



The Regional Municipality of Durham

Planning & Economic Development Committee Agenda

Lower Level Boardroom (LL-C)
Regional Headquarters Building
605 Rossland Road East, Whitby

Tuesday, January 8, 2019

9:30 AM

1. Declarations of Interest

2. Adoption of Minutes

- A) Planning & Economic Development Committee meeting
– [December 11, 2018](#)

Pages 3 - 8

3. Statutory Public Meetings

There are no statutory public meetings

4. Delegations

- 4.1 Ms. Sherry Colbourne, President & CEO, Spark Centre, re: Durham Region Innovation District

5. Presentations

- 5.1 Mr. Erik Karvinen, Watson & Associates Economists Ltd., re: Durham Region Competitiveness Study (2019-EDT-1)

6. Planning

- 6.1 Correspondence

- 6.2 Reports

- A) Application to Amend the Durham Regional Official Plan, submitted by Mike Kennedy, to permit the severance of a dwelling rendered surplus as a result of the consolidation of non-abutting farm parcels in the Township of Uxbridge, File OPA 2018-003 ([2019-P-1](#))

9 - 16

- B) Award of RFP 592-2018, Pre-qualified consultant roster for the peer review of hydrogeological and water balance reports submitted in support of development applications ([2019-P-2](#)) 17 - 20

7. Economic Development

7.1 Correspondence

7.2 Reports

- A) Durham Region Competitiveness Study ([2019-EDT-1](#)) 21 - 197
- B) Durham Region Idea Summit and D-Hive Tech Hub ([2019- EDT-2](#)) 198 - 200
- C) Toronto Global Effectiveness Evaluation and Funding Renewal ([2019-EDT-3](#)) 201 - 214

8. Advisory Committee Resolutions

There are no advisory committee resolutions to be considered

9. Confidential Matters

There are no confidential matters to be considered

10. Other Business

11. Date of Next Meeting

Tuesday, February 5, 2019 at 9:30 AM

12. Adjournment

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The Regional Municipality of Durham

MINUTES

PLANNING & ECONOMIC DEVELOPMENT COMMITTEE

Tuesday, December 11, 2018

A regular meeting of the Planning & Economic Development Committee was held on Tuesday, December 11, 2018 in the Lower Level Boardroom (LL-C), Regional Headquarters Building, 605 Rossland Road East, Whitby, Ontario at 9:30 AM

Present: Councillor Ryan, Chair
Councillor Joe Neal, Vice-Chair
Councillor Bath-Hadden
Councillor Highet
Councillor Kerr
Councillor Lee
Councillor Yamada attended the meeting at 9:33 AM
Regional Chair Henry

Staff

Present: B. Bridgeman, Commissioner of Planning and Economic Development
S. Gill, Manager, Economic Development, Investment Attraction
C. Goodchild, Manager, Policy Planning & Special Studies
S. Jones, Manager, Data, Mapping and Graphics
G. Muller, Director of Planning
S. Munns, Director, Corporate Communications
B. Pickard, Manager, Tourism
P. Roy, Manager, Transportation Planning
N. Rutherford, Manager, Economic Development, Agriculture and Rural Affairs
K. Ryan, Senior Solicitor, Corporate Services – Legal Services
M. Seppala, Systems Support Specialist, Corporate Services – IT
M. Stevenson, Manager, Administrative Services
L. Trombino, Manager, Plan Implementation
K. Weiss, Director, Economic Development and Tourism
T. Fraser, Committee Clerk, Corporate Services – Legislative Services

1. Declarations of Interest

There were no declarations of interest.

2. Election of Planning & Economic Development Committee Vice-Chair

The Chair called for nominations for the position of Vice-Chair of the Planning & Economic Development Committee.

Moved by Regional Chair Henry, Seconded by Councillor Kerr,

(1) That Councillor Joe Neal be nominated for the position of Vice-Chair of the Planning & Economic Development Committee.

Moved by Regional Chair Henry, Seconded by Councillor Kerr,

(2) That nominations be closed.

CARRIED

The Chair asked if Councillor Joe Neal wished to stand. Councillor Joe Neal indicated he would stand.

Chair Ryan declared Councillor Joe Neal the Vice-Chair of the Planning & Economic Development Committee.

3. Statutory Public Meetings

There were no statutory public meetings.

4. Delegations

There were no delegations to be heard.

5. Presentations

5.1 B. Bridgeman, Commissioner of Planning and Economic Development, re: Planning & Economic Development Committee Orientation

B. Bridgeman, Commissioner of Planning and Economic Development, provided a PowerPoint presentation regarding the Planning and Economic Development Department and functions of the Planning & Economic Development Committee. Highlights of his presentation included:

- Planning & Economic Development Department Structure
 - Planning Division
 - Regional Policy Implementation
 - Statutory Approvals
 - Policy Formulation and Administration
 - Planning Advisory and Information Services
 - Economic Development and Tourism Division

- Investment Attraction
- Agriculture and Rural Affairs
- Marketing and Strategic Partnerships
- Tourism
- Support Services
 - Administrative Services
 - Data, Mapping & Graphics Services
- Planning Division
 - Context
 - Roles
 - Responsibilities & Activities
- Economic Development and Tourism Division
 - Context
 - Roles
 - Responsibilities & Activities
- Planning and Economic Development Committee Information Binders

Staff responded to questions with respect to the Durham Tourism Strategy; Sport Tourism; the 2019 Ontario Parasport Games; the new Tourism website; the Durham Agricultural Strategy; non-residential development charges; affordable housing initiatives; and the Regional Broadband Strategy.

B. Bridgeman agreed to provide Councillor Joe Neal with statistics on tourism visits to Durham.

6. Planning

6.1 Correspondence

There were no communications to consider.

6.2 Reports

A) Planning and Economic Development Achievements, 2015-2018 (2018-P-1)

Report #2018-P-1 from B. Bridgeman, Commissioner of Planning and Economic Development, was received.

Staff responded to questions with respect to the film industry and permits; 2018 forecast for new residential units; the Regional Official Plan Municipal Comprehensive Review; the Foreign Direct Investment Strategy; Toronto Global; the Business Retention and Expansion study; and the marketing of available land.

K. Weiss agreed to provide Councillor Joe Neal with information on the economic impact of the film industry.

Moved by Councillor Neal, Seconded by Councillor Kerr,
(3) That Report #2018-P-1 of the Commissioner of Planning and Economic
Development be received for information.

CARRIED

7. Economic Development

7.1 Correspondence

A) Correspondence from the Township of Scugog, re: 2019 Budget Request – Part Time Tourism Employee for Township of Scugog

B. Bridgeman responded to questions with respect to the request from the Township of Scugog. He provided some background information and advised that a part-time tourism position was included in the 2018 Regional Business Plans and Budgets on a pilot basis.

Moved by Councillor Bath-Hadden, Seconded by Councillor Neal,
(4) That correspondence from the Township of Scugog regarding a 2019
Budget Request – Part Time Tourism Employee for Township of Scugog
be referred to staff for consideration.

CARRIED

7.2 Reports

There were no Economic Development reports to consider.

8. Advisory Committee Resolutions

There were no advisory committee resolutions to be considered.

9. Confidential Matters

There were no confidential matters to be considered.

10. Other Business

10.1 GO Rail Service Extension to Bowmanville

Moved by Regional Chair Henry, Seconded by Councillor Joe Neal,
(5) That the Rules of Procedure be suspended in order introduce a new
motion regarding the extension of GO Rail service to Bowmanville.

CARRIED on a 2/3^{rds} Vote

Moved by Regional Chair Henry, Seconded by Councillor Joe Neal,
(6) That we recommend to Council:

Whereas, the Regional Municipality of Durham has, for nearly 30 years, supported the easterly extension of the GO Rail service to Bowmanville, which has included a crossing of Highway 401 from the CNR Kingston line (now owned by GO) to the CPR Belleville line between Thornton Road and Stevenson Road, with a terminus in Bowmanville, west of Regional Road 57;

Therefore be it resolved:

1. That the Region of Durham Council requests the Provincial government and Metrolinx to confirm the commitment to extend GO Rail service north of Highway 401 through Oshawa to Bowmanville by 2024 and proactively resolve all pending negotiations with CN and CP rail, understanding that this project has substantial economic and environmental benefits, will spur significant public and private investment, will create much needed job opportunities for the community both for the short and long term, has widespread community support - including from the residents, business community, development industry, Durham's post-secondary institutions, commuters, youth, and the agricultural community - and is embedded in the land use, transportation and transit plans of Oshawa, Clarington and the Region of Durham;
2. That the Region of Durham Council further requests Metrolinx to keep the Region apprised of the status of the aforementioned negotiations and the progress of the overall undertaking on a regular basis;
3. That Town of Whitby, City of Oshawa, Municipality of Clarington, County of Northumberland, Municipality of Port Hope, Town of Cobourg, County of Peterborough and City of Peterborough be forwarded a copy of this resolution and based on their support of the GO Rail Service Extension to Bowmanville that they also request that the Province and Metrolinx stand by the commitment to complete this project by 2024;
4. That Region of Durham staff be authorized to engage the other stakeholders such as area municipal councils, boards of trade, and the local development and business community by providing them a copy of this resolution and requesting that they join their municipal partners in calling upon the Province and Metrolinx to stand by the commitment to extend GO Rail service through Oshawa to Bowmanville by 2024; and
5. That copies of this resolution be forwarded to the Honourable Doug Ford, Premier of the Province of Ontario; the Honourable Jeff Yurek, Minister of Transportation; Durham MPPs; Durham MPs; the Durham area

municipalities; David Piccini, MPP, Northumberland-Peterborough South;
the Chair, and the President and Chief Executive Officer of Metrolinx.

CARRIED

10.2 Retirement of Kathy Weiss, Director of Economic Development and Tourism

Chair Ryan thanked K. Weiss on behalf of the Committee for her service.
Committee members thanked K. Weiss and extended best wishes for the future.

11. **Date of Next Meeting**

The next regularly scheduled Planning & Economic Development Committee meeting will be held on Tuesday, January 8, 2019 at 9:30 AM in the Lower Level Boardroom (LL-C), Regional Headquarters Building, 605 Rossland Road East, Whitby.

12. **Adjournment**

Moved by Councillor Joe Neal, Seconded by Councillor Lee,
(7) That the meeting be adjourned.

CARRIED

The meeting adjourned at 10:54 AM

Respectfully submitted,

D. Ryan, Chair

T. Fraser, Committee Clerk



The Regional Municipality of Durham Report

To: Planning and Economic Development Committee
From: Commissioner of Planning and Economic Development
Report: [#2019-P-1](#)
Date: January 8, 2019

Subject:

Decision Meeting Report

Application to Amend the Durham Regional Official Plan, submitted by Mike Kennedy, to permit the severance of a dwelling rendered surplus as a result of the consolidation of non-abutting farm parcels in the Township of Uxbridge, File OPA 2018-003.

Recommendation:

That the Planning and Economic Development Committee recommends to Regional Council:

- A) That Amendment #173 to the Durham Regional Official Plan, to permit the severance of a dwelling rendered surplus as a result of the consolidation of non-abutting farm parcels, be adopted as contained in Attachment #3 to Commissioner's Report #2019-P-1; and
 - B) That "Notice of Adoption" be sent to the applicant, the applicant's agent, the Township of Uxbridge, the Ministry of Municipal Affairs and Housing, and all other persons or public bodies who requested notification of this decision.
-

Report:

1. Purpose

- 1.1 On June 27, 2018, Clark Consulting Services submitted an application on behalf of Mike Kennedy to amend the Durham Regional Official Plan (ROP), to permit the severance of a dwelling rendered surplus as a result of the consolidation of non-abutting farm parcels, in the Township of Uxbridge.

- 1.2 The subject site is municipally known as 11129 Concession Road 6 and is located on the east side of Concession Road 6, north of Weirs Road, south of Leaskdale Road and west of Regional Road 1 (refer to Attachment 1). The property is legally described as Part of Lot 16, Concession 6, geographic former Township of Scott, in the Township of Uxbridge.
- 1.3 The subject site is generally rectangular in shape, and has access to Concession Road 6. It is approximately 30.7 hectares (75.9 acres) in size, of which approximately 25 hectares (61.8 acres) is being used for cultivation. The subject site contains some wooded areas, consisting mainly of hedgerows. A residential dwelling with an accessory structure is located at the western part of the site.
- 1.4 Surrounding land uses include:
- North – agricultural lands;
 - East – agricultural lands;
 - South – agricultural lands; and
 - West – Concession Road 6, agricultural lands with a stream and other associated natural features.
- 1.5 The proposed amendment to the ROP would facilitate the severance of a 0.92 hectare (2.3 acre) parcel with an existing dwelling, retaining a vacant 29.8 hectare (73.6 acre) farm parcel with horse stables and a riding arena. The proposed retained parcel will continue to be used for agricultural purposes.

2. Reports Submitted in Support of the Application

- 2.1 A Planning Justification/Agricultural Assessment Report, prepared by Clark Consulting Services dated May 29, 2018, has been submitted in support of the application. The report concludes that the proposed amendment meets the objectives and requirements of the Provincial Policy Statement, the Greenbelt Plan, the ROP, and the Township of Uxbridge Official Plan. The consultant has indicated that associated applications for Zoning By-law Amendment and Land Division will be forthcoming. The report also concludes the proposed severance will comply with OMAFRA's Minimum Distance Separation requirements. The applicant's consultant advises that the dwelling is not required by a farm employee, and is surplus to the farm operation.

2.2 An Inventory of Land Holdings for Mike Kennedy, prepared by Clark Consulting Services, was also submitted in support of the application. The inventory includes two properties owned by Mike Kennedy comprising approximately 73 hectares (180 acres). Both properties are located in the Township of Uxbridge (refer to Attachment 2).

3. Provincial Policies

3.1 The subject site is located within the Protected Countryside of the Greenbelt Plan. Both the Greenbelt Plan and the Provincial Policy Statement permit the severance of a residence surplus to a farming operation as a result of farm consolidation, provided that the planning authority ensures that a residential dwelling is not permitted on the proposed retained farm lot created by the severance.

4. Durham Regional Official Plan

4.1 The subject site is designated “Prime Agricultural Areas” in the ROP with portions of the site containing Key Natural Heritage and/or Hydrologic Features (KNHHF). Severance applications for agricultural uses are considered in accordance with the relevant policies of Sub-Section 9A of the ROP.

4.2 Policy 9.A.2.10 of the ROP permits the severance of a farm dwelling rendered surplus as a result of a farmer acquiring a non-abutting farm, provided that:

- a) the dwelling is not needed for a farm employee;
- b) the farm parcel is a size which is viable for farm operations;
- c) for sites within the Protected Countryside of the Greenbelt Plan Area, the dwelling was in existence as of December 16, 2004; and
- d) the farm parcel is zoned to prohibit any further severances or the establishment of any residential dwelling.

The ROP further states that no further severances shall be permitted from the acquired parcel.

5. Planning Analysis

5.1 Mike Kennedy owns two agricultural properties in the Township of Uxbridge (Refer to Attachment #2). There is one dwelling located on each of the two farm properties. One is occupied by the Kennedy family and the second dwelling is located on the

property which is the subject of this application.

