, or by individual airport competitor
- **Types, nature, volumes, modes, directionality or seasonality of any potential cargo flows**
- **Strategic risks in capturing share of existing market**
- **To accommodate all likely outcomes LPS AVIA has undertaken an assessment of Land Needs and Options**

Typical Multi-modal Port Statistics

Port	Modes	Area (ha)	Recent Throughput (tonnes)
Frankfort (FRA)	Air, Ground	180	430,000
Denver (DEN)	Air, Ground	22	221,000
San Antonio (SAT)	Air, Ground	12	111,500
Kansas City (MCI)	Air, Ground	50	90,700
Baltimore-Washington	Air, Ground	20	84,000
Huntsville	Air, Ground, Rail	250*	73,000
Jacksonville (JAX)	Air, Ground	26	66,600
Richmond (RIC)	Air, Ground	16	46,500
Charlotte (CLT)	Air, Ground	72	45,000

* includes adjacent industrial park and available lands

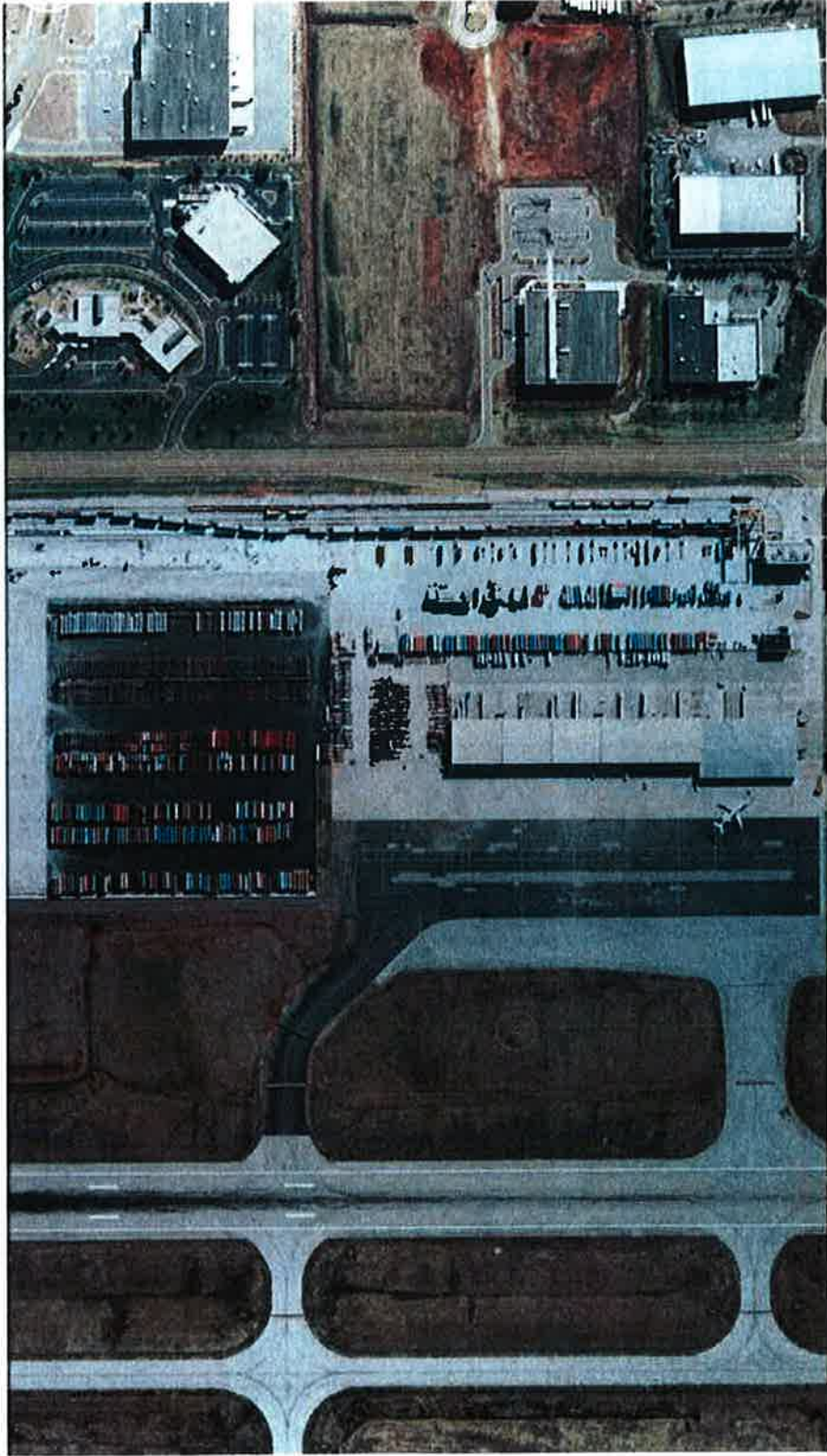
Case History – Huntsville Alabama

- Best successful analogy to Windsor Airport
- Huntsville population 176,000
- 1.2 million air passengers
- 12,600 ft. runway
- Intermodal centre for U.S.- Europe cargo
- Airport has:
 - Air cargo terminal
 - International all-cargo flights
 - Rail spur for container trains
 - Foreign trade zone
 - Industrial park
 - Inland port
- **Multi-modal port approximate area 250 ha.**



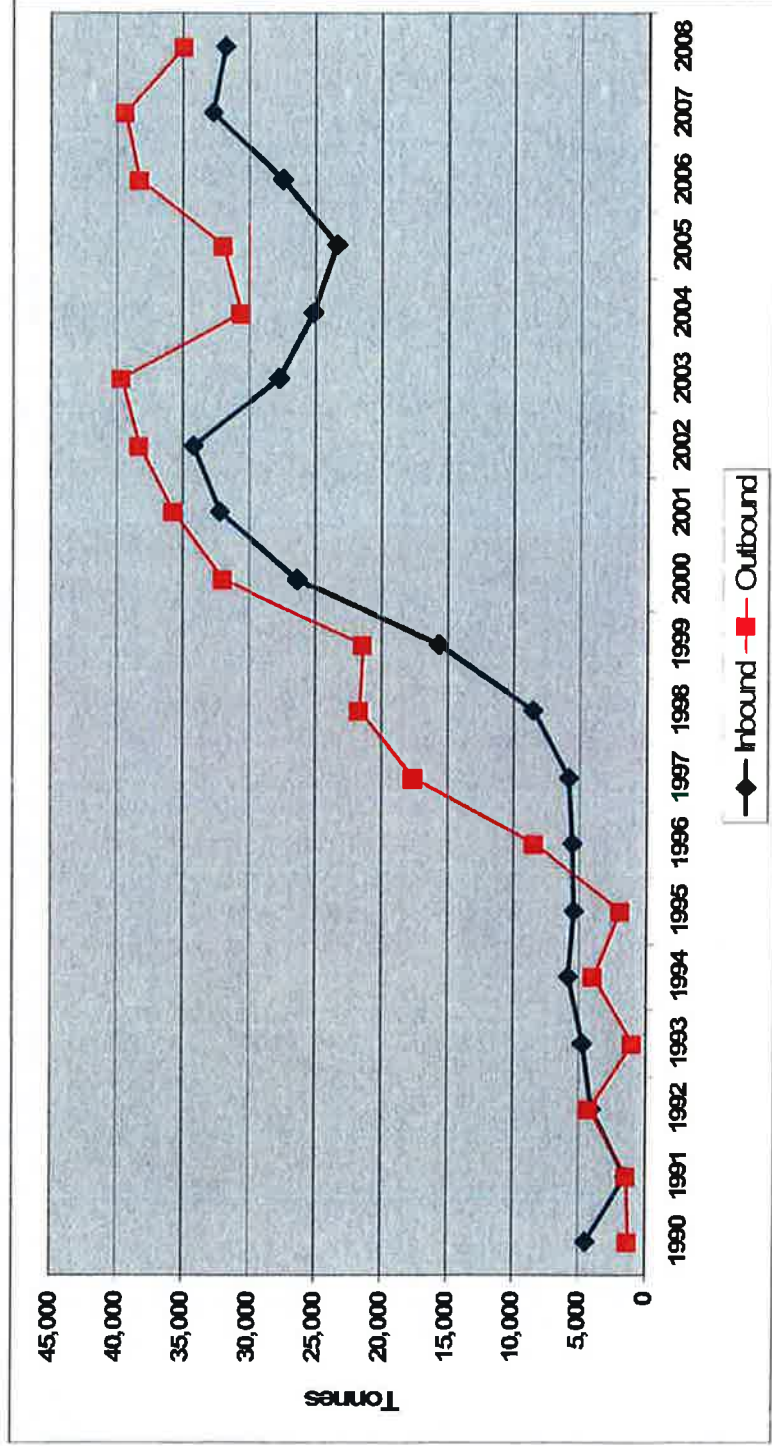


Huntsville Alabama



Huntsville Air Cargo Growth

Huntsville-Europe Air Freight





Why Huntsville Succeeded

1. 12,600' runway can accommodate international freighter flights
2. Centroid of demand for high value air transportation
3. Forwarder established consolidation center (Panalpina)
4. Forwarder chartered freighter aircraft
 - CargoLux service for Huntsville-Luxembourg flights

Most forwarders rely on belly capacity in passenger flights (see Phase 1 Report)

Why Huntsville Succeeded

5. Truck access from Houston
 - high value petroleum-related cargo
6. Truck access from manufacturing areas of Carolinas
 - sophisticated high value items (transportation premium)
7. Concentration of foreign car plants in Alabama and Tennessee
8. Oak Ridge Laboratories
 - nuclear weapons research complex
9. On major Interstate Highways

Support of air freight forwarder is essential for air cargo airport development

Limits of Huntsville Model

- Panalpina tried to establish similar operation at Hartford Connecticut but failed
 - Too close to large airports, inadequate traffic
- Huntsville has so far not obtained trans-Pacific freighter flights
- Multi-modal operations are limited
 - Trucks feed air or rail modes
 - Rail does not usually feed air mode
- Reliance on one forwarder and on all-cargo flights has risks.



Windsor Airport Land Reserve Options

- LPS AVIA has developed 3 options for multimodal land development within current Windsor Airport Lands

Option 1: Maximum Multi-modal Port Capability

Option 2: Minimum Multi-modal Port Capability

Option 3: Multi-Opportunity Configuration

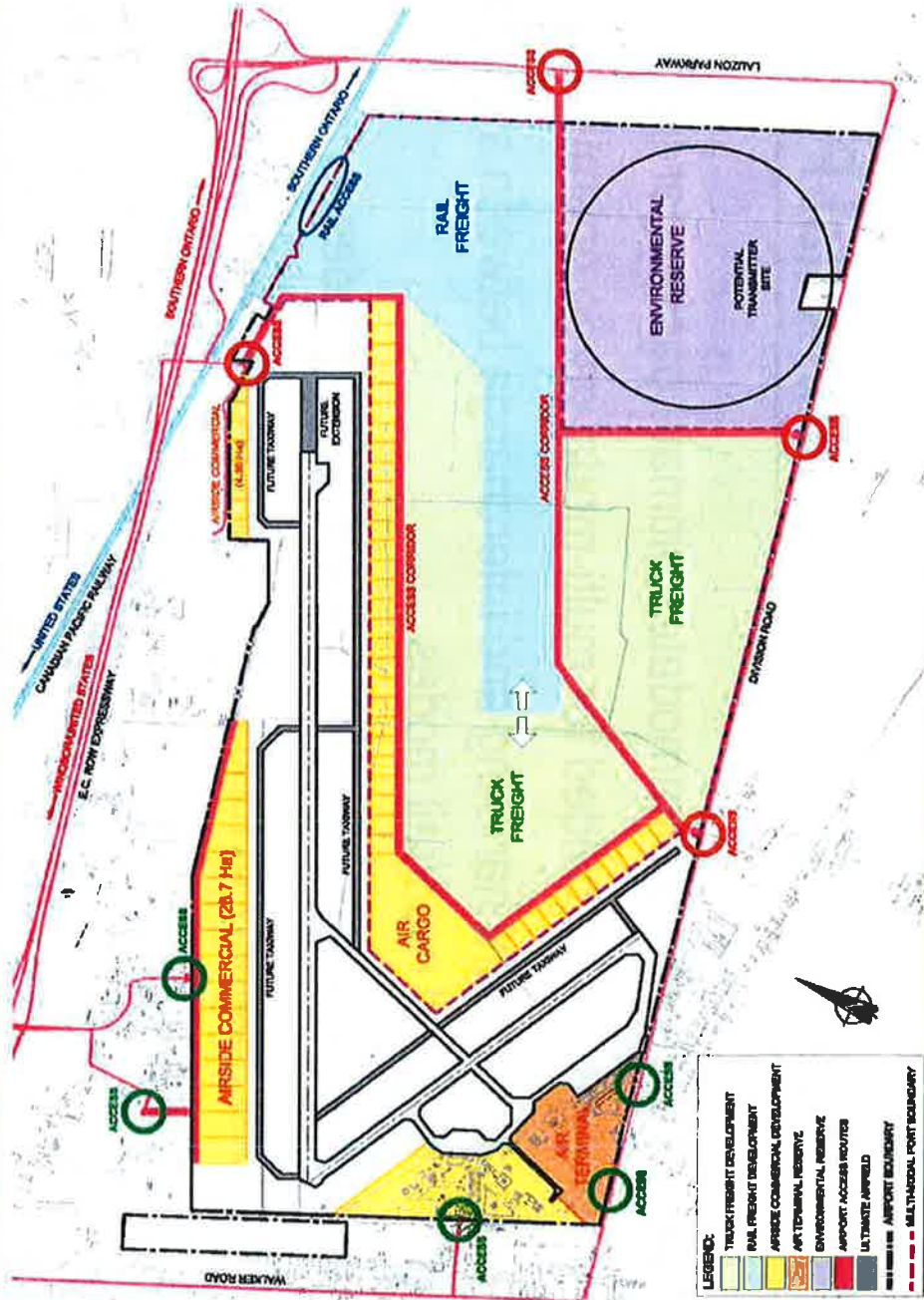


Windsor Option 1 - Maximum Multimodal Port

- Current ATB site accommodates ultimate passenger traffic
- Maximizes land provided for multi-modal cargo operations
- Integrates freight handling and interchange between air/road, road/road and road/rail modes
- Addresses key adjacency requirements for modes
- Provides flexibility of land assignment within each mode
- 4 multi-modal road access points
- 1 CP rail access point (bi-directional with parallel mainline siding)
- Extensive air cargo linear facility and hub operation capability
- Area of Multi-modal port up to **360 ha**.



Windsor Option 1 – Maximum Multimodal Port

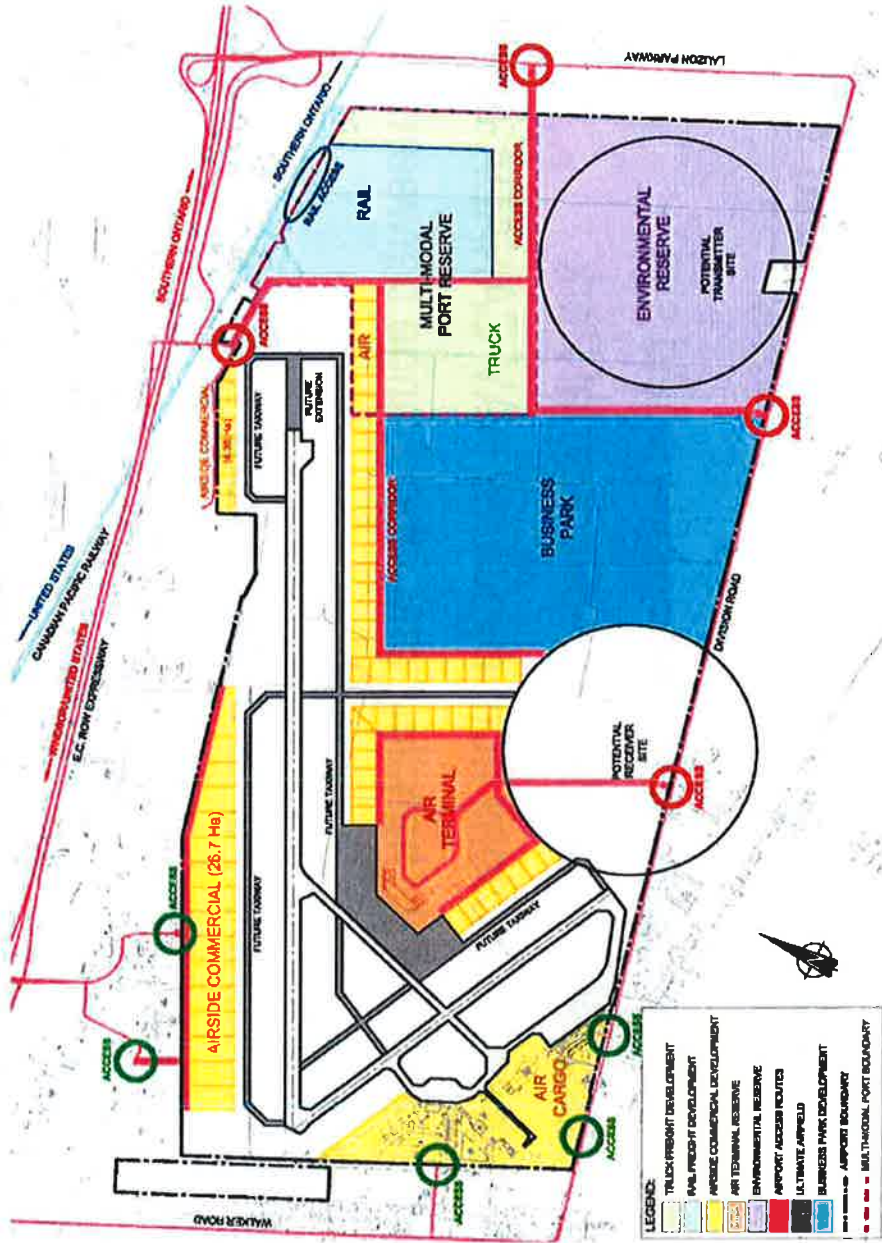




Windsor Option 2 - Minimum Multimodal Port

- Includes relocation of air terminal to infield site
- Includes independent or linked Industrial Park
- Assumes restrictions from relocated NAV CANADA equipment
- Integrates freight handling and interchange between:
 - Air/road, road/road and road/rail modes
- Provides flexibility of land assignment within each mode
- 3 multi-modal road access points
- 1 CP rail access point (bi-directional with parallel mainline siding)
- Moderate air cargo linear facility capability
- Area of Multi-modal port component approximately **100 ha.**

Windsor Option 2 – Minimum Multimodal Port



Rail Option - Inland Port

- Inland consolidation centre
- Expedited rail link to ocean port
- Trucks connect to inland shippers and consignees.
- Inland port relieves congestion at water ports and helps them attract business
- Attracts forwarders, manufacturers, warehousing
- Example: Virginia Inland Port
- Area approximately **26 ha.**



Virginia Inland Port



January 26, 2010

aviation planning + management consulting | for today's transport industry

Windsor Option 3 – Multi-Opportunity Configuration

- Expands on Option 2 and increases potential opportunities
- Adds Inland Port capability
 - Increases area of rail facilities and rebalances others
- Can respond to Market Assessment results for each mode
- For illustrative purposes assigned areas on east side include:

Air Cargo = 22 ha.

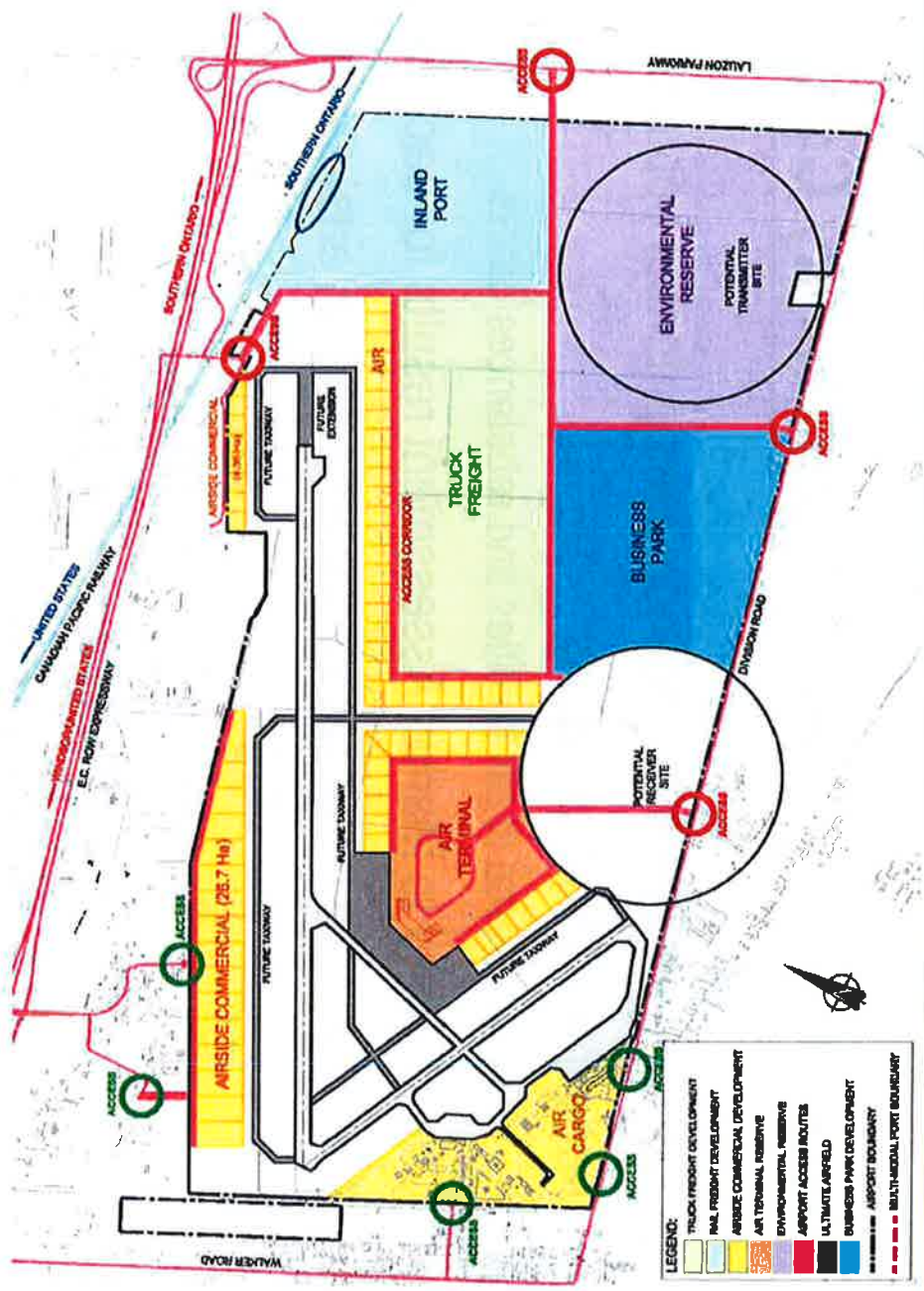
Rail Freight = 60 ha.

Truck Freight = 83 ha.

Industrial Park = 70 ha.

Total = 235 ha.

Windsor Option 3 – Multi-Opportunity Configuration





Findings for Multi-modal Land Reserve

Air Cargo

- Base investment strategy on finding a freight forwarder willing to develop an operation at Windsor
- Support development of passenger services to boost Windsor cargo capacity
- Consider Huntsville Airport as a multi-modal model

Rail

- Evaluate Inland Port option
- Establish partnerships with ports, railroads for services to Windsor
- Locate port to promote development of related industries
- Consider Virginia Inland Port as a model



Findings for Airport Master Plan

Master Plan must :

- accommodate air cargo arising from intermodal projects, through providing sufficient space for cargo terminals;
- provide non-conflicting land uses with intermodal terminals or inland port developments;
- provide flexibility to accommodate unforeseen activities in adjacent lands;
- be based on a broad economic development plan for airport and adjacent lands.



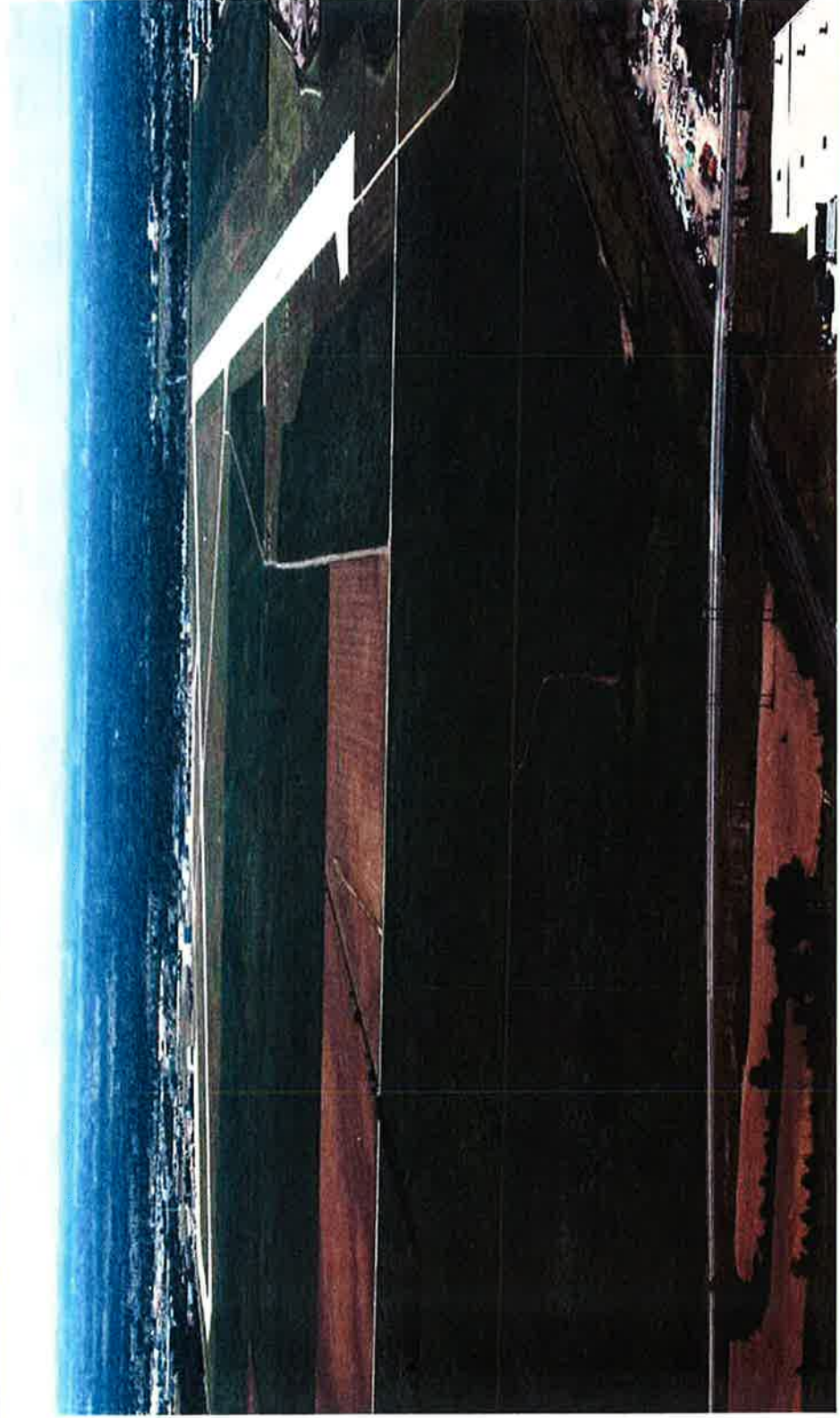
Conclusions

1. Ample land is available for development:
Multi-modal Port, Inland Port, Industrial Park and Cargo Village
2. A large port can be developed while reserving sufficient land for ultimate airport development.
3. A series of specialist studies are required to establish the scope, scale, timing and modes of port development.
4. Individual site development plans will define the type, nature, volumes, modes, directionality and seasonality of cargo flows.
5. Option 3 provides the most flexible balance of land assignments for air, truck and rail modes capable of accommodating all likely needs multi-modal port needs and good access for rail, road, air cargo movement.

Recommendations

- 1. It is recommended that a Staged Master Plan approach be adopted.**
- 2. Master Plan Updates can be prepared as specialist studies are undertaken and completed.**
- 3. It is recommended that the Master Plan adopt Option 3 Multi-opportunity Configuration for accommodating a Multi-modal Port facility as the base concept for the Master Plan.**
- 4. Results of specialized studies can be integrated as they become available.**

Questions





LPS AVIA
CONSULTING

One Antares Drive, Suite 250

Ottawa, ON K2E 8C4

Telephone: (613) 226-6050

Fax: (613) 226-5236

e-mail: info@lpsaviation.ca

www.lpsaviation.ca

Appendix F – Public and Agency Consultation



YQGG | YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT



WELCOME

MASTER PLAN 2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

MASTER PLAN

2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

Outline of Panels

- Purpose of the Master Plan and Goal
- About the Windsor Airport
- Land Use Plan
- General - Current Conditions Plan
- Conceptual Developments Plan
- Development Constraints Drawing
- Recommended Development Plan
- Existing Servicing - External
- Aircraft Noise



MASTER PLAN

2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

Purpose of the Master Plan

- The Windsor International Airport Master Plan is the overall planning document that will guide the development of the Airport and assist the City and the private sector in making land use decisions involving surrounding lands.
- It provides an in-depth profile of the physical conditions and capacities of the Airport's facilities and infrastructure and determines requirements to meet future needs and development potential, while recognizing the financial implications of improvements.
- The Master Plan builds on the vision of YQG and the City to facilitate long range planning and development on the surrounding lands that support and reinforce the City's investment in Windsor International Airport.

GOAL:

To stimulate cost effective development on the Windsor International Airport lands through the short (2010-2015), medium (2016-2020) and long-term (2021-2031) planning horizons.





	PROJECT		DRAWING NO.		DATE	
	GENERAL SITE PLAN		AIRPORT BOUNDARY		AUGUST 2010	
DESIGNED BY		CHECKED BY		DATE		
PJR		FN		1 - 1		
SCALE		APPROVED BY		DATE		
				YQGG 001		

MASTER PLAN

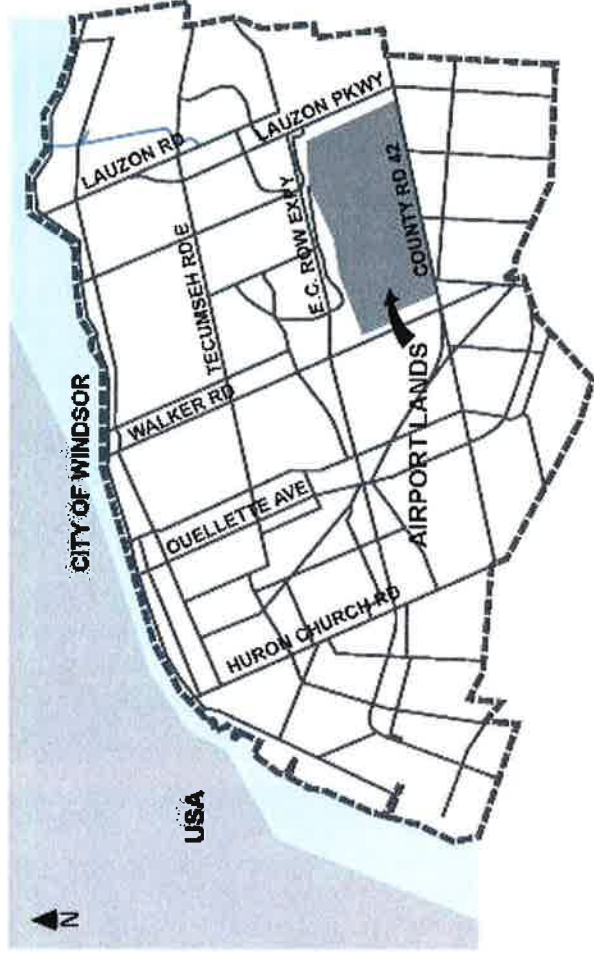
2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

About the Windsor International Airport

Windsor International Airport is owned by the Corporation of the City of Windsor and is operated by Your Quick Gateway (Windsor) Inc. (YQG), a wholly owned corporation of the City of Windsor under a long-term management agreement.



- The Windsor International Airport property is approximately 813 hectares in size and is located within the Sandwich South Planning District in the City of Windsor, approximately 8 km south of the Windsor Downtown area.
- The Airport is part of the Windsor-Essex Region, composed of the City of Windsor and the County of Essex.