- 5.2 The subject farm parcel contains an existing dwelling not utilized by a farm employee and has been rendered surplus to the needs of the farm operation. The proposed retained parcel is an appropriate size that will continue to remain viable for agricultural production.
- 5.3 The surplus farm residence on the subject site was built prior to 2004 and therefore the proposed severance complies with the provisions of the PPS, Greenbelt Plan and the ROP. The severed parcel would be of sufficient size to accommodate the surplus dwelling and existing private servicing systems.
- 5.4 The proposed Regional Official Plan Amendment requires that a Zoning By-law Amendment include provisions to prohibit any further severances and/or a new dwelling to be constructed on the proposed retained parcel.

6. Public Meeting and Submissions

- 6.1 In accordance with the *Planning Act*, a notice of public meeting regarding the application was published in The Uxbridge Times Journal newspaper, mailed to those who own land within 120 metres (400 feet) of the subject site, and a public meeting was held on September 5, 2018. Commissioner's Report #2018-COW-156 provides information on the application.
- 6.2 The Region received one general telephone inquiry in response to the consultation process.

7. Consultation

- 7.1 On September 10, 2018, the Township of Uxbridge adopted a resolution supporting the approval of the subject application. The future required Zoning By-law Amendment and consent applications will prohibit any further severances and/or a new dwelling to be constructed on the proposed retained parcel.
- 7.2 The Regional Health Department, Regional Works Department, and the Durham Agricultural Advisory Committee have no concerns with the application.

8. Notice of Meeting

- 8.1 Written notification of the meeting time and location of the Planning and Economic Development Committee Meeting was sent to all that requested notification, in accordance with Regional Council procedure.

8.2 The recommendation of the Planning and Economic Development Committee is scheduled to be considered by Regional Council on January 30, 2019. If Council adopts the proposed Amendment, notice will be given by the Regional Clerk and Council's decision will be final unless appealed to the Local Planning Appeal Tribunal (LPAT).

9. Conclusion

9.1 The proposed application adheres to the policies of the PPS, the Greenbelt Plan and the ROP. It has been demonstrated that the subject dwelling is surplus to the farm operation. Future residential development will be prohibited on the retained farm lot through the inclusion of the proposed zoning restrictions. Furthermore, the proposed severance of the farm dwelling will be limited to the minimum size needed to accommodate the retained residential dwelling and will continue to provide a housing option in the rural area. Accordingly, it is recommended that Amendment #173 to the ROP, as shown in Attachment #3, be adopted.

10. Attachments

Attachment #1: Location Sketch

Attachment #2: Inventory of Other Land Holdings, Mike Kennedy

Attachment #3: Amendment #173 to the Durham Regional Official Plan

Respectfully submitted,

Original signed by

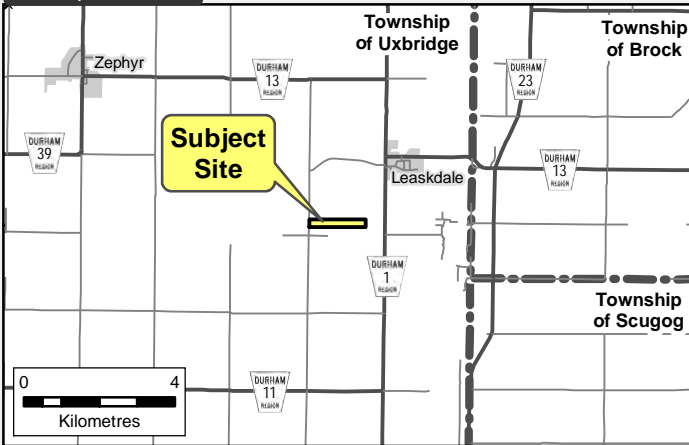
Brian E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

Recommended for Presentation to Committee






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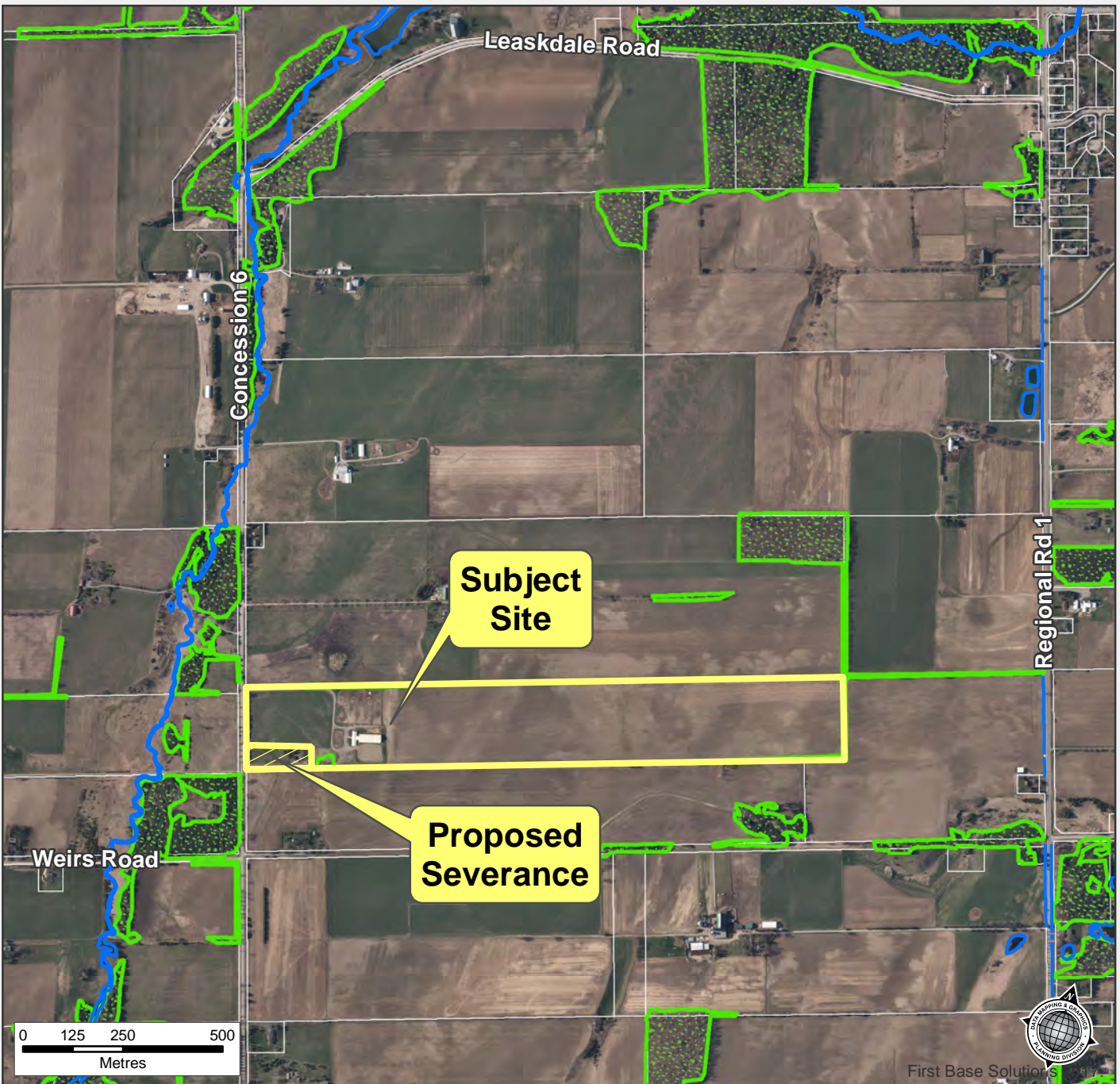
Elaine C. Baxter-Trahair
Chief Administrative Officer

Municipal Context



Legend

-  Subject Site
-  Municipal Boundary
-  Proposed Severance
-  Woodland
-  River or Stream

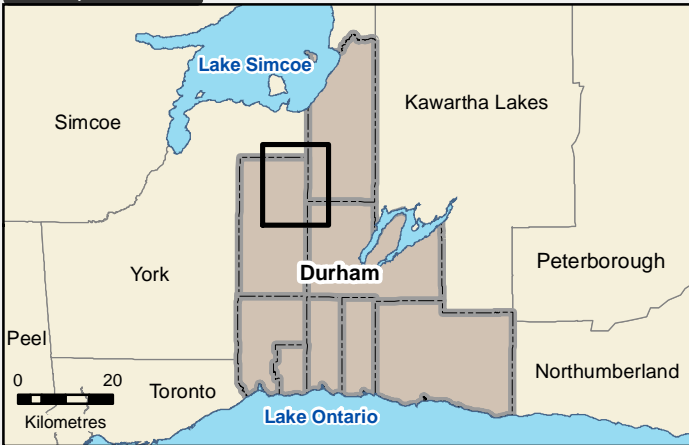


First Base Solutions

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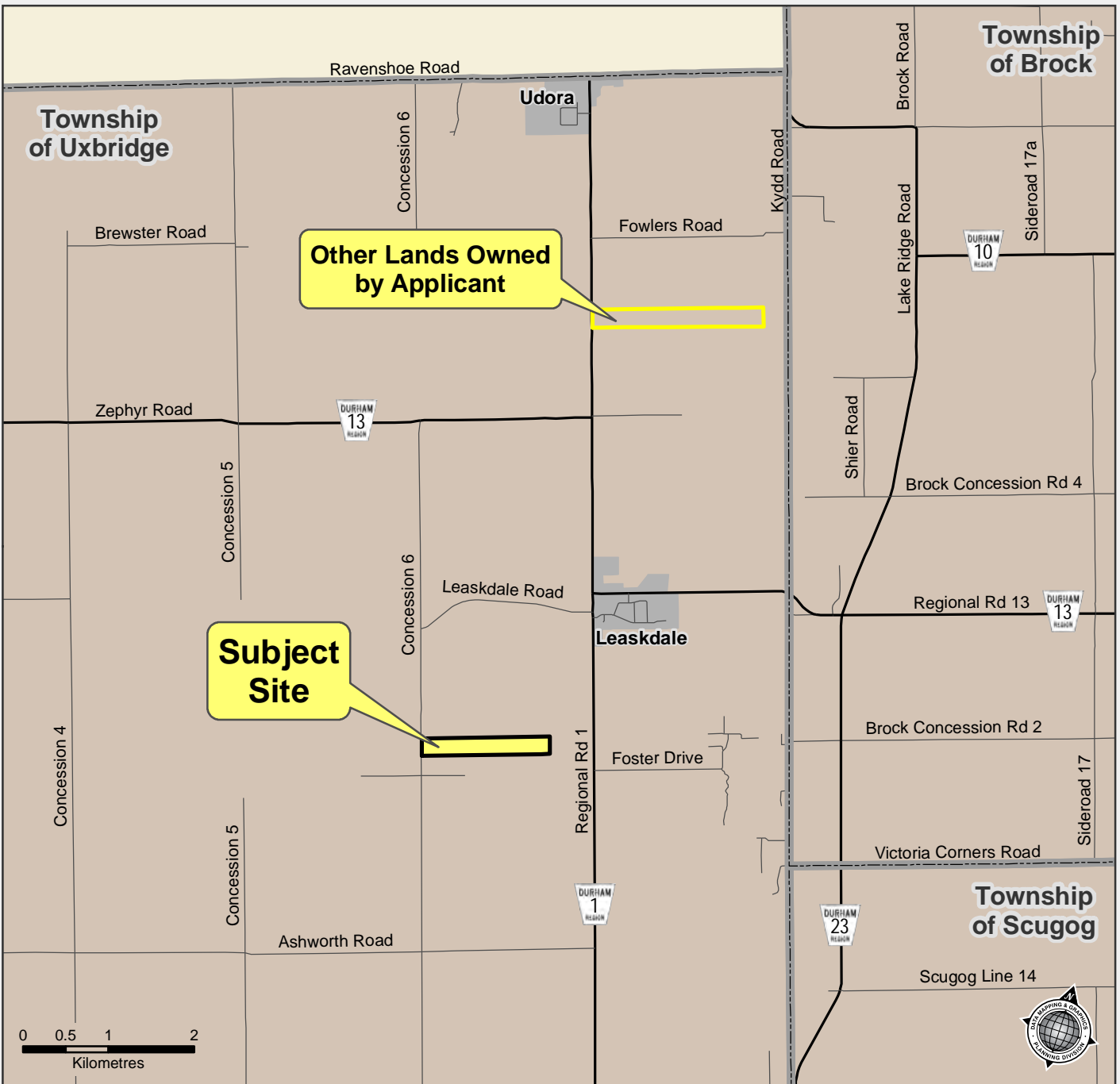
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Municipal Context



Legend

-  Subject Site
-  Other Lands Owned by Applicant
-  Municipal Boundary



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Amendment #173 to the Durham Regional Official Plan

- Purpose and Effect:** The purpose of this Amendment is to permit the severance of a residential dwelling rendered surplus as a result of the consolidation of non-abutting farm parcels on lands designated “Prime Agricultural Areas,” in the Township of Uxbridge.
- Location:** The subject site is located on the east side of Concession Road 6, north of Weirs Road, in the Township of Uxbridge. The site is legally described as Part of Lot 16, Concession 6, geographic former Township of Scott, in the Township of Uxbridge.
- Basis:** The subject site has been consolidated with the other non-abutting farm parcel owned by the applicant. The residential dwelling on the subject site is not required by, and is surplus to, the farm operation. **This amendment conforms to the Durham Regional Official Plan, the Greenbelt Plan, and the Growth Plan for the Greater Golden Horseshoe and is consistent with the Provincial Policy Statement.**
- Amendment:** The Durham Regional Official Plan is hereby amended by adding the following policy exception to Section 9A.3.2:
- “9A.3.2 tt) A surplus dwelling as severed from the parcel identified as Assessment Number 18-29-030-005-11400 located in Part of Lot 16, Concession 6, in the former Township of Scott, in the Township of Uxbridge, subject to the inclusion of provisions in the zoning by-law to prohibit further severances and the construction of any dwelling on the retained parcel.”*
- Implementation:** The provisions set forth in the Durham Regional Official Plan regarding the implementation of the Plan shall apply in regards to this Amendment.
- Interpretation:** The provisions set forth in the Durham Regional Official Plan regarding the interpretation of the Plan shall apply in regards to this Amendment.



The Regional Municipality of Durham Report

To: Planning and Economic Development Committee
From: Commissioner of Planning and Economic Development
Report: [#2019-P-2](#)
Date: January 8, 2019

Subject:

Award of RFP 592-2018, Pre-qualified consultant roster for the peer review of hydrogeological and water balance reports submitted in support of development applications, File: A14-02

Recommendation:

That the Planning and Economic Development Committee recommends:

That this report be received for information.

Report:

1. Purpose

1.1 This report provides information on an updated pre-qualified consultant roster for the peer review of hydrogeological studies. These studies are submitted in support of development applications proposing private services, and for the review of Water Balance assessments required by Source Protection Plans for development applications within areas that have been identified as having water quantity stress.

2. Background

2.1 On September 11, 1996, Council adopted a Framework for selecting peer review consultants who, on behalf of the Region, examine hydrogeological reports submitted in support of privately serviced development applications. The Region maintains an interest in hydrogeological reports as they relate to the protection of the quality of groundwater, and the adequacy of potable water supply.