YQG | YOUR QUICK GATEWAY
WINDSOR INTERNATIONAL AIRPORT



MASTER PLAN

2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

Land Use Plan

The Airport lands comprise approximately 813 hectares and are designated “Airport, Industrial, Future Employment Area, Open Space and Natural Heritage” in the City’s Official Plan.

Purpose of this Land Use Plan:

The recommended Airport Land Use Plan has been prepared to address short, medium and long-term development potential. The intent of the Land Use Plan is to identify and provide maximum flexibility in the use of Airport lands, thereby supporting broader City and Airport business objectives.

Current Airport Land Use Plan

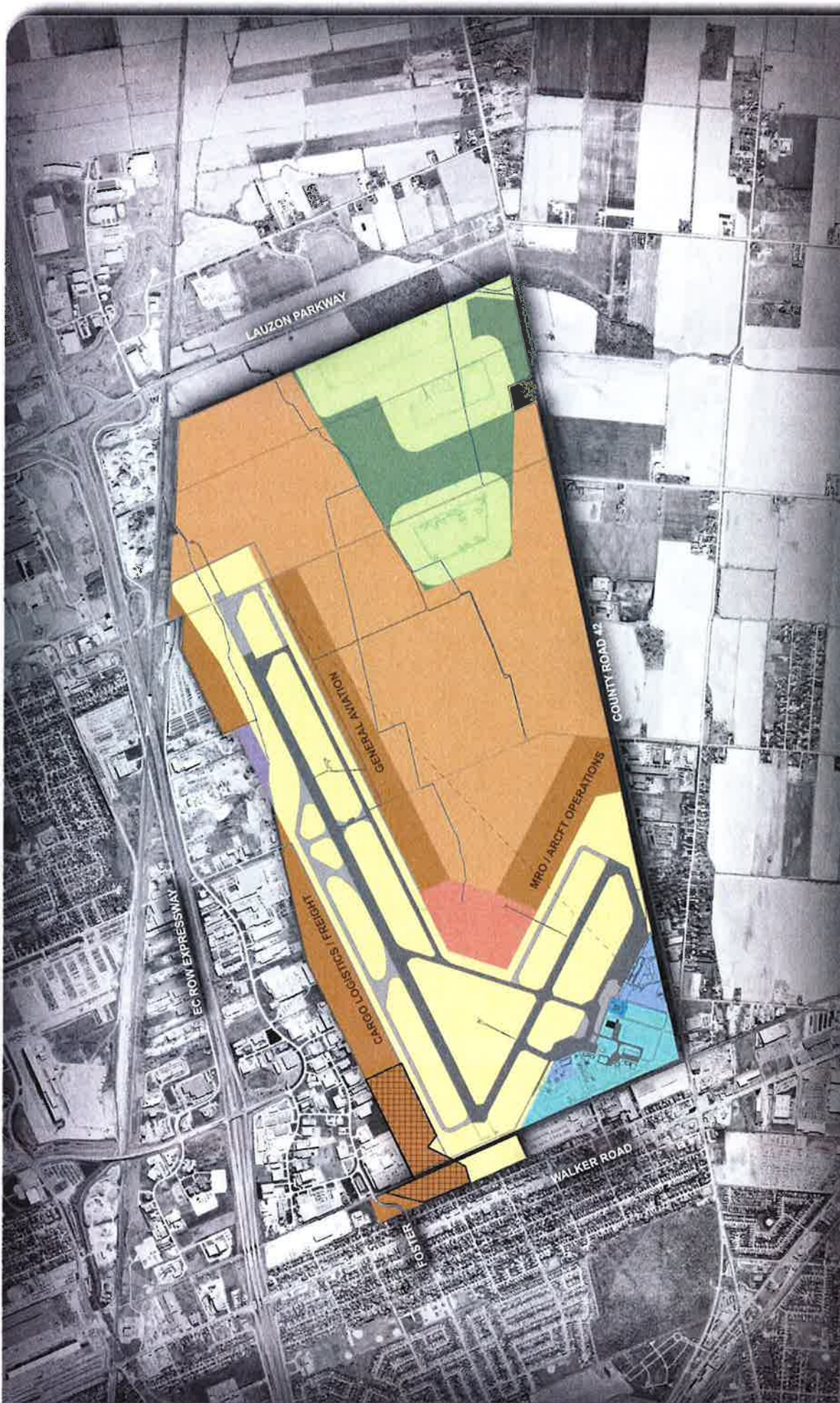
An Airside Land Reserve Plan was prepared in June, 2003 to provide a rational and comprehensive framework for the use and development of Airport lands. The plan identified surplus land within the Airport property.

The Land Reserve Plan has been utilized by Airport management since 2003. Several recommendations were made for future land use and Airport expansion in the Airside Land Reserve Plan. These recommendations have been considered in developing the Master Plan, as well as a number of new issues and requirements.

On-Airport Land Use Regulations

Land use on the Airport property must respect the requirements of Transport Canada’s TP312E. These aerodrome standards and recommended practices place various restrictions necessary within the Airport land area and include specific criteria for building structures on the property.





- COMMUNICATIONS RESERVE
- AIRPORT EMPLOYMENT
- AIRFIELD RESERVE
- GENERAL AVIATION
- AIR TERMINAL RESERVE
- EMPLOYMENT LANDS
- AIRPORT TERMINAL BUILDING
- OPEN SPACE/NATURAL HERITAGE
- EXISTING AIRCRAFT PAVEMENT
- FUTURE AIRCRAFT PAVEMENT
- PROPOSED LAND ACQUISITIONS
- TOWER LINE OF SIGHT
- DRAIN

WINDSOR AIRPORT MASTER PLAN

FIGURE 7-1 - RECOMMENDED LAND USE PLAN

YQGG
 YOUR QUICK GATEWAY
 WINDSOR INTERNATIONAL AIRPORT

DILLON CONSULTING

LPS AVIA CONSULTING

Base data provided by City of Windsor
 Map created by Paddy Kennedy
 Map checked by PFF

File Location: \\zodillon.dillon.ca\toronto\data\PROJECTS\UHAF\1091092665 Windsor Airport Master Plan

Scale: 0 100m 500m 1km

Map Projection: n/a
 Project #: 09-2665
 Status: n/a
 Date: December 2010

MASTER PLAN

2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

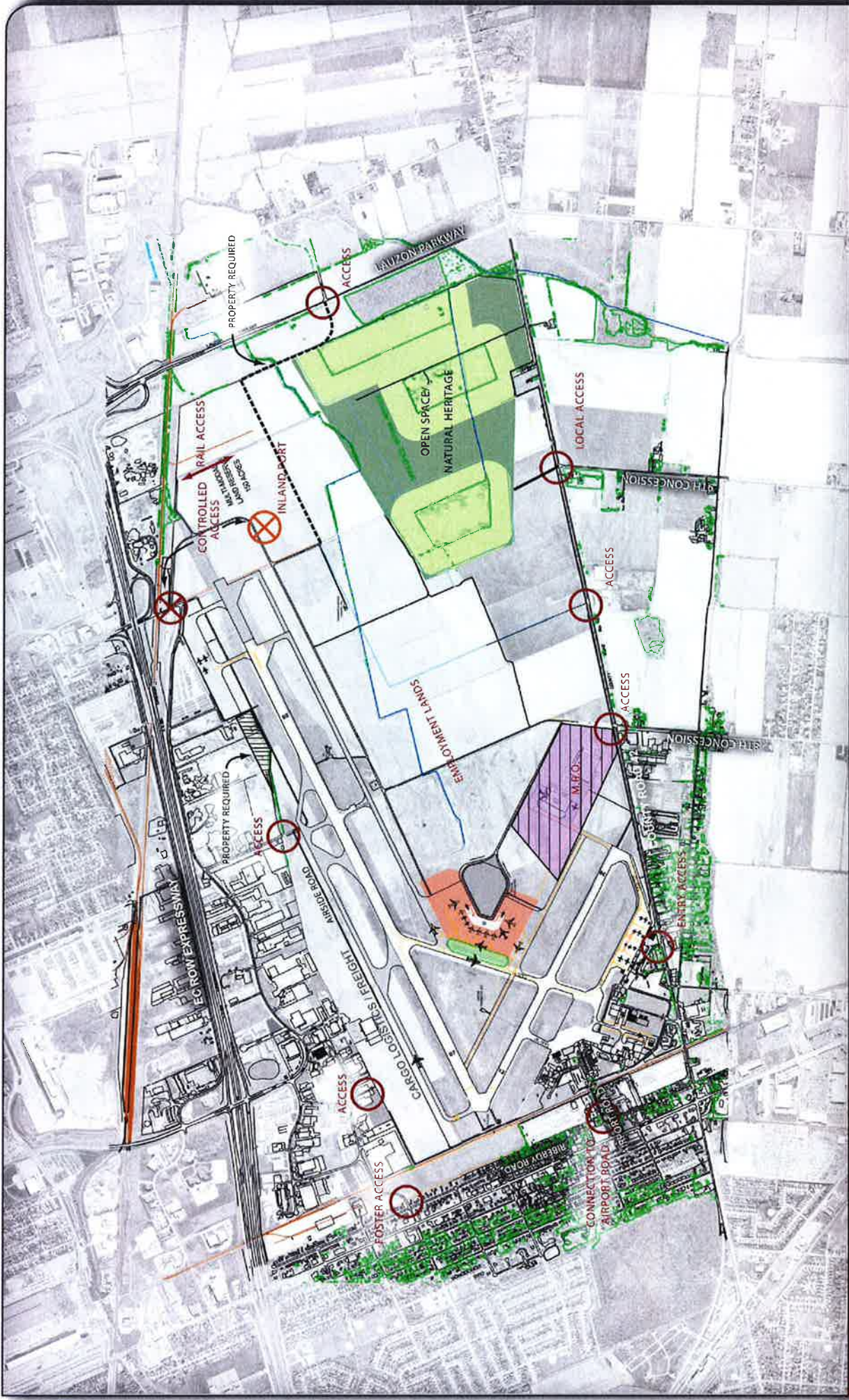
Recommended Development Plan

- The Development Plan is intended to meet the current and future airside, air terminal and groundside requirements of Windsor International Airport.
- The plan allocates sufficient land to accommodate Airport growth beyond the planning horizon.
- It is recommended that implementation of projects be demand driven as Airport marketing and growth objectives are achieved.

 **YQQG** | YOUR
QUICK
GATEWAY

WINDSOR INTERNATIONAL AIRPORT





**WINDSOR AIRPORT
MASTER PLAN**

FIGURE 8-1 - RECOMMENDED DEVELOPMENT PLAN

YQGG
WINDSOR INTERNATIONAL AIRPORT

YOUR
QUICK
GATEWAY



Base data provided by City of Windsor
Map created by Patsy Kennedy
Map Checked by FRG
File Location: \\70dillon.millan.ca\harmon\data\PROJECTS\WIA\16002655 Windsor Airport Master Plan



Map Projection: N/A
Project #: 09-2665
Status: N/A
Date: December 2010

MASTER PLAN

2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

Existing Servicing - External

Water Supply:

- The WUC Windsor Water System Master Plan, Oct. 2009, identified the need to construct a trunk watermain along County Road 42 across the frontage of the Airport lands by 2013.

Sanitary Sewerage:

- The City of Windsor has recently completed the installation of a trunk sanitary sewer to service the Sandwich South Planning District, including a portion of the Airport lands.

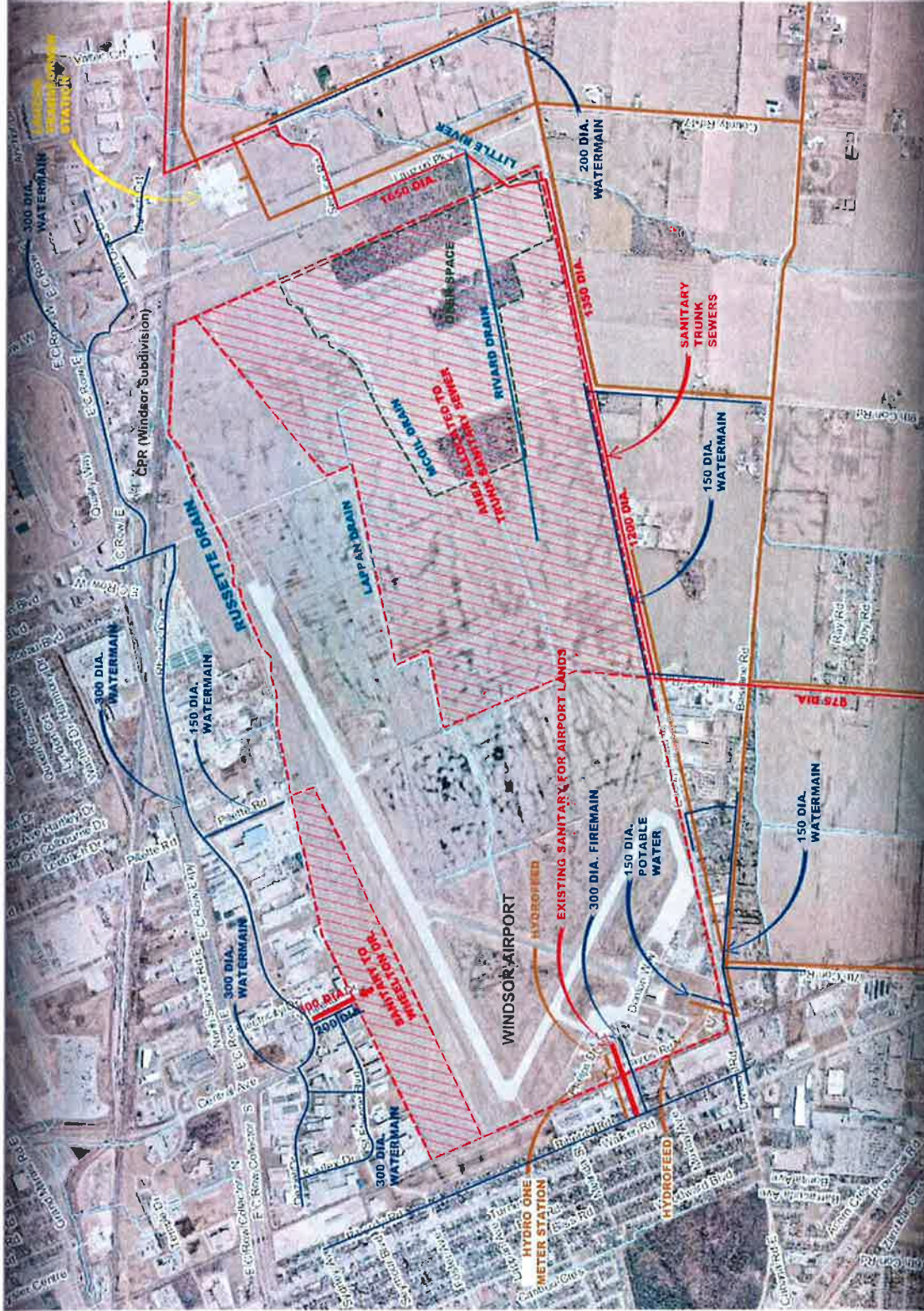
Stormwater Drainage:

- The Airport lands are primarily located within the Little River watershed. Storm drainage on the Airport lands is currently being collected by five municipal drains, two of which originate on the Airport lands

Recommendations:

- An assessment of the Airport's existing on-site water distribution system be carried out to identify opportunities to modify/expand the existing system.
- Environmental studies be updated and compiled in a more comprehensive biological inventory for flora, fauna and aquatic species.
- Comprehensive functional stormwater management study be completed to identify an appropriate strategy for implementing the necessary runoff control and mitigating measures for the development of these lands.





WINDSOR AIRPORT MASTER PLAN

FIGURE 5-4 - EXISTING SERVICING EXTERNAL



- WATERMAIN
- SANITARY SEWER
- MUNICIPAL DRAINS
- POWER DISTRIBUTION

Box plots provided by City of Windsor, Official Plan
 Map created by DGM
 Map checked by PSM/HRF

Map Projection: UTM
 Project #: 07-2065
 Status: U/L
 Date: December 2010

Name:
 H: Conceptual Layout



MASTER PLAN

2010

WINDSOR INTERNATIONAL AIRPORT

Public Information Centre: Monday May 30, 2011

Aircraft Noise

- One of the environmental impacts of Airport activity can be noise generated by aircraft landing or taking off.
- To estimate potential noise impacts on areas in the vicinity of Airports, Noise Exposure Forecast contours (NEF) are prepared based on the types of aircraft operating at the Airport and flight frequencies.
- NEF contours are presented to measure the likely level of community response to aircraft noise.
- The adjacent table describes the NEF contour intervals and corresponding community response predictions, as per Transport Canada's document TP1247 – Land Use in the Vicinity of Airports.

Response Area	Response Prediction
Over 40 NEF	Repeated and vigorous individual complaints are likely. Concerted group and legal action might be expected.
35-40 NEF	Individual complaints may be vigorous. Possible group action and appeals to authorities.
30-35 NEF	Sporadic to repeated individual complaints. Group action is possible.
Below 30 NEF	Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident.

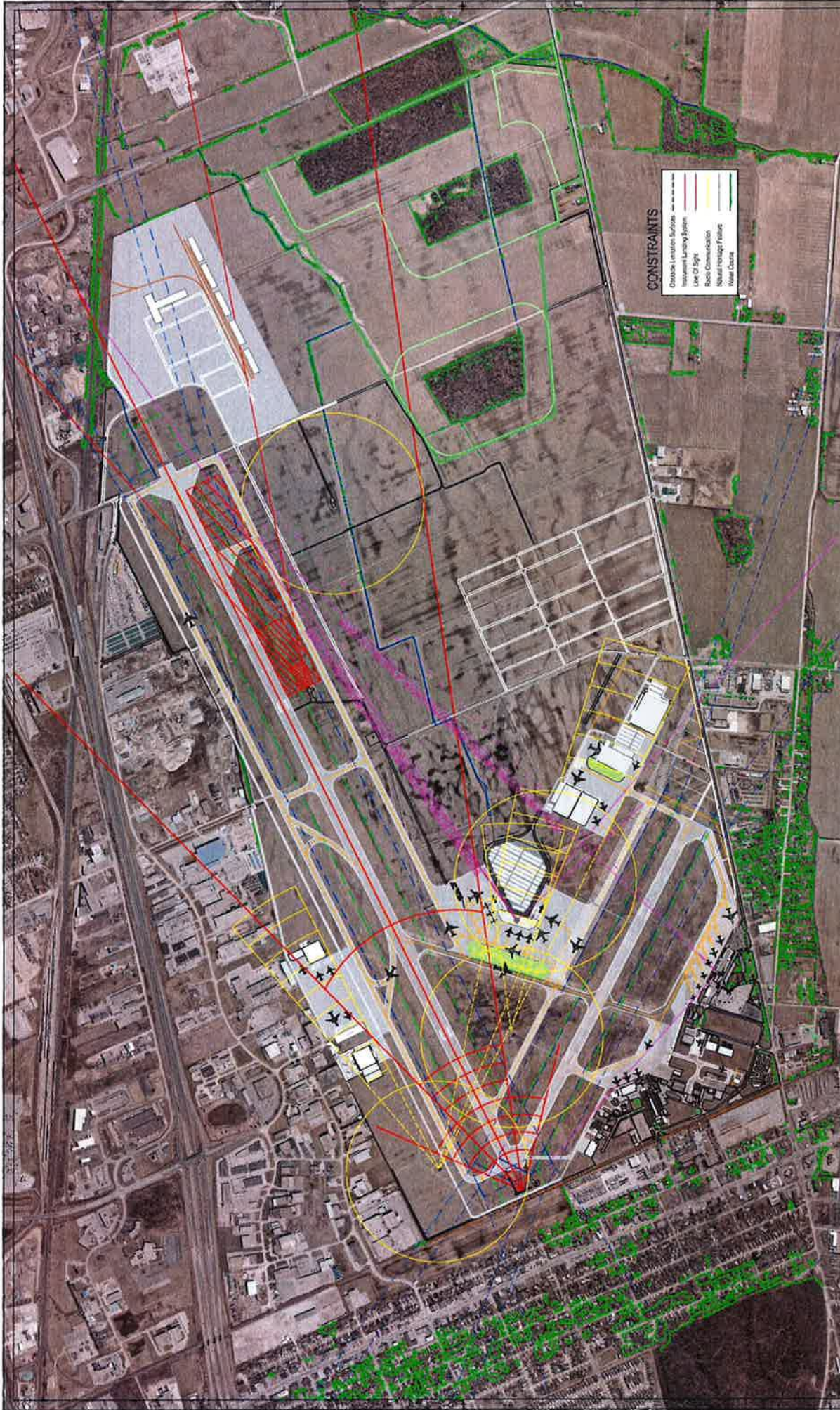




	GENERAL SITE PLAN AIRPORT MASTER PLAN		NOISE EXPOSURE FORECAST (NEF CONTOURS)		Project No.
	Prepared By PJR	Designed By STANTEC	Checked By PSMI	Date 2005	Scale 1:1000
					NEF 30



 YOUR QUICK GATEWAY	project title CONCEPTUAL DEVELOPMENT PLAN BASE DRAWING	drawing title AIRPORT DEVELOPMENT CONSTRAINTS GENERAL REFERENCE DRAWING (AIRPORT MASTER PLAN)	scale AS SHOWN	digital file name AIRPORT_MASTER_PLAN.dwg	approved by [Signature]	date DECEMBER 2010	drawing no. LAND USE PLAN 001
	designed by P. ROBERTS	checked by PUR	sheet 1 of 2	rev. 1			



- CONSTRAINTS**
- Outside Limitation Surface
 - Instrument Landing System
 - Line of Sight
 - Back Connection
 - Hazard Obstacle Feature
 - Visual Clutter

	project title CONCEPTUAL DEVELOPMENT PLAN BASE DRAWING		drawing title AIRPORT DEVELOPMENT CONSTRAINTS (Reference Fig. 8.1) (AIRPORT MASTER PLAN)		drawing no. LAND USE PLAN 001	
	drawn by F. ROBERTS	designed by PAR	checked by PAR	date DECEMBER 2010	approved by [Signature]	sheet 2 of 2



**THE CORPORATION OF THE CITY OF WINDSOR
PUBLIC WORKS - ENGINEERING DEPARTMENT**

P. O. BOX 1607, 350 City Hall Square West
Windsor, Ontario N9A 6S1

PHONE: 519-255-6257 (8:00 a.m. to 4:30 p.m.)

or

PHONE 519-255-6326 (24 hour emergency service)

or

FAX: 519-255-9847

To: Windsor Star

Date: May 10, 2011

From: Mario Sonogo, P. Eng.
City Engineer

Pages: 2

**Subject: Notice of Public Information Centre
Windsor International Airport
Master Plan 2010**

Windsor International Airport is owned by the Corporation of the City of Windsor and is operated by Your Quick Gateway (Windsor) Inc. (YQG), a wholly owned corporation of the City of Windsor under a long-term management agreement. A Master Plan for the Windsor International Airport has been prepared by Dillon Consulting and LPS Avia Consulting. The Master Plan is the overall planning document that will guide the City of Windsor, YQG and the private sector in the development of Windsor International Airport over the next twenty years. The Master Plan not only provides a detailed review of the existing conditions of the terminal, runways, infrastructure, and airport lands, both existing and planned, but also provides an outline for future needs and development potential, while recognizing the implications of those improvements from a financial and environmental perspective.

Public Information Centre

An Open House has been arranged to view the Master Plan:

Date: Monday May 30, 2011

Time: 4:00 PM to 8:00 PM

Location: Windsor International Airport (West Conference Room)

Address: 3200 County Road 42, Windsor ON

The purpose of the Public Information Centre is to obtain public feedback on the Airport Master Plan. All interested parties in the Master Plan are invited to the Open House. If you cannot attend and would like to provide comments, please forward them by June 13, 2011 to:

Tiffany Pocock, P. Eng, Project Manager
City of Windsor Engineering-Development and Geomatics
350 City Hall Square West, 4th floor,
Windsor, ON. N9A 6S1
tpocock@city.windsor.on.ca

Ron Shishido, RPP, Project Manager
Dillon Consulting Limited
235 Yorkland Boulevard, Suite 800
Toronto, ON M2J 4Y8
rshishido@dillon.ca

Keynote Drawing:





**THE CORPORATION OF THE CITY OF WINDSOR
PUBLIC WORKS - ENGINEERING DEPARTMENT**

P. O. BOX 1607, 350 City Hall Square West
Windsor, Ontario N9A 6S1
PHONE: 519-255-6257 (8:00 a.m. to 4:30 p.m.)
or
PHONE 519-255-6326 (24 hour emergency service)
or
FAX: 519-255-9847

To: Stakeholders and Interested Parties **Date:** May 10, 2011
From: Mario Sonogo, P. Eng. **Pages:** 2
City Engineer
Subject: Notice of Public Information Centre
Windsor International Airport
Master Plan 2010

Windsor International Airport is owned by the Corporation of the City of Windsor and is operated by Your Quick Gateway (Windsor) Inc. (YQG), a wholly owned corporation of the City of Windsor under a long-term management agreement. A Master Plan for the Windsor International Airport has been prepared by Dillon Consulting and LPS Avia Consulting. The Master Plan is the overall planning document that will guide the City of Windsor, YQG and the private sector in the development of Windsor International Airport over the next twenty years. The Master Plan not only provides a detailed review of the existing conditions of the terminal, runways, infrastructure, and airport lands, both existing and planned, but also provides an outline for future needs and development potential, while recognizing the implications of those improvements from a financial and environmental perspective.

Public Information Centre

An Open House has been arranged to view the Master Plan:

Date: Monday May 30, 2011
Time: 3:00 PM to 8:00 PM
Location: Windsor International Airport (West Conference Room)
Address: 3200 County Road 42, Windsor ON

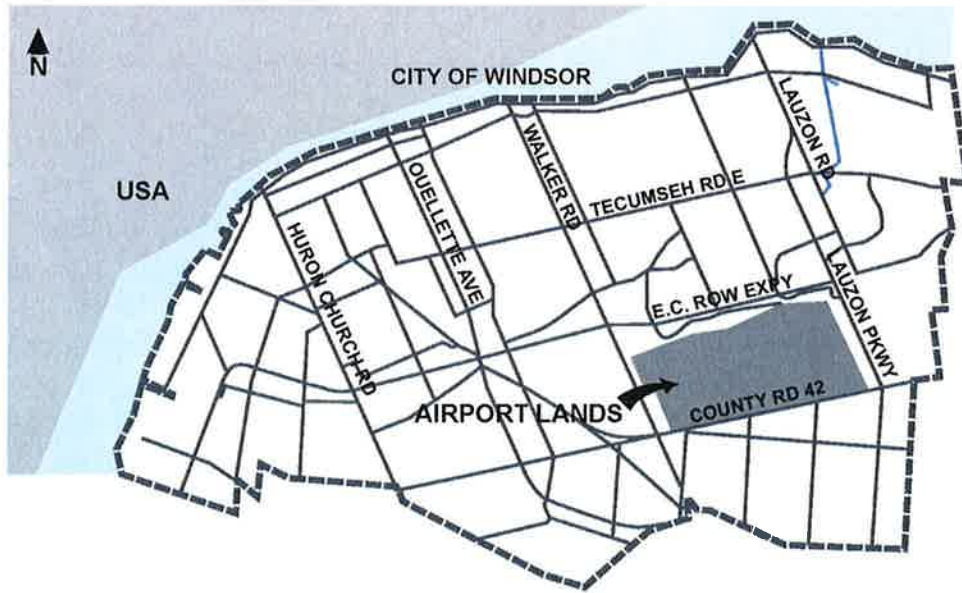
The purpose of the Public Information Centre is to obtain public feedback on the Airport Master Plan. All interested parties in the Master Plan are invited to the Open House.

If you cannot attend and would like to provide comments, please forward them by June 13, 2011 to:

Tiffany Pocock, P. Eng, Project Manager
City of Windsor Engineering – Development and Geomatics
350 City Hall Square West, 4th floor,
Windsor, ON. N9A 6S1
tpocock@city.windsor.on.ca

Ron Shishido, RPP, Project Manager
Dillon Consulting Limited
235 Yorkland Boulevard, Suite 800
Toronto, ON M2J 4Y8
rshishido@dillon.ca

Keynote Drawing:



Windsor Airport Master Plan

Notification of Public Meeting sent to the following:

- Mayor Eddie Francis
- Councillor Drew Dilkens
- Councillor Ron Jones
- Councillor Fulvio Valentinis
- Councillor Alan Halberstadt
- Councillor Ed Sleiman
- Councillor Jo-Anne Gignac
- Councillor Percy Hatfield
- Councillor Bill Marra
- Councillor Hilary Payne
- Councillor Al Maghnieh
- City Engineer, Mario Sonego
- Chief Administrative Officer, Helga Reidel
- City Financial Office/City Treasurer, Onorio Colucci
- Community Development and Health Commissioner, Ronna Warsh
- City Clerk/License Commissioner, Valerie Critchley
- City Solicitor, George Wilkki
- 311
- Essex Region Conservation Authority
- County of Essex
- Town of Tecumseh
- Town of LaSalle
- Bell
- Union Gas
- Cogeco
- EnWin
- Hydro One
- Ministry of Municipal Affairs
- Development Commission
- Chamber of Commerce
- City of Windsor Planning Department
- City of Windsor Transportation Planning
- City of Windsor Environmental
- YQG Board Mayor Francis
- YQG Board Kevin Laforet
- YQG Board Deborah Dent
- YQG Board Ron Holden
- YQG Board Robert Payne
- YQG Board Mike Raymond
- YQG Board Renato Discenza

- YQG Board Jack Fraser
- YQG Board Ed Sleiman
- YQG Board Drew Dilkens
- Dr. Fred Netherton
- Goggin Hangar
- Atlas Tube
- Aeroguard
- AES-Weather Office
- Air-Way Aviation
- Air Side Logistics
- Avis Car Inc.
- Budgetcar Inc.
- Canada Border Services
- Commissionaires
- Canadian Historical Aircraft Association
- Great Lakes Flight Centre
- Centerline
- Centaero Aviation
- Highline Mushrooms
- Gas Cylinder
- Hrycay
- Air Canada Express
- Mara-Tech Aviation
- National Auto Rad
- Nav Canada
- DeGraw Automotive Group
- W.C.S. Aviation
- Warp Drive
- WestJet
- Windsor Airline Limo
- Windsor Flying Club
- Wizie Inc.
- TST Air
- Transport Canada

Windsor International Airport Master Plan 2010

Public Information Centre: Monday May 30, 2011
Sign In Sheet



Name	Address	City	Postal Code	Phone	Email	Initial
David Gillies Furms Club Windsor	Windsor Airport	Windsor		519 979 8774	info@windsorfurmsclub.com	
Ruth McFarlane	3445 County Rd 42	Windsor		519 969 9152	ruthmc@sympatico.ca	
Glen McFarlane	"	"		"	"	
Richard Bradwell	Windsor Flying Club	"		519 736 9732	Bradvs1@hotmail.com	R
Jane Mustac	County of Essex	"		519 776 6441 x397	jmustac@countyofessex.on.ca	
Thom Hunt	City Planner					
John Robinson	CANADIAN HISTORICAL AIRCRAFT ASSOC.			519-300-4539	JRobinson1@xplornet.com	
Tom Byrne	ERCA 360 Fairview Rd	Essex		519-776-5209	TByrne@erca.org	
Rebecca Belanger	ERCA 360 Fairview Ave	Essex	N8M1Y6	519-776-5209	rbelanger@erca.org	
DAN SAWCHUK	WINDSOR AP 3200 COUNTY RD 42 UNIT 5	Windsor			AIRWAY@WINDSOR.NET	
CHARLIE WRIGHT	DEPUTY MAYOR - LEAMINGTON CO-CHAIR W.E.P.E.C.	Leamington		519-326-5761	cwright@leamington.on.ca	C
CURTIS POPE	100 Duncan McCall	Windsor		519-250-4956	cpoppe@attolink.com	P
Ted & Helen Jure	5630 Baseline		N0R1K0	519-735-6226	tedureca@yahoo.ca	
Terry J. Aldea Sr.	4955 Riverside Dr E	Windsor	N8Y5P3		tjaldea1934@sympatico.ca	
Charles Jure	825 Riverside Dr. W.	Windsor	N9A 5L3	CBC		
Kristofer Wally	1440 Celeste	Windsor		AM 800		
Terry Aldea	5505 Rhodes Dr	Windsor	N8N-2M1	519-566-7630	terryaldea@sympatico.ca	

Windsor International Airport Master Plan 2010

Public Information Centre: Monday May 30, 2011
Sign In Sheet



Name	Address	City	Postal Code	Phone	Email	Initial
Jason Lamberton	3526 RIBBOLDY	WINDSOR	N8W-3H5	250-6655	CODEDELTA9@GMAIL.COM	JL
Robert Spagnuolo / Enwin	4545 Rhodes	Windsor		251-7300x222	rspagnuolo@enwin.com	RS
Susan Peter Kennedy	3502. Ribbery.	Windsor	N8W-3V6.	966-7125		-
STEPHEN KUNTIG	3800 HAYES	WINDSOR		969-3232		
GARY WILSON	2600 AIRPORT RD. UNIT 102	WINDSOR	N8V1A1	969-3232	gary.wilson@journeyair.com	GW
Averil Parent	4155 Ojibway PKWY	Windsor	N9C 4A5	300-2931	aparent@city.windsor.on.ca	AP
Alex Hyszt	436 Huron Rd	Windsor	N9A 6J5	519-969-6711		
RIC Coronado	808 Hall Ave.	Windsor	N9A 2M3		rickcoronado@hotmail.com	
Derek Coronado	808 Hall Ave.	Windsor	N9A 2M3		derekcoronado@hotmail.com	
WILLIAM G. RANKINE	2074 ARPAS AV.	WINDSOR	N8W 1T5		SAWG RANK@HOTMAIL.COM	WR
Matthew Child	ERCA				mchild@erca.org	* requested PDF of presentation
BRUNO SFALCIN	3661 HOWARD	WINDSOR	N9E-3N6			
ROBER & LORNAINE LONG	3525 COUNTY RD 42	WINDSOR	N9A-653			
Abu Habib	1051 STOMYBROOK	WINDSOR.	N9G 2R2	519-796-7410	thiedent gwy 12003 @ YAHOO.CA	
ALEX HYSZT	4365 Huron Rd	Windsor	N9A 6J5	519-969-6711		
Chris Wood	120 N. Sever Rd E	Windsor	N8X 3T3	519-966-4800	cwood@llemusic.net	CW



Windsor International Airport Master Plan 2010

COMMENT SHEET

(Please use back if you require more space)

I WOULD REQUEST SLIDE PRESENTATION THAT YOU HAVE ON DISPLAY. E-MAIL ADDRESS.