- 2.2 As part of the Region's delegated provincial plan review responsibilities, the peer review process ensures that hydrogeological reports are consistent with provincial guidelines and policies. The peer review of these hydrogeological reports informs the Region's decisions and recommendations involving sensitive and/or complex development applications with private services.
- 2.3 Over the years, the Framework has evolved to include a process for selecting a roster of pre-qualified consulting firms that are used on a rotational basis for a three-year period by the Planning and Economic Development Department. The Framework also requires that the roster be updated at the end of each Council term.
- 2.4 The additional requirement for the review of Water Balance assessments has been added to the peer review scope of work. A Water Balance assessment is required to ensure that development does not have a negative impact on an aquifer which has been identified by a Source Protection Plan as having water quantity stress. The area of review generally encompasses a small portion of rural Pickering and Uxbridge where little to no development activity is anticipated. While a Water Balance assessment review is generally undertaken by the Conservation Authorities, the Region's Framework will enable the review of these studies where required.

3. Consultation and Evaluation

- 3.1 The Planning and Economic Development, and Health Departments, with the assistance of the Purchasing Division of the Finance Department prepared a Request for Proposal (RFP 592-2018). The RFP was posted on the Regional website, and a letter was sent to the current roster indicating the Region was undertaking an RFP. The RFP called for the Region to choose up to four of the highest scoring respondents for Contract award.
- 3.2 Seven vendors submitted a proposal to the Region and six of the seven proposals were deemed compliant and were evaluated for the roster.
- 3.3 The Planning and Economic Development and Health Departments evaluated each of the compliant submissions received. The Purchasing Division of the Finance Department oversaw the process. Each prospective firm was evaluated through five major areas of focus, which included sub-criteria, such as:
 - a. **The Consultant's understanding of the project requirements.**
This included demonstrating a clear understanding of how to conduct

hydrogeological and water balance peer reviews, and an understanding of the objectives and deliverables outlined in the RFP.

b. **The Company's background, qualifications and experience.**

This included demonstrating appropriate company experience and qualifications on projects of a similar nature, and appropriate company experience in utilizing the defined provincial and regional legislation and policies.

c. **The Consultant's proposed work team background, qualifications and experience.**

This included demonstrating appropriate experience in implementing water quality and quantity measures and appropriate experience in assessing how the proposed septic system will impact ground water on and off site.

d. **The Consultant's methodology/project management experience.**

This included demonstrating an appropriate project management approach, and clarity and appropriate quality control methods including adherence to a schedule and budget; and

e. **Pricing.**

This included the Consultant's proposed project upset limit which each candidate had to identify in their proposal. Each quote was then entered into a formula to find the score for this section of each proposal.

3.4 All required reference checks were completed successfully.

3.5 Based on the evaluations of the proposals and as noted in the RFP 592-2018, the Region may choose up to four of the highest scoring respondents for Contract award. The following four firms qualified for the pre-qualified peer review consultant roster for a period of four years, ending September 2022. The four firms are:

- Cole Engineering Group Ltd;
- Pottinger Gaherty Environmental Consultants Ltd;
- R.J. Burnside Associates Ltd; and
- WSP Canada Inc.

3.6 The peer review consultants will be used on a rotational basis in circumstances where a hydrogeological report or water balance study is submitted in support of a

privately serviced development application. The Contract includes a clause regarding conflicts of interest to allow the Region to move to the next Consultant on the roster, where a conflict exists.

- 3.7 This report has been prepared in consultation with the Regional Finance and Health Departments.

4. Financial Implications

- 4.1 The Planning and Economic Development Department completed an analysis of the total amount spent through the last RFP and found the amount was significantly lower than \$60,000 over the contract term. \$60,000 is the threshold for Council approval of a project and as such, this report is for information purposes.
- 4.2 The cost of a hydrological peer review is entirely borne by the applicant, at no cost to the Region of Durham.

5. Conclusion

- 5.1 Staff will continue to administer the hydrogeological peer review process in accordance with the Council adopted framework with the updated peer review roster.
- 5.2 A copy of this report will be forwarded to area municipalities, and Conservation Authorities within the Region of Durham.

Respectfully submitted,

Original signed by

Brian E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development



The Regional Municipality of Durham Report

To: Planning and Economic Development Committee
From: Commissioner of Planning and Economic Development
Report: [#2019-EDT-1](#)
Date: January 8, 2019

Subject:

Durham Region Competitiveness Study

Recommendation:

That the Planning and Economic Development Committee recommends:

That this report be received for information.

Report:

1. Background and Purpose

- 1.1 In an increasingly competitive regional and global economy, it is important to have an accurate understanding of the Region's relative competitive position within the Greater Golden Horseshoe (GGH) context. Targeted actions can then be taken to attract jobs, investment, development and growth. To properly gauge Durham's competitive position, the Region together with the Durham Economic Development Partnership (DEDP) retained Watson & Associates Economists Ltd., MDP Insight, and Cushman & Wakefield, to undertake a comprehensive Competitiveness Study.
- 1.2 The Study identifies regional, community, and site related factors that influence Durham's economic competitiveness. It assesses industrial and office market conditions and trends, market readiness, and Durham's relative competitiveness in key target sectors (i.e., agriculture and agri-business sector; health industries; digital media; energy, environment, and engineering; and advanced manufacturing).

The Study also provides a broad assessment of the Region's employment areas, analyzes cost competitiveness, and evaluates the feasibility of industrial and office development within the broader GGH.

- 1.3 The purpose of this report is to highlight the findings of the Study. A presentation will be provided by the lead consultant at the January 8, 2019 Planning and Economic Development Committee meeting.

2. Overview

Context

- 2.1 The Region competes with neighbouring and more distant municipalities to attract and retain business, and for new office / industrial construction. Having a strong understanding of Durham's current competitive position as well as its strengths and challenges will enable the development of key messaging. Deployment of this key messaging through a marketing and communications strategy to targeted investment audiences and stakeholders will more effectively advance job growth in Durham.

Employment and Development Trends Comparative Assessment

- 2.2 The Study found that from 2011 to 2016, Durham exhibited significantly stronger rates of employment growth relative to other municipalities in the GGH in the primary sectors (e.g., agriculture), construction, and transportation and warehousing. Over the same period however, sectors such manufacturing, wholesale and retail trade, information and cultural industries, and utilities saw slower rates of growth.
- 2.3 The following highlights Durham's industrial and office markets:
- a) Durham has approximately 30 million sq. ft. of industrial gross floor area, or 3% of the Greater Toronto and Hamilton Area (GTHA) total; compared to its proportional population of 9%;
 - b) Industrial net market rents in Durham average \$6.04 per sq. ft., marginally lower than the GTHA average;
 - c) Durham's share of the GTHA major office market is relatively small, representing 2% of its overall total gross floor area;
 - d) Between 2011 and 2017, Durham accounted for about 1% of the GTHA's industrial development. Over the same period, the industrial employment base (i.e., number of jobs) in Durham contracted by 1.4%, while other GTHA municipalities including Halton, Hamilton, York, and Peel experienced growth of between 3 and 8%. Peel accounted for nearly half (47%) of the GTHA industrial development over that period;
 - e) Between 2011 and 2017, over half of new major office development occurred in the City of Toronto, while 25% was in Peel, 12% in Halton, 11% in York

- and 1% in Durham;
- f) Between 2011 and 2016, office growth in Durham was 6.6%, comparable to Peel (6.8%) but lower than York (13.8%), Halton (11.4%), and Waterloo (16.0%);
 - g) Demand for office space in the GTHA in employment areas is increasingly single-tenant, and integrated with multi-purpose facilities (e.g., research and development, training centres, wholesale trade) in campus-type settings; and,
 - h) There are growing opportunities for office development in the GTHA within innovation districts in employment area that have direct synergies with knowledge-based clusters and educational infrastructure.

Durham's Competitiveness within the GGH Context

2.4 The Study compared Durham to the Regions of York, Peel, Halton, Niagara, Waterloo, the Cities of Hamilton and Peterborough, and the Counties of Northumberland and Peterborough. The City of Toronto was not included as a comparator. The Study made the following observations:

a. Labour force characteristics

- 64% of Durham's population aged 25 and older has a post-secondary degree, which is comparable to the survey average but lower than Halton (75%) and York (70%).

b. Transportation and distribution

- Durham's deep-sea Port of Oshawa is a competitive advantage, but Hamilton and Halton have the most well-rounded access to major markets in terms of airport access and overall business travel.

c. Development and costs

- Durham features some of the lowest employment land prices, utility costs, and industrial development charges of the surveyed GTHA municipalities;
- Durham has 730 ha (1,800 acres) of supply of vacant, serviced "shovel ready" employment land, however only 150 ha (370 acres) are "market/shovel ready" and over 530 ha (1,310 acres) are considered not for sale at this time, with no indication of when they might be for sale.

d. Business support environment

- Durham ranks 3rd with respect to business support environments, ranking highly in terms of its cultural asset offerings (i.e., performing arts venues) and number of recreation centres. However, Durham scored low on its restaurant offerings, particularly for fine-dining opportunities.

Industry Sector Competitiveness Profiles

2.5 Durham's competitive position was then assessed within the context of the five industry target sectors that were identified in the Durham Region Economic Development Strategy and Action Plan, 2017-2021.

a. Agriculture and Agri-Business Sector

- Durham ranks 2nd in competitiveness in the agri-business sector, behind Hamilton, as it offers the lowest wages of its comparators in the food processing sector, and has a strong local port network.

b. Health Industries

- Durham ranks 3rd in competitiveness in the health sector by having the 3rd largest labour force that can support pharmaceutical manufacturing, but with slightly higher development costs than Niagara or Peterborough, and on par with Hamilton.

c. Digital Media

- Durham ranks 4th in competitiveness in the digital media sector. It ranks 4th in terms of labour force and business base, and is home to more digital media businesses than Waterloo. Durham has lower associated operational costs than York, Peel, Waterloo and Halton, and has relatively lower costs of entry for digital media start-ups.

- d. EN3 (Energy, Environment, and Engineering)
 - Durham ranks 2nd in competitiveness in the EN3 sector primarily by way of producing approximately 30 per cent of Ontario's electricity. Durham also has one of the lower office development costs in the GTHA and the lowest commercial tax rates of its comparator municipalities. The Region is hindered, however, by being one of the farthest GTHA communities from a U.S. border crossing.
 - e. Advanced Manufacturing
 - Durham ranks 2nd for competitiveness in the advanced manufacturing sector due to significantly lower development and land costs for serviced vacant industrial/employment land. However, Durham ranks less favourably in terms of access to major markets (i.e., the U.S.) given Durham's location relative to border crossings and 400-series highways.
- 2.6 Overall, Durham is competitive in its five target sectors. Durham's strengths include relatively low industrial and office commercial lease rates, competitive property taxes for industrial and commercial office development, competitive development costs, affordable wages for start-up businesses, access to high-quality infrastructure, strong technical and college-level programming, an emerging presence of research and innovation assets, and a high quality of place.
- 2.7 Durham's competitive shortcomings include:
- a. A small share of the emerging skilled workforce (lower than Halton and York);
 - b. Limited availability of transportation and logistics services;
 - c. Longer import and export lead times due to distance from international border crossings;
 - d. Distance to Pearson airport and lack of alternative cargo opportunities on the east side of the GTHA; and
 - e. Average general logistics industry performance compared to York and Peel.

Employment Area Competitive Assessment

- 2.8 Durham's major employment areas were also assessed. The observations reveal that while the Region has a relatively large supply of designated vacant employment land, the market choice for serviced and shovel-ready employment land is more limited, particularly in northern Durham (except for the Scugog Industrial Park). However, Durham's supply of shovel-ready employment land is

expected to improve significantly over the medium term, with new employment areas becoming development-ready along the Highway 407 corridor.

Cost Competitiveness and Financial Feasibility Analysis

- 2.9 The Study examined cost competitiveness, economic viability, and investment potential of industrial and office development within Durham through a series of pro-forma financial analyses. Overall, the findings indicate that Durham's municipalities are cost competitive with surveyed comparators in the GTHA with respect to industrial and office development. However, Durham's municipalities are similar or less cost competitive than the GGH "Outer Ring" municipalities, most notably Brantford and Peterborough, in terms of industrial development.
- 2.10 With respect to market feasibility, most Durham municipalities are competitive in the industrial sector, while office development feasibility in Durham is generally unfavourable to developers due to relatively low market rents.

3. Conclusion and Next Steps

- 3.1 The Competitiveness Study identifies Durham Region's key competitiveness differentiators when compared to the GGH. These key differentiators include: low employment land prices and industrial development charges; an excellent business support environment comprising cultural asset offerings and recreation centres; and exceptional sector competitiveness particularly in Agri-Business, Health Science, EN3 and Manufacturing.
- 3.2 A cost-competitive business environment is critical to enabling business investment, expansion, and job growth. In this respect, Durham offers strong value and competitiveness. Notwithstanding, the Study identifies lower-than-average industrial and office construction rates, citing potential contributing barriers. In order to enable stronger growth in new construction and attract business investment and expansion within our highly competitive priority sectors, Durham will need to implement a domestic marketing and communications strategy to articulate the Region's competitiveness and value proposition among key GGH audiences.
- 3.3 The competitive attributes identified in the Study will be used to craft marketing messaging and be communicated to GGH Realtors, industrial developers, commercial and office developers, media, and stakeholders such as GGH chambers and boards of trade.

- 3.4 The competitiveness attributes within our key priority sectors will be marketed to targeted private sector audiences in the GGH to promote awareness and understanding, with the purpose of instigating consideration during business expansion or relocation decisions.
- 3.5 Key statistics regarding Durham's competitiveness in priority sectors will be used in the continuing development of marketing messaging and materials for foreign direct investment attraction.
- 3.6 Durham Region remains a competitive and attractive place to invest, and our value proposition can be enhanced and reinforced by the findings of this Study. Durham Region's domestic communications and marketing strategy will build awareness among key audiences that Durham is the right place for a bright future.
- 3.7 This report and the Durham Region Competitiveness Study has been forwarded to the area municipalities, all members of the Durham Economic Development Partnership and key stakeholders who participated in the Study.

4. Attachments

Attachment #1: Durham Region Competitiveness Study

Respectfully submitted,

Original signed by

Brian E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development



 **Watson
& Associates**
ECONOMISTS LTD.

Competitiveness Study

Region of Durham

December 14, 2018

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In association with:



Table of Contents

	Page
Executive Summary	i
1. Introduction	1
1.1 Terms of Reference	1
1.2 Context	1
2. G.G.H. and Durham Region Employment and Development Trends Comparative Assessment	6
2.1 Industry Clusters within the G.T.H.A. and Durham Region	6
2.2 Durham Region Competitive Share Analysis	8
2.3 Trends in Employment Growth in Industrial and Office-based Employment Sector	9
2.4 Industrial and Major Office Market within the G.T.H.A. and Durham Region	12
3. Durham Region Competitiveness within G.G.H. Context	22
3.1 Comparative Analysis	22
3.1.1 Labour Force Characteristics	23
3.1.2 Transportation and Distribution	25
3.1.3 Development and Costs	28
3.1.4 Business Support Environment	36
3.1.5 Quality of Place	37
3.2 Observations	39
4. Industry Sector Competitiveness Profiles	41



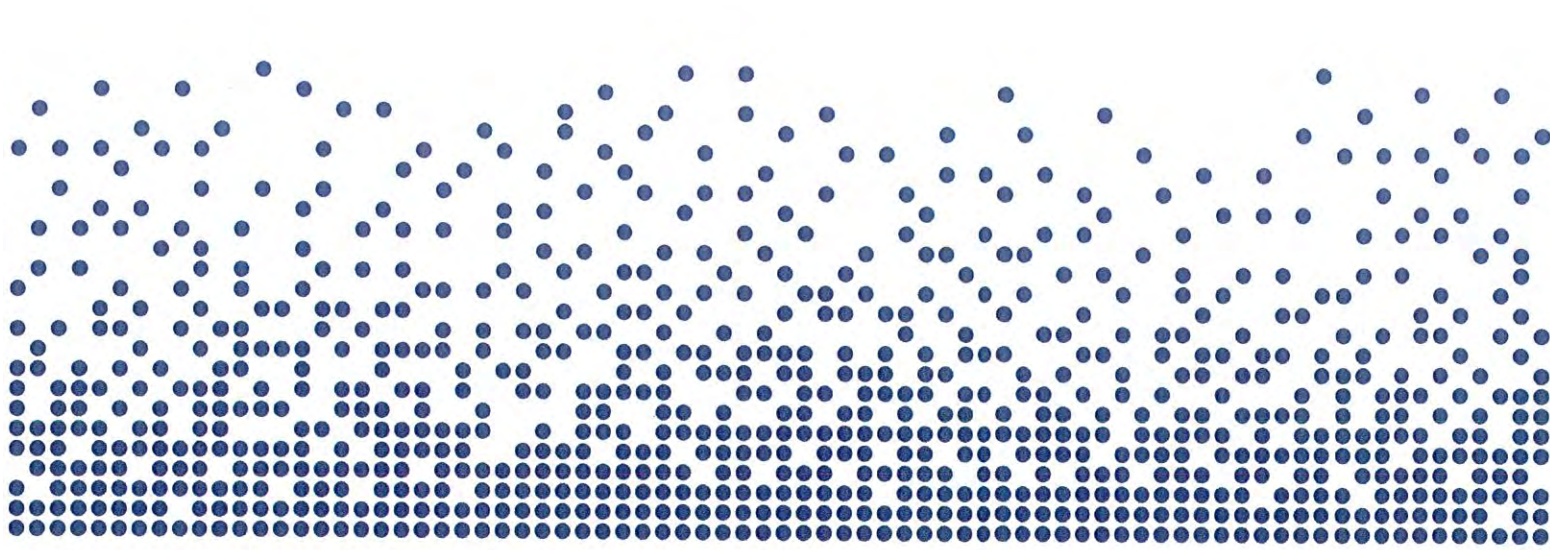
Table of Contents (Cont'd)

	Page
4.1 Industry Sector Profile Overview.....	42
4.2 Relative Importance of Competitiveness Factors by Industry Sector	44
4.3 Agriculture and Agri-Business Sector Industry Sector Competitiveness Profile	47
4.4 Health Industries Sector Industry Competitiveness Profile	55
4.5 Digital Media Industry Sector Competitiveness Profile.....	62
4.6 EN3 (Energy, Environment and Engineering) Industry Sector Competitiveness Profile	70
4.7 Advanced Manufacturing Industry Sector Competitiveness Profile.....	77
4.8 Competitiveness Observations	85
5. Durham Region's Employment Areas Competitive Assessment	88
5.1 Durham Region's Employment Areas Overview	88
5.2 Regional Comparative Analysis of Employment Areas	91
5.2.1 Key Durham Region Employment Areas.....	91
5.2.2 Comparator Employment Area Profiles.....	94
5.3 Observations.....	99
6. Detailed Cost Competitiveness and Financial Feasibility Analysis	101
6.1 Total Development Annualized Cost Framework.....	102
6.2 Development/Operating Cost Comparative Assessment.....	104
6.3 Market Feasibility Comparative Assessment	109
6.3.1 Residual Land Value Analysis Framework	109
6.3.2 Residual Land Value Analysis Comparative Assessment.....	110
6.4 Observations.....	114
7. Conclusions	116
Appendix A Competitive Factors Supplemental Data.....	A-1
Appendix B Industry Sector NAICS Codes.....	B-1
Appendix C Industry-Specific Prototypical Developments	C-1



Table of Contents (Cont'd)

	Page
Appendix D Assessment of Development Cost/Annualized Cost	D-1
Appendix E Residual Land Value Analysis – Rental Revenue Scenario	E-1



Executive Summary



Executive Summary

Context

Watson & Associates Economists Ltd. (Watson), in association with MDB Insight (MDB) and Cushman & Wakefield, were retained by the Region of Durham and the Durham Economic Development Partnership (DEDP) to undertake a Competitiveness Study.

The intent of this study is to provide the Region of Durham and the DEDP with a comprehensive assessment of current industrial and office market conditions and trends, market readiness and competitiveness, and relative competitiveness in key target industry sectors. The study also provides an assessment of the Region's Employment Areas and presents a cost competitiveness and feasibility analysis of industrial and office development within the broader Greater Golden Horseshoe (G.G.H.) context.

Municipalities compete directly for business attraction with other communities in their respective regional market areas and beyond. This is particularly true for “export-based” sectors in the industrial and knowledge-based sectors which are largely accommodated in Employment Areas. Municipalities have a role to play in promoting economic growth by ensuring that they are “business investment ready” and “competitive.” In an increasingly competitive macro environment, municipalities need to better position themselves to capitalize on the economic potential and opportunities that exist within the “new economy.”

In the highly competitive regional market, there are a number of comparable municipalities with which Durham Region and its local municipalities compete for “export-based” business attraction and retention. Durham Region's most immediate competition within the industrial sector includes Peel Region, York Region, Halton Region, and the City of Hamilton. Durham Region also competes in the industrial sector against communities in the G.G.H. “Outer Ring,” such as the Cities of Peterborough and Guelph, Counties of Peterborough and Northumberland, and Regions of Waterloo and Niagara. Within the office market, Durham Region competes most directly with municipalities within the Greater Toronto and Hamilton Area (G.T.H.A.). This includes municipalities in Peel Region (i.e. Mississauga and Brampton), South York Region (i.e. Vaughan, Richmond Hill and Markham), South Halton Region (i.e. Oakville and Burlington), the City of Hamilton and Waterloo Region.



Having a comprehensive understanding of Durham's competitive position compared to other communities in the surrounding market area is a fundamental aspect of economic development. Municipal competitiveness can be assessed through a range of macro- and micro-level factors. This includes regional, community and site level factors specific to the municipality and those over which Durham Region has some influence or control.

Regional Employment and Development Growth Trends

Ultimately, the aggregate indicators of the G.T.H.A.'s and Durham Region's economic performance are determined in large measure by the competitiveness of their industry clusters. This study included an assessment of recent employment growth by sector, and industrial and major office development trends in the G.T.H.A. within a Durham context.

Over the 2011 to 2016 period, Durham's employment base expanded by 4.0%, a moderately lower rate of growth than the G.T.H.A, which experienced a 6.4% expansion over the same period. Over this period, industrial employment growth in Durham contracted marginally. In comparison, services-producing sectors in Durham including office, retail and institutional employment experienced moderate growth over the same time period.

A number of industry sectors in Durham has exhibited relatively strong employment growth over the 2011 to 2016 period. These include primary sectors (e.g. agriculture), construction, transportation and warehousing, professional, scientific and technical services, and accommodation and food services. Over the same period, Durham Region has seen a significantly slower rate of employment growth within manufacturing, real estate and rental and leasing, wholesale trade, retail trade, information and cultural industries, and utilities, when compared to the rest of the G.G.H.

The G.T.H.A.'s industrial and office commercial development markets are significant, with the third and sixth largest inventories, respectively, in North America. Durham's share of the G.T.H.A. industrial building space inventory is approximately 3% while its share of the regional office space market is 2%.

Industrial building development in the G.T.H.A. has averaged 4.7 million sq.ft. of G.F.A. annually over the past decade. Industrial development has been largely oriented to



large-scale industrial buildings housing wholesale trade, transportation/warehousing and multi-tenant industrial condominiums, accommodating a range of industrial and non-industrial uses. Over the 2011 to 2017 period, Durham Region has accommodated 1% of the G.T.H.A.'s industrial development activity. Coinciding with the increase in industrial development activity since 2010, vacancy rates have gradually declined to relatively low levels in both Durham and the G.T.H.A., indicative of a market which is facing supply challenges.

Over the past decade, major office development activity in the G.T.H.A. has averaged 1.9 million sq.ft. per year. Over the 2011 to 2017 period, approximately 1% of new major office development in the G.T.H.A. was accommodated in Durham Region.

Historically, the vast majority of suburban office development has been accommodated within Employment Areas; however, market prospects for conventional standalone suburban office development within Employment Areas is gradually diminishing, as demand shifts to more urban environments, such as downtown Toronto. Demand for office space within Employment Areas is increasingly single-tenant and integrated with multi-purpose facilities (e.g. R&D, training centres, wholesale trade) often in campus-type settings. Further, there are growing opportunities for office development within innovation districts located on employment lands that have direct synergies with knowledge-based clusters and educational infrastructure.

Durham Region Competitiveness within the G.G.H. Context

There are a number of broad comparative factors that companies in most economic sectors will look at when considering location decisions and evaluating the competitiveness of a location. These factors include the following:

- Labour force;
- Local industry;
- Transportation and distribution;
- Development and costs;
- Business support environment; and
- Quality of place.



Based on the comparison of the surveyed upper/single-tier municipalities in the G.G.H., a number of observations can be drawn with respect to Durham Region's competitive position.

Durham Region has a relatively high concentration of working-age population and has a highly skilled labour force that is well suited for knowledge-based sectors. The Region also offers a relatively high quality of life which is an increasingly important attribute for both employers and employees. Further, the Region ranks favourably with respect to business support.

The Region offers competitive serviced employment land costs and development charge rates which makes it attractive for new industrial and office development. Durham Region also has a relatively large supply of designated and shovel-ready employment land compared to other upper/single-tier municipalities in the G.T.H.A.

While Durham Region is centrally located in the G.G.H., the Region's access to markets in Central Canada and the northeastern United States, and its access to a range of transportation and distribution networks, is generally less favourable than other G.T.H.A municipalities and G.G.H. municipalities located to the west and south. Durham Region ranks in the middle with respect to non-residential property tax rates and utilities' costs, which heavily influences the operating cost environment for businesses.

Industry Sector Competitiveness

At both the regional and local levels, location requirements of industry can vary considerably depending on the nature of the industry sector. The relative importance of these attributes is evolving in response to structural changes in the macro-economy which is impacting industrial and office development patterns within the G.G.H. and more broadly in Ontario. While the cost of development and access/proximity to major infrastructure have historically weighed heavily on business location decision making, the relative weighting of factors is beginning to shift. Quality factors are becoming increasingly important in business location decision making. This is particularly apparent in knowledge-based sectors.

With respect to industrial development, industrial activity is increasingly centred on production processes that are time-sensitive, driven by just-in-time manufacturing, e-commerce and an increasingly globalized environment. As a result, the location and site requirements within the industrial sector continue to evolve. For the Goods



Movement sector, a major growth sector, the growing inter-dependence of companies and their suppliers continues to increase the importance of this integrated business process through various modes of transportation. In turn, this drives the need for more, bigger and better-located warehouses and logistics facilities. As such, large flexible tracts of land are required for large warehouses, storage yards and future expansion. Locational requirements are typically focused on direct access to distribution channels. This means that access to transportation infrastructure is critical, including access to 400-series highways and intermodal facilities. Given that these facilities tend to be land-extensive, competitive land costs are also an important consideration in site selection.

With an increasing emphasis on the “knowledge-based” and/or “creative class” economy, office development is becoming an increasingly dominant built form. Within the office sector, office development patterns are evolving in response to needs of office tenants. Office tenants are increasingly looking for access/proximity to high-order transit and services/amenities, as well as environments that feature mixed-use development and offer opportunities for live/work. While development and operating costs influence location decisions for office development, they are typically of less importance than some of the other factors identified above.

Durham Region’s relative competitive position against comparator G.G.H. upper/single-tier municipalities within the context of five key industry targets sectors was examined, including:

- Agri-business (food processing);
- Health Industries;
- IT (Digital Media);
- EN3 (Energy, Environment and Engineering); and
- Advanced Manufacturing.

The following summarizes Durham Region’s performance on a range of indicators aimed at establishing the competitiveness of the Region for investment in its target sectors.



Agri-business (Food Processing)

Durham ranks second of the seven municipalities assessed, in terms of competitiveness in the agri-business sector, behind the City of Hamilton. Durham Region's competitive advantages include development and operating costs for prototypical food processing facilities and its business support environment. These factors had Durham Region score in the top three of the municipalities surveyed.

The competitive disadvantages identified were Durham Region's proximity to global markets, in particular trucking distances to major U.S. markets. Comparatively, Durham Region is located approximately 50 to 100 km further to these markets than Halton Region (ranks first for agri-business opportunities based on market proximity) and York Region (ranks first for its industry strength). York and Halton Regions are also in closer proximity to the Ontario Food Terminal and G.G.H. intermodal terminals.

One advantage unique to Durham Region is its proximity to two marine ports, including the Port of Oshawa. Only the Ports of Hamilton and Toronto handle more agricultural products than the Port of Oshawa.

Health Industries

In terms of competitiveness in the health industries sector, Durham Region ranks third of the seven municipalities surveyed, behind Hamilton and Niagara, and slightly ahead of Peel and York Regions. Durham Region's competitive advantage is its business support environment, in particular, the research labs and post-secondary programs that are revolutionizing the industry. The Pharmaceutical Chemistry specialization program at the University of Ontario Institute of Technology (U.O.I.T.) is one of the top-ranking programs in the country.

The competitive disadvantage was Durham Region's existing business base of health industries. Unlike Peel Region and York Region that have a well-established pharmaceutical manufacturing cluster, only 8% of all health industries are in the pharmaceutical manufacturing industry. Peel Region and York Region both have over 30% of all health industries in those fields.



IT (Digital Media)

Durham Region ranks 4th of the seven comparator municipalities in terms of competitiveness in the digital media sector. Durham's competitive advantages lie in its cost-competitive labour, talent pool emerging from key institutions such as U.O.I.T., affordable desk and office space, and a network of co-working spaces.

The analysis indicates that the competitiveness difference between the top five ranking municipalities is relatively small. This suggests that, overall, the G.T.H.A. offers a competitive environment for digital media growth. The only slight competitive disadvantage Durham Region has is in its industry strength. Both York Region and Peel Region have over triple the business size and existing labour pool.

EN3 (Energy, Environment and Engineering)

Durham Region ranked second of the seven comparator municipalities in terms of competitiveness in the EN3 sector. Durham Region's competitive advantages lie in its labour force pool, strength of its local industry cluster and development and related costs. Durham Region's post-secondary schools also provide several programs related to the sector.

Advanced Manufacturing

Durham Region ranked 2nd of the seven comparator municipalities with respect to competitiveness in the advanced manufacturing sector. Durham Region's competitive advantages lie in its local supply chain, the cost-competitiveness of its development, property taxes, and the strength of its business environment from available incentives and accelerator funds to local research centres, such as the Automotive Centre of Excellence.

Durham Region's competitive disadvantage is its proximity to major U.S. markets, comparatively; it is one of the furthest away from a U.S. border crossing (although the deep-water port in Oshawa provides a slight advantage). Durham Region's cluster of advanced manufacturing industries is predominantly located in Pickering, Whitby and Oshawa, close to Toronto and is in direct competition with Markham, the third largest manufacturing cluster in the G.T.A., second to Vaughan and Mississauga.