I HAVE CONCERNS OF NIGHT OPERATIONS AND THE NOISE OF THE AIRPLANES COMING IN AT NIGHT TIME WHICH COULD CAUSE A PROBLEM FOR THE RESIDENTS IN THE TURNOR RD AREA.

don_donna14@sympatico.ca

Information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments received will become part of the public record.

Please send your comments by June 13, 2011 to:

Tiffany Pockock, P. Eng, Project Manager
City of Windsor Engineering-Development and Geomatics
350 City Hall Square West, 4th floor,
Windsor, ON. N9A 6S1
tpockock@city.windsor.on.ca

Ron Shishido, RPP, Project Manager
Dillon Consulting Limited
235 Yorkland Boulevard, Suite 800
Toronto, ON M2J 4Y8
rshishido@dillon.ca



Windsor International Airport Master Plan 2010

COMMENT SHEET

(Please use back if you require more space)

Very happy with today's presentation very happy
all were kept in the loop and all of
our concerns were addressed.
Thank you we are also glad that
Windsor airport is still expanding nicely
with thought to wildlife and surrounding community.
Please send me a copy of the presentation
treequeenshell@gmail.com
Thank you again
Michelle Bastien / Jason Lambert
3526 Ribberdy rd
Windsor ont
N5W-3J4

Information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments received will become part of the public record.

Please send your comments by June 13, 2011 to:

Tiffany Pocock, P. Eng, Project Manager
City of Windsor Engineering-Development
and Geomatics
350 City Hall Square West, 4th floor,
Windsor, ON. N9A 6S1
tpocock@city.windsor.on.ca

Ron Shishido, RPP, Project Manager
Dillon Consulting Limited
235 Yorkland Boulevard, Suite 800
Toronto, ON M2J 4Y8
rshishido@dillon.ca



Windsor International Airport Master Plan 2010

COMMENT SHEET

(Please use back if you require more space)

*This was very well done! Thank You
for this information session.*

*Dita Kennedy
519-966-7125*

Information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments received will become part of the public record.

Please send your comments by June 13, 2011 to:

Tiffany Pocock, P. Eng, Project Manager
City of Windsor Engineering-Development
and Geomatics
350 City Hall Square West, 4th floor,
Windsor, ON. N9A 6S1
tpocock@city.windsor.on.ca

Ron Shishido, RPP, Project Manager
Dillon Consulting Limited
235 Yorkland Boulevard, Suite 800
Toronto, ON M2J 4Y8
rshishido@dillon.ca



Windsor International Airport Master Plan 2010

COMMENT SHEET

(Please use back if you require more space)

- Request for full service Entrance to Airport Grounds to Service Intermodal and airport areas from Jefferson & Rhodes.
- As stake holders, we request to participate in the planning process.

Terry Aldea.
Guardon Storage.

Information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments received will become part of the public record.

Please send your comments by June 13, 2011 to:

Tiffany Pocock, P. Eng, Project Manager
City of Windsor Engineering-Development
and Geomatics
350 City Hall Square West, 4th floor,
Windsor, ON. N9A 6S1
tpocock@city.windsor.on.ca

Ron Shishido, RPP, Project Manager
Dillon Consulting Limited
235 Yorkland Boulevard, Suite 800
Toronto, ON M2J 4Y8
rshishido@dillon.ca

Forest, Flavio

From: Pocock, Tiffany [tpocock@city.windsor.on.ca]
Sent: Tuesday, May 24, 2011 9:22 AM
To: Forest, Flavio; Shishido, Ron
Subject: FW: vacant land
Follow Up Flag: Follow up
Flag Status: Yellow

Fyi

From: Jim [mailto:jimcooper@sympatico.ca]
Sent: May 23, 2011 5:43 PM
To: Pocock, Tiffany
Subject: vacant land

ONE READS OF THE PLANS BEING DRAWN UP FOR THE VACANT AIRPORT PROPERTY.
 ONE SENSES THIS WILL EVOLVE INTO ANOTHER MUNICIPALITY PROJECT OF MORE BUILDINGS, MORE CONCRETE, MORE ASPHALT, PRESUMABLY FOR MORE JOBS, EMPLOYMENT ETC.
 IT IS UNFORTUNATE THAT THIS SHORT TERM APPROACH WITH MORE OF THE ABOVE, WILL PROMOTE WINDSOR, ON THE GLOBAL MAP.
 MANY YEARS AGO, THE CITY OF NEW YORK, HAD THE FORSITE TO BUILD "CENTRAL PARK" A TREASURE TO THE CITIZENS OF THAT GLOBAL CITY, IN THIS DAY OF BUILDINGS, CEMENT ASPHALT, AND ALL THAT GOES WITH IT.
 IF WINDSOR WANTS TO PUT ITSELF ON THE SO CALLED "GLOBAL MAP" MAY I SUGGEST ANOTHER PLAN, ONE THAT WOULD HAVE IT STAND OUT IN HAVING, WINDSOR'S, "CENTRAL PARK", NEAR AN AREA WHERE VISITORS WILL NOTICE A DIFFERENCE, FROM THE AIR, FROM THE ROAD, AN AREA OF TREES, PATHS, BIKE WAYS, PONDS ETC, AWAY FROM THE SAME OLD DEVELOPMENT OF THE ABOVE MENTIONED.
 WE KNOW WINDSOR IS NO NEW YORK CITY, HOWEVER, IT WOULD SHOW ITSELF, IN NOT FILLING EVERY PIECE OF VACANT LAND WITH THE USUAL INDUSTRIAL DEVELOPMENT, AND LEADING TO THE PRIDE OF EXISTING WINDSORITES IN THAT WE DO AND THINK A LITTLE DIFFERENT IN THE WAY WE USE OUR VACANT LANDS, AND COULD BE ADMIRIED BY THOSE THAT WANT TO INVEST HERE IN A COMMUNITY WHICH STANDS OUT IN ITS ATTRACTIVENESS, AND FORE THOUGHT OF, NOT YOUR ORDINARY CITY, AND A PLEASANT PLACE TO WORK AND THINKING OF THE FUTURE GENERATION.
 THE CITY HAS A CHOICE, AND, HAS THE REALATORS OFTEN DRUM INTO US, "LAND THEIR NOT MAKING ANY MORE OF IT"
 HOPEFULLY THE PLANNERS FOR WINDSOR, S WILL HAVE THE FORESITE.

Forest, Flavio

From: Pocock, Tiffany [tpocock@city.windsor.on.ca]
Sent: Thursday, May 26, 2011 9:32 AM
To: Forest, Flavio
Subject: FW: Riberdy Road Resident Concerns
Follow Up Flag: Follow up
Flag Status: Yellow
Attachments: riberdy.jpg; riberdy1a.jpg; riberdy2.jpg; riberdy2a.jpg; riberdymap.gif; antonov_facing_Riberdy.jpg

From: J L [mailto:codedelta9@gmail.com]
Sent: May 25, 2011 6:01 PM
To: Pocock, Tiffany
Cc: rshishido@dillon.ca
Subject: Fwd: Riberdy Road Resident Concerns

Hello , We have just received notice of the Open House to view the Windsor airport master plan , Monday May 30 2011, & do not know if our schedule will allow us to attend , therefore I am forwarding an email previously sent to others , that we really haven't had a clear answer on,... As residents of Riberdy road we are primarily concerned with the development of the last stretch of field behind our homes ,... While we dont know of any plans in place,...Or if this area even can be developed ,....We would be opposed to any development for many reasons , a few of which are outlined below

----- Forwarded message -----
From: J L <codedelta9@gmail.com>
Date: Sat, Sep 18, 2010 at 12:18 PM
Subject: Riberdy Road Resident Concerns

Hello , after hearing the news that you were part of a tour , on the airport lands I would just like to forward you this email concerning a very small piece of land behind riberdy road , most residents here can tell you even though this is just a very small field , we also get lots of wildlife here , the occasional deer , coyote ,lots of frogs snakes etc , anyway most people are concerned that it could be developed & potentially reduce home values , most back yards here are so small that even to lose this small field would be a big loss , Some of us have contacted various city officials & the airport ,..but have not got any response on what plans may be,.. or how to secure this area as a park & have it left be ,..so we are just giving you a little more info maybe you can use..

Hello , I would like to bring to attention some concerns of Riberdy road residents concerning the future of a piece of land behind Riberdy road, attached are pictures showing the area defined within the green lines

Historically this area has been farm land & has been, on some maps designated as "Airport Operating Area" Now that the city owns it , it is actually believed to be zoned "Industrial"

While we are not clear on what the plans are for this land ,
The residents whose yards back on to this small field would respectfully be opposed to development of any type, for many reasons , A few of which which will be outlined here ..

- Windsor Airport currently has & maintains several visual landing aid markers & associated electrical boxes within this field

- Although this is a small field it provides a beautiful view to the horizon & is one of the strong value points of homes that back onto it ., any development would surely decrease the value that these homes currently enjoy

- Many families from the area use the field for park like uses , walking , pets & children regularly play there , while there are other parks in the area, children would have to cross walker road to get to them
It also offers a clear view of night sky & is frequented by many small birds rabbits & other wildlife.

- Another factor would be development constraints , the field is landlocked , at the end of 2 runways, & beside a rail line , between the vibration from the trains affecting foundations ,..the lack of access ,& the low approaches of aircraft
it really doesn't make sense to develop anything there at all...

- What the residents would like to see, is it left alone,.. as a field,.. really we don't have enough of them around in the city, & it just doesn't make sense to develop this one , its small but is a beautiful little green space.
A guard rail could be put on foster road to prevent motorized vehicles from from entering it as well as a sidewalk along foster & that's it.
Nothing more would be needed....call it riberdy air park & your done.
It is a quiet street, with a quiet field, & we hope it will stay that way
We just hope in your planning you will consider this & will listen to others in different areas as well , because we feel that it is just not necessary, to develop every single strip of land one can find ,...especially when these days there are so many vacant properties that could be utilized, & green space is so important to incorporate into the city.

- It also makes sense safety wise to leave it undeveloped ...
Another factor to consider in the vicinity of airport operations is safety & noise,
A buffer zone around the runway & approach areas free of structures & people makes for a safer environment for everyone & gives that extra margin of area to bleed off speed or stop in if needed , everything from failing engines, poor weather etc can cause lower than usual approaches & runway overruns.
One fairly common problem is a gear up landing ,...this occurs when the landing gear do not fully deploy , in these cases many feel it is usually the safest & best option to actually land gear up in the grass beside the runway,....(if it hasn't been developed of course)

Also From what can be understood by looking at the zoning regulations It really doesn't look like development of this area would be wise..

Windsor Airport & Area Zoning Regulations

And we should remember that sometimes accidents do happen
imagine the consequences of developed areas in close proximity to runways
when a runway overrun occurs ,would you want to be responsible for putting a road or structure with
people in it so close to a runway then?

And so we should remember the incident of an Antonov jet overrunning the runway at Windsor
Airport,..... UR-82029, owned by Antonov Airlines overran the runway at Windsor, Ontario while
landing at night on December 18, 2000. It stopped 340 feet beyond the runway after landing some 3400
feet beyond the threshold of runway 25, which is 7850 feet long. Although None of the 20 crew were
injured, and the plane suffered minor damage.

WestJet Aircraft Slides Off Runway

It does occasionally happen,.....

We thank you for taking the time to listen to some of our concerns
& hope you will take these into account in future planning for the area.

Riberdy Road Residents



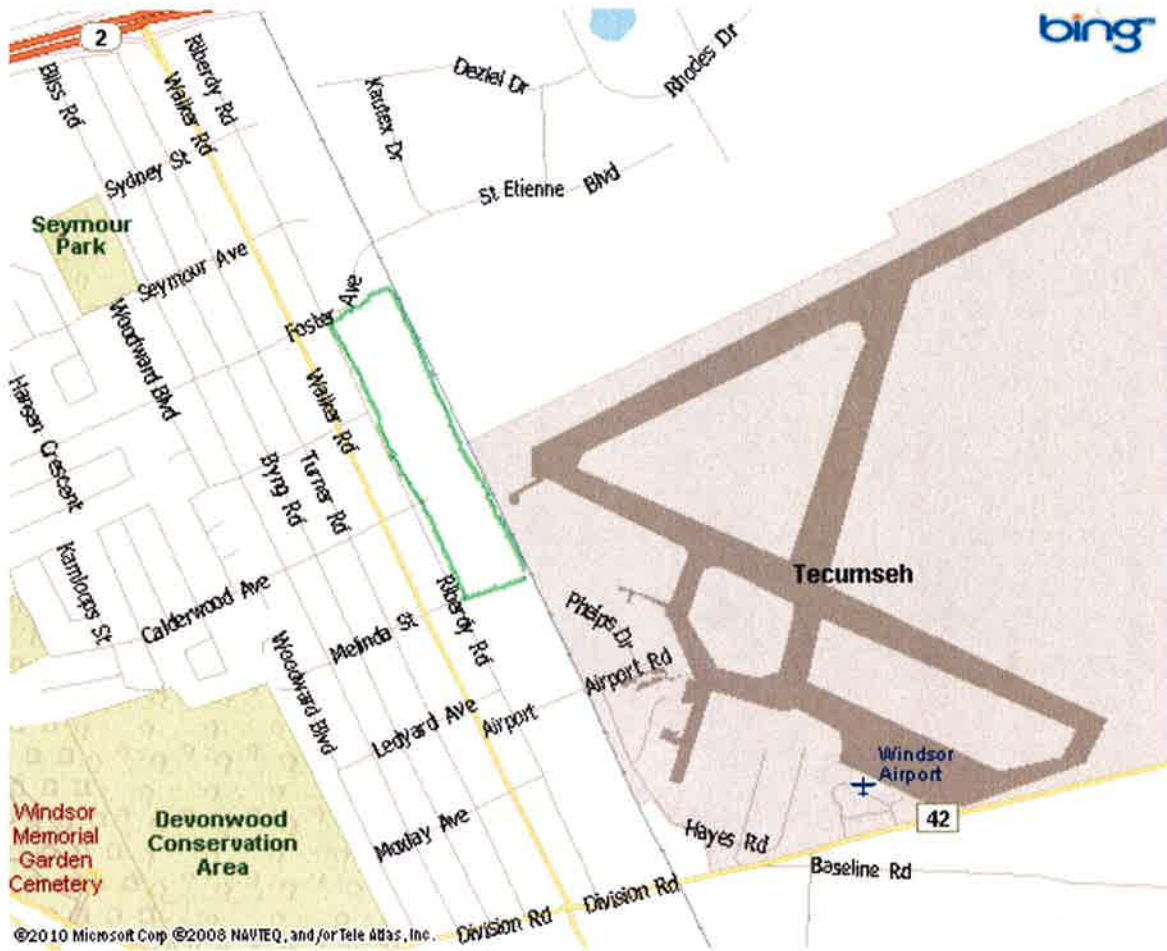






Google

1 200 219 2 ele 22 e 1 111





Stakeholders Requesting Copy of Master Plan

1. Norbert V. Poggio P. Eng. (Email request to T. Pocock on 12 May 2011)
Director, Water Engineering
Windsor Utilities Commission
4545 Rhodes Dr. P.O. Box 1625, Strn. "A" Windsor ON N9A 5T7
Tel: (519) 251-7300 x295
Fax: (519) 251-7316
Mobile: (519) 796-2784
email: npoggio@enwin.com
2. Jim Cooper jimcooper@sympatico.ca (Email request to T. Pocock on 23 May 2011).
3. Riberdy Road Residents J L codedelta9@gmail.com (Email request to T. Pocock on 25 May 2011).
4. Dan McCulloch Dan.McCulloch@rosatigroup.com (Email request to N. Robertson on 31 May 2011).
5. John Lewis john.lewis@ctv.ca (requested through Federica Nazzani).
6. Sandra Poirier spoirier@craworld.com (requested through Federica Nazzani).
7. Curtis Pope cpope@manofsteelltd.com (requested through Federica Nazzani).
8. Mr. D. Rodzik drodzikjr@narmco.com (requested through Federica Nazzani).
9. Don and Donna Richer, 3438 Turner Road. don_donna14@sympatico.ca (PIC request).
10. Michelle Bastien/Jason Lamberton, 3526 Riberdy Road. treequeenshell@gmail.com (PIC request).
11. Matthew Child, Essex Region Conservation Authority. mchild@erca.org (PIC request).
12. Averil Parent aparent@city.windsor.on.ca (requested through Tiffany Pocock).
13. Jane Mustac jmustac@countyofessex.on.ca (requested through Tiffany Pocock).
14. Councillor Ed Sleiman esleiman@city.windsor.on.ca (PIC request – to be addressed by Tiffany Pocock).
15. Councillor Hillary Payne hpayne@city.windsor.on.ca (PIC request – to be addressed by Tiffany Pocock).



**Essex Region
Conservation
Authority**



360 Fairview Avenue West, Suite 311, Essex, ON, Canada, N8M 1Y6 | P 519-776-5209 | F 519-776-8688 | erca.org | ourgreenlegacy.org

June 21, 2011

2011 Board of Directors

Town of Amherstburg

Robert Pillon
John Sutton

Town of Essex

Sherry Bondy
John Scott

Town of Kingsville

Gord Queen
Tamara Stomp

Town of Lakeshore

Al Fazio
Len Janisse

Town of Lasalle

Sue Desjarlais
Ray Renaud

**Municipality of
Leamington**

Rick Atkin
Larry Verbeke

Township of Pelee

Rick Masse

Town of Tecumseh

Joe Bachetti - Vice Chair
Cheryl Hardcastle

City of Windsor

Percy Hatfield - Chair
Al Maghnieh
Hilary Payne
Ed Sleiman

**General Manager /
Secretary Treasurer**

Richard Wyma

Ms. Tiffany Pocock, P.Eng.,
Project Administrator
350 City Hall Square West- 4th Floor, City Hall
Windsor, Ontario,
N9A 6S1

Dear Ms. Pocock,

RE: Windsor International Airport Master Plan

Thank you for providing a copy of the Windsor International Airport Master Plan 2010, Draft No.2, dated December 3, 2010. The following comments are offered on behalf of the Conservation Authority.

Ontario Regulation 158/06 Permit and Fisheries Act Authorization Requirements

Each of the drains on the subject lands (the McGill Drain, Lappan Drain, Rusette Drain and Rivard Drain) are Regulated by ERCA's Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses. Any proposed modifications to these drains will require the proponent to obtain a permit or clearance for alterations to the drains such as the installations of new outlets into the drains, access culverts, enclosures, relocations, etc.

Any proposed modifications to these drains will also require that the proponent undertake an aquatic assessment to determine the feasibility of drain modifications. ERCA has been delegated authority for reviewing and commenting on proposed undertakings under Section 35 of the *Fisheries Act*. Section 35(1) of the *Fisheries Act* stipulates that,

“no person shall carry on any work or undertaking that results in the harmful alterations, disruption or destruction (HADD) of fish habitat.”

Furthermore, a HADD of fish habitat is prohibited unless authorized by the DFO pursuant to subsection 35(2) of the *Fisheries Act*. In keeping with DFO's "Policy for the Management of Fish Habitat", no such authorizations are issued unless acceptable measures to compensate for the habitat loss are developed and implemented by the proponent. Please note that an application for a *Fisheries Act* authorization will trigger a *Canadian Environmental Assessment Act* review process. In addition, the current DFO aquatic

Member of



**Conservation
ONTARIO**
Natural Champions



Page 2

Ms. Pocock

June 21, 2011

Species at Risk Screening Maps presently identify that the drains on the Airport Lands do not contain aquatic Species at Risk.

Based on the preliminary concept plans, it is recommended that an audit of all of the waterways on the Airport lands be undertaken at this time to determine a compensation strategy for the anticipated drain modifications. In addition, further consideration of a phased authorization and compensation implementation process should be embarked upon. If requested by the City, we will investigate potential phasing options and/or a longer validation period for a *Fisheries Act* authorization.

Stormwater Management

The Master Plan identifies that over 250 hectares of lands on the Airport property are designated "Future Employment Area" to support non-airport related employment and business park uses. Typically, 18-22% of a proposed development is required to be utilized for stormwater management facilities. This may prove insufficient for the nature of stormwater facilities required for the Airport, with the objective of avoiding areas of standing water. Issues relating to storm sewers and overland flow routing should be investigated through a Functional Design which may alter the overall areas required for stormwater management. In addition, the stormwater management facilities cannot be used as compensation for a *Fisheries Act* authorization for the loss of waterways on this site. It should also be noted that stormwater management areas will always be part of the infrastructure requiring maintenance over time and it is necessary to differentiate the natural heritage restoration area from the stormwater management facilities. As well, it is anticipated that stormwater quality controls may need to be addressed through the installation of oil and grit separators within specific catchment areas prior to release of runoff into the stormwater drainage system. This will ensure that stormwater receives appropriate levels of polishing prior to release into the stormwater management facilities that are being considered adjacent to natural heritage features.

Natural Heritage Restoration Opportunities

The natural heritage features located on the airport lands have been evaluated as Provincially Significant Wetlands by the Ministry of Natural Resources. A significant amount of information is known about these features and the City commissioned the Update to the Candidate Natural Heritage Site Inventory which was completed in July of 2008. The Ecological Land Classification Community Types of the three forests are green ash mineral deciduous swamp, silver maple mineral deciduous swamp and mineral cultural thicket. As restoration is proposed to link the three wooded features CNHS Report #39 can be referenced for a complete list of floral species which should be used as a basis for selecting floral species to be planted in the restoration area. A hydrologic assessment to determine the water cycle balance ensuring maintenance of optimal health of these features should be completed as part of the stormwater management design particularly in the event that a serpentine type facility is proposed near this area. We have some concerns relating to the required magnitude and configuration of this facility due to the amount to stormwater runoff which will result from the intensification of development over the long term.

Page 3

Ms. Pocock

June 21, 2011

The City of Windsor Official Plan identifies the forests as Natural Heritage and adjacent lands as Open Space. The Master Plan is putting forward a concept to locate municipal infrastructure within the restoration area. We have concerns with respect to the compatibility of the proposed stormwater management facility to the concept of this area being restored to natural environment. Over time various levels of maintenance and repair to stormwater management facilities may be required. This maintenance and repair is active construction and may end up necessitating the removal of trees/shrubs that would be encouraged in the natural environment. Lands that are either restored and/or naturalized within this area will inevitably function as a significant natural heritage feature over time due to its proximity to the existing provincially significant wetlands and any species at risk populations in the area. Further consideration should be given to this potential future conflict between protecting natural heritage features and undertaking regular maintenance to municipal infrastructure.

An endangered species has been identified on the Airport Lands. Natural Heritage Information Centre Records identify that at least one population of an endangered snake has been known to exist at the Windsor Airport since the 1970's. The protection of the significant habitat of this species is required based on the Provincial Policy Statement. Suitable corridors for the snakes' movement should also be provided. During the preparation of Natural Heritage Reports for the Windsor Annexed Area in 2003, it was identified that the Airport Woodlots would benefit from the preparation of a management plan. To our knowledge this management plan has never been completed however this information would be helpful for the City in determining appropriate management objectives for these very significant natural heritage features.

Source Protection Planning Considerations

It is noted that the Master Plan identifies the intent to "develop a bulk fuel storage facility on a lot in the employment lands". The recent work of the Essex Region Source Protection Committee has identified that the storage of large volumes of fuel is considered to be a 'significant threat' to source water quality at the intakes of some of the water treatments plants in the Region, if such facilities are located within mapped 'Intake Protection Zones'. Specialized modelling studies of simulated fuel spills in the upper reaches of tributary waterways, have shown that benzene could reach the municipal water intakes at concentrations substantially higher than the Ontario Drinking Water Quality Standard, which is the threshold for the identification of 'Significant Threats'. The Intake Protection Zones ('IPZ-3s' in this case) associated with the A.H. Weeks Water Plant in the City of Windsor which have been mapped through these special studies, include those areas within floodplains, or within 120m, of all tributaries of Little River and other nearby watersheds, or within the floodplains of these waterways.

Based on the requirements of the Province of Ontario's *Clean Water Act*, 'significant threats' such as large fuel storage facilities will require policies in the Source Protection Plan, to ensure that the threat is managed so that the risk of large spills from such facilities is minimized. The Source Protection Plan for the Essex Region is currently being developed by the Source Protection Committee in consultation with municipalities and others, and is expected to be completed by summer 2012.



Page 4

Ms. Pocock

June 21, 2011

Through the City's representatives on the SPC, (Thom Hunt and Mario Sonego), information regarding draft policy considerations will be available during the balance of this year and into 2012. It would be helpful if information is available regarding the potential volumes and types of fuel to be stored in these tanks. Depending on these details, and if the large fuel storage facilities are to be located within 120m of waterways or the floodplain of the Little River, they will likely be subject to the policies for fuel storage in the Source Protection Plan. We have attached a map of the IPZ-3 area for your reference.

Although the Source Protection Plan policies have not yet been developed, and will not take effect until sometime after summer 2012, the City may find it helpful to consider the draft information as it becomes available, as it may be of assistance with respect to the planning and design of large fuel storage facilities on the Airport lands. Even if the fuel tanks are located beyond 120m of the waterways or the floodplain of the Little River on the Airport Lands and the, the City may wish to utilize the policies from the Source Protection Plan applicable for large scale fuel storage. For your consideration, we also offer the suggestion of site specific modelling of a simulated spill from the proposed large fuel storage at the Airport to determine the impact that this could have on the water quality at the downstream water-intake. If the City wishes to undertake such a study, we would be pleased to assist with respect to the scope, methodology, etc. building on the similar studies which we have completed to date. The results from such a modelling study may provide valuable information which could potentially assist the municipality in taking a proactive approach to site layout or other considerations, for large scale fuel storage.

We note that the Master Plan also identifies the intent to develop a designated aircraft de-icing area as operations increase in the future. The storage and handling of Aircraft De-icing Fluid is also included in the list of Prescribed Threats to Drinking water Sources as specified by the Ministry of the Environment. Studies have not yet been undertaken regarding the potential effects of such facilities with respect to the source water at the A.H. Weeks Water Plant. All such studies through the Source Water Protection Program have been put on hold by the MOE at this time, pending completion of the first Source Protection Plan in 2012, based on the studies completed to date. However, we suggest that the City may also wish to consider a study to model a hypothetical spill based on the anticipated amount of aircraft de-icing to be stored on site to determine what type of impacts this could have on the water quality at the downstream water intake, and whether any extra mitigating measures might be advisable. We would be pleased to assist the City with respect to the study scope and methodology, etc., again building on the similar studies which have been recently completed through the Source Water Protection Program.

Page 5

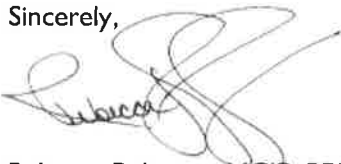
Ms. Pocock

June 21, 2011

There has been an inference that approvals will not be required from the Conservation Authority for development within Regulated Areas under Section 28 of the *Conservation Authorities Act*. This inference requires clarification and regardless of this, we request the opportunity to continue to review submissions and participate in the preparation of Functional Design for Stormwater Management and, based on our delegated responsibilities with the Department of Fisheries and Oceans, we will participate in all aspects of the biological assessment for the waterways assessing fish habitat.

Thank you for the opportunity to comment on the draft Master Plan for the City Airport Lands. We would be pleased to continue our involvement in the review process and request information relating to future public meetings or drafts of the Master Plan.

Sincerely,



Rebecca Belanger, MCIP, RPP,
Conservation Planner

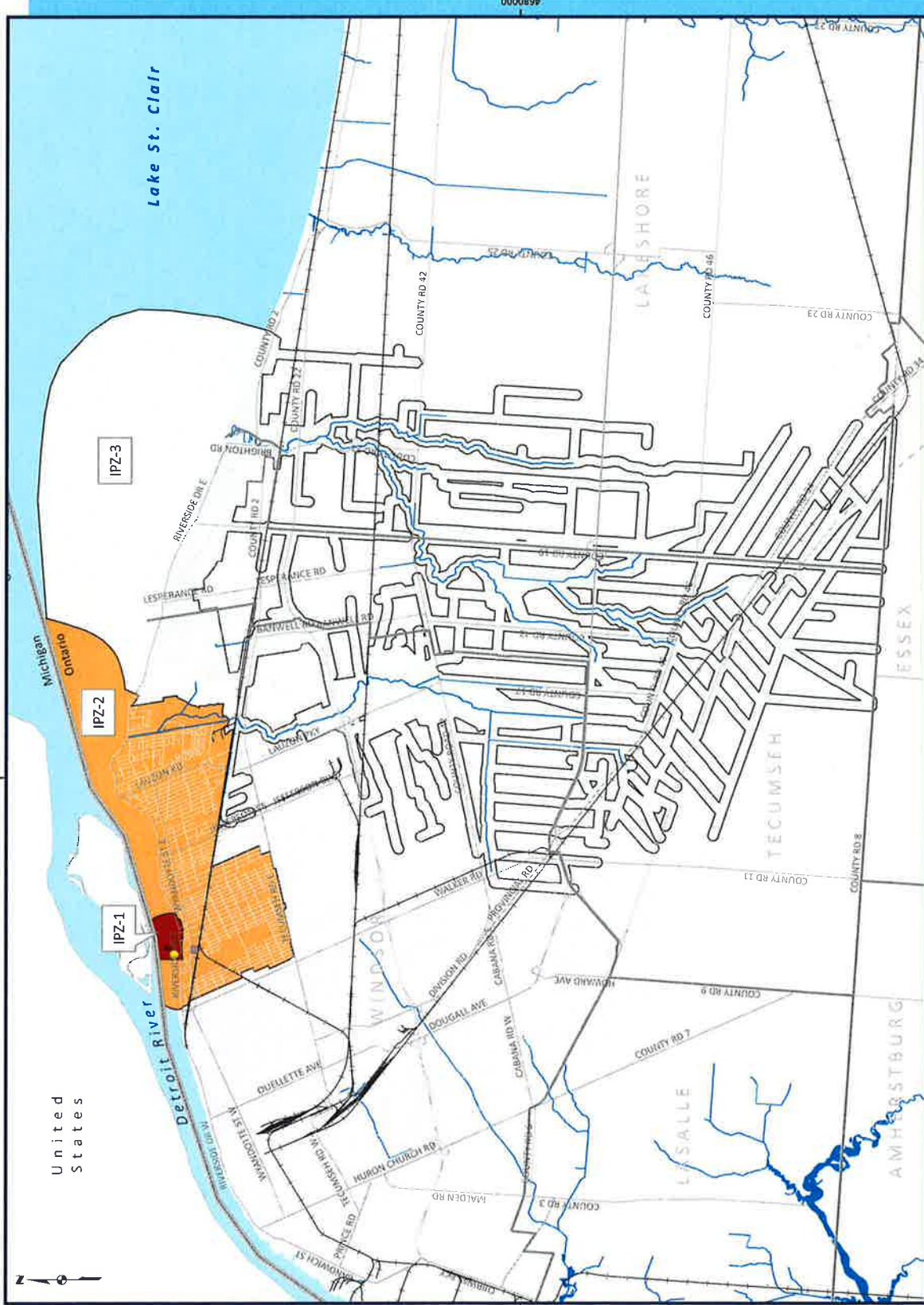
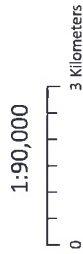
c./ Thom Hunt, City Planner
Mario Sonego, City Engineer
France Isabelle-Tunks, Senior Manager of Infrastructure Coordination and Development





A. H. Weeks (Windsor) Water Treatment Plant East Intake IPZ 1, 2 and 3

Made possible by the Government of Ontario



Essex Region Source Protection Area Assessment Report Map 4.24b

Legend

- Intake - Type B
- Drinking Water System
- Municipal, Lower Tier
- International Boundary
- Road
- Railway
- Water and Drainage
- Water Body
- Intake Protection Zones
- IPZ-1
- IPZ-2
- IPZ-3

This publication was produced by:

Essex Region Conservation Authority
360 Fairview Avenue West
Essex, ON N8M 1Y6

Sources: ERCA, County of Essex,
City of Windsor, MNR, MOE,
Stantec Consultants, StatsCanada

© Queen's Printer for Ontario, 2010

Map Produced in Co-Operation with the
Province of Ontario and Conservation Ontario

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Essex Region Conservation Authority (ERCA) shall not be liable in any way for the use of, or reliance upon, this map or any information contained herein.

Map Projection & Datum: UTM NAD83 Zone 17N

Windsor Essex County Environment Committee

Council Services Department
350 City Hall Square West, Room 203
Windsor, Ontario N9A 6S1



Attention: Tiffany Pocock
City of Windsor Engineering Department
350 City Hall Square West
Windsor, Ontario N9A 6S1

July 9th, 2011

Re: The Windsor International Airport Master Plan 2010

Dear Tiffany,

The subcommittee found the goals of the Windsor International Airport Master Plan overly ambitious. The projections seem unrealistic given the emerging impact of peak oil and airplane fuel costs, the uncertain future growth of air transport of commercial goods and related impacts to the industry. However, technology's response to future needs is also an unknown.

The recommendations on existing services seem reasonable however the subcommittee would like to see the noise exposure forecast (NEF) explained in more details given the diagram of the NEF and the reference to complaints and legal action for 40 NEF. *The subcommittee would like to have that component of the plan explained in more detail if possible.*

The subcommittee also noted the lack of recognition between airport and land transportation (buses, cars, taxis, shuttles). Certainly, if the projections of the plan are actually met, land transport access will increase significantly. However, given the scale of the plans this is not a great concern at this time.

The subcommittee was pleased to see the clear demarcation of the now confirmed PSW wood lots and the 120 meter buffer around the woodlots.

Sincerely,

Frank Butler
WECEC Transportation subcommittee

Appendix E

Windsor Airport Zoning Regulations



CANADA

CONSOLIDATION

CODIFICATION

Windsor Airport Zoning Regulations

Règlement de zonage de l'aéroport de Windsor

C.R.C., c. 123

C.R.C., ch. 123

Current to March 20, 2023

À jour au 20 mars 2023

Published by the Minister of Justice at the following address:
<http://laws-lois.justice.gc.ca>

Publié par le ministre de la Justice à l'adresse suivante :
<http://lois-laws.justice.gc.ca>

OFFICIAL STATUS OF CONSOLIDATIONS

Subsections 31(1) and (3) of the *Legislation Revision and Consolidation Act*, in force on June 1, 2009, provide as follows:

Published consolidation is evidence

31 (1) Every copy of a consolidated statute or consolidated regulation published by the Minister under this Act in either print or electronic form is evidence of that statute or regulation and of its contents and every copy purporting to be published by the Minister is deemed to be so published, unless the contrary is shown.

...

Inconsistencies in regulations

(3) In the event of an inconsistency between a consolidated regulation published by the Minister under this Act and the original regulation or a subsequent amendment as registered by the Clerk of the Privy Council under the *Statutory Instruments Act*, the original regulation or amendment prevails to the extent of the inconsistency.

LAYOUT

The notes that appeared in the left or right margins are now in boldface text directly above the provisions to which they relate. They form no part of the enactment, but are inserted for convenience of reference only.

NOTE

This consolidation is current to March 20, 2023. Any amendments that were not in force as of March 20, 2023 are set out at the end of this document under the heading “Amendments Not in Force”.

CARACTÈRE OFFICIEL DES CODIFICATIONS

Les paragraphes 31(1) et (3) de la *Loi sur la révision et la codification des textes législatifs*, en vigueur le 1^{er} juin 2009, prévoient ce qui suit :

Codifications comme élément de preuve

31 (1) Tout exemplaire d'une loi codifiée ou d'un règlement codifié, publié par le ministre en vertu de la présente loi sur support papier ou sur support électronique, fait foi de cette loi ou de ce règlement et de son contenu. Tout exemplaire donné comme publié par le ministre est réputé avoir été ainsi publié, sauf preuve contraire.

[...]

Incompatibilité — règlements

(3) Les dispositions du règlement d'origine avec ses modifications subséquentes enregistrées par le greffier du Conseil privé en vertu de la *Loi sur les textes réglementaires* l'emportent sur les dispositions incompatibles du règlement codifié publié par le ministre en vertu de la présente loi.

MISE EN PAGE

Les notes apparaissant auparavant dans les marges de droite ou de gauche se retrouvent maintenant en caractères gras juste au-dessus de la disposition à laquelle elles se rattachent. Elles ne font pas partie du texte, n'y figurant qu'à titre de repère ou d'information.

NOTE

Cette codification est à jour au 20 mars 2023. Toutes modifications qui n'étaient pas en vigueur au 20 mars 2023 sont énoncées à la fin de ce document sous le titre « Modifications non en vigueur ».

TABLE OF PROVISIONS**Regulations Respecting Zoning at Windsor Airport**

- 1 Short Title
- 2 Interpretation
- 4 Application
- 5 General
- 6 Natural Growth

SCHEDULE**TABLE ANALYTIQUE****Règlement de zonage concernant l'aéroport de Windsor**

- 1 Titre abrégé
- 2 Interprétation
- 4 Application
- 5 Dispositions générales
- 6 Végétation

ANNEXE

CHAPTER 123

AERONAUTICS ACT

Windsor Airport Zoning Regulations

Regulations Respecting Zoning at Windsor Airport

Short Title

1 These Regulations may be cited as the *Windsor Airport Zoning Regulations*.

Interpretation

2 In these Regulations,

airport means Windsor Airport, Windsor, in the Province of Ontario; (*aéroport*)

airport reference point means the point described in Part I of the schedule; (*point de repère de l'aéroport*)

approach surface means an imaginary inclined plane the lower end of which is a horizontal line at right angles to the centre line of a strip and passing through a point at the strip end on the centre line of the strip; (*surface d'approche*)

horizontal surface means an imaginary horizontal plane centering on and located 150 feet above the assigned elevation of the airport reference point; (*surface horizontale*)

Minister means the Minister of Transport; (*ministre*)

strip means a rectangular portion of the landing area of the airport, 1,000 feet in width, including the runway especially prepared for the take-off and landing of aircraft in a particular direction; (*bande*)

transitional surface means an imaginary inclined plane extending upward and outward from the outer lateral limits of a strip and its approach surface to an intersection with the horizontal surface or other transitional surfaces. (*surface de transition*)

CHAPITRE 123

LOI SUR L'AÉRONAUTIQUE

Règlement de zonage de l'aéroport de Windsor

Règlement de zonage concernant l'aéroport de Windsor

Titre abrégé

1 Le présent règlement peut être cité sous le titre : *Règlement de zonage de l'aéroport de Windsor*.

Interprétation

2 Dans le présent règlement,

aéroport désigne l'aéroport de Windsor, dans la province d'Ontario; (*airport*)

bande désigne une partie rectangulaire de l'aire d'atterrissage de l'aéroport, de 1 000 pieds de largeur, piste comprise, spécialement aménagée pour le décollage et l'atterrissage des aéronefs dans une direction déterminée; (*strip*)

ministre désigne le ministre des Transports; (*Minister*)

point de repère de l'aéroport signifie le point décrit à la partie I de l'annexe; (*airport reference point*)

surface d'approche désigne un plan incliné imaginaire dont l'extrémité inférieure est une ligne horizontale perpendiculaire à l'axe de la bande et passant par un point situé à l'extrémité de la bande sur l'axe de cette bande; (*approach surface*)

surface de transition désigne un plan incliné imaginaire s'étendant vers le haut et vers l'extérieur à partir des limites latérales extérieures de la bande et de sa surface d'approche, jusqu'à intersection avec la surface horizontale ou d'autres surfaces de transition; (*transitional surface*)

surface horizontale désigne un plan horizontal imaginaire centré sur le point de repère de l'aéroport et situé à 150 pieds au-dessus de l'altitude assignée de ce point de repère. (*horizontal surface*)

3 For the purposes of these Regulations, the airport reference point is deemed to be 606 feet above sea level.

Application

4 These Regulations apply to all lands, including public road allowances, adjacent to or in the vicinity of the airport, as more particularly described in Part II of the schedule.

General

5 No person shall erect or construct, on any land to which these Regulations apply, any building, structure or object or any addition to any existing building, structure or object, the highest point of which will exceed in elevation at the location of the highest point any of the surfaces hereinafter set out that project immediately over and above the surface of the land at that location, namely,

(a) a horizontal surface, the outer limits of which may be described as follows:

COMMENCING at the Southerly angle of Lot 107, as shown on a plan of subdivision registered in the Registry Office for the Registry Division of the County of Essex as Plan No. 1489, the said angle being the intersection of the Westerly limit of Howard Avenue (as widened) with the Eastern limit of Dougall Avenue; THENCE, Northerly along the said Eastern limit of Dougall Avenue to the Northwesterly angle of Lot 40 as shown on the said Plan 1489; THENCE, Northerly in a straight line across the allowance for road between Concessions 3 and 4, in the Township of Sandwich West, to the Southwesterly angle of Lot 257 as shown on a plan of subdivision registered as Plan 1124; THENCE, Northerly along the said Eastern limit of Dougall Avenue to the intersection thereof with the Southern limit of the allowance for road between Concessions 2 and 3, in the said Township; THENCE, Easterly along the said Southern limit of the said allowance for road to the intersection thereof with the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich East (now known as Howard Avenue); THENCE, Northerly in a straight line across the said allowance for road between Concessions 2 and 3 to the intersection of the Northern limit of the said road with the Eastern limit of Howard Avenue; THENCE, Northerly along the Eastern limit of Howard Avenue to the intersection thereof with the Southern limit of Stanley Street as shown on a plan of subdivision registered as Plan 1354; THENCE, Easterly along the Southern limit

3 Aux fins du présent règlement, le point de repère de l'aéroport est réputé être à 606 pieds au-dessus du niveau de la mer.

Application

4 Le présent règlement s'applique à tous les terrains contigus à l'aéroport ou situés dans son voisinage, y compris les emprises de voies publiques, définis plus en détail à la partie II de l'annexe.

Dispositions générales

5 Nul ne peut ériger ni construire, sur un terrain auquel s'applique le présent règlement, un bâtiment, ouvrage ou objet, ni un rajout à un bâtiment, ouvrage ou objet existant, dont le point le plus élevé dépasserait en hauteur à l'endroit où se trouverait ledit point, le niveau de l'une des surfaces définies ci-après qui surplombent immédiatement la surface du terrain à cet endroit à savoir :

a) une surface horizontale dont les limites extérieures peuvent être définies de la manière suivante :

COMMENÇANT à l'angle sud du lot 107, comme l'indique un plan de subdivision portant le n° 1489 enregistré au Bureau des registres de la Division d'enregistrement du comté d'Essex, ledit angle étant l'intersection de la limite ouest de l'avenue Howard (selon sa largeur actuelle) avec la limite est de l'avenue Dougall; DE LÀ, en direction du nord le long de ladite limite est de l'avenue Dougall jusqu'à l'angle nord-ouest du lot 40, comme l'indique ledit plan n° 1489; DE LÀ, en direction nord sur une ligne droite coupant la réserve de chemin entre les concessions 3 et 4, dans le township de Sandwich-Ouest, jusqu'à l'angle sud-ouest du lot 257, comme il est indiqué sur le plan de subdivision enregistré portant le n° 1124; DE LÀ, en direction nord le long de ladite limite est de l'avenue Dougall jusqu'à son intersection avec la limite sud de la réserve de chemin entre les concessions 2 et 3, dans ledit township; DE LÀ, en direction est le long de ladite limite sud de ladite réserve de chemin jusqu'à son intersection avec la limite est de la réserve de chemin entre les townships de Sandwich-Ouest et de Sandwich-Est (maintenant désignée avenue Howard); DE LÀ, en direction nord en traversant en ligne droite ladite réserve de chemin entre les concessions 2 et 3 jusqu'à l'intersection de la limite nord dudit chemin avec la limite est de l'avenue Howard; DE LÀ, en direction nord le long de la limite est de l'avenue Howard jusqu'à son intersection avec la limite sud de la rue Stanley, comme il est indiqué sur le plan de subdivision enregistré portant le n° 1354; DE LÀ, en direction est le long de la limite sud de la rue Stanley et le long de son

of Stanley Street and along its production Easterly to the intersection thereof with the Western boundary of Block "F" as shown on a plan of subdivision registered as Plan 423; THENCE, Northerly along the said Western boundary of Block "F" to the intersection thereof with the Northern limit of the right-of-way lands of the Canadian Pacific Railway; THENCE, Easterly along the Northern limit of the said right-of-way lands of the said Railway to the intersection thereof with the production Southerly of the Eastern limit of Gladstone Avenue as shown on a plan of subdivision registered as Plan 1220; THENCE, Northerly along the said production Southerly of the Eastern limit of Gladstone Avenue and along the said limit of Gladstone Avenue to the intersection thereof with the Southern limit of Ypres Avenue as shown on the said Plan 1220; THENCE, Easterly along the Southern limit of Ypres Avenue to the intersection thereof with the Eastern limit of Walker Road; THENCE, Northerly along the Eastern limit of Walker Road to the intersection thereof with the Southern limit of the allowance for road between Concessions 1 and 2, in the Township of Sandwich East (now known as Tecumseh Road); THENCE, Easterly along the Southern limit of the said road allowance to the intersection thereof with the Eastern limit of Lauzon Road; THENCE, Easterly along the Southern limit of the said road allowance to the Northeasterly angle of Lot 139, in Concession 2, McNiff's Survey; THENCE, Southerly along the Eastern boundary of Lot 139 to the Southeasterly angle of the said Lot; THENCE, Southerly in a straight line across the allowance for road between Concessions 2 and 3 (now known as E. C. Row Avenue) to the Northeasterly angle of Lot 139, in Concession 3, McNiff's Survey; THENCE, Southerly along the Eastern boundary of the last said Lot to the intersection thereof with the Southern limit of the right-of-way lands of the Canadian Pacific Railway; THENCE, Westerly along the said limit to the intersection thereof with the Eastern limit of Lauzon Road; THENCE, Southerly along the Eastern limit of Lauzon Road and the production Southerly thereof to a point in the Southern limit of the allowance for road between the Townships of Sandwich East and Sandwich South; THENCE, Westerly along the said Southern limit to the intersection thereof with the Western limit of the allowance for road between Concessions 9 and 10, in the Township of Sandwich South; THENCE, Southerly along the said Western limit of the said allowance for road to the Southeasterly angle of the East half of Lot 15, in Concession 9; THENCE, Westerly along the Southern boundary of the East half of said Lot 15 to the intersection thereof with the Eastern limit of Beaconsfield Road, as shown on the plans of subdivision registered as Plan Numbers 1332 and 1366; THENCE, Southerly along the said Eastern limit of Beaconsfield Road, as

prolongement est jusqu'à son intersection avec la limite ouest du bloc « F », comme il est indiqué sur le plan de subdivision enregistré portant le n° 423; DE LÀ, en direction nord le long de ladite limite ouest du bloc « F » jusqu'à son intersection avec la limite nord des terres d'enceinte du Canadien Pacifique; DE LÀ, en direction est le long de la limite nord desdites terres d'enceinte dudit Canadien Pacifique jusqu'à son intersection avec le prolongement vers le sud de la limite est de l'avenue Gladstone, comme il est indiqué sur le plan de subdivision enregistré portant le n° 1220; DE LÀ, en direction nord le long dudit prolongement vers le sud de la limite est de l'avenue Gladstone et le long de ladite limite de l'avenue Gladstone jusqu'à son intersection avec la limite sud de l'avenue Ypres, comme il est indiqué sur ledit plan n° 1220; DE LÀ, en direction est le long de la limite sud de l'avenue Ypres jusqu'à son intersection avec la limite est du chemin Walker; DE LÀ, en direction nord le long de la limite est du chemin Walker jusqu'à son intersection avec la limite sud de la réserve de chemin entre les concessions 1 et 2, dans le township de Sandwich-Est, (maintenant désignée chemin Tecumseh); DE LÀ, en direction est le long de la limite sud de ladite réserve de chemin jusqu'à son intersection avec la limite est du chemin Lauzon; DE LÀ, en direction est le long de la limite sud de ladite réserve de chemin jusqu'à l'angle nord-est du lot 139, dans la concession 2, arpentage de McNiff; DE LÀ, en direction sud le long de la limite est du lot 139 jusqu'à l'angle sud-est dudit lot; DE LÀ, en direction sud sur une ligne droite en traversant la réserve de chemin entre les concessions 2 et 3 (maintenant désignée avenue E. C. Row) jusqu'à l'angle nord-est du lot 139, dans la concession 3, arpentage de McNiff; DE LÀ, en direction sud le long de la limite est de ce dernier lot jusqu'à son intersection avec la limite sud des terres de l'emprise du chemin de fer du Canadien Pacifique; DE LÀ, en direction ouest le long de ladite limite jusqu'à son intersection avec la limite est du chemin Lauzon; DE LÀ, en direction sud le long de la limite est du chemin Lauzon et de son prolongement sud jusqu'à un point situé dans la limite sud de la réserve de chemin entre les townships de Sandwich-Est et de Sandwich-Sud; DE LÀ, en direction ouest le long de ladite limite sud jusqu'à son intersection avec la limite ouest de la réserve de chemin entre les concessions 9 et 10, dans le township de Sandwich-Sud; DE LÀ, en direction sud le long de ladite limite ouest de ladite réserve de chemin jusqu'à l'angle sud-est de la moitié est du lot 15, dans la concession 9; DE LÀ, en direction ouest le long de la limite sud de la moitié est dudit lot 15 jusqu'à son intersection avec la limite est du chemin Beaconsfield,

shown on the said plans to the intersection thereof with the Southern boundary of said Plan Number 1366; THENCE, Westerly along the Southern boundary of the said Plan 1366 to the intersection thereof with the half lot line between the East and West halves of Lot 14, in Concession 9; THENCE, Southerly along the half lot line between the East and West halves of Lot 14 to the intersection thereof with the Southern boundary of the West half of said Lot 14; THENCE, Westerly along the said Southern boundary of the West half of Lot 14 to the Southwesterly angle of the said Lot; THENCE, Westerly across the allowance for road between Concessions 8 and 9 to the Southeasterly angle of Lot 14, in Concession 8; THENCE, Southerly along the Eastern boundary of Lot 13, in Concession 8 to the Southeastern angle of the said Lot; THENCE, Westerly along the Southern boundary of Lot 13, in Concession 8 to the Southwesterly angle of the East half of the said Lot; THENCE, Southerly along the half lot line between the East and West halves of Lot 12, in Concession 8 to the Southeasterly angle of the West half of said Lot 12; THENCE, Westerly along the Southern boundary of the West half of said Lot 12 to the Southwesterly angle of the said Lot; THENCE, Southerly along the Western boundary of Lot 11, in Concession 8 to the Southwesterly angle of the said Lot 11, the said angle being the intersection of the Eastern limit of the allowance for road between Concessions 7 and 8 with the Northern limit of the allowance for road (known as the North Talbot Road); THENCE, Southerly along the production Southerly of the said Western boundary of Lot 11, in Concession 8 to the intersection thereof with the Southern limit of the North Talbot Road, the said limit being the Northern boundary of Lot 302, in the Concession North side of Talbot Road; THENCE, Westerly along the said Southern limit of North Talbot Road to the intersection thereof with the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich South (now known as Howard Avenue); THENCE, Northerly in a straight line across North Talbot Road to the Southwesterly angle of Lot 299 as shown on a plan of subdivision registered as Plan No. 1330; THENCE, Northwesterly in a straight line to the point of commencement,

(b) the approach surface abutting each end of the strips designated as 2-20 and 12-30 and extending outward therefrom, the dimensions of which are five hundred (500) feet on each side of the centre line of the strip at the strip ends and one thousand two hundred and fifty (1,250) feet on each side of the projected centre line of the strip at the outer ends, the said outer ends being two hundred (200) feet above the elevations at the strip ends and ten thousand (10,000) feet measured horizontally therefrom; and the approach

comme il est indiqué sur les plans de subdivision enregistrés portant les n^{os} 1332 et 1366; DE LÀ, en direction sud le long de ladite limite est du chemin Beaconsfield, comme il est indiqué sur lesdits plans, jusqu'à son intersection avec la limite sud dudit plan n^o 1366; DE LÀ, en direction ouest le long de la limite sud dudit plan n^o 1366 jusqu'à son intersection avec la ligne de demi-lot entre les moitiés est et ouest du lot 14 dans la concession 9; DE LÀ, en direction sud le long de la ligne de demi-lot entre les moitiés est et ouest du lot 14 jusqu'à son intersection avec la limite sud de la moitié ouest dudit lot 14; DE LÀ, en direction ouest le long de ladite limite sud de la moitié ouest du lot 14 jusqu'à l'angle sud-ouest dudit lot; DE LÀ, en direction ouest en traversant la réserve de chemin entre les concessions 8 et 9 jusqu'à l'angle sud-est du lot 14, dans la concession 8; DE LÀ, en direction sud le long de la limite est du lot 13, dans la concession 8, jusqu'à l'angle sud-est dudit lot; DE LÀ, en direction ouest le long de la limite sud du lot 13, dans la concession 8 jusqu'à l'angle sud-ouest de la moitié est dudit lot; DE LÀ, en direction sud le long de la ligne de demi-lot entre les moitiés est et ouest du lot 12, dans la concession 8, jusqu'à l'angle sud-est de la moitié ouest dudit lot 12; DE LÀ, en direction ouest le long de la limite sud de la moitié ouest dudit lot 12 jusqu'à l'angle sud-ouest dudit lot; DE LÀ, en direction sud le long de la limite ouest du lot 11, dans la concession 8, jusqu'à l'angle sud-ouest dudit lot 11, ledit angle étant l'intersection de la limite est de la réserve de chemin entre les concessions 7 et 8 avec la limite nord de la réserve de chemin (connue sous le nom de chemin Talbot-Nord); DE LÀ, en direction sud le long du prolongement sud de ladite limite ouest du lot 11, dans la concession 8, jusqu'à son intersection avec la limite sud du chemin Talbot-Nord, ladite limite étant la limite nord du lot 302 dans la concession située sur le côté nord du chemin Talbot; DE LÀ, en direction ouest le long de ladite limite sud du chemin Talbot-Nord jusqu'à son intersection avec la limite est de la réserve de chemin (maintenant désignée avenue Howard) entre les townships de Sandwich-Ouest et de Sandwich-Sud; DE LÀ, en direction nord sur une ligne droite en traversant le chemin Talbot-Nord jusqu'à l'angle sud-ouest du lot 299 comme il est indiqué sur le plan de subdivision enregistré portant le n^o 1330; DE LÀ, en direction nord-ouest en ligne droite jusqu'au point initial,

b) la surface d'approche aboutissant à chacune des extrémités de la bande désignée par les chiffres 2-20 et 12-30 et s'étendant à l'extérieur de cette bande, les dimensions de ladite surface d'approche étant de cinq cents (500) pieds de chaque côté de l'axe de la bande

surfaces abutting each end of the strip designated as 7-25 and extending outward therefrom, the dimensions of which are five hundred (500) feet on each side of the centre line of the strip at the strip ends and two thousand (2,000) feet on each side of the projected centre line of the strip at the outer ends, the said outer ends being two hundred (200) feet above the elevation at the strip ends and ten thousand (10,000) feet measured horizontally therefrom, and

(c) the several transitional surfaces, each rising at an angle determined on the basis of a ratio of one (1) foot measured vertically for every seven (7) feet measured horizontally from the outer lateral limits of the strips and their abutting surfaces,

as shown on Plan No. 2586 dated October 3, 1968, of record in the Department of Transport at Ottawa.

Natural Growth

6 Where an object of natural growth on any land to which these Regulations apply exceeds in elevation any of the surfaces set out in paragraphs 5(a) to (c), the Minister may make a direction that the owner or occupier of the land on which that object is growing remove the excessive growth thereof.

SOR/79-901, s. 1.

7 [Revoked, SOR/79-901, s. 1]

aux extrémités de la bande et de mille deux cent cinquante (1 250) pieds de chaque côté du prolongement de l'axe de la bande aux extrémités extérieures de la surface d'approche, lesdites extrémités extérieures se trouvant à deux cents (200) pieds au-dessus de l'altitude des extrémités de bande et à dix mille (10 000) pieds horizontalement des extrémités de la bande; et les surfaces d'approche aboutissant à chacune des extrémités de la bande désignée par les chiffres 7-25 et s'étendant à l'extérieur de cette bande, les dimensions desdites surfaces d'approche étant de cinq cents (500) pieds de chaque côté de l'axe de la bande aux extrémités de la bande et de deux mille (2 000) pieds de chaque côté du prolongement de l'axe de la bande aux extrémités extérieures des surfaces d'approche, lesdites extrémités extérieures se trouvant à deux cents (200) pieds au-dessus de l'altitude des extrémités de la bande et à dix mille (10 000) pieds horizontalement des extrémités de la bande, et

c) les diverses surfaces de transition, chacune s'élevant obliquement à raison de un (1) pied mesuré verticalement pour chaque longueur de sept (7) pieds mesurée horizontalement à partir des limites latérales extérieures des bandes et de leurs surfaces aboutissantes,

comme il est indiqué sur le plan n° 2586 daté du 3 octobre 1968 qui se trouve dans les dossiers du ministère des Transports à Ottawa.

Végétation

6 Au propriétaire ou à l'occupant d'un terrain où la végétation croît au-delà du niveau des surfaces énoncées aux alinéas 5a) à c), le ministre peut ordonner d'enlever l'ex-cédent de végétation.

DORS/79-901, art. 1.

7 [Abrogé, DORS/79-901, art. 1]

SCHEDULE

(Sections 2 and 4)

PART I

Airport Reference Point

COMMENCING at a stone monument planted at the intersection of the Northern limit of the Queen's Highway Number 2, as widened, with the Eastern boundary of Lot One Hundred and Four (104), in Concession Three (3), McNiff's Survey, in the Township of Sandwich East, in the County of Essex, the said intersection being distant eighteen and two tenths feet (18.2') measured Northerly along the said Eastern boundary from the Southeasterly angle of said Lot One Hundred and Four (104); THENCE Northerly along the said Eastern boundary of Lot One Hundred and Four (104), a distance of three thousand feet (3,000'); THENCE Westerly at right angles to the said Eastern boundary, a distance of two hundred feet (200') to a point henceforth designated as the airport reference point.

PART II

Description of Lands to Which These Regulations Apply

ALL AND SINGULAR those certain parcels or tracts of land and premises, situate, lying and being in the Townships of Sandwich West, Sandwich South and Sandwich East, in the County of Essex and Province of Ontario and being more particularly described hereinafter as Parcels "A", "B", "C" and "D".

PREMISING that the bearings hereinafter mentioned are astronomical and are referred to the centre line of Runway 7-25 of Windsor Airport as having a bearing of North 62°36' East.

Parcel "A": Part of Concessions 3 and 4 McNiff's Survey, in the Township of Sandwich West.

Being composed of part of farm Lots 80, 81, 82, 83, 84 and 85, in Concession Three (3), McNiff's Survey, and part of Lot Six (6), in Concession Four (4), McNiff's Survey, in the Township of Sandwich West, and all of the plans of subdivision registered in the Registry Office for the Registry Division of the County of Essex as Plan Numbers 1258, 1489, 1431, 1124, 707 and 713, and part of the allowance for road between Concessions Three (3) and Four (4) (now known as Cabana Road) in the Township of Sandwich West, and part of the allowance for road between the Township of Sandwich West and the Township of Sandwich East, and part of the road allowance between the Township of Sandwich West and the Township of Sandwich South, and being more particularly described as follows:

COMMENCING at the Southerly angle of Lot 107 as shown on the said plan of subdivision registered as Plan 1489, the said angle being the intersection of the Westerly limit of

ANNEXE

(articles 2 et 4)

PARTIE I

Point de repère de l'aéroport

COMMENÇANT à un monument en pierre qui s'élève à l'intersection de la limite nord de la route n° 2, selon sa largeur actuelle, avec la limite est du lot cent quatre (104), dans la concession trois (3), arpentage de McNiff, dans le township de Sandwich-Est, dans le comté d'Essex, ladite intersection étant à une distance de dix-huit pieds et deux dixièmes (18.2') mesurée en direction du nord le long de ladite limite est, depuis l'angle sud-est dudit lot cent quatre (104); DE LÀ, en direction nord le long de ladite limite est du lot cent quatre (104), une distance de trois mille pieds (3 000'); DE LÀ, en direction ouest à angle droit avec ladite limite est, une distance de deux cents pieds (200') jusqu'à un point dorénavant désigné comme point de repère de l'aéroport.

PARTIE II

Description des terrains auxquels s'applique le présent règlement

LA TOTALITÉ ET CHACUNE de certaines parcelles ou lières de terrain, immeubles compris, situés dans les townships de Sandwich-Ouest, Sandwich-Sud et Sandwich-Est, dans le comté d'Essex et la province d'Ontario et plus particulièrement décrites ci-après comme parcelles « A », « B », « C » et « D ».

POSANT EN PRÉMISSSE que les relèvements mentionnés ci-après sont astronomiques et se rapportent à l'axe de la piste 7-25 de l'aéroport de Windsor, soit Nord 62°36' Est.

Parcelle « A »: Partie des concessions 3 et 4, arpentage de McNiff, dans le township de Sandwich-Ouest.

Composée de la partie des lots de ferme 80, 81, 82, 83, 84 et 85, dans la concession trois (3), arpentage de McNiff, et de la partie du lot six (6), dans la concession quatre (4), arpentage de McNiff, dans le township de Sandwich-Ouest, et de tous les plans de subdivisions enregistrés au bureau d'enregistrement de la division de l'enregistrement du comté d'Essex et portant les n°s 1258, 1489, 1431, 1124, 707 et 713, et de la partie de la réserve de chemin entre les concessions trois (3) et quatre (4) (maintenant connue sous le nom de chemin Cabana) dans le township de Sandwich-Ouest, et de la partie de la réserve de chemin entre le township de Sandwich-Ouest et le township de Sandwich-Est, et de la partie de la réserve de chemin située entre le township de Sandwich-Ouest et le township de Sandwich-Sud, et plus particulièrement décrite comme suit :

COMMENÇANT à l'angle sud du lot 107 comme il est indiqué sur ledit plan de subdivision enregistré portant le n° 1489, ledit angle étant l'intersection de la limite ouest de

Howard Avenue (as widened) with the Eastern limit of Dougall Avenue; THENCE, Northerly along the said Eastern limit of Dougall Avenue to the Northwesterly angle of Lot Forty (40) as shown on the said Plan 1489; THENCE, Northerly in a straight line across the allowance for road between the said Concessions Three (3) and Four (4) to the Southwesterly angle of Lot 257 as shown on the said plan of subdivision registered as Plan 1124; THENCE, Northerly along the said Eastern limit of Dougall Avenue to the intersection thereof with the Southern limit of the allowance for road between Concessions Two (2) and Three (3), in the said Township; THENCE, Easterly along the said Southern limit of the said allowance for road to the intersection thereof with the Eastern limit of the allowance for road (now known as Howard Avenue) between the Townships of Sandwich East and Sandwich West; THENCE, Southerly along the Eastern limit of Howard Avenue to the intersection thereof with the Northern limit of the allowance for road between the Townships of Sandwich East and Sandwich South; THENCE, Southerly in a straight line across the said allowance for road to the intersection of the Southern limit of the said road with the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich South, the said intersection being the Northwesterly angle of Lot Fifteen (15), in Concession Five (5), in the Township of Sandwich South; THENCE, Southerly along the Eastern limit of the last said allowance for road to the Southwesterly angle of Lot 299 as shown on a plan of subdivision registered as Plan Number 1330; THENCE, Northwesterly in a straight line to the point of commencement.