While the initial competitiveness analysis completed for each sector is an important exercise and necessary first step to identifying the best options for economic improvement, there is a need to dig deeper to determine Durham Region's competitive advantages and disadvantages for future investment attraction and development within the Region.

Competitive advantages and disadvantages are different than strengths and weaknesses. Strengths and weaknesses may be common to Durham Region as well as its competitors, while competitive advantages and disadvantages will differentiate the Region from its competitors. Durham Region has a better chance of continued success if it can target its economic development activities to promote the advantages that are valued by its target sectors. Competitive advantages form the centre for Durham Region's unique value proposition – the “wow” factor that will motivate potential investors to take a closer look.

Competitive disadvantages are those elements that the community needs to help fix (or become less of an obstacle) if they are critical to investment attraction and marketing efforts in specific target sectors. Competitive disadvantages can be ignored as long as there is agreement not to try and pursue investment that will find those qualities a challenge. In the case of Durham Region's competitiveness, competitive disadvantages will be prioritized given their relative influence over location decisions in each of the target sectors.

Competitive advantages are rooted in the strengths of a particular region. Though those strengths positively influence investment in an area, they may be shared by other communities and, as such, do little to truly differentiate the community for the purposes of investment attraction. The competitiveness profiles outlined several areas where Durham Region has strength as a potential investment location:

- Relatively low industrial and office commercial lease rates;
- Competitive property taxes for industrial and commercial office development;
- Competitive development costs;
- Affordable wages for start-up businesses;
- Access to high quality infrastructure;
- Strong technical and college level programming, aligned with local labour market;
- Emerging presence of research and innovation assets; and
- High quality of place.



As with competitive advantages, competitive disadvantages are rooted in the weaknesses of a region. Some weaknesses, if shared among multiple competitors may not prominently influence investment. It is the competitive disadvantages – those areas where the characteristics of the weakness in the community differentiate it from other areas – that potentially have the most influence over investment decisions. The competitiveness profiles outlined identified several weaknesses:

- Small share of emerging skilled workforce (i.e. 25 to 34 years old);
- Limited availability of transportation and logistics services (outside of the Port of Oshawa, Durham Region does not have an intermodal terminal or airport);
- Longer import and export lead times than comparators; and
- Average general logistics industry performance when compared to York Region and Peel Region.

Overall, comparatively, Durham Region was ranked as one of the more competitive regions in the G.G.H. when it comes to investment in the five sectors. Its competitive advantages are well suited for increased investment in the agricultural/agri-food sector (food processing), digital media sector, and the EN3 industry. Its competitive disadvantages do limit its investment opportunities in health industries and advanced manufacturing when compared to other G.T.H.A. locations that tend to have larger established clusters and supply chains in these sectors.

Durham Region's Employment Areas Competitive Assessment

Durham Region's Employment Areas are an integral part of the Region's economic development potential. The Region's designated employment lands accommodate a broad range of industrial and office uses and, to a more limited extent, commercial and institutional uses, including employment-supportive uses. A major factor in the future competitiveness of Durham Region's economic base is dependent, in part, on the attributes of its Employment Areas. Key Employment Areas within the broader regional market are explored herein to better understand Durham Region's relative competitive position with respect to employment land development.

A major factor in the future competitiveness of Durham Region's economic base is the supply and quality of vacant lands to accommodate industrial and office development within its Employment Areas. Key observations include the following:



- Of the Region's vacant employment land inventory, 29% (923 net ha) has Regional servicing while the remaining 71% (2,223 net ha) is unserviced;
- Many older Employment Areas in South Durham along the Highway 401 corridor are approaching buildout, including Pickering West, Ajax West, Whitby South, Oshawa Southwest and Oshawa Southeast;
- The largest supply of serviced vacant designated employment lands within South Durham is located in Ajax East (largely within the Caruthers Creek Business Park) and in Clarington (Bowmanville East and Clarington Energy and Technology Park);
- Within North Durham, the supply of existing vacant employment lands is limited, with the exception of the Scugog Industrial Park in Scugog;
- Overall, Durham Region has a sufficient supply of short-term serviced vacant employment lands, but there is a limited shovel-ready supply in Oshawa, Whitby and Pickering; and
- The Region's planned Employment Areas, concentrated along the Highway 407 corridor, offer significant longer-term development opportunities. This includes the Pickering Innovation Corridor in Seaton (600 net ha), West/North Whitby (590 net ha) and North Oshawa (345 net ha).

All Employment Areas in South Durham are in proximity to 400-series highways and are located along the Highway 401 and 407 corridors or along Highway 412. Employment Areas in North Durham are located along provincial highways (e.g. Highway 12) or along major regional roadways.

Durham Region's Employment Areas generally provide very good or excellent vehicular circulation and access, and they are well-designed for heavy truck traffic. This includes major arterial roadways that bound or intersect the parks with arterial roads connected to major highways without impeding on residential land uses.

Durham offers a number of active Employment Areas that are highly marketable; however, the market choice of shovel-ready employment lands that are "market ready" is somewhat limited. Durham does offer significant employment lands development opportunities to accommodate growth over the medium and longer term. This includes strong market potential along the Highway 407 corridor in Pickering, Whitby and Oshawa.



Within the broader G.G.H. market, there are a number of key existing and planned Employment Areas that are highly marketable which will pose direct competition for Durham over the coming decades.

Detailed Cost Competitiveness and Financial Feasibility Analysis

One factor influencing business decisions on where to locate industrial and office development is the cost competitiveness (both capital investment and operating costs) of the development in relation to the market demand and potential return on investment. Further, it is critical that the revenue generation potential of a development be assessed with corresponding capital and operating costs through a cost benefit analysis, using a cost-based approach, to evaluate the economic attractiveness of the development.

The cost competitiveness, economic viability and investment potential of industrial and office development within Durham Region was examined through a series of pro-forma financial analyses. This is presented through the assessment of the feasibility of constructing and operating various prototypical industrial and office developments within each of Durham Region's local municipalities in relation to select comparator municipalities within the G.G.H.

For the purposes of this exercise, four general industrial developments, including a 75,000 sq.ft., 150,000 sq.ft., 300,000 sq.ft., and 750,000 sq.ft. industrial building, were examined. The analysis also considered two major office developments (a 150,000 sq.ft. Class A conventional multi-storey office building and a 150,000 sq.ft. flex office building). The prototypical buildings reflect suburban-type developments with surface parking accommodated on employment lands.

The cost competitiveness of the select prototypical development was completed through the compilation of total development cost across the comparator municipalities and illustrates the impact of operating cost components (reflecting property taxes) on total costs on an annualized basis. Utilizing the capital and operating costs identified above, along with potential revenue streams determined by current average net market rents (per sq.ft.), a residual land value analysis was also prepared.

The following provides a summary of annualized costs and feasibility analysis for the prototypical non-residential developments within Durham Region's local municipalities and the surveyed comparator municipalities.



Industrial Cost of Development

- Annualized cost of industrial development (expressed in dollars per sq.ft.) is highest for a 75,000 sq.ft. building, ranging between \$8.66 and \$17.75 per sq.ft., and lowest for a 750,000 sq.ft. building, ranging between \$7.15 and \$14.83 per sq.ft.;
- Cost of development (on a square foot basis) for industrial development generally declines as building size increases, due to a lower construction cost per sq.ft. and higher land utilization (higher coverage); and
- Durham Region municipalities are cost competitive for industrial development, with costs notably lower than West G.T.H.A. municipalities in Peel and Halton Regions, and the North G.T.H.A. communities of Vaughan, Richmond Hill, Markham, Aurora and Newmarket. Durham Region municipalities, however, are similar or less cost competitive than the G.G.H. “Outer Ring” municipalities, most notably Brantford and Peterborough, which have the lowest cost of industrial development of the municipalities surveyed.

Office Cost of Development

- Annualized cost of office development (expressed in dollars per sq.ft.) for a 150,000 sq.ft. major office building ranges between \$17.72 and \$26.40 per sq.ft.;
- In comparison, the annualized cost for a 150,000 sq.ft. flex office building ranges between \$15.17 and \$30.47 per sq.ft., notably lower than for the Class A office buildings due to lower construction costs;
- Of the municipalities surveyed, Richmond Hill has the highest construction annualized cost of development for office buildings, followed by Mississauga, Brampton, Oakville, Markham, Vaughan, Hamilton and Burlington, which is largely due to the high cost of land; and
- Durham Region municipalities offer among the lowest annualized cost for office development of the municipalities surveyed, comparable to the City of Waterloo.

Industrial Development Feasibility Analysis

- Despite the relative favourable industrial market rents, some challenges remain with respect to the financial feasibility of industrial development in the G.T.H.A. and broader G.G.H.;



- Development of smaller industrial buildings (i.e. less than 150,000 sq.ft.) is generally not financially viable throughout the markets surveyed, due to higher costs of construction on a square foot basis;
- The feasibility of larger industrial developments is more favourable; and
- The feasibility for larger industrial development is strongest in G.G.H. “Outer Ring” municipalities, as well as northern York Region, North Durham (Scugog, Uxbridge), Whitby, Oshawa, Clarington and Pickering; comparatively, the feasibility of industrial development in Ajax and Brock Township is less favourable.

Office Development Feasibility Analysis

- Relative to industrial development, office development is generally more financially viable in core G.T.H.A. markets than industrial development;
- In most markets surveyed, the financial feasibility of office development under a rental revenue scenario is highly favourable;
- Market conditions for office development are most favourable in Waterloo, Burlington, Oakville, Markham, Mississauga, Vaughan, and Brampton; and
- The feasibility for major office development in Oshawa, Whitby, Pickering, Ajax and Hamilton is relatively unfavourable due to comparatively low market rents.

Overall, Durham Region municipalities are cost competitive with comparator municipalities surveyed in the G.T.H.A. with respect to industrial and office development. Having said that, many G.G.H. “Outer Ring” communities are more cost competitive for industrial development than Durham Region.

With respect to market feasibility, most Durham municipalities, including Whitby, Oshawa, Clarington, Scugog and Uxbridge, are competitive in the industrial sector, while office development feasibility is generally unfavourable in Durham due to relatively low market rents.

Conclusions

In many respects, Durham Region’s long-term economic growth potential is largely tied to the success of the G.T.H.A. and G.G.H. as a whole. As such, a key driver of Durham Region’s future economic potential is its geographic location within the G.G.H. – one of the fastest growing City/Regions in North America. While the G.G.H. is a highly



competitive region and the broader long-term employment and development outlook is positive, Durham Region competes directly for industrial and office development with other locations in the G.T.H.A. and G.G.H. “Outer Ring” municipalities. Municipal competitiveness is typically driven by a broad range of hard and soft factors at the regional, local and site levels, which can strongly influence business location decisions both for new development and expansion.

A factor influencing business decisions on where to locate is the cost competitiveness (both capital investment and operating costs) of the development in relation to market demand and potential return on investment. Industrial and office development and operating costs in Durham Region municipalities are cost competitive relative to comparator G.T.H.A. municipalities. Notwithstanding this, it is important to also consider that Durham Region’s relative cost competitiveness is less favourable when compared to other surrounding municipalities throughout the G.G.H. “Outer Ring.” With respect to market feasibility, industrial and office developments in Durham Region are generally less favourable than many other surveyed municipalities in the broader market, due to lower net market rents.

The competitiveness of Durham Region’s export-based economy is also partly determined by the availability and quality of its developable employment lands. While the Region has a relatively large supply of designated vacant employment lands, the supply of serviced and shovel-ready employment lands is more limited. The Region’s supply of shovel-ready employment lands is expected to improve significantly over the medium term, with new Employment Areas becoming development ready along the Highway 407 corridor, which will greatly benefit the competitive position of South Durham. North Durham, however, has more limited opportunities for employment lands development.

The supply of vacant employment lands across the G.T.H.A is steadily diminishing for a number of the larger, more mature urban municipalities in this area, which continues to generate outward development pressures across the G.G.H, including Durham Region. Over time, Durham Region’s competitive position with respect to market choice of employment lands is expected to continue to improve.

Access to transportation infrastructure is also a major factor in shaping non-residential development patterns and business location decisions across the G.G.H. The extension of Highway 407 has greatly improved accessibility within Durham Region; as



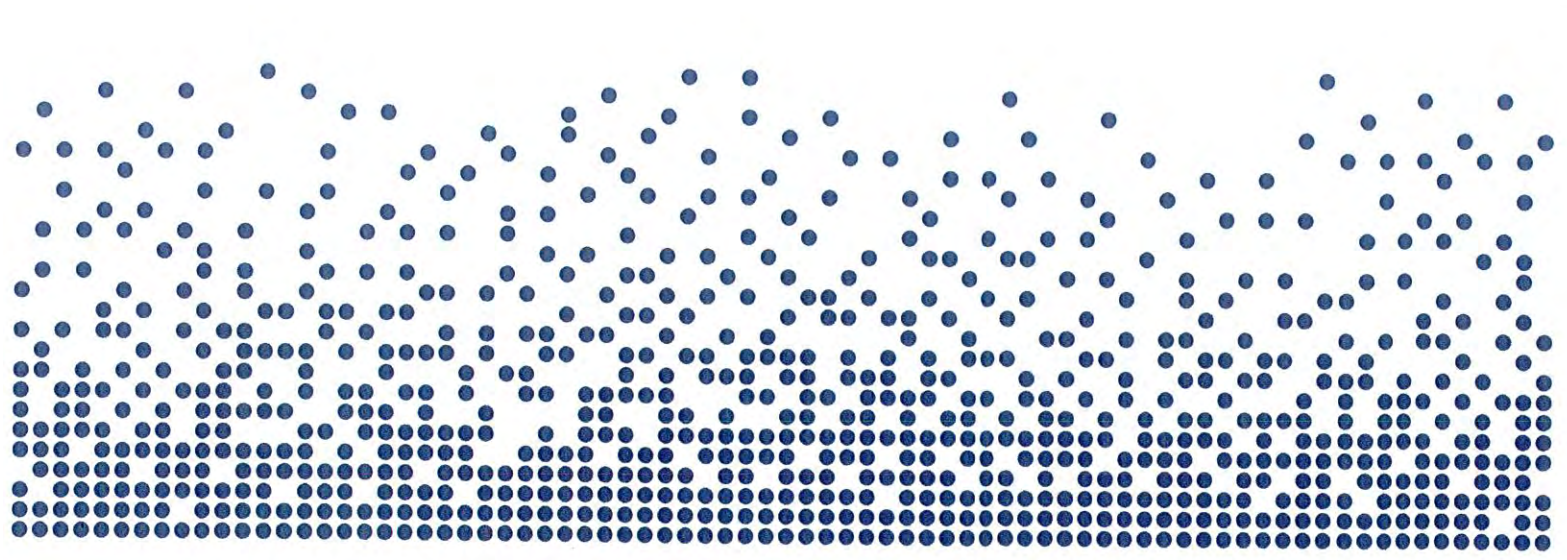
well, it provides connectivity to Employment Areas situated along this corridor. The completion of the Highway 407 extension to Highway 35/115 and the Highway 418 connector between Highways 401 and 407 will enhanced transportation network connections and the Region's competitiveness further.

While Durham Region has strong access to 400-series highways, water ports, a labour force pool and post-secondary institutions, the Region's location is less favourable with respect to proximity to intermodal facilities, major airports and key major markets in northeast North America, than other G.T.H.A. municipalities.