Parcel "B": Part of Concessions 5, 6, 7, 8 and 9, in the Township of Sandwich South.

Being composed of part of Lots Twelve (12), Thirteen (13) and Fourteen (14), and all of Lot Fifteen (15), in Concession Five (5), all of Lots Eleven (11), Twelve (12), Thirteen (13), Fourteen (14), Fifteen (15), Sixteen (16) and Seventeen (17), in Concession Six (6), all of Lots Eleven (11), Twelve (12), Thirteen (13), Fourteen (14), Fifteen (15), Sixteen (16) and Seventeen (17), in Concession Seven (7), the West half of Lot Twelve (12), and all of Lots Thirteen (13), Fourteen (14), Fifteen (15), Sixteen (16), Seventeen (17) and Eighteen (18), in Concession Eight (8), the West half of Lot Fourteen (14), and all of Lots Fifteen (15), Sixteen (16), Seventeen (17), Eighteen (18) and Nineteen (19), in Concession Nine (9), part of Lots Three Hundred and Five (305) and Three Hundred and Six (306), in the Concession North side of Talbot Road, and all of the plans of subdivision registered in the Registry Office for the County of Essex as Plan Numbers 1108, 1527, 1530, 1133, 1143, 1503, 1330, 1525, 1519, 1523 and part of Plan Numbers 1332 and 1366, all of the allowance for road between Concessions Five (5) and Six (6), all of the allowance for road between Concessions Six (6) and Seven (7), all of the allowance for road between Concessions Seven (7) and Eight (8), part of the allowance for road between Concessions Eight (8) and Nine (9), all of the allowance for road between Lots Sixteen (16) and Seventeen (17), in Concessions Six (6) and Seven (7), Eight (8) and Nine (9), and part of the allowance for road between Lots Three Hundred and Five (305) and Three Hundred and Six (306), in the Concession North side of Talbot Road, and part of the allowance for road

l'avenue Howard (selon sa largeur actuelle) avec la limite est de l'avenue Dougall; DE LÀ, en direction nord le long de ladite limite est de l'avenue Dougall jusqu'à l'angle nord-ouest du lot quarante (40) comme il est indiqué sur ledit plan n° 1489; DE LÀ, en direction nord en traversant en ligne droite la réserve de chemin entre lesdites concessions trois (3) et quatre (4) jusqu'à l'angle sud-ouest du lot 257 comme il est indiqué sur ledit plan de subdivision enregistré portant le n° 1124; DE LÀ, en direction nord le long de ladite limite est de l'avenue Dougall jusqu'à son intersection avec la limite sud de la réserve de chemin entre les concessions deux (2) et trois (3), dans ledit township; DE LÀ, en direction est le long de ladite limite sud de ladite réserve de chemin jusqu'à son intersection avec la limite est de la réserve de chemin (maintenant connue sous le nom d'avenue Howard) entre les townships de Sandwich-Est et Sandwich-Ouest; DE LÀ, en direction sud le long de la limite est de l'avenue Howard jusqu'à son intersection avec la limite nord de la réserve de chemin entre les townships de Sandwich-Est et Sandwich-Sud; DE LÀ, en direction sud en traversant en ligne droite ladite réserve de chemin jusqu'à l'intersection de la limite sud dudit chemin avec la limite est de la réserve de chemin entre les townships de Sandwich-Ouest et Sandwich-Sud, ladite intersection étant l'angle nord-ouest du lot quinze (15), dans la concession cinq (5), dans le township de Sandwich-Sud; DE LÀ, en direction sud le long de la limite est de ladite dernière réserve de chemin jusqu'à l'angle sud-ouest du lot 299 comme il est indiqué sur le plan de subdivision enregistré portant le n° 1330; DE LÀ, en direction nord-ouest en ligne droite jusqu'au point initial.

Parcelle « B »: Partie des concessions 5, 6, 7, 8 et 9, dans le township de Sandwich-Sud.

Composée de la partie des lots douze (12), treize (13) et quatorze (14), et de la totalité du lot quinze (15), dans la concession cinq (5), de la totalité des lots onze (11), douze (12), treize (13), quatorze (14), quinze (15), seize (16) et dix-sept (17), dans la concession six (6), de la totalité des lots onze (11), douze (12), treize (13), quatorze (14), quinze (15), seize (16) et dix-sept (17), dans la concession sept (7), de la moitié ouest du lot douze (12), et de la totalité des lots treize (13), quatorze (14), quinze (15), seize (16), dix-sept (17) et dix-huit (18), dans la concession huit (8), de la moitié ouest du lot quatorze (14), et de la totalité des lots quinze (15), seize (16), dix-sept (17), dix-huit (18) et dix-neuf (19), dans la concession (9), d'une partie des lots trois cent cinq (305) et trois cent six (306), dans la concession située du côté nord du chemin Talbot, et de la totalité des plans de subdivision enregistrés au bureau d'enregistrement du comté d'Essex et portant les n°s 1108, 1527, 1530, 1133, 1143, 1503, 1330, 1525, 1519, 1523 et d'une partie des plans n°s 1332 et 1366, de la totalité de la réserve de chemin entre les concessions cinq (5) et six (6), de la totalité de la réserve de chemin entre les concessions six (6) et sept (7), de la totalité de la réserve de chemin entre les concessions sept (7) et huit (8), d'une partie de la réserve de chemin entre les concessions huit (8) et neuf (9), de la totalité de la réserve de chemin entre les lots seize (16) et dix-sept (17), dans les concessions six (6) et sept (7), huit (8) et neuf (9), et d'une partie de la réserve de chemin entre les lots trois cent cinq (305) et trois cent six (306), dans la concession située du côté nord du chemin Talbot, et d'une partie

known as the North Talbot Road, the said Lots and Roads being more particularly described as follows:

COMMENCING at the intersection of the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich South with the Southern limit of the allowance for road between the Townships of Sandwich East and Sandwich South, the said intersection being the Northwesterly angle of Lot Fifteen (15), in Concession Five (5), in the Township of Sandwich South; THENCE, Easterly along the said Southern limit of the allowance for road between the Townships of Sandwich East and Sandwich South to the Northeasterly angle of Lot Nineteen (19), in Concession Nine (9), in the Township of Sandwich South; THENCE, Southerly along the Western limit of the allowance for road between Concessions Nine (9) and Ten (10) to the Southeasterly angle of the East half of Lot Fifteen (15), in Concession Nine (9); THENCE, Westerly along the Southern boundary of the East half of said Lot Fifteen (15) to the intersection thereof with the Eastern limit of Beaconsfield Road, as shown on the plan of subdivision filed in the said Registry Office as Plan Numbers 1332 and 1366; THENCE, Southerly along the said Eastern limit of Beaconsfield Road, as shown on the said plans to the intersection thereof with the Southern boundary of said Plan Number 1366; THENCE, Westerly along the Southern boundary of the said Plan 1366 to the intersection thereof with the half lot line between the East and West halves of Lot Fourteen (14), in Concession Nine (9); THENCE, Southerly along the half lot line between the East and West halves of Lot Fourteen (14) to the intersection thereof with the Southern boundary of the West half of said Lot Fourteen (14); THENCE, Westerly along the said Southern boundary of the West half of Lot Fourteen (14) to the Southwesterly angle of the said Lot; THENCE, Westerly across the allowance for road between Concessions Eight (8) and Nine (9) to the Southeasterly angle of Lot Fourteen (14), in Concession Eight (8); THENCE, Southerly along the Eastern boundary of Lot Thirteen (13), in Concession Eight (8) to the Southeasterly angle of the said Lot; THENCE, Westerly along the Southern boundary of Lot Thirteen (13), in Concession Eight (8) to the Southwesterly angle of the East half of the said Lot; THENCE, Southerly along the half lot line between the East and West halves of Lot Twelve (12), in Concession Eight (8) to the Southeasterly angle of the West half of said Lot Twelve (12); THENCE, Westerly along the Southern boundary of the West half of said Lot Twelve (12) to the Southwesterly angle of the said Lot; THENCE, Southerly along the Western boundary of Lot Eleven (11), in Concession Eight (8) to the Southwesterly angle of the said Lot Eleven (11), the said angle being the intersection of the Eastern limit of the allowance for road between Concessions Seven (7) and Eight (8) with the Northern limit of the allowance for road known as the North Talbot Road; THENCE, Southerly along the production Southerly of the said Western boundary of Lot Eleven (11), in Concession Eight (8) to the intersection thereof with the Southern limit of the North Talbot Road, the said limit being the Northern boundary of Lot Three Hundred and Two (302), in the Concession North side of Talbot Road; THENCE, Westerly along the Southern limit of the North Talbot Road to a point in the Northern boundary of Lot Three Hundred and Five (305), in the Concession North side of Talbot Road, distant nine hundred and twenty-two and ninety-four one-hundredths feet

de la réserve de chemin connue sous le nom de chemin Talbot-Nord, lesdits lots et chemins étant plus particulièrement décrits comme suit :

COMMENÇANT à l'intersection de la limite est de la réserve de chemin entre les townships de Sandwich-Ouest et Sandwich-Sud avec la limite sud de la réserve de chemin entre les townships de Sandwich-Est et Sandwich-Sud, ladite intersection étant l'angle nord-ouest du lot quinze (15), dans la concession cinq (5), dans le township de Sandwich-Sud; DE LÀ, en direction est le long de ladite limite sud de la réserve de chemin entre les townships de Sandwich-Est et Sandwich-Sud jusqu'à l'angle nord-est du lot dix-neuf (19), dans la concession (9), dans le township de Sandwich-Sud; DE LÀ, en direction sud le long de la limite ouest de la réserve de chemin entre les concessions neuf (9) et dix (10) jusqu'à l'angle sud-est de la moitié est du lot quinze (15), dans la concession neuf (9); DE LÀ, en direction ouest le long de la limite sud de la moitié est dudit lot quinze (15) jusqu'à son intersection avec la limite est du chemin Beaconsfield, comme l'indiquent les plans de subdivision déposés audit bureau d'enregistrement et portant les n^{os} 1332 et 1366; DE LÀ, en direction sud le long de ladite limite est du chemin Beaconsfield comme l'indiquent lesdits plans jusqu'à son intersection avec la limite sud dudit plan n^o 1366; DE LÀ, en direction ouest le long de la limite sud dudit plan n^o 1366 jusqu'à son intersection avec la ligne de demi-lot entre les moitiés est et ouest du lot quatorze (14), dans la concession neuf (9); DE LÀ, en direction sud le long de la ligne de demi-lot entre les moitiés est et ouest du lot quatorze (14) jusqu'à son intersection avec la limite sud de la moitié ouest dudit lot quatorze (14); DE LÀ, en direction ouest le long de ladite limite sud de la moitié ouest du lot quatorze (14) jusqu'à l'angle sud-ouest dudit lot; DE LÀ, en direction ouest en traversant la réserve de chemin entre les concessions huit (8) et neuf (9) jusqu'à l'angle sud-est du lot quatorze (14), dans la concession huit (8); DE LÀ, en direction sud le long de la limite est du lot treize (13), dans la concession huit (8) jusqu'à l'angle sud-est dudit lot; DE LÀ, en direction ouest le long de la limite sud du lot treize (13), dans la concession huit (8) jusqu'à l'angle sud-ouest de la moitié est dudit lot; DE LÀ, en direction sud le long de la ligne de demi-lot entre les moitiés est et ouest du lot douze (12), dans la concession (8) jusqu'à l'angle sud-est de la moitié ouest dudit lot douze (12); DE LÀ, en direction ouest le long de la limite sud de la moitié ouest dudit lot douze (12) jusqu'à l'angle sud-ouest dudit lot; DE LÀ, en direction sud le long de la limite ouest du lot onze (11), dans la concession huit (8) jusqu'à l'angle sud-ouest dudit lot onze (11), ledit angle étant l'intersection de la limite est de la réserve de chemin entre les concessions sept (7) et huit (8) avec la limite nord de la réserve de chemin connue sous le nom de chemin Talbot-Nord; DE LÀ, en direction sud le long du prolongement sud de ladite limite ouest du lot onze (11), dans la concession huit (8) jusqu'à son intersection avec la limite sud du chemin Talbot-Nord, ladite limite étant la limite nord du lot trois cent deux (302), dans la concession située au nord du chemin Talbot; DE LÀ, en direction ouest le long de la limite sud du chemin Talbot-Nord jusqu'à un point situé dans la limite nord du lot trois cent cinq (305), dans la concession située au nord du chemin Talbot, à une distance de neuf cent quatre-vingt-douze

(922.94') measured Easterly along the said boundary from the most Northerly angle of the said Lot; THENCE, South twelve degrees four minutes thirty-nine seconds West (S12°04'39"W), a distance of nine hundred and seventy-nine feet (979'); THENCE, North seventy-three degrees thirty-eight minutes West (N73°38'W), a distance of two thousand five hundred feet (2,500'); THENCE, North twenty degrees thirty-nine minutes twenty-one seconds East (N20°39'21"E), a distance of one thousand and fifty-four and fifty-nine one-hundredths feet (1,054.59') to the Northern boundary of Lot Three Hundred and Six (306), the said boundary being the Southern limit of the North Talbot Road; THENCE, Westerly along the Southern limit of the North Talbot Road to the intersection thereof with the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich South; THENCE, Northerly along the said Eastern limit of the last said allowance for road to the point of commencement.

Parcel "C": Part of Concession Three (3), McNiff's Survey, in the Township of Sandwich East.

Being composed of part of farm Lots 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116 and 117, all of farm Lots 118, 119, 120, 121, 122, 123, 124, 125, 126, 127 and 134, part of farm Lots 135, 136, 137, 138 and 139, in Concession Three (3), McNiff's Survey, and all of the plans of subdivision registered in the Registry Office for the County of Essex as Plan Numbers 1259, 1093, 1415, 1629, 1026, 1045, 1513, 1215, 1126, 1079 and part of Plan 1197 and all of Lot K on Plan 148, part of the allowance for road between Lots 109 and 110 (now known as Pilette Road), all of the allowance for road lying adjacent to and Easterly from the Eastern boundary of Lot 127 and known as Lauzon Road, and the said Lots and Roads being more particularly described as follows:

COMMENCING at the intersection of the Southern limit of the allowance for road between Concessions Two (2) and Three (3), McNiff's Survey, with the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich East (now known as Howard Avenue); THENCE, Southerly along the Eastern limit of Howard Avenue to the intersection thereof with the Northern limit of the allowance for road between the Townships of Sandwich East and Sandwich South; THENCE, Southerly in a straight line across the allowance for road to the intersection of the Southern limit of the said road with the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich South; THENCE, Easterly along the Southern limit of the allowance for road between the Townships of Sandwich East and Sandwich South to the intersection thereof with the production Southerly of the Eastern limit of Lauzon Road; THENCE, Northerly along the said production Southerly of the Eastern limit of Lauzon Road and along the said limit of Lauzon Road to the intersection thereof with the Southern limit of the right-of-way lands of the Canadian Pacific Railway; THENCE, Easterly along the said limit to the intersection thereof with the Eastern boundary of Lot 139; THENCE, Northerly along the Eastern boundary of Lot 139 to the Southern limit of the allowance for road between Concessions Two (2) and Three (3), McNiff's Survey; THENCE, Westerly along the said Southern limit of the said allowance for road to the point of commencement.

pieds et quatre-vingt-quatorze centièmes (992,94 pi.) mesurée en direction de l'est le long de ladite limite depuis l'angle extrême nord dudit lot; DE LÀ, sud douze degrés, quatre minutes, trente-neuf secondes ouest (S. 12°04'39" O.), distance de neuf cent soixante-dix-neuf pieds (979 pi.); DE LÀ, nord soixante-treize degrés, trente-huit minutes ouest (N. 73°38' O.), distance de deux mille cinq cents pieds (2 500 pi.); DE LÀ, nord vingt degrés, trente-neuf minutes, vingt et une secondes est (N. 20°39'21" E.), distance de mille cinquante-quatre pieds et cinquante-neuf centièmes (1 054,59 pi.) jusqu'à la limite nord du lot trois cent six (306), ladite limite étant la limite sud du chemin Talbot-Nord; DE LÀ, en direction ouest le long de la limite sud du chemin Talbot-Nord jusqu'à son intersection avec la limite est de la réserve de chemin entre les townships de Sandwich-Ouest et Sandwich-Sud; DE LÀ, en direction nord le long de ladite limite est de ladite réserve de chemin jusqu'au point initial.

Parcelle « C » : Partie de la concession trois (3), arpentage de McNiff, dans le township de Sandwich-Est.

Composée d'une partie des lots de ferme 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116 et 117, de la totalité des lots de ferme 118, 119, 120, 121, 122, 123, 124, 125, 126, 127 et 134, et d'une partie des lots de ferme 135, 136, 137, 138 et 139, dans la concession 3, arpentage de McNiff, et de la totalité des plans de subdivision enregistrés au bureau d'enregistrement du comté d'Essex et portant les numéros 1259, 1093, 1415, 1629, 1026, 1045, 1513, 1215, 1126, 1079 et d'une partie du plan 1197 et de la totalité du lot K sur le plan 148, d'une partie de la réserve de chemin entre les lots 109 et 110 (maintenant désignée chemin Pilette), de la totalité de la réserve de chemin contiguë à la limite est du lot 127, et qui s'étend vers l'est depuis ladite limite est dudit lot 127, et connue sous le nom de chemin Lauzon, lesdits lots et chemins étant plus particulièrement décrits comme il suit :

COMMENÇANT à l'intersection de la limite sud de la réserve de chemin entre les concessions deux (2) et trois (3), arpentage de McNiff, avec la limite est de la réserve de chemin (maintenant désignée avenue Howard) entre les townships de Sandwich-Ouest et Sandwich-Est; DE LÀ, en direction sud le long de la limite est de l'avenue Howard jusqu'à son intersection avec la limite nord de la réserve de chemin entre les townships de Sandwich-Est et Sandwich-Sud; DE LÀ, en direction sud en traversant en ligne droite ladite réserve de chemin jusqu'à l'intersection de la limite sud dudit chemin avec la limite est de la réserve de chemin entre les townships de Sandwich-Ouest et Sandwich-Sud; DE LÀ, en direction est le long de la limite sud de la réserve de chemin entre les townships de Sandwich-Est et Sandwich-Sud jusqu'à son intersection avec le prolongement sud de la limite est du chemin Lauzon; DE LÀ, en direction nord le long dudit prolongement sud de la limite est du chemin Lauzon et le long de ladite limite du chemin Lauzon jusqu'à son intersection avec la limite sud des terres de l'emprise du chemin de fer du Canadien Pacifique; DE LÀ, en direction est le long de ladite limite jusqu'à son intersection avec la limite est du lot 139; DE LÀ, en direction du nord le long de la limite est du lot 139 jusqu'à la limite sud de la réserve de chemin entre les concessions deux (2) et trois (3), arpentage de McNiff; DE LÀ, en

Parcel "D": Part of Concession Two (2), McNiff's Survey, in the Township of Sandwich East.

Being composed of part of farm Lots 86, 87, 88, 89, 90, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 126 and 128, all of farm Lots 118, 119, 120, 121, 122, 123, 124, 125, 127, 129, 132, 133, 134, 135, 136, 137, 138 and 139, in Concession Two (2), McNiff's Survey, and all of the plans of subdivision registered in the said Registry Office as Plan Numbers 1373, 1117, 1246, 1542, 1319, 1234, 868, 1456, 1356, 1140, 1109, 1446, 1574, 1584, 1003, 1541, 1238, 1088, 1603, 1102, 1123, 1276, 1160, 1369, 1441, 1359, 1157, 1107, 1167, 1214, 1639, 1636, 1633, 1637, 867, 995, 1153, 1151, 1638 and part of the plans of subdivision registered as Plan Numbers 1354, 1090, 1106, 1097, 1281, 148, 423, 1220 and 951, part of the allowance for road between Concessions Two (2) and Three (3), McNiff's Survey, part of Grand Marais Road all of the allowance for road between the said farm Lots 109 and 110 (now known as Pillette Road), and all of the allowance for road between farm Lots 127 and 128 (now known as Lauzon Road), and being more particularly described as follows:

COMMENCING at the intersection of the Southern limit of the allowance for road between Concessions Two (2) and Three (3), McNiff's Survey, with the Eastern limit of the allowance for road between the Townships of Sandwich West and Sandwich East (now known as Howard Avenue); THENCE, Northerly in a straight line, across the said allowance for road between Concessions Two (2) and Three (3) to the intersection of the Northern limit of the said road with the Eastern limit of Howard Avenue; THENCE, Northerly along the Eastern limit of Howard Avenue, to the intersection thereof with the Southern limit of Stanley Street as shown on a plan of subdivision registered as Plan Number 1354; THENCE, Easterly along the Southern limit of Stanley Street, as shown on the plans of subdivision registered as Plan Numbers 1354, 1090, 1106, 1097, 1281, 1373 and 1334 and along its production Easterly to the intersection thereof with the Western boundary of Block "F", as shown on a plan of subdivision registered as Plan Number 423; THENCE, Northerly along the said Western boundary of Block "F" and the production Northerly of the said boundary to the intersection thereof with the Northern limit of the right-of-way lands of the Canadian Pacific Railway; THENCE, Easterly along the Northern limit of the said right-of-way lands of the said Railway to the intersection thereof with the production Southerly of the Eastern limit of Gladstone Avenue as shown on a plan of subdivision registered as Plan Number 1220; THENCE, Northerly along the said production Southerly of the Eastern limit of Gladstone Avenue and along the said limit of Gladstone Avenue to the intersection thereof with the Southern limit of Ypres Avenue as shown on the said Plan 1220; THENCE, Easterly along the Southern limit of Ypres Avenue as shown on the plans of subdivision registered as Plan Numbers 1220, 1319 and 951 and along the production Easterly thereof to the intersection thereof with the Eastern limit of Walker Road; THENCE, Northerly along the Eastern limit of Walker Road to the intersection thereof with the Southern limit of the allowance for road between Concessions One (1) and Two (2), McNiff's

direction ouest le long de ladite limite sud de ladite réserve de chemin jusqu'au point de départ.

Parcelle « D » : Partie de la concession deux (2), arpentage de McNiff, dans le township de Sandwich-Est.

Composée d'une partie des lots de ferme 86, 87, 88, 89, 90, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 126, et 128, et de la totalité des lots de ferme 118, 119, 120, 121, 122, 123, 124, 125, 127, 129, 132, 133, 134, 135, 136, 137, 138 et 139, dans la concession 2, arpentage de McNiff, et de la totalité des plans de subdivision enregistrés audit bureau d'enregistrement et portant les numéros 1373, 1117, 1246, 1542, 1319, 1234, 868, 1456, 1356, 1140, 1109, 1446, 1574, 1584, 1003, 1541, 1238, 1088, 1603, 1102, 1123, 1276, 1160, 1369, 1441, 1359, 1157, 1107, 1167, 1214, 1639, 1636, 1633, 1637, 867, 995, 1153, 1151, 1638 et d'une partie des plans de subdivision enregistrés et portant les numéros 1354, 1090, 1106, 1097, 1281, 148, 423, 1220 et 951, d'une partie de la réserve de chemin entre les concessions deux (2) et trois (3), arpentage de McNiff, partie du chemin du Grand-Marais, de la totalité de la réserve de chemin entre lesdits lots de ferme 109 et 110, (maintenant désignée chemin Pillette) et de la totalité de la réserve de chemin entre les lots de ferme 127 et 128 (maintenant désignée chemin Lauzon), et plus particulièrement décrite comme il suit :

COMMENÇANT à l'intersection de la limite sud de la réserve de chemin entre les concessions deux (2) et trois (3), arpentage de McNiff, avec la limite est de la réserve de chemin (maintenant désignée avenue Howard) entre les townships de Sandwich-Ouest et Sandwich-Est; DE LÀ, en direction nord, en traversant en ligne droite ladite réserve de chemin entre les concessions deux (2) et trois (3) jusqu'à l'intersection de la limite nord de l'avenue Howard; DE LÀ, en direction nord le long de la limite est de l'avenue Howard, jusqu'à son intersection avec la limite sud de la rue Stanley, comme il est indiqué sur le plan de subdivision enregistré portant le n° 1354; DE LÀ, en direction est le long de la limite sud de la rue Stanley, comme il est indiqué sur les plans de subdivision enregistrés portant les n°s 1354, 1090, 1106, 1097, 1281, 1373 et 1334 et le long de son prolongement est jusqu'à son intersection avec la limite ouest du bloc « F », comme il est indiqué sur le plan de subdivision portant le n° 423; DE LÀ, en direction nord le long de ladite limite ouest du bloc « F » et du prolongement en direction nord de ladite limite jusqu'à son intersection avec la limite nord des terres de l'emprise du chemin de fer du Canadien Pacifique; DE LÀ, en direction est le long de la limite nord desdites terres d'enceinte dudit chemin de fer jusqu'à son intersection avec le prolongement sud de la limite est de l'avenue Gladstone comme il est indiqué sur le plan de subdivision enregistré portant le n° 1220; DE LÀ, en direction nord le long dudit prolongement sud de la limite est de l'avenue Gladstone et le long de ladite limite de l'avenue Gladstone jusqu'à son intersection avec la limite sud de l'avenue Ypres comme il est indiqué sur ledit plan n° 1220; DE LÀ, en direction est le long de la limite sud de l'avenue Ypres, comme il est indiqué sur les plans de subdivision enregistrés portant les n°s 1220, 1319 et 951 et le long de son prolongement est jusqu'à son intersection avec la limite est du chemin Walker; DE LÀ, en direction nord le long de la limite est du chemin Walker jusqu'à son intersection avec la limite sud

Survey, and now known as Tecumseh Road; THENCE, Easterly along the Southern limit of Tecumseh Road to the Northeasterly angle of farm Lot 127; THENCE, Easterly in a straight line across the allowance for road between Lots 127 and 128 to the Northwesterly angle of Lot 128; THENCE, Easterly along the said Southern limit of the allowance for road between Concessions One (1) and Two (2), McNiff's Survey, to the Northeasterly angle of farm Lot 139; THENCE, Southerly along the Eastern boundary of Lot 139 to the Southeasterly angle of the said Lot; THENCE, Southerly in a straight line across the allowance for road between Concessions Two (2) and Three (3), McNiff's Survey, to the Northeasterly angle of Lot 139, in Concession Three (3), McNiff's Survey; THENCE, Westerly along the Southern limit of the said allowance for road to the point of commencement.

de la réserve de chemin entre les concessions un (1) et deux (2), arpentage de McNiff, et maintenant connue sous le nom de chemin Tecumseh; DE LÀ, en direction est le long de la limite sud du chemin Tecumseh jusqu'à l'angle nord-est du lot de ferme 127; DE LÀ, en direction de l'est traversant en ligne droite la réserve de chemin entre les lots 127 et 128 jusqu'à l'angle nord-ouest du lot 128; DE LÀ, en direction de l'est le long de ladite limite sud de la réserve de chemin entre les concessions un (1) et deux (2), arpentage de McNiff, jusqu'à l'angle nord-est du lot de ferme 139; DE LÀ, en direction sud, le long de la limite est du lot 139 jusqu'à l'angle sud-est dudit lot; DE LÀ, en direction sud traversant en ligne droite la réserve de chemin entre les concessions deux (2) et trois (3), arpentage de McNiff, jusqu'à l'angle nord-est du lot 139 dans la concession trois (3), arpentage de McNiff; DE LÀ, en direction ouest le long de la limite sud de ladite réserve de chemin jusqu'au point de départ.

Appendix F

Aviation: Land Use in Vicinity of Aerodromes (TP 1247)



AVIATION

Land Use In The Vicinity of Aerodromes

Abstract

This publication describes not only the operational characteristics of aerodromes but also different types of land uses outside the aerodrome property boundary and recommends, where applicable, guidelines for those land uses in the vicinity of aerodromes. In addition, the source documents have been linked to further explain the technical aeronautical requirements.

This publication was prepared by the Flight Standards division of the Standards Branch of the Civil Aviation Directorate of Transport Canada. Enquiries relating to the document's content and suggested amendments should be directed to:

Chief
Flight Standards
Standards Branch
Civil Aviation Directorate
Transport Canada
Place de Ville, Tower "C"
330 Sparks Street
Ottawa, Ontario
K1A 0N8

Part I -- Introduction

This publication is designed to assist planners and legislators at all levels of government in becoming familiar with issues related to land use in the vicinity of aerodromes.

Municipal planners and developers must understand that how land is used around an aerodrome will have an impact on the aerodrome's operations. The land use around aerodromes can have significant impacts on safety at the aerodrome and can negatively impact the operational viability of the aerodrome to the detriment of the local community that depends upon it.

The compatible land use planning concept is an outgrowth of the focus of attention on the environmental relationship between aerodromes and their community neighbours. This planning concept is relatively simple and the results can be impressive, but the implementation requires careful study and co-ordinated planning.

Some community/aerodrome situations have reached the point where the effect of land use planning guidelines may be minimal. However, there are still instances where the use of these guidelines will result in more compatible aerodrome and community development. Implementation of this guidance may result in provincial/municipal legislation or bylaws for compatible land uses, easements or land zoning.

As new and non-traditional uses of land become more prevalent (e.g. windfarms), the public and aviation stakeholders have advanced concerns to Transport Canada over items that may be viewed as impediments to access or as safety items. The ninth edition of TP 1247 has been revised to address these issues.

Where units of measure are quoted in this document, the metric numbers are to be heeded as the equivalent imperial units are approximations only.

For the purposes of this document, where the word *aerodrome* is used, it includes certified aerodromes, non-certified aerodromes, heliports and water aerodromes; where the word *airport* is used, it specifically means certified aerodromes.

Enquiries relating to the application of these guidelines should be directed to the appropriate Regional Director Civil Aviation. Addresses for the Regional Civil Aviation officials are listed in [Appendix A](#).

TABLE OF CONTENTS

Part I -- Introduction	2
Definitions	6
1.1 General	7
1.2 Slopes and Surfaces	7
1.3 Outer Surface	9
1.3.1 Dimensions of Outer Surface	9
1.4 Take-Off/Approach Areas and Surfaces	10
1.4.1 Delimitation.....	10
1.4.2 Dimensions of the Takeoff/Approach Areas and Surfaces	10
1.5 Transitional Surface	12
1.5.1 Delimitation.....	12
1.6 Width of Strip	12
1.6.1 Dimensions of the Runway Strips	12
Part II -- Telecommunications and Electronic Systems	13
2.1 General	13
2.2 Radar Systems	13
2.2.1 Air Traffic Control (ATC), Air Defence or Military Radars	14
2.2.2 Weather Radar	14
2.3 VHF/UHF Radio Communication Systems	14
2.4 Navigational Aids	14
2.4.1 General.....	14
2.4.2 Non-Directional Beacons (NDB).....	15
2.4.3 VHF Direction Finding Systems (VHF/DF).....	15
2.4.4 VHF Omni-Directional Range (VOR)	15
2.4.5 Distance Measuring Equipment (DME).....	15
2.4.6 Tactical Air Navigation System (TACAN and VORTAC).....	16
2.4.7 Instrument Landing Systems (ILS).....	16
Part III -- Bird Hazards and Wildlife	17
3.1 General	17
3.2 Hazardous Land-use Acceptability	17
Part IV -- Aircraft Noise	19
4.1 General	19
4.1.1 Noise Measurement	19
4.1.2 Predicting Annoyance	20
4.1.3 The Noise Exposure Forecast System (NEF)	20
4.2 Production of Noise Contours - Aerodromes That Are Neither Owned Nor Operated and Managed by Transport Canada	20
4.3 Noise Exposure Contours	21
4.3.1 Noise Exposure Forecast (NEF)	21
4.3.2 Noise Exposure Projection (NEP)	21
4.3.3 Planning Contour.....	21
4.4 Production of Noise Contours: DND Aerodromes	21
4.5 Noise Contour Maps	22
4.6 Community Response to Noise	22
4.6.1 New Aerodromes and Community Response to Noise.....	22
4.7 Recommended Noise Control Action	23
4.8 Recommended Practices	23
PART V -- Restrictions to Visibility	31
PART VI -- Wind Turbines and Wind Farms	32
6.0 General	32

6.1 Wind turbine marking and lighting.....	32
6.2 Wind turbines and airport radar	32
6.3 Navigation aids and communication systems.....	32
6.4 Weather Radar.....	33
6.5 Parachute Landing Areas (PLA).....	33
6.6 Light Pollution.....	33
PART VII -- Exhaust Plumes.....	34
PART VIII -- Solar Array Installations	35
Appendix A - Regional Offices of Transport Canada – Civil Aviation	37

Transport Canada Land Use Role

From a regulatory perspective, the authority for the designation of and control of the use of lands located outside of aerodrome property rests with provincial/municipal levels of government. The only exception to this fact, in the aviation case, occurs where an airport zoning regulation, made pursuant to the Aeronautics Act, is in force.

The Minister of Transport may exercise authority only over lands that are included in an Airport Zoning Regulation made pursuant to the Act. An Airport Zoning Regulation contains restrictive clauses that describe the activities and uses that are restricted or prohibited and contains a legal description of the lands to which it applies.

Restrictions and or prohibitions contained in a zoning regulation may range from limiting the height of structures to prohibiting specified land uses or to prohibiting facilities that may interfere with signals or communications to/from aircraft.

Airport zoning regulations cannot be made for non-certified aerodromes.

Individual zoning regulations are included in a listing of regulations made pursuant to the Aeronautics Act and may be found at the following internet address:

<http://www.tc.gc.ca/eng/acts-regulations/acts-1985ca-2.htm>

Definitions

The following definitions are provided for the purposes of this document only;

Airport: An aerodrome for which, under Part III of the *Canadian Aviation Regulations*, an airport certificate has been issued by the Minister.

Aerodrome: Any area of land, water (including the frozen surface thereof) or other supporting surface used or designed, prepared, equipped or set apart for use either in whole or in part for the arrival, departure, movement or servicing of aircraft and includes any buildings, installations and equipment situated thereon or associated therewith.

Note: *This definition of "Aerodrome" includes water aerodrome and heliports.*

Aerodrome Reference Point: The designated point or points on an aerodrome normally located near the geometric centre of the runway complex that:

- (a) establishes the geographical location of an aerodrome for charting purposes, and
- (b) establishes the locus of the radius or radii of the outer surface as defined in a Zoning Regulation.

Graded Area: An area surrounding the runway which is graded to a specified standard to minimize hazards to aircraft which may accidentally run off the runway surface.

Heliport: An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

Obstacle Limitation Surface: A surface that establishes the limit to which objects may project into the airspace associated with an aerodrome consisting of the following; a takeoff surface, an approach surface, a transitional surface and an outer surface.

Runway Strip: A defined area including the runway, and stopway if provided, intended to reduce the risk of damage to aircraft running off a runway and to protect aircraft flying over it during takeoff or landing operations.

Water Aerodrome: means an aerodrome that uses an area of water, excluding the frozen surface of that area, for the arrival, departure, movement or servicing of aircraft.

1.1 General

This part will give the reader some insight into those aerodrome operational factors which can affect land uses outside the aerodrome property boundary. Each factor is considered separately and in enough detail to allow general planning conclusions to be drawn. It is important that any particular land use under consideration be judged from the point of view of all relevant factors. The referenced Manual for Part I is: Aerodrome Standards and Recommended Practices (TP 312E).

Obstacle Limitation Surfaces are established to ensure the required level of safety. These surfaces normally extend beyond the boundary of the aerodrome and therefore benefit from protection by the enactment of an Airport Zoning Regulation which will prohibit the erection of structures which would violate any of the defined plane surfaces.

Where enacted, zoning regulations apply to all the lands, including public road allowances, adjacent to or in the vicinity of an airport; the specific lands are described in the Schedule of the relevant airport zoning regulation. Lands within an airport boundary are therefore not included in an airport zoning regulation; however, all structures within an airport boundary must comply with obstacle limitation surface requirements, as stated in TP312 Aerodrome Standards and Recommended Practices.

For those airports at which an Airport Zoning Regulation has been enacted under the Aeronautics Act, details of the registered zoning plans are available from the Land Registry Office for the district within which the airport is located.

Note: It is of the utmost importance to be aware that the proximity of obstacles, for example, wind turbines, telecommunications towers, antennae, smoke stacks, etc., may have an impact on the current and future usability of an aerodrome. Therefore, it is critical that planning and coordination of the siting of obstacles should be conducted in conjunction with an aerodrome operator at the earliest possible opportunity.

1.2 Slopes and Surfaces

There are three types of surfaces in place at an aerodrome that should be protected to avoid penetration by objects or structures. Protection of these surfaces is done by limiting the height of structures, including appurtenances or objects on the ground, to heights that are less than that of the slope surface thereby avoiding penetration of that surface.

Airports that have an Airport Zoning Regulation have these surfaces protected by law and these zoning regulations apply to land that is located outside the property boundary of the airport. At aerodromes that do not have an Airport Zoning Regulation, the cooperation of adjacent communities is sought to obtain provincial/municipal zoning protection against development that would compromise the operational airspace, as defined by the description of these surfaces, around the aerodrome facility.

Where the facility is an airport, objects penetrating any of these surfaces may affect the operations of the airport and the certification status of the airport. Where the facility is a non-certified aerodrome, penetration of these surfaces may affect the operations at the aerodrome. Where the facility is a non-certified aerodrome, the standards in TP312 Aerodrome Standards and Recommended Practices can be used but are not enforceable; however, the operational integrity of the non-certified aerodrome is enhanced if the designation of the use of land adjacent to the facility is done in line with technical portions of the standards.

The three types of surfaces in place at an aerodrome are the outer surface, the takeoff /approach slope surface and the transitional surface as shown in Figure 1.

A complete description of the standards related to these surfaces may be accessed at the following website:

<http://www.tc.gc.ca/eng/civilaviation/publications/tp312-menu-4765.htm>

The following figure will assist the reader in developing a visual picture of the surfaces discussed above.

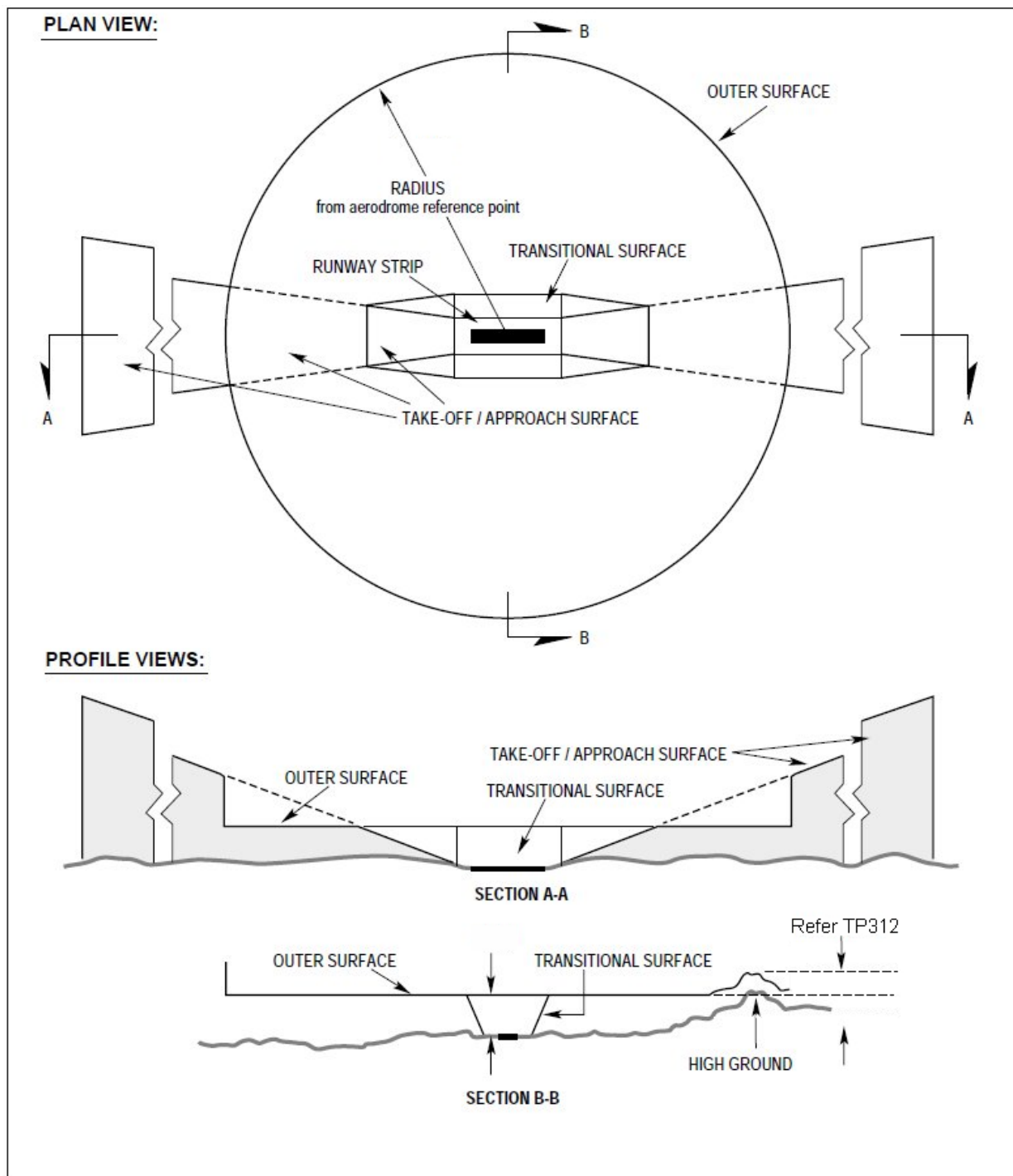


Figure 1: Obstacle Limitation Surfaces

1.3 Outer Surface

An outer surface shall be established where required for the protection of aircraft conducting a circling procedure or manoeuvring in the vicinity of an aerodrome. The outer surface establishes the height above which it may be necessary to rake one or more of the following actions:

- (a) restrict the erection of new structures which would constitute an obstruction; or
- (b) remove or mark obstacles to ensure a satisfactory level of safety and regularity for aircraft manoeuvring visually in the vicinity of the airport before commencing the final approach phase (See Figure 2).

1.3.1 Dimensions of Outer Surface

Where an outer surface is established, it shall be as follows:

- (a) a common plane established at a constant elevation of 45 m above the assigned elevation of the aerodrome reference point; and
- (b) when the common plane described in paragraph (a) is less than 9 m above the surface of the ground, an imaginary surface shall be established at 9 m above the surface of the ground (See Figures 2 and 3).

Note: When the outer surface elevation cannot be held to 45 m, a semi-circular outer surface may be established permitting a circling procedure on one side of the runway. If this compromise solution is not possible, circling as part of an instrument approach procedure should not be recognized, thus eliminating the need for an outer surface.

The outer surface measured from the designated aerodrome reference point or points, shall extend to a horizontal distance of at least:

- (a) 4000 m is recommended where the code number is 1, 2 or 3.
- (b) to be determined by an aeronautical study where the code number is 4, but never less than 4000 m.

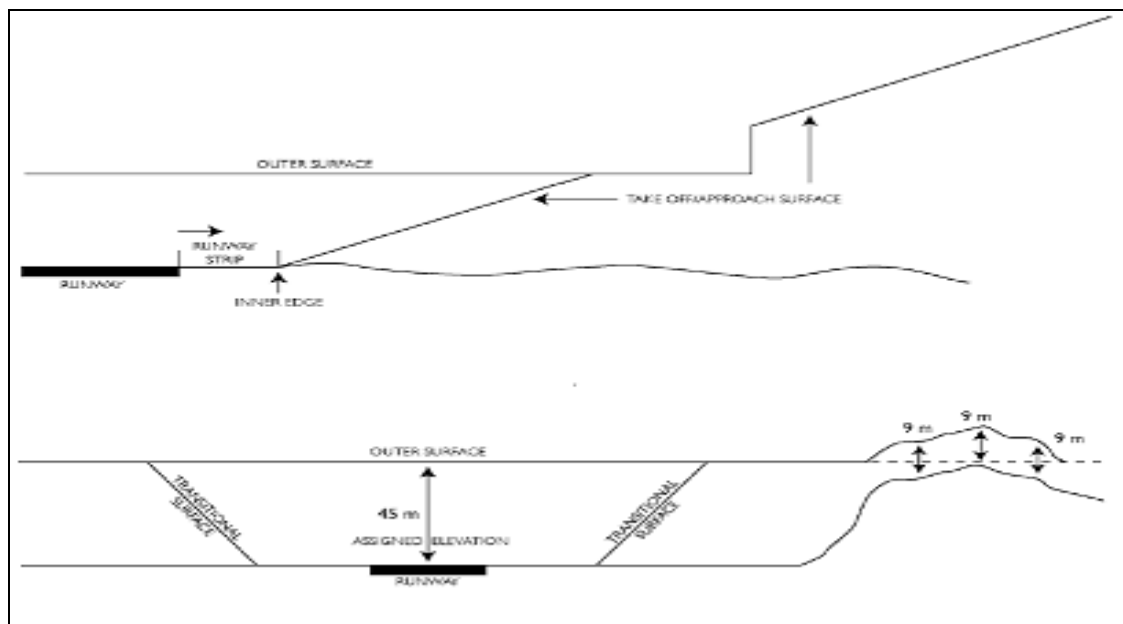


Figure 2 – Obstacle Limitation Surface – Side View

1.4 Take-Off/Approach Areas and Surfaces

1.4.1 Delimitation

They are established for each runway direction intended to be used for the take-off and landing of aircraft.

- An inner edge, perpendicular to the runway, begins at the end of the runway strip (normally 60 m from the runway threshold). The length of the inner edge is dependent on the strip width.
- Two sides originate at the ends of the inner edge and diverge uniformly at either 10% or 15% from the extended runway centre line (Note: See divergence minima information in paragraph 1.4.2).
- Final Width will be the product of the divergence and length of the area, and will be parallel to the inner edge.

1.4.2 Dimensions of the Takeoff/Approach Areas and Surfaces

The dimensions of the takeoff/approach areas and surfaces shall be:

(a)

Precision Approach Runway - Category I and II	
Length of inner edge	As per strip width
Divergence (min)	15%
Length (min.)	15 000 m
*Slope (max.)	Cat. II Runways, 2% where the code number is 3 or 4. Cat. I Runways, 2% where the code number is 3 or 4. Cat. I Runways, 2.5% where the code number is 1 or 2.

* Where applicable, for new runways at major aerodromes the slope should be 1.66% for the first 3000 m and 2% thereafter for a total length of 15 000 m.

For the purposes of registered zoning, the takeoff approach surfaces of Code 3 and 4 Precision Approach Runways shall be defined by using slopes appropriate for a glide path extending for a maximum of 6 KM. If local terrain precludes the use of a glide path, then the lowest usable glide slope should be selected.

(b)

Non-Precision Approach Runway				
Code Number	1	2	3	4
Length of inner edge	As per strip width			
Divergence (min.)	10%	10%	15%	15%
Length (min.)	2 500m	2 500m	3 000m	3 000m
* Slope (max.)	3.33%	3.33%	2.5%	2.5%

* Where practicable, the slope should be 2%.

(c)

Non-Instrument Runways				
Code Number	1	2	3	4
Length of inner edge	As per strip width			
Divergence (min.)	10%	10%	10%	10%
Length (min.)	2 500m	2 500m	3 000m	3 000m
Slope (max.)	5%	4%	2.5%	2.5%

Note: The lengths given in (a), (b) and (c) above, are measured horizontally, unless otherwise specified. Regardless of the slope specifications in (a), (b) and (c) above, all objects considered by the certifying authority to be hazardous shall be marked and/or lighted.

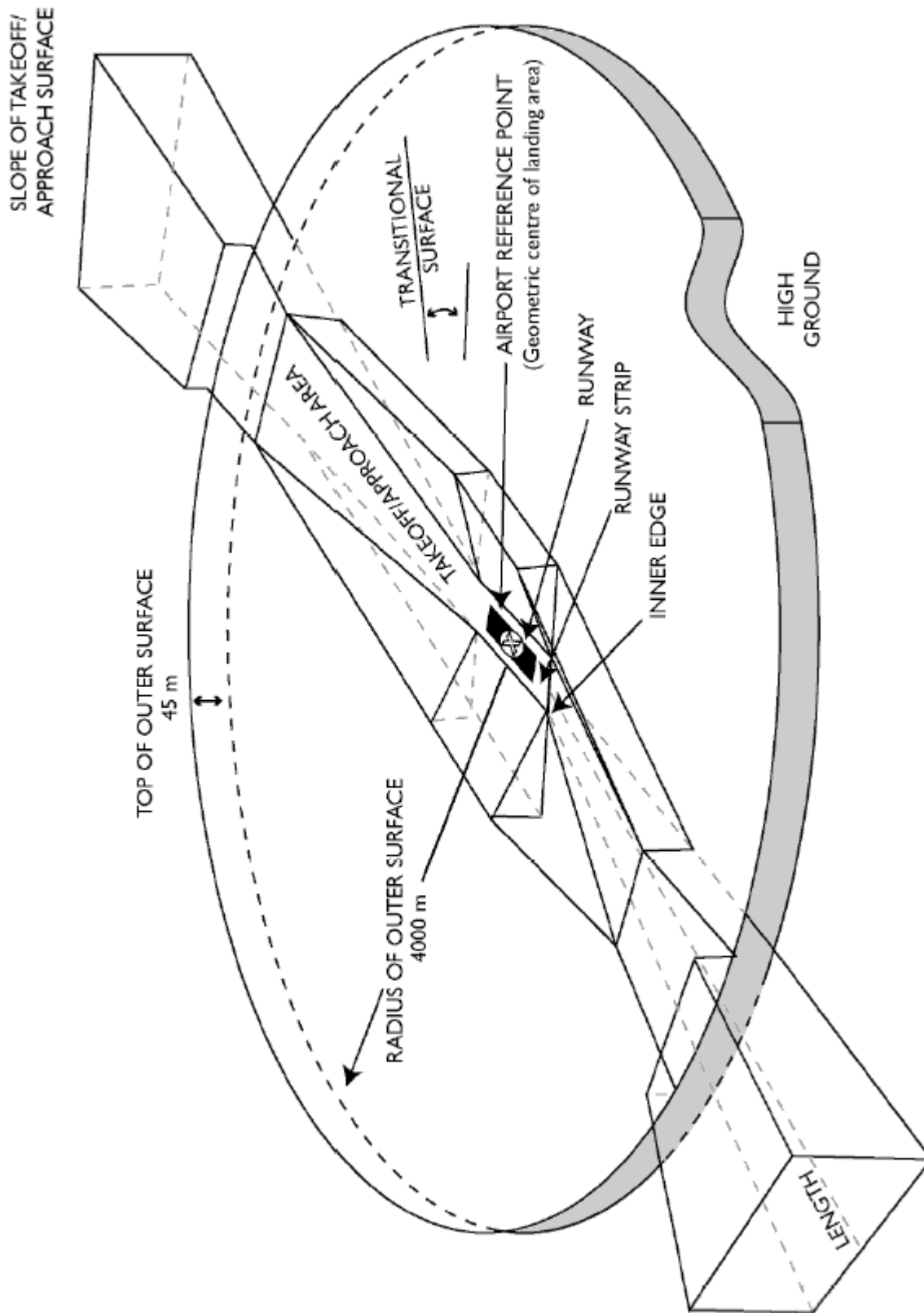


Figure 3 – Obstacle Limitation Surfaces

1.5 Transitional Surface

1.5.1 Delimitation

Transitional surface is a complex surface along the sides of the runway strip and pan of the approach surface that slopes up to the outer surface. Its purpose is to ensure the safety of aircraft at low altitudes displaced from the runway centre line in the approach or missed approach phase. The slope of a transitional surface measured in the vertical, perpendicular to the runway shall be:

- 14.3% for an Instrument runway and non-Instrument runways, Code 3 and 4
- 20.0% for non-Instrument runways, Code 1 and 2

Where topographical or natural obstructions make it economically unreasonable and in the opinion of the Certifying Authority, an equivalent level of safety will be achieved, the transitional surfaces for runways where the code number is 1 or 2, used in Visual Meteorological Conditions (VMC) may be steepened or eliminated provided the strip width is widened in accordance with the following:

Strip Width			
Code Number	90 m	120 m	150 m
1. Transitional Surface	33%	Vertical	Vertical
2. Transitional Surface	33%	50%	Vertical

Note: This is intended to provide relief for small aerodromes in mountainous regions, used in VMC, where river valleys, etc. are the only sites, available. At other locations an aeronautical study and Headquarters' approval is required before applying the above criteria.

1.6 Width of Strip

1.6.1 Dimensions of the Runway Strips

1. Width of Strip - Instrument Runways

The runway strip shall extend the following distances each side of the centre line of the runway.

Precision Approach Runway:

1. 150 m where the code number is 3 or 4,
2. 75 m where the code number is 1 or 2.

Non-Precision Approach Runway:

3. 150 m where the code number is 4,
4. 75 m where the code number is 3,
5. 45 m where the code number is 1 or 2.

2. Width of Strip - Non-instrument Runways

Runway strips containing a non-instrument approach runway shall extend each side of the centre line as follows:

1. 75 m where the code number is 4,
2. 45 m where the code number is 3,
3. 30 m where the code number is 1 or 2.

Part II -- Telecommunications and Electronic Systems

2.1 General

The guidance contained in this part is aimed at protecting navigational aids, radars and telecommunications systems which include systems for civil, military, and environmental applications. Transport Canada approval of the location and/or construction of structures and facilities considered incompatible would only be required for structures located on lands to which an airport zoning regulation applies.

Local land use planners and those wishing to erect structures are encouraged to contact regional Transport Canada Civil Aviation offices for assistance in locating any nearby aerodromes and NavCanada for assistance in locating any potentially impacted radars, navigation aids or telecommunications facilities. Local planners and those wishing to erect structures are encouraged to consult with identified airport and aerodrome operators and NavCanada. NavCanada can be contacted at 1-866-577-0247 or by email at landuse@navcanada.ca.

The information contained in this part represents the criteria normally applicable for the protection of navigational aids, radars and telecommunications systems. More specific guidance on structures conforming to these values should be available from the owner of the radar, navigational aid or telecommunications system.

Planners should also be aware that, where airport zoning regulations are in effect, specific structures which contravene the values contained within said zoning regulations may sometimes be acceptable, provided that the applicant demonstrates by a technical analysis that such approvals will not cause harmful interference.

Consultation with the radar, navigational aid or telecommunication system owner should take place at an early stage in the project in order to avoid costly redesign or undue pressure when seeking building and site approvals. It is recommended that consultation take place at the building concept stage, before site approval is sought.

The radar, navigational aid or telecommunication system owner should ensure that full coordination takes place with aerodrome and local authorities where there is any air navigation system change that may impact local communities.

Note: *The development and promulgation of the requirements for the protection of radar, navigational aid or telecommunication systems are the responsibility of the facility owner.*

2.2 Radar Systems

The radar coverage volume for all types of radar systems can be reduced by a structure blocking the transmit or receive signal path. The severity of this blockage is proportional to the size of the structure and varies according to its location.

The size and construction material of buildings and other structures can be controlled to ensure that the radar coverage volume is maintained and that the number of false targets detected is not increased.

False targets are usually a problem only with Air Traffic Control (ATC) Radar Systems (including military and weather radar systems). They are created by transmitted or received signals being reflected from structures. The magnitude of the reflection is proportional to the size of the structure and the electrical behaviour of the material used. Non-metallic materials can reduce the magnitude of the reflection.

The protection criteria presented in this section are provided for general guidance purposes only. For more precise criteria suitable to the location/structure being proposed, proponents should contact local aerodrome operators and/or the radar/navigation aid/communication systems owner.

2.2.1 Air Traffic Control (ATC), Air Defence or Military Radars

(a) Primary Surveillance Radar (PSR)

- (i) within 300 m of the radar site, no building or other structure should exceed a height of 5 m below the geodetic height of the antenna platform. The preference is to have no structure at all or to have trees surrounding the site.
- (ii) from 300 to 1,000 m from the radar site, the upper limit on the height of a structure is increased at a rate of approximately 0.007 m per metre. Thus, at a distance of 1,000 m from the site, the structure can be as high as the geodetic height of the antenna tower platform.
- (iii) beyond 1,000 m from the radar site, no site protection requirement is specified; however, it is preferable not to have any large structure exceeding 0.25° above the radar horizon. Large structures are defined as having an azimuth of more than 0.43° . The consequences of building such structures should be brought to the attention of the local land use authority responsible for approving the proposal for construction.

(b) Secondary Surveillance Radar (SSR)

The provisions given above for a Primary Radar System apply as well for an ATC Secondary Surveillance Radar System. In addition, all buildings or other structures within 1,000 m of the radar should be constructed with non-metallic materials having a low reflectivity at frequencies from 1.0 to 1.1 GHz.

(c) Precision Approach Radar (PAR)

Within 900 m of the approach area to a runway served by a Precision Approach Radar System, no reflecting objects (trees, buildings or other structures) are allowable.

(d) Airport Surface Detection Equipment Radar (ASDE)

No structure should be built that blocks the line-of-sight from the ASDE radar antenna to any runway, taxiway, intersection, etc., unless it is approved by the owner of the equipment. Any exception would have to demonstrate that the blockage would be operationally insignificant.

2.2.2 Weather Radar

No structures exceeding the height of the radar antenna should be built within a radius of 300 m of weather radars. Environment Canada is the entity responsible for siting weather radars in Canada. The owner or proponent of the structure is responsible for any coordination with Environment Canada.

2.3 VHF/UHF Radio Communication Systems

Metallic structures may cause reflection of communication signals. In cases where such structures are proposed to be constructed within 300 m of a VHF/UHF transmitter/receiver installation, consultation with the owner of the communications systems is recommended.

The protection criteria presented in this section are provided for general guidance purposes only. For more precise criteria suitable to the location/structure being proposed, proponents should contact local aerodrome operators and/or the radar/navigation aid/communication systems owner.

2.4 Navigational Aids

2.4.1 General

Although several different standardized types of navigational aids are used to support air navigation, they share the common characteristic that the navigation guidance is derived partially as a function of the direction from which the navigation signals are received. Any structure that causes unwanted reflections of guidance signals will cause some of those signals to be received from a different direction, altering the navigation guidance in a potentially hazardous way. For this reason, it is important to screen and assess any developments in the vicinity of navigational aids.

The protection criteria presented in this section are provided for general guidance purposes only. For more precise criteria suitable to the location/structure being proposed, proponents should contact local aerodrome operators and/or the navigational aid owner.

2.4.2 Non-Directional Beacons (NDB)

The following types of structures should be assessed prior to construction to determine the potential impact on navigation signals from an NDB:

- (a) All proposed structures within 200 m of an NDB antenna; and
- (b) All proposed steel towers, power lines, metal buildings, etc., within 1,000 m of an NDB antenna, for which the subtended vertical angle measured from the base of the NDB antenna structure exceeds 3°.

2.4.3 VHF Direction Finding Systems (VHF/DF)

Siting requirements for VHF/DF are of major importance. In particular, the equipment requires that:

- (a) within 45 m of the antenna: ground to be level $\pm 1^\circ$ and surface roughness ± 30 cm
- (b) within 90 m of the antenna: ground to be clear of trees, masts, metal fences and vehicles.
- (c) within 180 m of the antenna: ground to be clear of buildings, car parks and small metal structures.
- (d) within 365 m of the antenna: ground to be clear of built-up areas, hangars, railways and other metallic structures.

In general, a clear line-of-sight should be maintained between the antenna system and local flying aircraft.

The VHF/DF antenna should be separated from any VHF air/ground communication (transmitting) antenna to the greatest extent practical, but by at least 2 km, and be separated from any antenna transmitting a high power broadcast by at least 8 km.

2.4.4 VHF Omni-Directional Range (VOR)

For standard VOR facilities, the following constraints should be applied to maintain the required accuracy of navigation signals:

- (a) Within 300 m radius of the VOR antenna array, the area should be clear of trees, fences, wire lines, structures, machinery or buildings;
- (b) Within 600 m radius of the VOR antenna array, structures and buildings having large metal content, wire lines and fences should not subtend a vertical angle of more than 1.2° or extend above the horizontal plane as measured from the array centre, except that the subtended vertical angle may be increased by 50% for fences or lines which are essentially radial or which subtend an angle of not more than 0.2° measured in the horizontal plane;
- (c) Within 600 m radius of the VOR antenna array, wooden structures or buildings with negligible metallic content should not subtend a vertical angle of more than 2.5°; and
- (d) Outside of 600 m radius of the VOR antenna, proposed large continuous metallic objects such as overhead power lines, masts, water towers or large metal-clad buildings which will penetrate beyond above the horizontal plane as measured from the array centre, or which will subtend a vertical angle of more than 1.2°, should be assessed prior to construction to determine the potential impact on VOR navigation signals.

The above criteria for standard VOR also apply to Doppler-type VOR facilities, except that the radius of 300 m may be reduced to 150 m, and the radius of 600 m may be reduced to 300 m.

2.4.5 Distance Measuring Equipment (DME)

DME may be installed as a stand-alone facility, or may be collocated with a VOR or ILS facility.

The following types of structures should be assessed prior to construction to determine the potential impact on navigation signals from a DME:

- (a) All proposed structures within 150 m of a DME antenna; and
- (b) All proposed steel towers, power lines, metal buildings, etc., within 3,000 m of a DME antenna, for which the subtended angle of elevation measured from the base of the DME antenna structure exceeds 1°.

2.4.6 Tactical Air Navigation System (TACAN and VORTAC)

TACAN is a military navigational aid whose functions are similar to those of a combined VOR and DME. TACAN may be installed as a stand-alone facility, or may be co-located with a VOR (VORTAC). Criteria outlined above for VOR and DME are applicable to TACAN.

2.4.7 Instrument Landing Systems (ILS)

An ILS supporting operations to a given runway generally consists of two complementary components: a localizer transmitter installed near the stop end of the runway and a glide path transmitter installed alongside the runway roughly 300 m from the beginning of the runway.

ILS supports all-weather precision approach and landing operations. To maintain the safety of landing aircraft, it is critical that the accuracy of ILS navigation signals not be compromised by unwanted reflections or interference.

The most significant sources of interference for ILS facilities are metallic objects having appreciable horizontal dimensions such as structural steel towers, metal-clad buildings and power/telephone transmission lines. These objects may reflect the ILS signals in unwanted directions, distorting the information provided to aircraft. Planners involved in siting and approval of these sources of interference should contact the ILS facility owner. For planning purposes, all runways should be considered to be equipped with an ILS at each end.

Any proposed structure on or in the vicinity of an aerodrome should be subjected to a detailed assessment for possible interference to ILS facilities unless it falls outside the Building Restricted Area (BRA) surfaces for ILS as defined in the document, European Guidance Material on Managing Building Restricted Areas¹. (Buildings within the ILS building restricted area are often acceptable after a detailed assessment. In some cases, measures such as appropriate orientation of the building, shape of reflecting surfaces, etc. can significantly reduce the impact on ILS navigation signals.)

Some ILS localizers provide “back course” approach navigation guidance to the reciprocal end of the runway. For these localizers, the applicable restrictions apply in both directions from the antenna array.

High voltage power lines and substations radiate Electromagnetic Noise (EMN). In addition, EMN radiated by Industrial-Scientific-Medical (ISM) apparatus may inhibit reliable reception of ILS signals. Power lines and substations should be designed, constructed and maintained using state of the art techniques to minimize radiated EMN in the ILS frequency bands. In general, the following should be avoided:

- (a) power lines with voltages greater than 100 kV that are closer than 1.8 km from the runway centre line and closer than 3.2 km from the ends of the runway;
- (b) AC electrical substations for voltages greater than 100 kV that are closer than 3.2 km from the centre line of the runway and closer than 16 km from the ends of the runway;
- (c) ISM apparatus operating within the rectangular area extending 1.5 km on either side of the centre line of the runway to the outer markers.

¹ International Civil Aviation Organization (ICAO) European and North Atlantic Office: ICAO EUR DOC 015, European Guidance Material on Managing Building Restricted Areas, Second Edition (2009)

Part III -- Bird Hazards and Wildlife

3.1 General

In its many civil aviation responsibilities, Transport Canada remains focused sharply on the safety of air travelers. This focus has led the department to examine numerous potential hazards, including those found on and in areas around Canadian aerodromes.

Working with industry experts, and based on extensive international scientific research, Transport Canada has confirmed that these hazards include many forms of wildlife, from birds and deer which are often struck by aircraft, to smaller prey animals that attract more hazardous species. Wildlife of all types can be hazardous to aircraft because they can cause structural or engine damage. The hazard is greatest at and in the vicinity of aerodromes due to the concentration of aircraft activity close to the ground, where the majority of wildlife lives. In addition, aircraft involved in takeoffs or landings are at low altitudes and in a critical phase of flight where any disruptions to the operation could be catastrophic.