Quality of life is a factor influencing the residential location decisions of individuals and their families. It is also a factor considered by companies in relocation decisions. Durham Region has a reputation for being a vibrant, growing, affordable, low-crime location in which to live in Ontario, with access to a wide range of recreational opportunities. Talent attraction and retention will be a key issue in Durham Region's competitiveness going forward. A factor in the Region's economic growth, therefore, will be the extent to which it can develop "quality of life" enhancements to appeal to mobile young talent, while not detracting from its attractiveness for other population segments.

Durham Region ranks as one of the more competitive upper/single-tier municipalities in the G.G.H. with respect to investment in the five industry sectors profiled – agri-business, health industries, digital media, EN3 and advanced manufacturing. Its competitive advantages are well suited for increased investment in the agricultural/agri-food sector (food processing), digital media sector, and the EN3 industry. Its competitive disadvantages do limit its investment opportunities in health industries and advanced manufacturing when compared to other G.T.H.A. municipalities that tend to have larger established clusters and supply chains in these sectors.

Based on the analysis contained herein, the Region of Durham is well-positioned to capture a significant share of G.G.H.-wide industrial and office development growth potential, including that specific to the five target industry sectors profiled herein. It is important to acknowledge, however, that from a provincial standpoint Durham Region will compete not only with G.T.H.A. municipalities but increasingly with the surrounding G.G.H. "Outer-Ring." In order to maintain and enhance its economic competitiveness, the Region must continue to be innovative and pro-active in its efforts to attract and market future development.



Chapter 1

Introduction



1. Introduction

1.1 Terms of Reference

Watson & Associates Economists Ltd. (Watson), in association with MDB Insight (MDB) and Cushman & Wakefield, were retained by the Region of Durham and the Durham Economic Development Partnership (DEDP) to undertake a Competitiveness Study.

Market competitiveness is typically driven by a broad range of factors which can strongly influence business location decisions, both for new development and expansion. Recognizing the evolving nature of the economy and planning requirements for today's industries, this study explores Durham Region's municipal development competitiveness within the context of a broad range of regional, community and site level factors. This includes access to transportation infrastructure, access to labour and employment markets, supply and market choice of employment lands development opportunities, cost structure of the business environment, and quality of life factors.

The intent of this study is to provide the Region of Durham and the DEDP with a comprehensive assessment of current industrial and office market conditions and trends, market readiness and competitiveness, and relative competitiveness in key target industry sectors. The study also provides an assessment of the Region's Employment Areas and presents a cost competitiveness and feasibility analysis of industrial and office development within the broader Greater Golden Horseshoe (G.G.H.) context.

1.2 Context

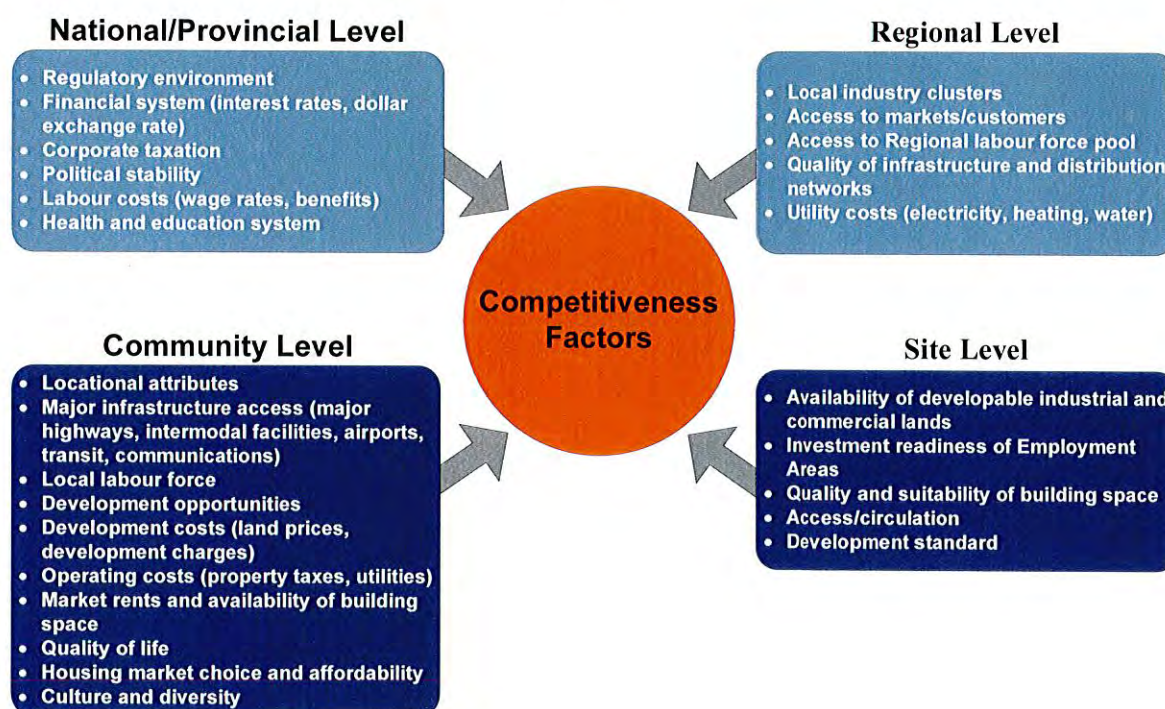
Municipalities compete directly for business attraction with other communities in their respective regional market areas and beyond. This is particularly true for "export-based" sectors in the industrial and knowledge-based sectors which are largely accommodated in Employment Areas. Municipalities have a role to play in promoting economic growth by ensuring that they are "business investment ready" and "competitive." In an increasingly competitive macro environment, municipalities need to better position themselves to capitalize on the economic potential and opportunities that exist within the "new economy."



Having a comprehensive understanding of a municipality's competitive position compared to other communities in the surrounding market area is a fundamental aspect of economic development. One of the challenges in addressing municipal competitiveness is the range of factors to consider, as illustrated in Figure 1. This includes a range of “hard” and “soft” factors. Many competitiveness factors are national/provincial in nature on which Durham Region has limited influence. This includes such factors as the regulatory environment, dollar exchange rate, corporate taxation, and labour costs.

There are, however, a range of regional, community and site level factors specific to the municipality and ones over which Durham Region has some influence or control.

Figure 1: Municipal Competitiveness Factors



Regional Level Factors

Durham Region is part of the Greater Toronto and Hamilton Area (G.T.H.A.) which is located within one of the fastest growing Cities/Regions in North America, known as the Greater Golden Horseshoe (G.G.H.). The G.G.H. represents an economic powerhouse in Ontario and the center of a large portion of economic activity in Canada.



With a robust economy and diverse mix of export-based employment clusters, the G.G.H. is highly attractive on an international and national level to new businesses and investors as a world class “City/Region.” In turn, this continues to support strong G.G.H. population growth levels largely driven by international and inter-provincial net migration. Notwithstanding the success of the G.G.H., global competition for business development and investments is becoming increasingly intense in today’s “new economy.”

In many respects Durham Region’s long-term economic growth potential is largely tied to the success of the Greater Golden Horseshoe (G.G.H.) as a whole. Collectively, the population for the entire G.G.H. is forecast to increase from 9.0 million in 2011 to 13.5 million in 2041 while the employment base is forecast to increase from 4.5 million in 2011 to 6.3 million in 2041.¹ This represents a population increase of 4.4 million people (148,000 annually) and an employment increase of 1.8 million (60,000 annually). This is a substantial increase in population and employment relative to other North American metropolitan regions of comparable population.

The strength of the broader regional G.G.H. economy and growth potential presents a tremendous opportunity for Durham Region’s economy.

Community and Site Level Factors

Durham Region is located within proximity to a number of large urban/suburban and rural municipalities with which it competes directly for business attraction and investment. All of these municipalities generally offer regional attributes which largely appeal to prospective international and local firms. Hence, community level factors can strongly influence business location decisions, both for new development and expansion. Market competitiveness is typically influenced by the following broad community level criteria:

- “Hard” factors – development costs (e.g. land costs, construction costs) and operating costs (e.g. property taxes, utilities’ costs); and

¹ Based on 2011 population and employment data derived from Greater Golden Horseshoe Growth Forecasts to 2041 – Technical Report (November 2012) Addendum by Hemson Consulting Ltd.; 2041 population and employment forecasts are based on the Growth Plan for the Greater Golden Horseshoe, 2017.



- “Soft” factors – proximity and access to major infrastructure; labour force; access to post-secondary institutions; availability of developable land, quality of life.

In addition to the location factors discussed above, location preferences at the Employment Area level or local site level are largely influenced by:

- the market choice of developable land in terms of site size, configuration, access, zoning, surrounding land uses and future expansion potential;
- the quality and suitability of the vacant building space inventory; and
- the character of the Employment Area and compatibility with surrounding land uses.

The industrial and office market is strongly influenced by these selection factors – investors typically have a broad geography to select from. This is examined in detail within the Durham context herein.



Chapter 2

G.G.H. and Durham Region Employment and Development Trends Comparative Assessment



2. G.G.H. and Durham Region Employment and Development Trends Comparative Assessment

2.1 Industry Clusters within the G.T.H.A. and Durham Region

Ultimately, the aggregate indicators of the G.T.H.A.'s and Durham Region's economic performance are determined in large measure by the competitiveness of their industry clusters. A cluster is a set of inter-linked private sector industries and public-sector institutions, whose final production reaches markets outside the local market. An expanding export base is a key component to the economic prosperity of the local economy and surrounding area because exports bring money into the local market to be circulated among local-serving enterprises and their employees.

The G.T.H.A. economy is comprised of a highly diverse mix of industry clusters related to manufacturing, technology and services. This diversity is a key strength of the G.T.H.A. economy, with most of the top traded industry clusters throughout North America having a strong presence in this region.

The manufacturing sector represents a dominant G.T.H.A. industry cluster but has demonstrated limited growth since 2010. The transportation and warehousing sector is also a dominant G.T.H.A. employment cluster, with a strong concentration in municipalities with proximity to the Toronto Pearson International Airport (T.P.I.A.) and intermodal facilities.

With respect to the service sector, the G.T.H.A. has a number of established industry clusters in knowledge-based sectors, including finance and insurance, professional, scientific and technical services, education and health care and social assistance. While other emerging knowledge-based sectors, including information and cultural industries, real estate and rental leasing, are smaller in scale, they are highly concentrated and have a strong employment growth outlook. The retail and accommodation and food sectors are also large, heavily concentrated and steadily growing across the G.T.H.A.



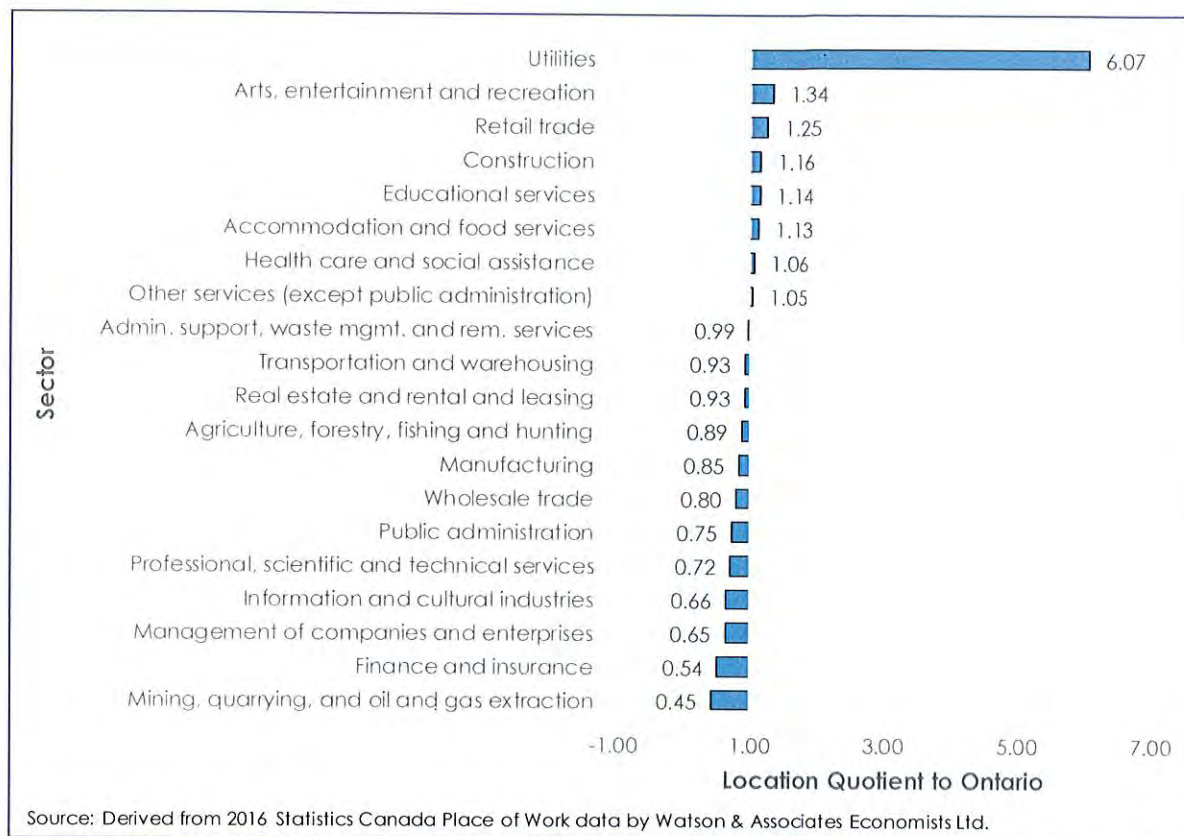
Location Quotients (L.Q.s)¹ are a commonly used tool in regional economic analysis to identify and assess the relative strength of industry clusters. Figure 2 illustrates the strength of employment sectors in Durham Region relative to the Province using L.Q.s.² As shown, Durham Region's economy is largely oriented towards utilities, arts, entertainment and recreation, retail trade, construction, educational services, and accommodation and food services. Durham Region has a relatively lower concentration of employment in professional, scientific and technical services, information and cultural industries, finance and insurance, and mining, quarrying, and oil and gas extraction.

¹ An L.Q. of 1.0 identifies that the concentration of employment by sector is consistent with the broader employment base average. An L.Q. of greater than 1.0 identifies that the concentration of employment in a given employment sector is higher than the broader base average, which suggests a relatively high concentration of a particular employment sector or "cluster."

² The L.Q. is calculated using the following formula: (Region Industry Employment / Region Total Employment) / (Provincial Industry Employment / Provincial Total Employment).