The presence of birds at or near aerodromes presents particular hazards. Aerodromes are naturally attractive areas to many species of birds because the wide open, short grass areas provide the basic elements of security from predators and humans, a place to nest and loaf (just generally sit about) and access to food and water sources. Wildlife Management programs at aerodromes effectively reduce this natural attraction of birds to aerodrome lands, primarily through major habitat management and manipulation projects, as well as through day to day vigilance and the use of bird scaring techniques. While these on aerodrome activities are effective, they can be neutralized by the presence of attractive land use or activities outside the aerodrome boundary. Hazardous bird species will be persistent in their attempts to use the aerodrome as a convenient stop over and resting place before or after feeding at a nearby location. It is therefore important that land in the surrounding area be used in a manner that is compatible with the wildlife control measures in use on the aerodrome, to minimize the attraction to birds and other potentially hazardous species.

Wildlife respects no boundaries, physical or regulatory, and often congregates in and passes through air-traffic corridors, such as take-off, departure, approach and landing areas. The result is risk to aircraft and air travelers that can be minimized when aerodrome area stakeholders work together and systematically integrate their efforts to:

- identify wildlife hazards and risks;
- plan, coordinate and implement management and mitigation measures; and
- measure results.

These activities can prevent lands in the vicinity from being used or developed in a manner that is incompatible with the safe operation of aircraft due to hazardous wildlife activity.

The following information provides guidance on the acceptability of different land use practices in the vicinity of aerodromes. General land use practices have been evaluated on their relative attractiveness to traditionally hazardous bird species.

Note: *Where land in the vicinity of aerodromes is targeted for development, local land use authorities should consult a wildlife/bird hazard specialist to identify and address any issues relative to attractant and habitat concerns prior to approval of the development.*

3.2 Hazardous Land-use Acceptability

Not all potentially hazardous activities possess the same level of potential risk and cannot be treated equally when planning land uses in the vicinity of an aerodrome. The acceptability of land use activities can be classified using specific zones created around the aerodrome property, as defined in *Safety Above All* - <http://www.tc.gc.ca/eng/civilaviation/publications/tp8240-awmb38-appendix-a-5031.htm>.

Primary Hazard Zones generally enclose airspace in which aircraft are at or below altitudes of 1500 feet AGL (above ground level). These are the altitudes most populated by hazardous birds, and at which collisions with birds have the potential to result in the greatest damage.

Secondary Hazard Zones (4km beyond the Primary Hazard Zone) are buffers that account for:

- variables in pilot behaviour and technique;
- variations in departure and arrival paths that are influenced by environmental conditions, ATC (air traffic control) requirements, IFR versus VFR flight, etc.; and
- unpredictability of bird behaviour, and variations in bird movements around specific land uses.

Special Hazard Zones, though often distant from aerodromes, may regularly attract potentially hazardous species across primary or secondary zones.

Table 1. Hazardous land-use acceptability by hazard zone

LEVEL OF RISK	LAND USE	LAND-USE ACCEPTABILITY BY ZONE		
		Primary	Secondary	Special
Potentially High	Putrescible waste landfills	No	No	No
	Food waste hog farms	No	No	No
	Fish processing/packing plants	No	No	No
	Horse racetracks	No	No	No
	Wildlife refuges	No	No	No
	Waterfowl feeding stations	No	No	No
Potentially Moderate	Open or partially enclosed waste transfer stations	No	No	Yes
	Cattle paddocks	No	No	Yes
	Poultry factory farms	No	No	Yes
	Sewage lagoons	No	No	Yes
	Marinas/fishing boats/fish cleaning facilities	No	No	Yes
	Golf courses	No	No	Yes
	Municipal parks	No	No	Yes
Picnic areas	No	No	Yes	
Potentially Low	Dry waste landfills	No	Yes	Yes
	Enclosed waste transfer facility	No	Yes	Yes
	Wet/dry recycling facility	No	Yes	Yes
	Marshes, swamps & mudflats	No	Yes	Yes
	Stormwater management ponds	No	Yes	Yes
	Plowing/cultivating/haying	No	Yes	Yes
	Commercial shopping mall/plazas	No	Yes	Yes
	Fast food restaurants	No	Yes	Yes
	Outdoor restaurants	No	Yes	Yes
	School yards	No	Yes	Yes
Community & recreation centers	No	Yes	Yes	
Potentially Limited	Vegetative compost facilities	Yes	Yes	Yes
	Natural habitats	Yes	Yes	Yes
	Inactive agricultural fields	Yes	Yes	Yes
	Inactive hay fields	Yes	Yes	Yes
	Rural ornamental & farm ponds	Yes	Yes	Yes
	Residential areas	Yes	Yes	Yes

Land-use acceptability is site sensitive, and can be determined only through detailed assessments of each aerodrome and its surroundings. The table indicates general land-use suitability in primary, secondary and special hazard zones.

Although the table lists discreet categories, land-use suitability is dynamic and subject to change based on a variety of factors, including seasonal considerations and the range of activities that may be associated with a specific site. For example, agricultural fields can be classified as posing limited risk as long as they remain inactive. The moment cultivation begins; the degree of risk escalates, since the turning of soil, seeding, etc., increase the attraction to wildlife.

Risk may also escalate incrementally due to concentrations of land uses. For example, a golf course's attractiveness to birds may increase if the facility is bordered by a storm water management pond, marsh or agricultural operation.

Finally, it's important to note that risks associated with many land uses can be reduced through appropriate mitigation and monitoring. The acceptability of a commercial shopping plaza in a primary hazard zone, for example, would depend on the effectiveness of facility design-or the property owner's active, calculated interventions-to minimize the operation's attractiveness to potentially hazardous bird species.

For remedial actions please consult the Wildlife Control Procedures Manual (TP 11500) available at the following website:

<http://www.tc.gc.ca/eng/civilaviation/publications/tp11500-menu-1630.htm>

The information contained here provides a brief explanation and appreciation of the compatibility issues between aerodromes and wildlife. Land use planners are invited to obtain more details by accessing the following website:

<http://www.tc.gc.ca/eng/civilaviation/publications/tp8240-awmb38-appendix-a-5031.htm>

Part IV -- Aircraft Noise

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 directing the nature of development of lands adjacent to aerodromes. This section will discuss noise measurement, annoyance prediction, the Noise Exposure Forecast and the Noise Exposure Projection. It also contains an assessment of various land uses in terms of their compatibility with aircraft noise.

4.1.1 Noise Measurement

The sound pressure level created by an aircraft (or any other noise source) can be measured by means of a sound level meter. The microphone of the sound level meter senses the pressure fluctuations over a short period of time. The sound pressure is the root mean square value of the difference between atmospheric pressure and the instantaneous pressure of the sound, the mean being read over several periodic cycles. For mathematical convenience, the logarithmic parameter called sound pressure level (SPL) is used. The unit of sound (noise) measurement is the decibel (dB).

A particular sound signal may comprise several different frequencies to which the human ear may respond in various ways. In order that noise measurements may relate more closely to loudness as judged by the average person, sound level meters are equipped with weighting networks which make use of information related to the frequency response characteristics of the human ear. Some sound level meters have the capability of reading on A, B, C, and D weighting scales, and decibel values are correspondingly indicated as dB(A), dB(B), dB(C) or dB(D), according to the weighting network used. However, the dB(A) is the most common.

The noise metric known as Perceived Noise Level (PNL), measured in the unit PNdB, provides a frequency weighting system which attempts to more closely approximate the subjective reaction of the human ear to an aircraft noise stimulus. Although weighting networks are available which provide a means of directly measuring approximate PNL values, i.e., dB(D), true PNL values are determined by the analysis and treatment of sound pressure levels in various 1/3 octave bands.

A more sophisticated noise metric, the Effective Perceived Noise Level (EPNL), expressed in the unit EPNdB, was developed specifically for use in the measurement of aircraft noise. The EPNdB is the metric that forms the basis of noise certification of aircraft. This metric is basically similar to the PNL except that corrections have been applied to account for the effects of discrete tones and the duration of the noise event, i.e., factors which contribute to the annoyance of the listener.

4.1.2 Predicting Annoyance

In addition to the annoying characteristics of an individual noise signal, overall subjective reaction to noise is dependent on the number of times the disturbance occurs as well as the daily distribution of these events. These factors must be included in any noise forecasting system if it is to be applicable to the communities located in the vicinity of aerodromes. The Noise Exposure Forecast (NEF) system made available by Transport Canada takes into consideration all of these factors.

The NEF system provides for the summation of noise from all aircraft types operating at an aerodrome based on actual or forecast aircraft movements by runways and the time of day or night the events occur. The large number of mathematical calculations necessary for the construction of NEF contours requires the use of computer techniques for the practical application of this system.

4.1.3 The Noise Exposure Forecast System (NEF)

The Effective Perceived Noise Level is the basis for estimating noise annoyance in the Noise Exposure Forecast system.

The data required for determining NEF contours consist of EPNL versus distance information for various aircraft types, along with generalized aircraft performance data. In calculating NEF at a specific location, the EPNL contribution from each aircraft operating from each runway is assessed by considering the distance from the point in question to the aircraft, and then obtaining EPNL values from the appropriate EPNL versus distance curve. The noise contributions from all aircraft types operating on all runways are summed on an anti-logarithmic basis to obtain the total noise exposure at that one location. Thus, the determination of NEF contours is strictly a numerical calculation procedure. As stated previously, due to the large number of mathematical calculations involved, computer techniques provide the only practical means of constructing NEF contours.²

4.2 Production of Noise Contours - Aerodromes That Are Neither Owned Nor Operated and Managed by Transport Canada

The preparation and approval of noise contours for aerodromes that are neither owned, nor operated and managed by the Federal Government is not a responsibility of Transport Canada. Transport Canada will conduct a technical review of an NEF, NEP or Planning Contour if requested by the sponsoring aerodrome operator or airport authority provided that:

- (a) the Aerodrome owner or operator initiates this action;
- (b) the Aerodrome owner or operator supplies or approves a projection of aircraft traffic, both as to type and numbers; and
- (c) the Aerodrome owner or operator uses the noise impact prediction methods, procedures and recommended practices relating to aircraft operations as established by Transport Canada.

² Kingston, Beaton and Rohr, A Description of the CNR and NEF Systems for Estimating Aircraft Noise Annoyance (R-71-20), Department of Transport, 1971

4.3 Noise Exposure Contours

There are three types of noise exposure contours produced depending on the time element involved. These are Noise Exposure Forecasts (NEFs), Noise Exposure Projections (NEPs) and Planning Contours. Transport Canada may provide, upon request from a sponsoring aerodrome operator or airport authority, a technical review of any contours calculated to determine if the NEF computer model has performed accurately and has been applied correctly.

4.3.1 Noise Exposure Forecast (NEF)

The Noise Exposure Forecast (NEF) is produced to encourage compatible land use planning in the vicinity of aerodromes. Traffic volume and aircraft type and mix used in calculating the noise contours are normally forecast for a period of between five and ten years into the future (See NOTE). Runway geometry should be the current layout plus any changes forecast to be completed prior to the end of the forecast period. Noise contours (NEFs, NEPs and Planning Contours) are the property of the sponsoring aerodrome operator or airport authority which may make them available to provincial and local governments. The use of the contours will enable planners to define compatible land use in the vicinity of aerodromes.

***Note:** Transport Canada does not retain copies of NEFs and NEPs submitted to it for technical review. Upon completion of the review, all materials submitted are returned to the sponsoring aerodrome operator or airport authority. These materials are the property of the sponsoring aerodrome operator or airport authority.*

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.

4.3.2 Noise Exposure Projection (NEP)

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 (not a forecast) of aircraft movements for more than 10 years into the future, and includes aircraft types and runway configurations that may materialize within this period. NEPs may be made available in the same manner as NEFs.

4.3.3 Planning Contour

The third type of noise contour is the Planning Contour which is produced to investigate planning alternatives and should be labelled as such. In the same manner as NEFs and NEPs, these contours are the property of the sponsoring aerodrome operator or airport authority.

4.4 Production of Noise Contours: DND Aerodromes

Production of noise contours for aerodromes used solely by the Department of National Defence (DND) is the responsibility of DND as to data input and production. Production of Noise contours for DND owned joint use aerodromes with a civilian airport authority is the responsibility of DND as to data input and production. When requested, these contours will be published subject to Commander, Canadian Air Division (1CAD)'s approval of the accuracy of the contours.

4.5 Noise Contour Maps

It may be necessary for computer-produced contour lines to be mechanically smoothed to remove irregularities that arise in the plotting process. This should be done particularly in areas of sharp corners or tips. The convention used for depicting the NEF and NEP 40, 35 and 30 contours on maps is a solid line. The printing and any subsequent distribution of contour maps is not the responsibility of Transport Canada. These functions may be undertaken by the sponsoring aerodrome operator or airport authority as they are the property of the aerodrome.

4.6 Community Response to Noise

During developmental work on preliminary noise rating systems, it was established that community response to aircraft noise correlated well with the noise contours then in use. Case histories of noise complaints at twenty-one aerodromes were analyzed as to severity, frequency of complaint, and distribution around the aerodromes to establish a relationship with known noise values. The results of this work, which may be found in [Table 1](#) (see below) have been used for relating land use recommendations to NEF contour levels.

The analysis of the effect of aircraft noise on various working and living environments is a complex matter. For each case where there is a note in the Land Use Tables ([Table 2](#)) (see below) it is desirable that a noise climate analysis or a noise reduction requirement analysis be undertaken, since each note indicates a particular specialized problem. Many of the factors that would be considered in such analyses are subject to changing technology. Also, the attitudes of those exposed to the noise environment are subjective and varied. Since these factors evolve, authorities undertaking analyses of noise climates and noise reduction requirements in buildings should consult using most recent information with agencies conducting these reviews. The National Research Council has undertaken work in this area and validated the results of the NEF System and interpretation of noise exposure areas in 1996.

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. 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. 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.

4.7 Recommended Noise Control Action

For a specific noise problem, [Table 3](#) (see below) may be used to select different actions.

4.8 Recommended Practices

NEF/NEP contours should be used in conjunction with these guidelines to encourage compatible land use in the vicinity of aerodromes. Therefore, it is recommended that contours be distributed by aerodrome operators or airport authorities to the officials and organizations responsible for land use and municipal zoning of the affected land. This would normally include both provincial and municipal planners, and zoning boards.

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.	

Table 2 - Land Use Tables - Aircraft Noise Considerations Only

This land use tabulation should not be considered as an exhaustive listing, but merely as examples of how various land uses would be assessed in the Noise Exposure Forecast zones in terms of community response predictions.

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.

The land uses contained in the following tables are included for compatibility purposes from a noise perspective only. Caution should be exercised as some of the recommended uses may not be optimal from a safety perspective (i.e bird and wildlife habitat)

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

Table 2B- Recreational - Outdoor

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Athletic Fields	NO	J	K	YES
Stadiums	NO	NO	K	YES
Theatres - Outdoor	NO	NO	NO	H
Racetracks - Horses	NO	K	K	YES
Racetracks - Autos	YES	YES	YES	YES
Fairgrounds	K	K	YES	YES
Golf Courses	YES	YES	YES	YES
Beaches and Pools	YES	YES	YES	YES
Tennis Courts	NO	K	YES	YES
Playgrounds	K	K	YES	YES
Marinas	YES	YES	YES	YES
Camping Grounds	NO	NO	NO	NO
Park and Picnic Areas	NO	K	YES	YES

Table 2C - Commercial

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Offices	F	E	D	YES
Retail Sales	F	D	YES	YES
Restaurants	F	D	D	YES
Indoor Theatres	NO	G	D	YES
Hotels and Motels	NO	F	G	YES
Parking Lots	YES	YES	YES	YES
Gasoline Stations	YES	YES	YES	YES
Warehouses	YES	YES	YES	YES
Outdoor Sales	E	K	YES	YES

Table 2D - Public

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Schools	NO	NO	D	C
Churches	NO	NO	D	C
Hospitals	NO	NO	D	C
Nursing Homes	NO	NO	D	C
Auditoriums	NO	NO	D	C
Libraries	NO	NO	D	C
Community Centres	NO	NO	D	C
Cemeteries	N	N	N	N

Table 2E - Municipal Utilities

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Electric Generating Plants	YES	YES	YES	YES
Gas & Oil Storage	YES	YES	YES	YES
Garbage Disposal	YES	YES	YES	YES
Sewage Treatment	YES	YES	YES	YES
Water Treatment	YES	YES	YES	YES
Water Storage	YES	YES	YES	YES

Table 2F - Industrial

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Factories	I	I	YES	YES
Machine Shops	I	I	YES	YES
Rail Yards	YES	YES	YES	YES
Ship Yards	YES	YES	YES	YES
Cement Plants	I	I	YES	YES
Quarries	YES	YES	YES	YES
Refineries	I	I	YES	YES
Laboratories	NO	D	YES	YES
Lumber Yards	YES	YES	YES	YES
Saw Mills	I	I	YES	YES

Table 2G - Transportation

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Highways	YES	YES	YES	YES
Railroads	YES	YES	YES	YES
Shipping Terminals	YES	YES	YES	YES
Passenger Terminals	D	YES	YES	YES

Table 2H - Agriculture

Noise Exposure Forecast Values	>40	40-35	35-30	< 30
Response Areas	1	2	3	4
Crop Farms	YES	YES	YES	YES
Market Gardens	YES	YES	YES	YES
Plant Nurseries	YES	YES	YES	YES
Tree Farms	D	YES	YES	YES
Livestock Pastures	M	YES	YES	YES
Poultry Farms	L	L	YES	YES
Stockyards	M	YES	YES	YES
Dairy Farms	M	YES	YES	YES
Feed Lots	M	YES	YES	YES
Fur Farms	K	K	K	K

Explanatory Notes for Table 2

The location of the 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.

In cases where reference is made to a detailed on-site noise analysis, or to peak noise levels, it will be appreciated that the notes are intended to apply specifically at existing aerodromes, where a field assessment is possible. For planning with respect to new aerodromes, such zones should be considered cautionary. Before reaching a final decision with respect to permitting the particular land-use in question, the authority may wish to consider local topographic effects and ambient noise levels, in conjunction with generalized peak noise level "footprints" for the predominant aircraft types to be using the new aerodrome.

<p style="text-align: center;">(A)</p>	<p>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. ²</p>
<p style="text-align: center;">B</p>	<p>(b) 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:</p> <ol style="list-style-type: none"> (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. <p>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.</p>
<p style="text-align: center;">(C)</p>	<p>These facilities should not be located close to the 30-NEF contour unless the restrictions outlined in Note D below are applied.</p>
<p style="text-align: center;">(D)</p>	<p>These uses should not be approved unless a detailed noise analysis is conducted and the required noise insulation features are considered by the architectural consultant responsible for the building design.</p>
<p style="text-align: center;">(E)</p>	<p>When associated with a permitted land use, an office may be located in this zone provided that all relevant actors are considered and a detailed noise analysis is conducted to establish the noise reduction features required to provide an indoor environment suited to the specific office function.</p>
<p style="text-align: center;">(F)</p>	<p>It is recommended that this specific land use should be permitted only if related directly to aviation-oriented activities or services. Conventional construction will generally be inadequate and special noise insulation features should be included in the building design.</p>
<p style="text-align: center;">(G)</p>	<p>Generally, these facilities should not be permitted in this zone. However, where it can be demonstrated that such a land use is highly desirable in a specific instance, construction may be permitted to proceed provided that a detailed noise analysis is conducted and the required noise insulation features are included in the building design.</p>
<p style="text-align: center;">(H)</p>	<p>Facilities of this nature should not be located close to the NEF 30 contour unless a detailed noise analysis has been conducted.</p>
<p style="text-align: center;">(I)</p>	<p>Many of these uses would be acceptable in all NEF zones. However, consideration should be given to internally generated noise levels, and acceptable noise levels in the working area.</p>
<p style="text-align: center;">(J)</p>	<p>Undesirable if there is spectator involvement.</p>
<p style="text-align: center;">(K)</p>	<p>It is recommended that serious consideration be given to an analysis of peak noise levels and the effects of these levels on the specific land use under consideration.</p>




	The construction of covered enclosures should be undertaken if this use is to be newly introduced to the noise environment. (See Note M below).
	Research has shown that animals condition themselves to high noise levels. However, it is recommended that peak noise levels be assessed before this use is allowed.
	This appears to be a compatible land use in all NEF zones.

Table 3 - Recommended Matrix of Noise Control Actions

	Consider these actions	If you have this problem						
		Noise from taxiing	Departure	Approach	Landing roll	Training flights	Maintenance	Ground equipment
Aerodrome plan	Changes in runway location, length or strength	■	■	■	■	■		
	Displaced thresholds			■		■		
	High-speed exit taxiways	■			■			
	Relocated terminals	■					■	■
	Isolating maintenance runups or use of test stand noise suppressors and barriers	■					■	■
Aerodrome and airspace use	* Preferential or rotational runway use	■	■	■	■	■		
	* Preferential flight track use or modification to approach and departure procedures		■	■		■		
	* Restrictions on ground movement of aircraft	■						
	Restrictions on engine runups or use of ground equipment						■	■
	Limitations on number or types of operations or types of aircraft	■	■	■	■	■	■	■
	US restrictions, rescheduling move flights to another aerodrome	■	■	■	■	■	■	■
	Raise glide slope angle or intercept.			■		■		
Aircraft operation	Power and flap management		■	■		■		
	Limited use of reverse thrust				■			
Land use	Land or easement acquisition	■	■	■	■	■	■	■
	Joint development of aerodrome property	■	■	■	■	■	■	■
	Compatible use zoning	■	■	■	■	■	■	■
	Building code provisions and sound insulation of buildings	■	■	■	■	■	■	■
	Real property noise notices		■	■	■	■	■	■
	Purchase assurance		■	■	■	■	■	■
Noise program management	Noise related landing fees	■	■	■	■	■		
	Noise monitoring		■	■		■	■	
	Establish citizen complaint mechanism	■	■	■	■	■	■	■
	Establish community participation program	■	■	■	■	■	■	■

* These are examples of restrictions that involve TC Aviation's responsibility for safe implementation.

PART V -- Restrictions to Visibility

Restrictions to visibility at an aerodrome which can seriously limit aircraft operations may be caused by factors other than deteriorating weather conditions. These phenomena are briefly discussed in this Part.

Some industrial/manufacturing/power generation processes may generate smoke, dust or steam in sufficient volume to potentially affect visibility at or near aerodromes under certain wind conditions and temperature inversions. Examples of the types of industries which may be prominent in this regard are pulp mills, steel mills, quarries, municipal or other incinerators, cement plants, sawmills (slash and sawdust burners), power generating plants and refineries.

During the planning stages for new industrial complexes that will generate smoke, dust or steam, it is recommended that individual facility plans include an analysis to deal with potential emission dispersion problems. The results of the analysis should be considered before approving such land uses near an aerodrome. Prospective industrial sites near an aerodrome should be assessed on an individual basis due to the many local factors involved. Sufficient evidence is available from aerodromes across the country to suggest that such industries generating emissions may cause visibility problems near aerodromes that could pose a potential safety problem.

PART VI -- Wind Turbines and Wind Farms

6.0 General

Due to concerns regarding climate change, governments are encouraging the installation of renewable energy sources such as wind turbines for the generation of electricity. Although a wind turbine can be considered as just another object that is deemed an obstacle and thus in need marking and lighting, there are additional issues that should be addressed through consultation in the early stages of planning.

6.1 Wind turbine marking and lighting

Industrial wind turbines are typically more than 90m in height and thus in need of marking and lighting in accordance with Transport Canada's Standard 621.

(<http://www.tc.gc.ca/eng/civilaviation/regserv/cars/part6-standard-standard621-3868.htm>)

In as much as the wind turbine presents a substantial silhouette, the marking is that of the surface painting in either a white or off-white colour. In Canada, special paint bands for the blade ends is not required for reason that the blades are rotating and the display would not be as effective as that of a fixed object. The lighting is a red medium intensity flashing beacon of 2000 candela nominal output located on the nacelle. Light units are not mounted on the blades because the technical impracticality of such installation. In order to reduce the amount of lighting, the required lights are installed at intervals in the order of 900m such that not all wind turbines of a wind farm need lighting. The lights are provided with means to make them flash in unison.

The wind farm proponent should complete the Aeronautical Assessment Form for Obstruction Marking and Lighting and submit to the local regional office of Transport Canada. This form instructs contact with adjacent aerodromes and information on the planned wind farm.

6.2 Wind turbines and airport radar

Wind turbines can interfere with radar tracking of airplanes. Although the rotational speed of the blades is relatively slow at 10 to 20 rpm, the blade tip can have an angular speed reaching more than 180km/hr. The tip speed is then sufficient to mimic aircraft. The result is shadowing of aircraft, false returns and general cluttering of the radar screen. The wind farm proponent should, therefore, consult with NavCanada on the issue and to develop means of mitigation.

NavCanada can be contacted at ... 1-866-577-0247

or

by email at ... landuse@navcanada.ca

6.3 Navigation aids and communication systems

Similarly wind turbines of a wind farm may have adverse impact on navigation aids and communication systems. Consultation should be again made with NavCanada.

VOR is susceptible to reflection interference from wind turbines; due to the height of wind turbines, they can cause interference to the VOR even if they are far away. Developments of several wind turbines together have a cumulative effect on the VOR signal accuracy. Proposed wind turbine developments must be assessed if within 15 km from the VOR facility. Wind turbines that are less than 52 m in height can be treated like other structures. In most cases, a single wind turbine is acceptable at a distance greater than 5 km from the VOR facility, and developments of less than six wind turbines are acceptable at distances greater than 10 km from the VOR facility. However if VOR performance is already marginal this may not be acceptable.

6.4 Weather Radar

Wind farms can also shadow weather affects or return false information to weather radars. The proponent of a wind farm should contact Environment Canada at (416) 739-4103 or (416) 464-2798.

6.5 Parachute Landing Areas (PLA)

Wind turbines pose a special risk to parachutists, regardless of size, although those over 15m can additionally present a hazard to aircraft used in the activity of parachuting. Consultation with stakeholders is necessary as the existence of wind turbines near the PLA may result in restrictions being placed upon any parachute activity.

6.6 Light Pollution.

Lighting is provided for wind turbines within a wind farm for purpose of warning to aircraft. Extraneous lighting such as that for support buildings should be minimized. Refer to the Royal Astronomical Society of Canada "Light-Pollution Abatement (LPA) Program".

<http://www.rasc.ca/lpa>

Note: It is of the utmost importance to be aware that the proximity of obstacles, for example, wind turbines, telecommunications towers, antennae, smoke stacks, etc., may potentially have an impact on the current and future usability of an aerodrome. Therefore, it is critical that planning and coordination of the siting of obstacles should be conducted in conjunction with an aerodrome operator at the earliest possible opportunity.

PART VII -- Exhaust Plumes



The purpose of this section is to provide guidance to aerodrome operators and persons involved in the design, construction and operation of facilities with exhaust plumes about the information required to assess the potential hazard from a plume.

The hazard is that both to the aircraft itself in flight and the impact of exhaust upon visibility for landing/takeoff.

Exhaust plumes, of both visible and invisible emissions may pose a hazard to aviation operations. Exhaust plumes can originate from any number of sources; chimneys; elevated smoke stacks at power generating stations; smelters; combustion sources; a flare created by an instantaneous release from pressurised gas systems all create exhaust plumes of one degree or another. High temperature exhaust plumes may cause significant air disturbances such as turbulence and vertical shear. Other identified potential hazards include, but are not necessarily limited to, reduced visibility, oxygen depletion, engine particulate contamination, exposure to gaseous oxides, and/or icing. These hazards are most critical during low altitude flight, especially during takeoff and landing.

In the case of a solid object, Standard 621 provides for marking and/or lighting so that the object's shape is delineated and made visible to pilots. This, however, is not feasible for an exhaust plume and there is a need to assess the hazards to aviation because the vertical velocity from gas efflux that may cause airframe damage and/or affect the handling characteristics of an aircraft in flight, as well as visibility reduction. TCCA may be obliged to consider alternative measures to make sure that pilots are unlikely to encounter the affects of exhaust plumes.

Away from aerodromes, exhaust plumes may also pose a hazard to low level flying operations such as that of specialist flying activities for crop dusting, pipeline inspection, power line inspections, fire-fighting, etc., search and rescue operations and military low-level manoeuvres. The risk posed by an exhaust plume to an aircraft during low level flight can be managed or reduced if information is available to pilots so that they can avoid the area of likely air disturbance.

The proponent of a facility that creates an exhaust plume should provide details of the facility to Transport Canada Civil Aviation (TCCA) so that potential hazards to aircraft safety can be assessed. In determining the need for a Restricted Area, TCCA will consider the severity and frequency of the risk posed to an aircraft which might fly through the plume.

PART VIII -- Solar Array Installations

The geometry of aerodromes is such that there are relatively large open areas which give opportunity for installation of solar energy projects. These projects, however, need to be evaluated in relation to possible problems that such installation may pose.

For example, the following concerns could pose problems:

- Glare to pilots of aircraft approaching to or departing from the aerodrome or glare to ATC (Air Traffic Control) staff.
- Interference with electronic navigational aids.
- Penetration through transitional or approach/departure surfaces.
- Thermal plumes from the central tower of concentrated solar power installations.

There is a variety of solar plants used for production of electrical energy: photovoltaic (PV) panel arrays and concentrator solar power (CSP) systems. The former converts solar energy directly to electricity by a photovoltaic effect whereas the latter involves the heating of a fluid (e.g. molten salt) that activates a turbine coupled to a convention electric generator.

All solar plants involve reflection. In the case of concentrator systems, the reflection necessary to the system and is controlled by purpose so as to focus solar energy upon a central absorbing tube or tower. Because the light is focused, the possibility of glare to ATC and pilots is minimal, but should still be assessed in the preliminary design.

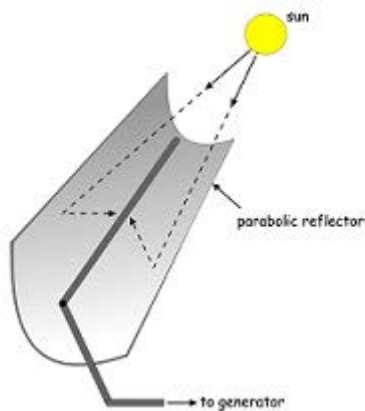


Figure 1. Parabolic trough reflector

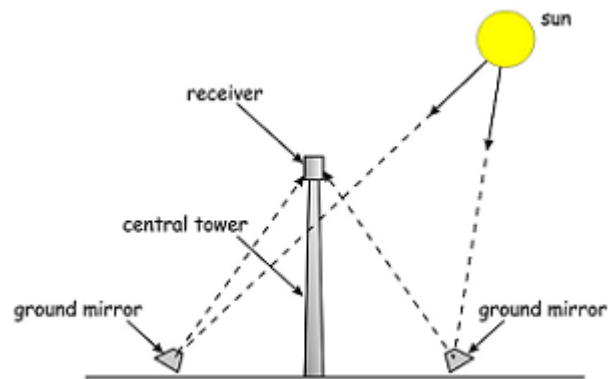


Figure 2. Central tower Concentrator

In the case of photovoltaic panels, electrical energy is produced directly and reflection is a loss factor. For this reason, the panels are designed to have as minimum reflectance as possible. The panels may be installed in a fixed position facing in a generally southern direction or provided with means to follow the sun as it moves across the sky.



Figure 3. Photovoltaic Panel

Also, when viewed from a distance, the sun reflectance tends to be smeared across the array as might be the case for a body of water. Thus the impact for glare to the pilot is inherently minimized. But again this is not a certainty and glare to the pilot should be assessed in the preliminary design. In the case of panels that are automatically rotated with sun movement, a remedy may be to stop the rotation prior to the point at which glare can occur.

The analysis of glare should involve a review of the position of the aircraft for both landing and take-off as well as when performing a circling approach.



Figure 4. Mehringer Höhe Solar Park I, Germany - www.juwi.com

Although for purpose improving efficiency, solar panels are usually provided with a top layer of anti-reflective coating intended to reduce reflectance, this does not mean that there is no reflected light. When viewed from a relatively short distance the affect can be significant, especially when the observer is not moving as would be the case of ATC personnel in the control tower. The designer should review the positioning and orientation of the panels in relation to the control tower to ensure that adverse reflection will not be produced. Figure 4 illustrates the occurrence of reflectance as the sun angle is optimized.