Figure 2: Durham Region, Location Quotient to Ontario



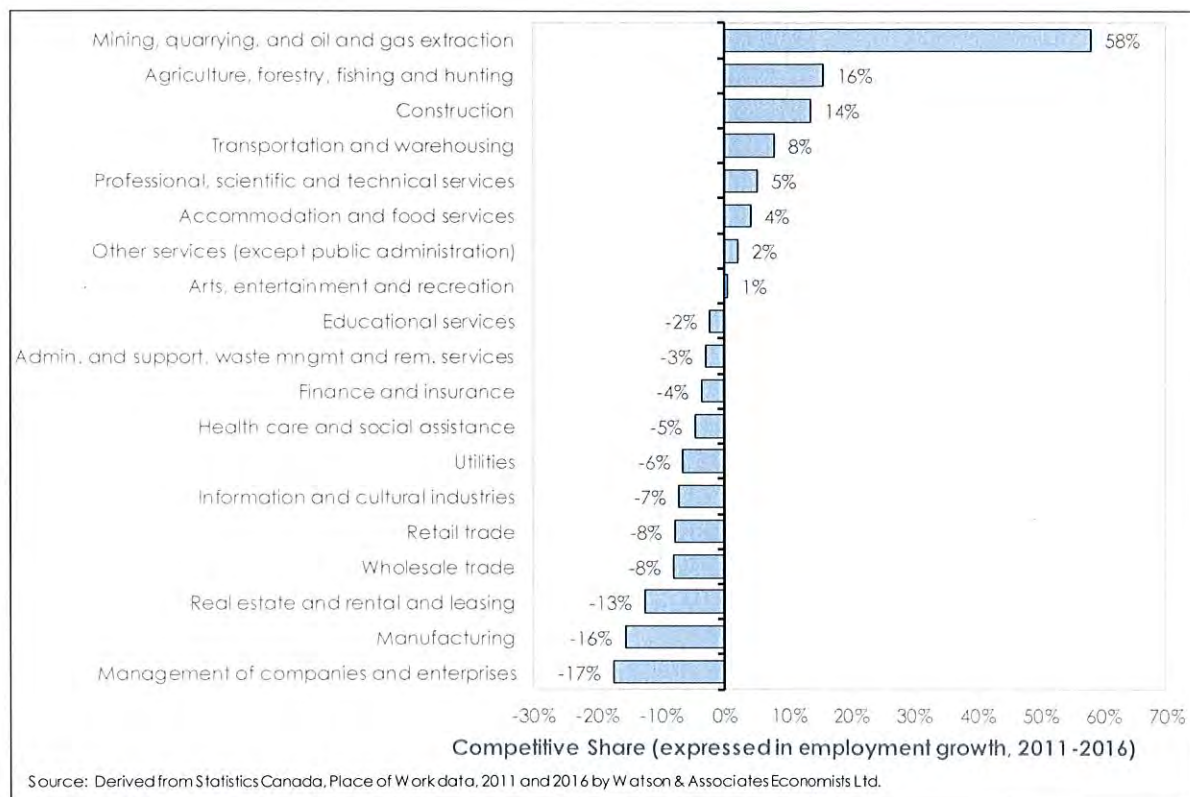
2.2 Durham Region Competitive Share Analysis

To assess the relative strength of business growth within Durham Region, the employment growth rate by industry sector over the 2011 to 2016 period in the Region, relative to the G.G.H. average, is examined in Figure 3. This comparative share analysis helps identify how much faster or slower (expressed in percentage points) employment is growing in Durham Region relative to the G.G.H. as a whole, by sector. Industry sectors that generate a strong positive value suggest areas where Durham Region potentially has a competitive advantage relative to the surrounding market with respect to business growth. On the other hand, industry sectors that exhibit a negative value suggest areas where Durham Region may be at a competitive disadvantage to its neighbouring municipalities.



As illustrated in Figure 3, a number of sectors have exhibited a significantly stronger rate of employment growth relative to the surrounding municipalities in the G.G.H. These include primary sectors (e.g. agriculture), construction, transportation and warehousing, professional, scientific and technical services, and accommodation and food services. Over the same period, Durham Region has seen a significantly slower rate of employment growth within manufacturing, real estate and rental and leasing, wholesale trade, retail trade, information and cultural industries, and utilities, when compared to the rest of the G.G.H.

Figure 3: Durham Region Competitive Share Growth Analysis Relative to the Greater Golden Horseshoe, 2011 to 2016



2.3 Trends in Employment Growth in Industrial and Office-based Employment Sector

Employment growth rates throughout Durham are largely influenced by the broader G.G.H. economy. Over the 2011-2016 period, Durham's employment base expanded



by 4.0%, a moderately lower rate of growth than the G.T.H.A, which experienced a 6.4% expansion over the same period.¹

Figure 4 summarizes employment growth rates by major sector² over the 2006 to 2011 and 2011 to 2016 periods. As illustrated, the industrial sector within Durham Region experienced a steady decline in employment over the 2006 to 2011 period, largely due to contraction in the manufacturing sector. While industrial employment growth remained negative over the 2011 to 2016 period, the contraction was more limited suggesting that the manufacturing sector is stabilizing. In comparison, services-producing sectors including office, retail and institutional employment experienced moderate growth over the same time period.

Figure 4: Durham Region Employment Growth by Major Sector, 2006 to 2016

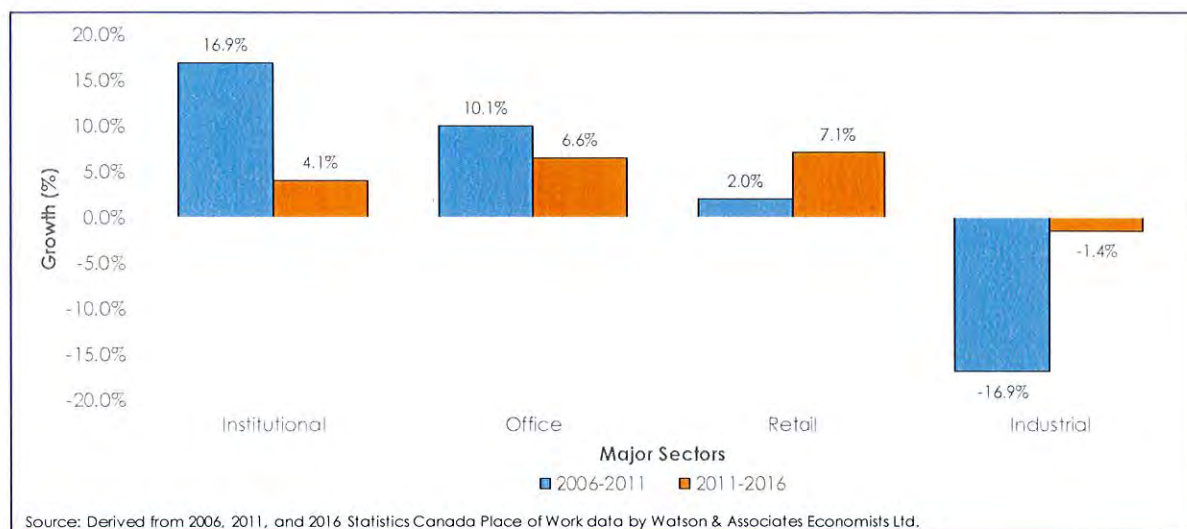


Figure 5 and Figure 6 illustrate industrial and office-based employment growth, respectively, within Durham Region over the 2011 to 2016 period, in comparison to select upper/single tier municipalities within the G.G.H. As illustrated, Durham Region's industrial employment base contracted by 1.4% over the period, whereas other G.T.H.A. municipalities, including Halton, Hamilton, York and Peel, experienced

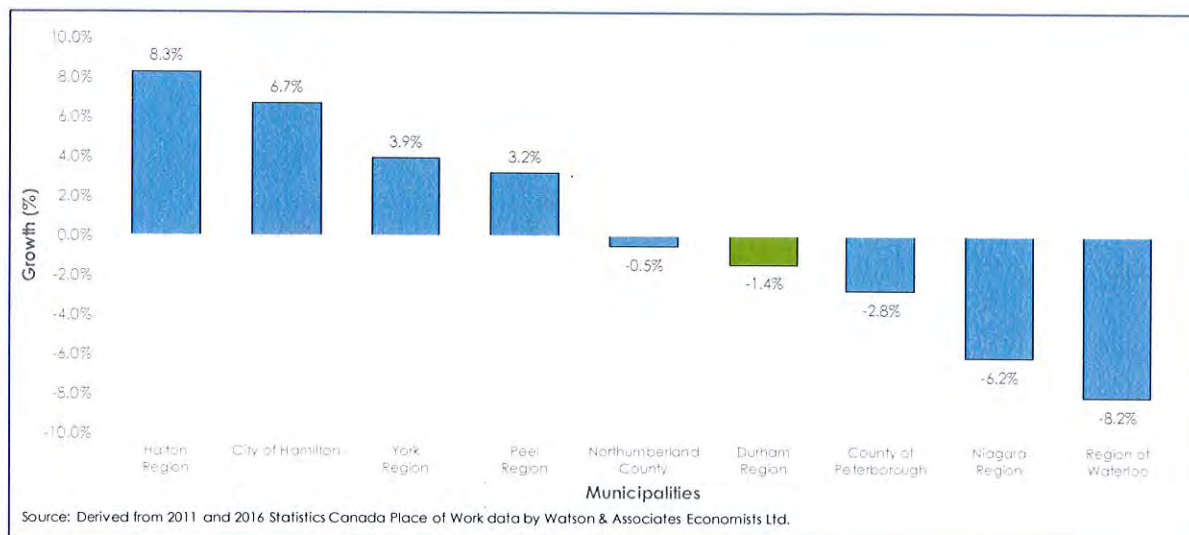
¹ Based on 2011 and 2016 Census Place of Work employment data.

² Major sectors defined as follows: Industrial – NAICS 22-41, 48-49 and 50% of employment within NAICS 56; Office – NAICS 51-56 and 25% of employment within NAICS 56; Retail – NAICS 44-45, 71-81 and 25% of employment within NAICS 56; Institutional – NAICS 61,62 and 91.



relatively strong employment growth ranging between 3 and 8%. In comparison, the industrial employment base in Waterloo Region, Niagara Region, Peterborough¹ and Northumberland contracted by 8.2%, 6.2%, 2.8% and 0.5%, respectively, over the same period. With respect to office employment, Durham Region experienced relatively strong employment growth of 6.6% over the 2011 to 2016 period, comparable to Peel Region (6.8%) but lower than York Region (13.8%), Halton Region (11.4%) and Waterloo Region (16.0%). During the same period, office employment within Peterborough and Northumberland contracted by 2.4% and 20.9%, respectively.

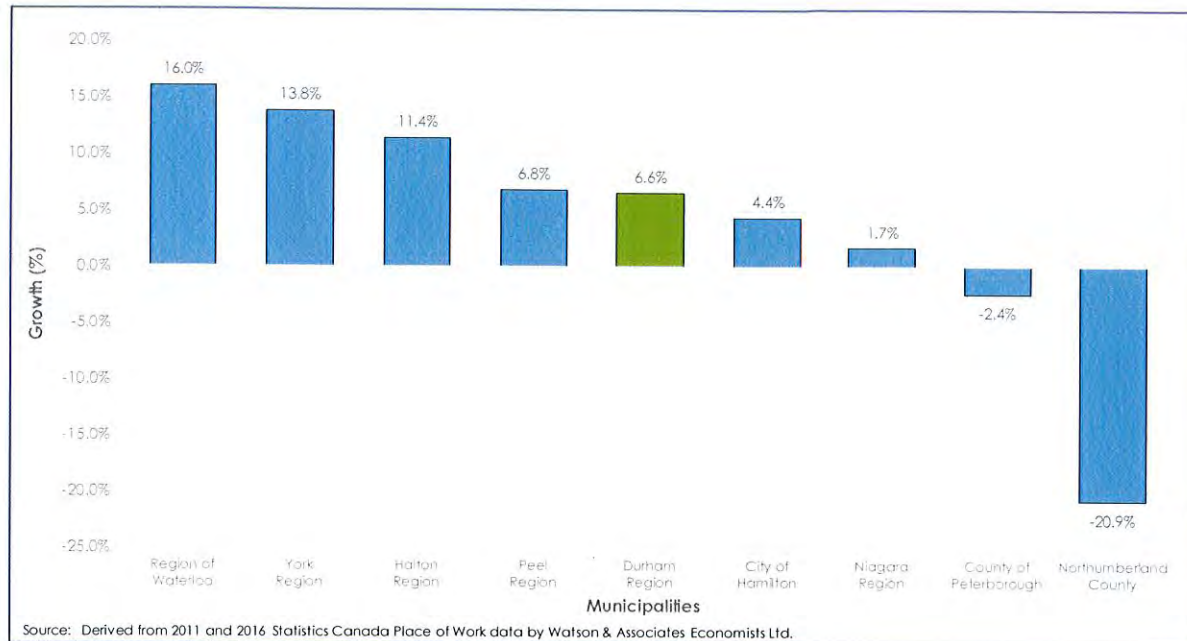
Figure 5: Industrial Employment Growth by Select G.G.H. Upper/Single Tier Municipality, 2011 to 2016



¹ Analysis reflects both City of Peterborough and Peterborough County.



Figure 6: Office-based Employment Growth by Select G.G.H. Upper/Single Tier Municipality, 2011 to 2016



2.4 Industrial and Major Office Market within the G.T.H.A. and Durham Region

The G.T.H.A.'s industrial and office commercial development markets are significant, with the third and sixth largest inventories, respectively, in North America.¹ The following provides commentary on the characteristics of the market and recent development trends by geographic area.

Industrial Market

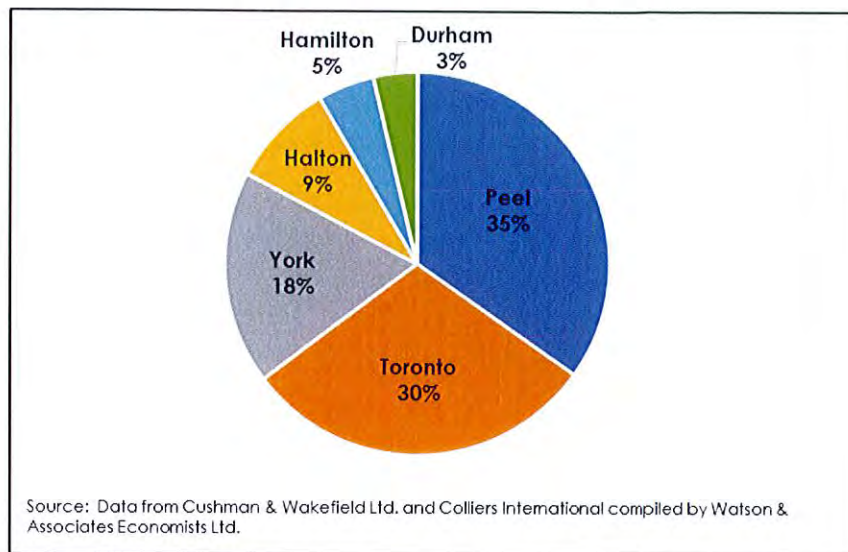
The industrial market in the G.T.H.A. is comprised of 812 million sq.ft. of industrial space, as expressed in gross floor area (G.F.A.), with nearly two-thirds located in Peel Region and the City of Toronto, as illustrated in Figure 7. Comparatively, Durham

¹ Source: Derived from Cushman & Wakefield Toronto Industrial Market Beat and US Industrial Market Beat Snapshot, Q3 2017 and Cushman & Wakefield Toronto Office Market Beat and US Office Market Beat Snapshot, Q3 2017 by Watson & Associates Economists Ltd.



Region has an existing industrial base of 30 million sq.ft. (G.F.A.), which comprises 3% of the G.T.H.A.'s total market, as illustrated in Figure 7.