Figure 5. Reflection off solar panel

Appendix A - Regional Offices of Transport Canada – Civil Aviation

Regional Director, Civil Aviation (TA) – Pacific
Transport Canada
800 Burrard Street
Vancouver, British Columbia
V6Z 2J8
[Telephone: 1-604-666-8317]

Regional Director, Civil Aviation (PA) - Ontario
Transport Canada
4900 Yonge Street
North York, Ontario
M2N 6A5
[Telephone: 1-416-952-0167]

Regional Director, Civil Aviation (NA) - Québec
Transport Canada
Regional Administration Building
700 Leigh-Capreol Place
Dorval, Quebec
H4Y 1G7
[Telephone: 1-514-633-3159]

Regional Director, Civil Aviation (RA) – Prairie and Northern
Transport Canada
344 Edmonton Street
Winnipeg, Manitoba
R3B 2L4
[Telephone: 1-204-983-4373]

Regional Director, Civil Aviation (MA) - Atlantic
Transport Canada
95 Foundry Street
Moncton, New Brunswick
E1C 5H7
[Telephone: 1-506-851-7220]

Appendix G

D6 Guidelines



D-6-3 Separation Distances

A guide for land use planning authorities on how to measure recommended distances between industrial areas and sensitive land uses to protect people and the environment.

Class I industrial

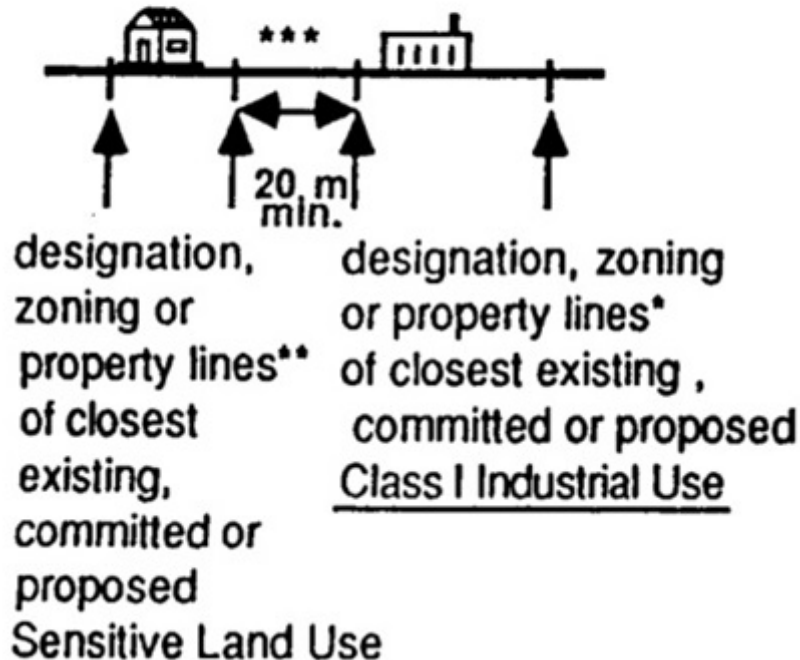
- 70 metre potential influence area
- 20 metre recommended minimum in which incompatible development should not normally take place

Section view

This diagram shows the designation, zoning or property lines of an existing, committed or proposed sensitive land use in relation to the designation, zoning or property lines of the closest existing, committed or proposed Class I industrial use.

CLASS I INDUSTRIAL:

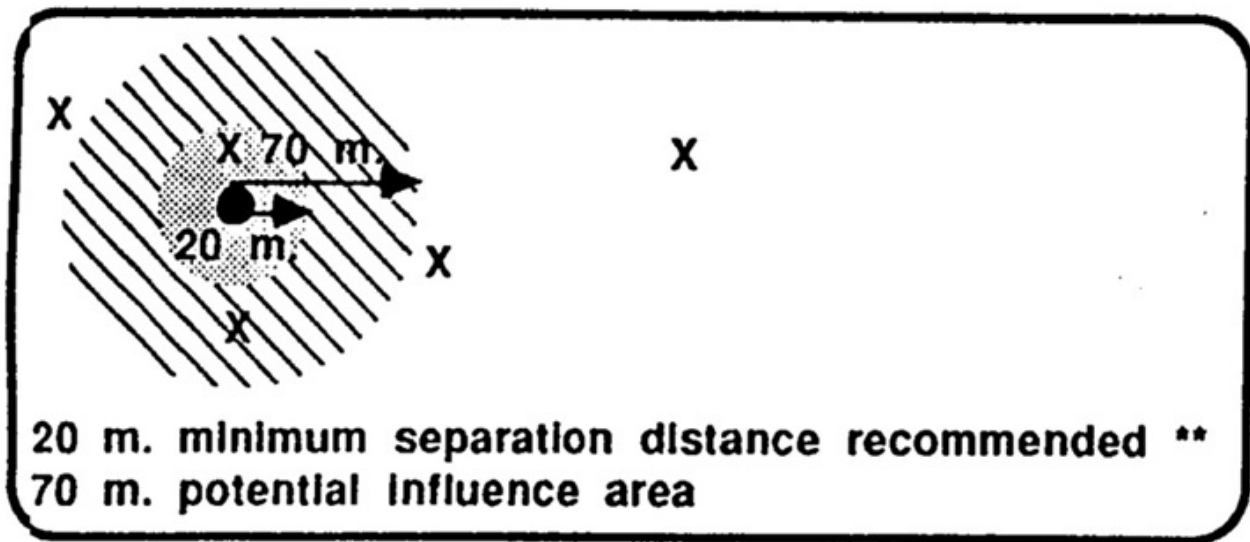
70 m. potential influence area



Plan view

This diagram shows an overhead view of the recommended minimum separation distance (20 metres), potential or actual influence area distance (70 metres), and acceptable range (greater than 70 metres) between sensitive land use and Class I industrial use.

The solid black dot indicates an existing land use, and the Xs indicate a proposed land use.



Class II industrial

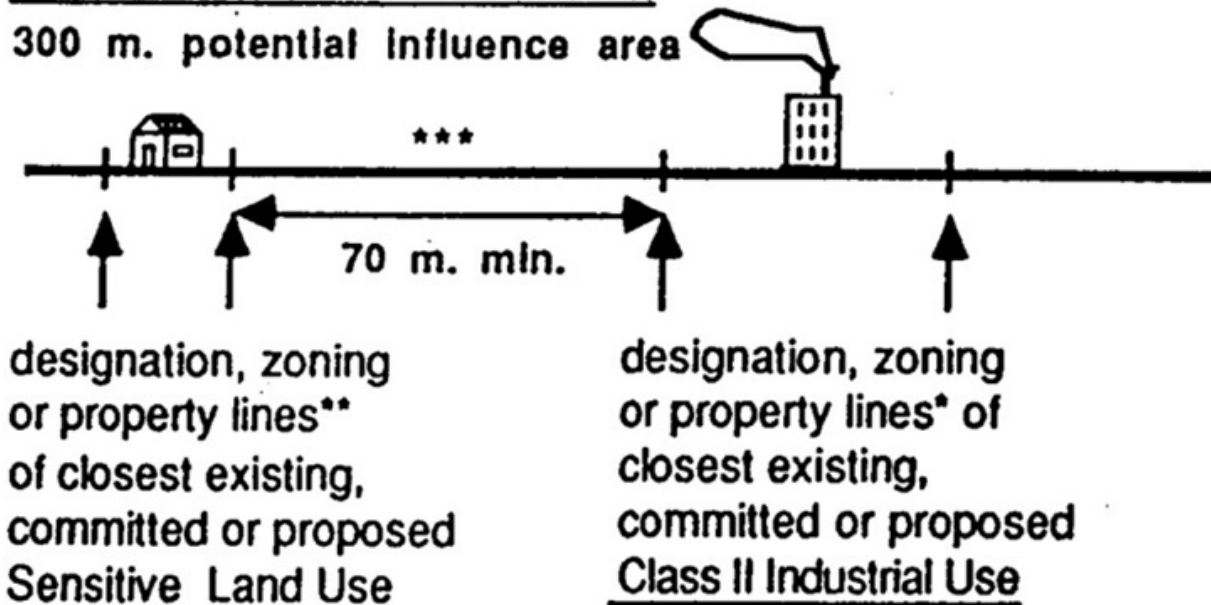
- 300 metre potential influence area
- 70 metre recommended minimum in which incompatible development should not normally take place

Section view

This diagram shows the designation, zoning or property lines of an existing, committed or proposed sensitive land use in relation to the designation, zoning or property lines of the closest existing, committed or proposed Class II Industrial Use.

CLASS II INDUSTRIAL:

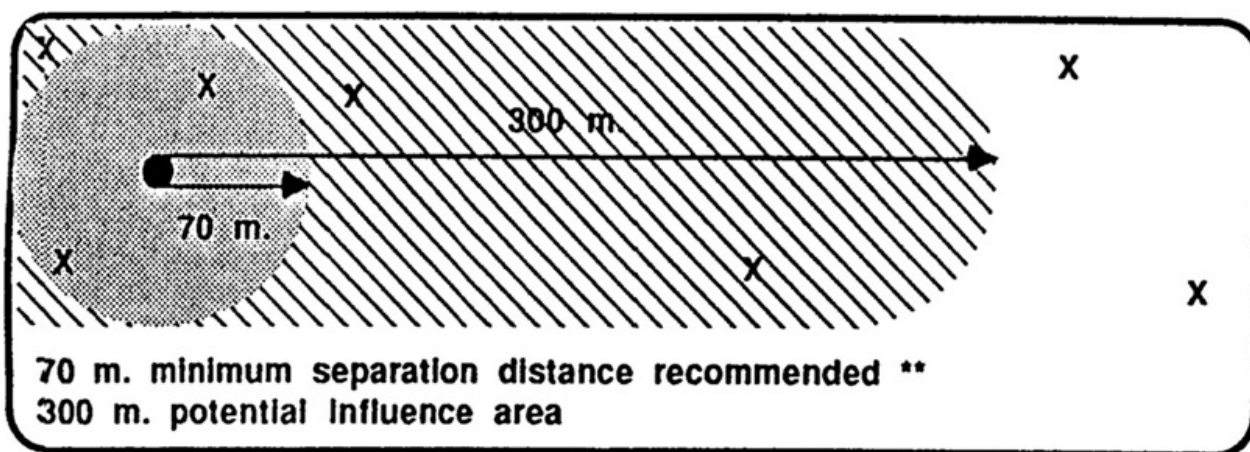
300 m. potential influence area



Plan view

This diagram shows an overhead view of the recommended minimum separation distance (70 metres), potential or actual influence area (300 metres), and acceptable range (greater than 300 metres) between sensitive land use and Class II industrial use.

The solid black dot indicates an existing land use, and the Xs indicate a proposed land use.

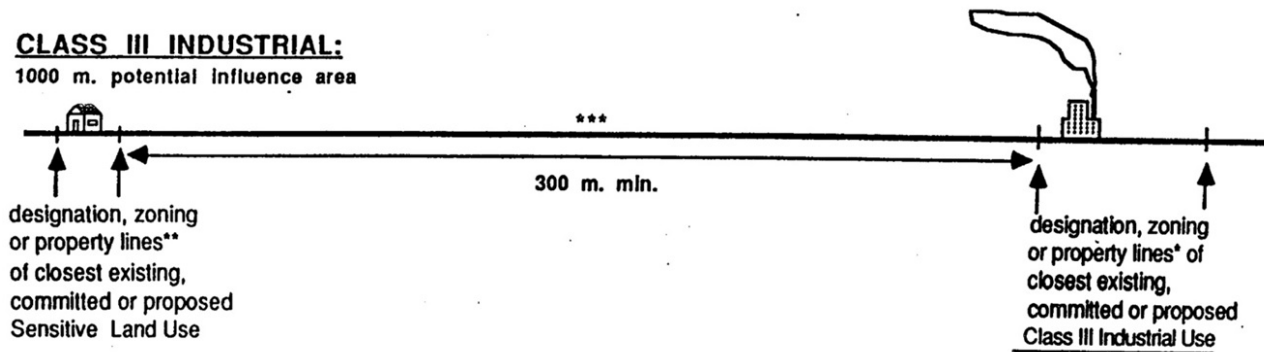


Class III industrial

- 1000 metre potential influence area
- 300 metre recommended minimum in which incompatible development should not normally take place

Section view

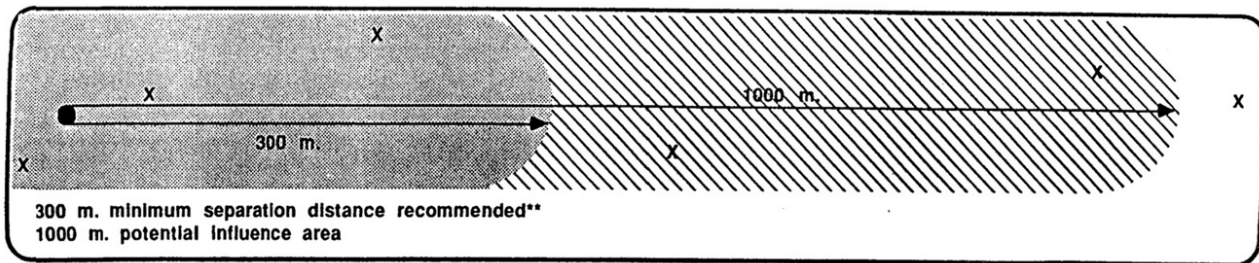
This diagram shows the designation, zoning or property lines of an existing, committed or proposed Sensitive Land Use in relation to the designation, zoning or property lines of the closest existing, committed or proposed Class III Industrial Use.



Plan view

This diagram shows an overhead view of the recommended minimum separation distance (300 metres), potential or actual influence area (1000 metres), and acceptable range (greater than 1000 metres) between sensitive land use and Class III industrial use.

The solid black dot indicates an existing land use, and the Xs indicate a proposed land use.



References

Recommended minimum separation distance

Incompatible development should not normally be permitted within the recommended minimum.

See the following Sections:

- Section 4.3 Recommended Minimum
- Section 4.10 Redevelopment, Infilling and Mixed Use Areas
- Section 4.2.5 Off-Site Separation Distances

Recommended potential area of influence or actual area of influence

“Adverse effects” need to be identified, mitigation proposed and an assessment made on the acceptability of the proposal. See “Section 4.1 Influence of Area Concept”.

Acceptable range

Beyond the potential area of influence, therefore normally development in this range should not pose a compatibility problem. See “Section 4.5.2 Separation Distances Greater than the Potential Area of Influence” for exceptions.

Measuring separation distance

See Section 4.4 Measuring Separation Distances.

The set backs established in zoning by-law can be included in the separation distance measurement if the by-law or site plan control precludes the use of the set back for activities that could create an adverse effect. See “Section 4.4.3, Zoning/Site Plan Control (Industrial Land Uses)”.

Where the established use on-site and ancillary lands associated with a sensitive land use are not of a sensitive nature (e.g., parking lot or roadway), measurement may be taken to where the sensitive activities actually begin.

See the following Sections:

- Section 4.4.2 Site Specific Plans
- Section 4.4.4 Ancillary use (Sensitive Land Use)

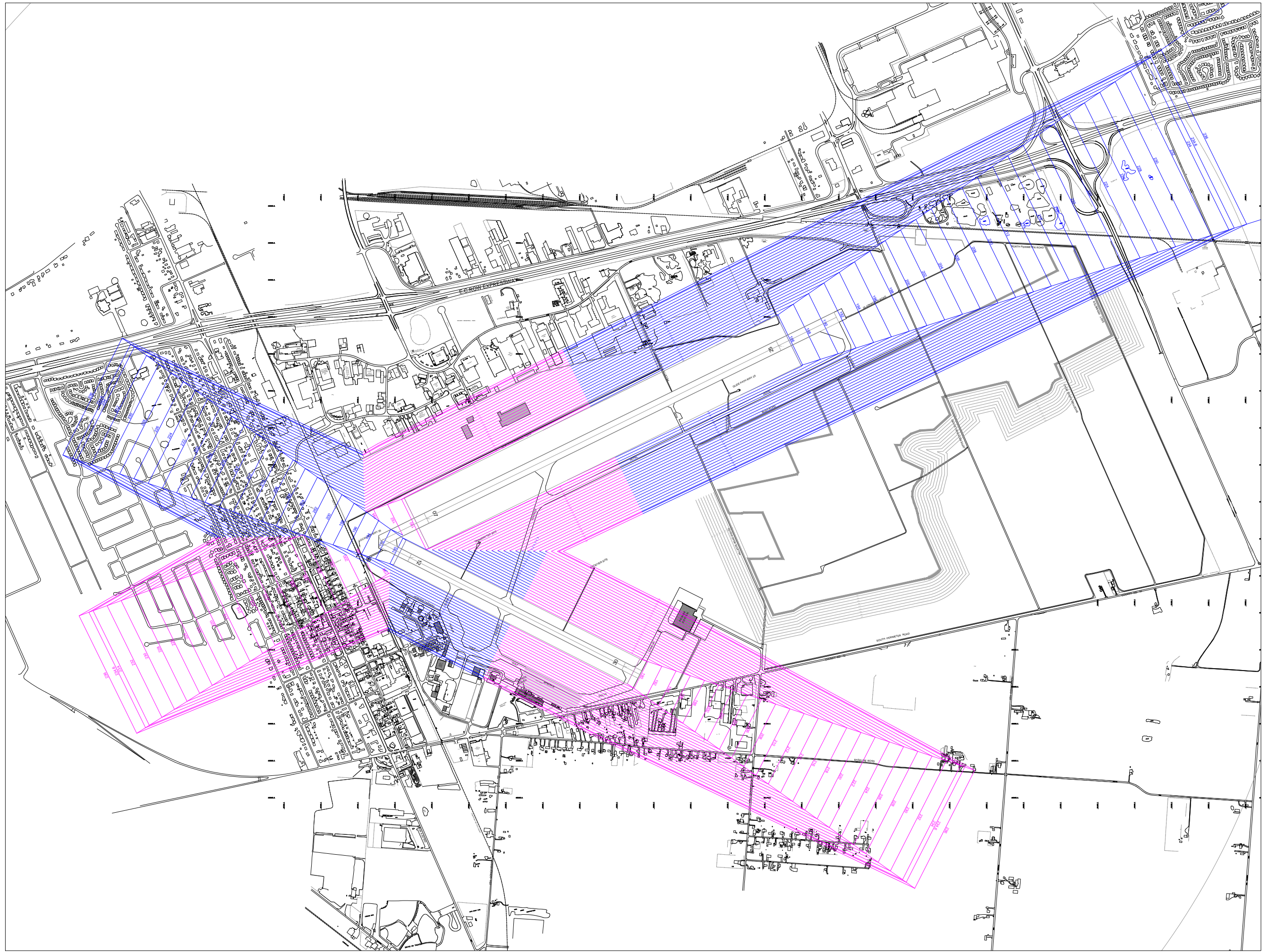
This approach may be particularly appropriate for redevelopment/infill proposals.
“See Section 4.10 Redevelopment, Infilling and Mixed Use Areas.”

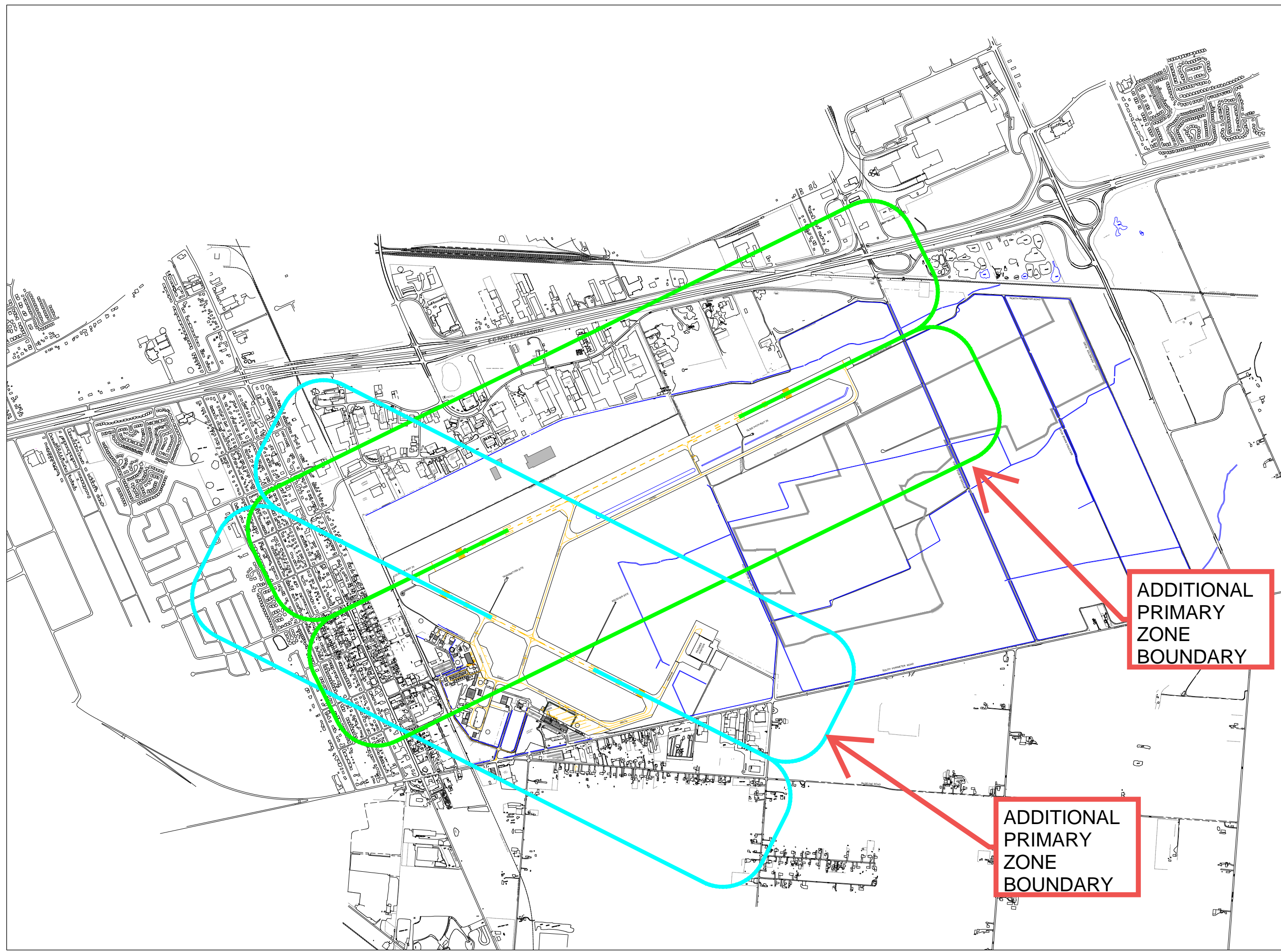
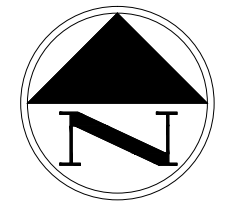
If the existing land use is industrial, then the proposed land use is sensitive, and vice versa.

Updated: July 13, 2021
Published: September 26, 2016

Appendix H

Restrictions and Constraints

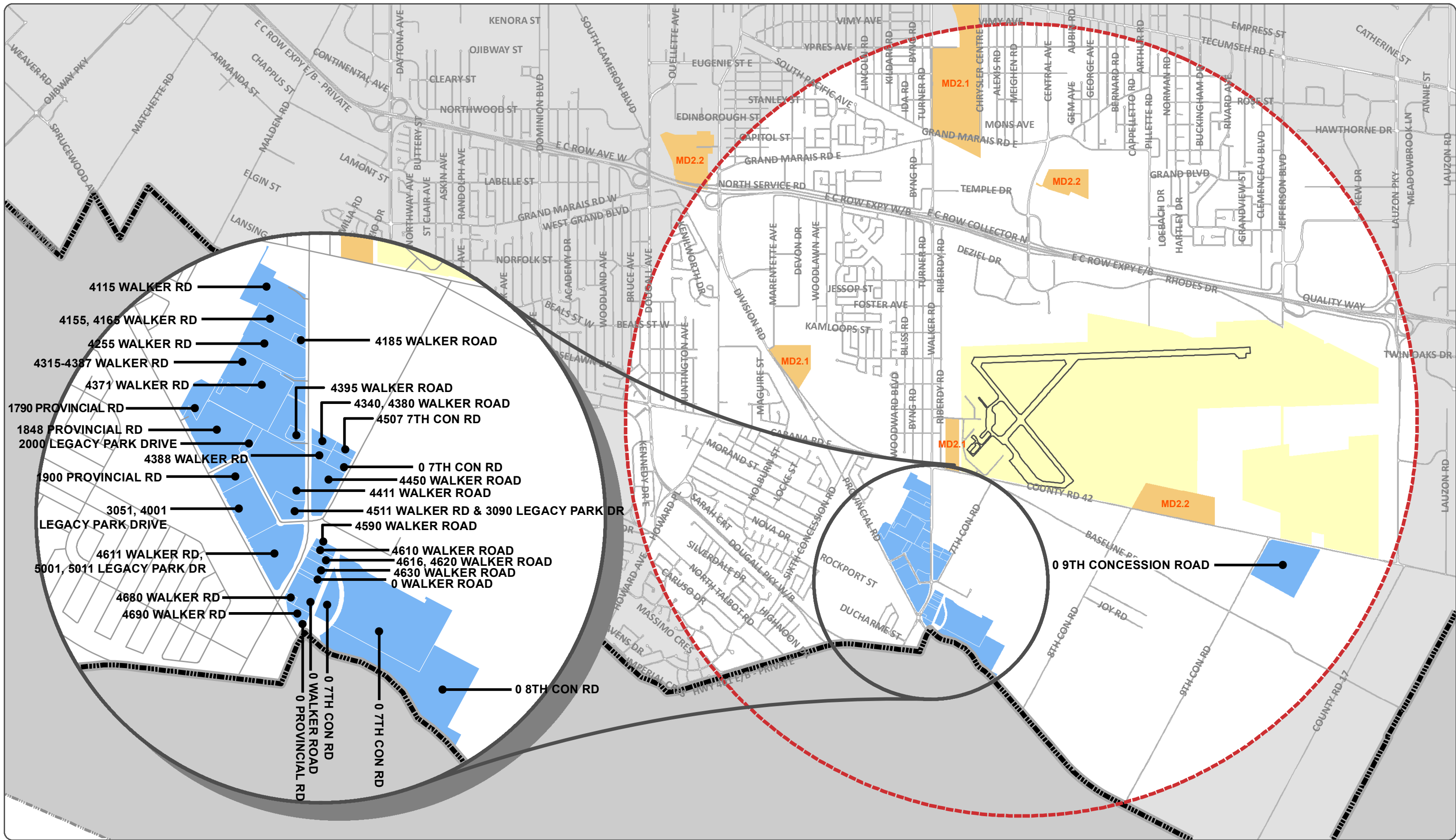




ADDITIONAL
PRIMARY
ZONE
BOUNDARY

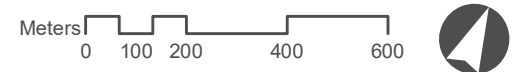
ADDITIONAL
PRIMARY
ZONE
BOUNDARY

KEYPLAN	
PROJECT TITLE	
DRAWING TITLE	
TYPICAL RUNWAY TRAFFIC PATTERN	
DESIGNED BY	
CHECKED BY	
DRAWN BY SMG	
DATE 7 SEPTEMBER 2017	
SCALE	
AUTOCAD FILE	
PROJECT NO.	DWG. NO.
	OF

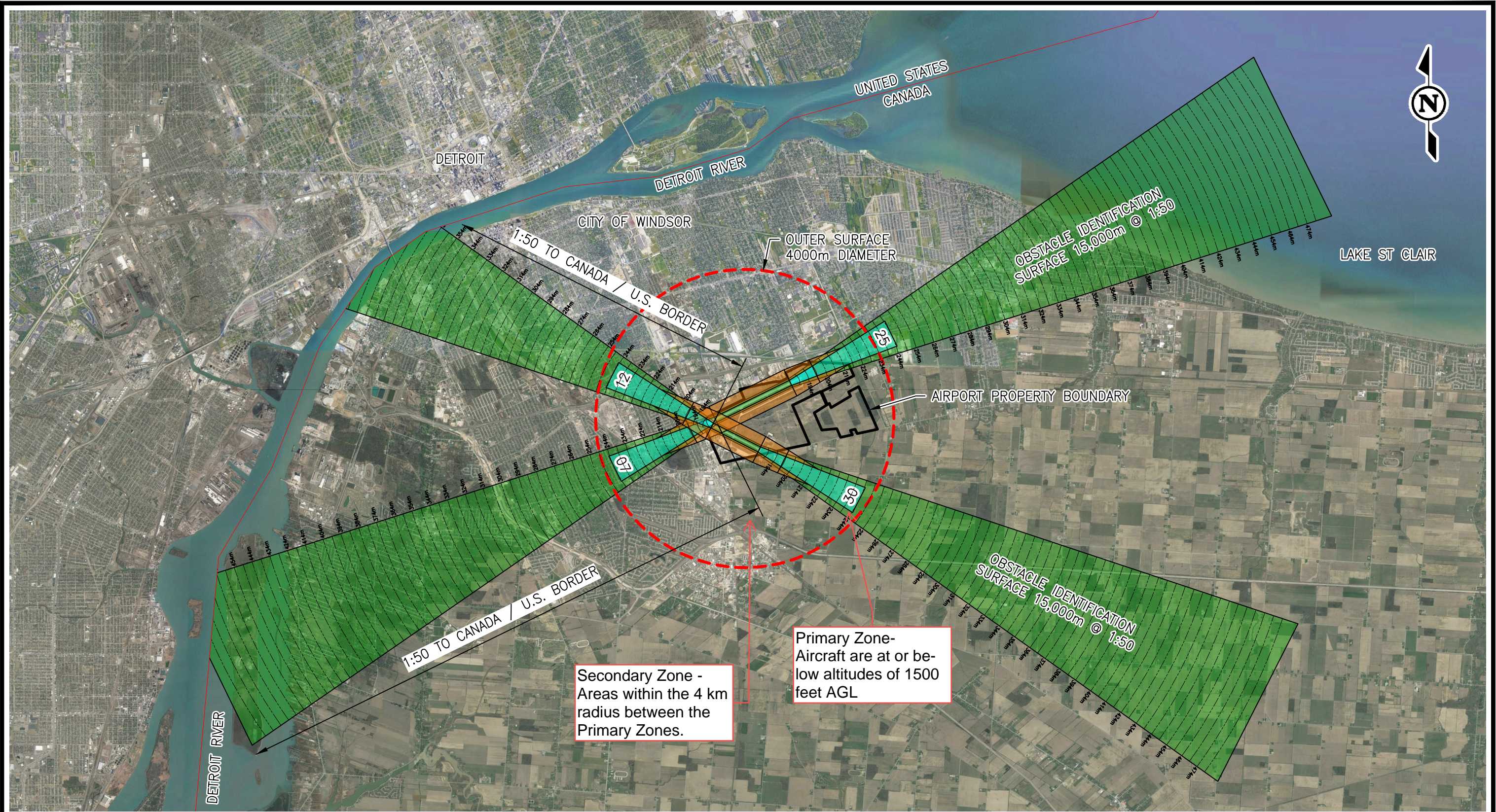


AIRPORT ZONING HEIGHT REGULATION

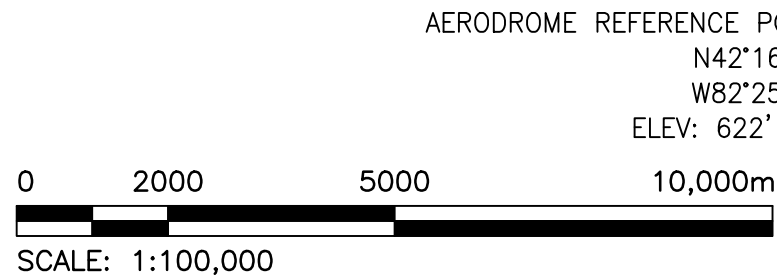
- POTENTIAL FUTURE DEVELOPMENT SITE
- ZONING PERMITTED FOR INCREASED HEIGHT
- WINDSOR AIRPORT LANDS
- AREA WITHIN 4000m OF AIRPORT
- CITY BOUNDARY



PLOT DATE: 2022/10/05 AT 14:06:13 PLOTTED BY: CLENDENING, TODD
 CADD FILE: C:\PWORKING\CAN_INFRA\DWG\16950\FIG-01.DWG [PROP. AZR ZONING]



- LEGEND:**
- AIRPORT PROPERTY BOUNDARY
 - INTERNATIONAL BORDER
 - OUTER SURFACE
 - APPROACH/TAKEOFF SURFACE
 - TRANSITIONAL SURFACE
 - OBSTACLE IDENTIFICATION SURFACE



AIRPORT ZONING REGULATION AMENDMENT - YQG
 WINDSOR INTERNATIONAL AIRPORT, WINDSOR ON.

PROPOSED AZR ZONING

PROJ: TRN.AIRP03047-01

CONTR: #####

DFTG: T.C.

DSGN: J.S.

CHK : D.F.

APPD: D.F.

DATE : 2022/10/05

FIG-01