Figure 7: Share of G.T.H.A. Industrial G.F.A. Inventory by Upper/Single Tier Municipality



With respect to industrial building development, the G.T.H.A. has averaged 4.7 million sq.ft. of G.F.A. annually over the 2008 to 2017 period (refer to Figure 8). The G.T.H.A. experienced significant growth in industrial development in 2008; however, with the onset of the 2008/2009 global economic recession, development activity dropped sharply in 2009 and 2010. Since bottoming out in 2010, industrial development activity has been steadily rebounding, with 2017 activity totalling 4.8 million sq.ft. Recent industrial development activity, however, remains below pre-recession levels.

Over the past five years, industrial development has been largely oriented to large-scale industrial buildings housing wholesale trade, transportation/warehousing and multi-tenant industrial condominiums, accommodating a range of industrial and non-industrial uses.



Figure 8: Industrial Development within the G.T.H.A. (000s G.F.A.), 2008 to 2017



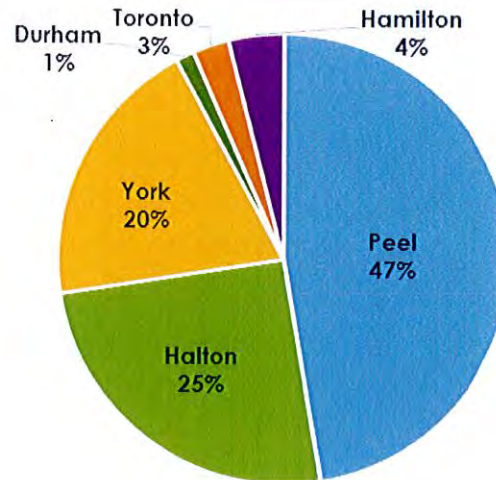
Source: Data from Cushman & Wakefield compiled by Watson & Associates Economists Ltd.

Over the 2011 to 2017 period, Peel Region accommodated nearly half (47%) the G.T.H.A.'s industrial development, as illustrated in Figure 9. In comparison, Halton Region accounted for 25%, York Region 20%, City of Toronto 3%, Durham Region 1% and the City of Hamilton 4%. The majority of recent industrial development in the G.T.H.A. has been focused largely along the Highway 401 corridor in Mississauga, Brampton and Milton, and in the Highway 400/407 area of Vaughan.

The West and North G.T.H.A. has historically been highly marketable for industrial development due to access to 400 series highways and intermodal facilities as well as greenfield development opportunities.



Figure 9: G.T.H.A. Industrial Development by Geographic Area, 2011 to 2017



Source: Data from Cushman & Wakefield compiled by Watson & Associates Economists Ltd.

Coinciding with the increase in industrial development activity since 2010, vacancy rates have gradually declined to relatively low levels and net market rents have risen, albeit at a marginal rate. The industrial availability rate in the G.T.A. and Durham Region is currently 1.7% and 2.2%, respectively.¹ This is indicative of a market which is facing supply challenges.

A key variable in understanding the relative strength of the industrial and office markets is the net market rents for industrial and office space, typically expressed on a per square foot of gross lease area on an annual lease basis and referred to as “net market rent.”²

Figure 10 summarizes the average market rents for industrial space in the G.T.H.A. by upper/single tier municipality. As shown, industrial net market rents in Durham Region average \$6.04 per sq.ft., marginally lower than the G.T.H.A. average. Industrial market rents are highest in Peel Region, followed by York Region and Halton Region. Lower market rents benefit existing and prospective tenants by offering a more cost

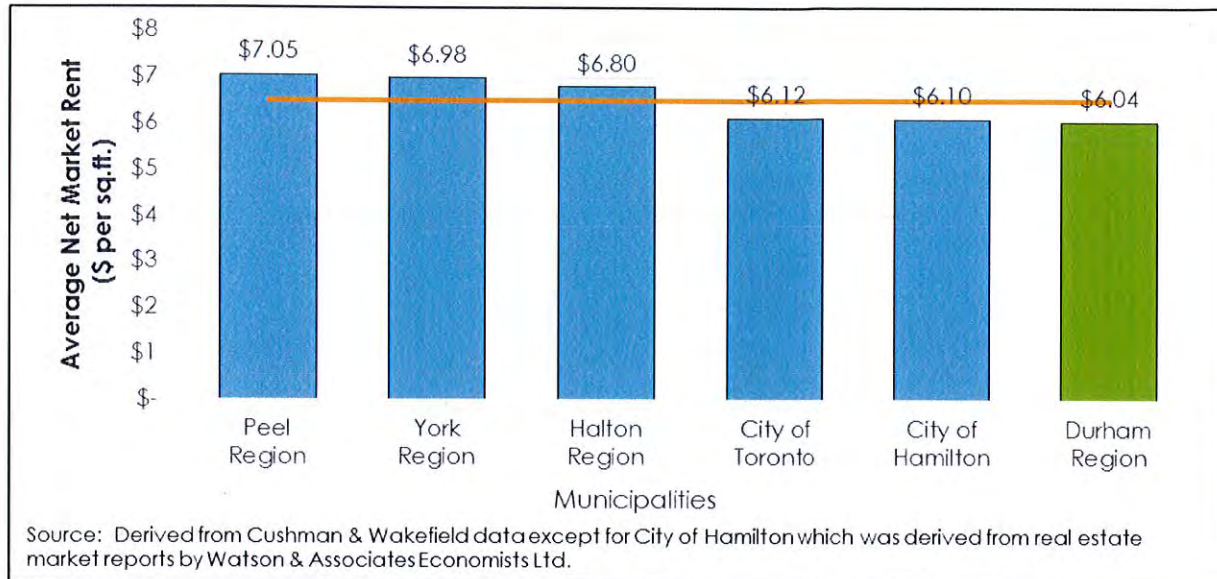
¹ Cushman and Wakefield, Greater Toronto Area Industrial Market Beat Q4 2018.

² Net market rent is exclusive of additional charges to the property (e.g. property taxes, insurance, utilities and maintenance).



competitive business operating environment with respect to occupied industrial building space.

Figure 10: G.T.H.A. Average Industrial Net Market Rents (per sq.ft.)



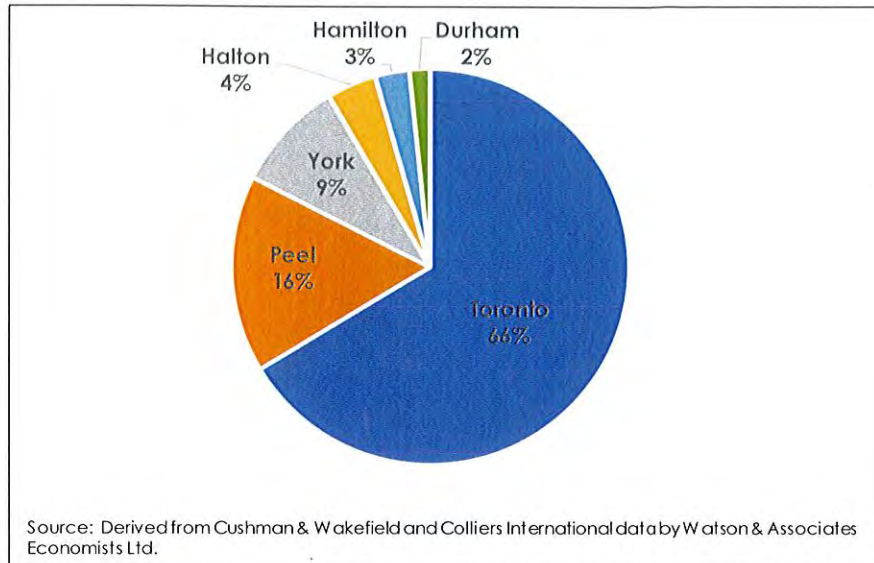
Major Office Market

With respect to the office market, the G.T.H.A. contains 183 million sq.ft. of office space.¹ Of this total, nearly two-thirds (66%) is located within the City of Toronto, with the majority located in the downtown core, as illustrated in Figure 11. Outside the City of Toronto, major office clusters are located in the 905 area, including York Region (Highways 404 and 407 in Markham and Richmond Hill, and the Highway 400 Corridor in Vaughan), Peel Region (Mississauga Airport Corporate Centre, City Centre and Meadowvale), and Halton Region (Q.E.W. Corridor in Burlington and Oakville). Durham Region's share of the G.T.H.A. major office market is relatively small, representing 2% of the building G.F.A.

¹ Source: Derived from Cushman & Wakefield 2013 to 2017 data, except data for the City of Hamilton which was derived from Colliers International Oakville-Burlington-Hamilton Commercial Real Estate Update Q4 2017.



Figure 11: Share of G.T.H.A. Major Office G.F.A. Inventory by Upper/Single Tier Municipality

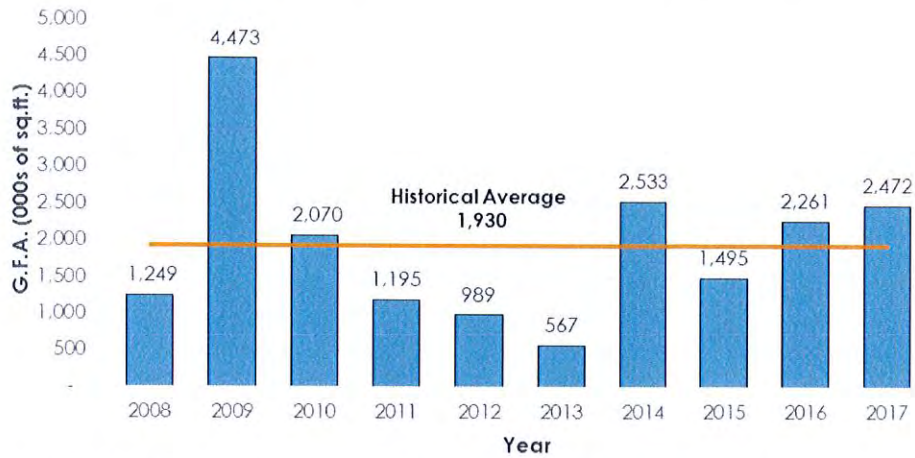


Over the 2008 to 2017 period, major office development activity in the G.T.H.A. has averaged 1.9 million sq.ft. per year¹ (refer to Figure 12). Major office development has exhibited relatively strong growth throughout the past decade. In 2017, office development activity totalled 2.5 million sq.ft., moderately higher than the historical 10-year annual average.

¹ Based on building completions market data from Cushman & Wakefield. Excludes City of Hamilton for which data was unavailable.



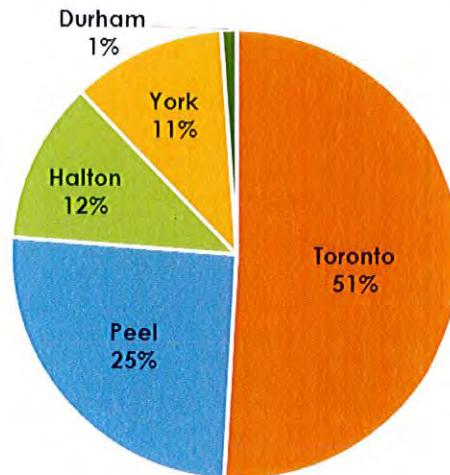
Figure 12: Major Office Development within the G.T.A. (G.F.A.), 2008 to 2017



Source: Data from Cushman & Wakefield compiled by Watson & Associates Economists Ltd.

Over the 2011 to 2017 period, over half of new major office development was accommodated within the City of Toronto, as illustrated in Figure 13. This is compared to 25% within Peel Region, 12% within Halton Region, 11% in York Region and 1% in Durham Region.

Figure 13: Greater Toronto Area Major Office Development, 2011 to 2017



Source: Data from Cushman & Wakefield compiled by Watson & Associates Economists Ltd.



Major office development over the past decade has been concentrated within the Toronto downtown core as well as in Vaughan, Markham, Mississauga along the Highway 401 Corridor, and the Q.E.W. corridor in Oakville. Over this period, office development activity in the G.T.H.A. has shifted increasingly to downtown Toronto at the expense of suburban locations. Office tenants are increasingly looking for locations that offer access to high-order transit and services/amenities and are in proximity to the skilled labour, most notably the Millennial generation (Generation Y).

Historically, the vast majority of suburban office development has been accommodated within Employment Areas; however, market prospects for conventional standalone suburban office development within Employment Areas is gradually diminishing, as demand shifts to more urban environments. Demand for office space within Employment Areas is increasingly single-tenant and integrated with multi-purpose facilities (e.g. R&D, training centres, wholesale trade) often in campus-type settings. Further, there are growing opportunities for office development within innovation districts located on employment lands which have direct synergies with knowledge-based clusters and educational infrastructure.

The major office availability rate in the G.T.H.A., excluding Hamilton, averages 6.5%.¹ Vacancy rates for major office space have decreased significantly since the 2008/2009 economic downturn. However, this has largely been attributed to downtown Toronto where availability rates are relatively low (2.3%), while rates in suburban locations, including the 905 area, remain relatively high, averaging 10.7%.²

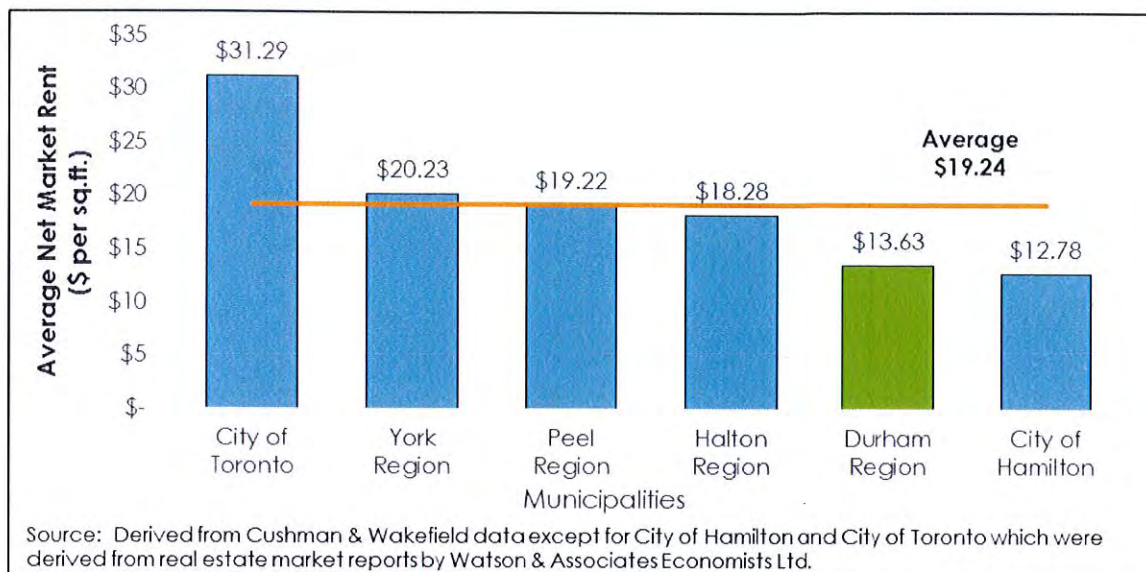
Figure 14 summarizes the average market rents for major office space in the G.T.H.A. by upper/single tier municipality. As illustrated, office net market rents in Durham Region are the lowest in the G.T.H.A, averaging \$13.63 per sq.ft. This is compared to York, Peel and Halton Regions, where rents range between \$18.28 and \$20.23 per sq.ft. Lower market rents benefit existing and prospective tenants by offering a more cost competitive business operating environment with respect to occupied office building space.

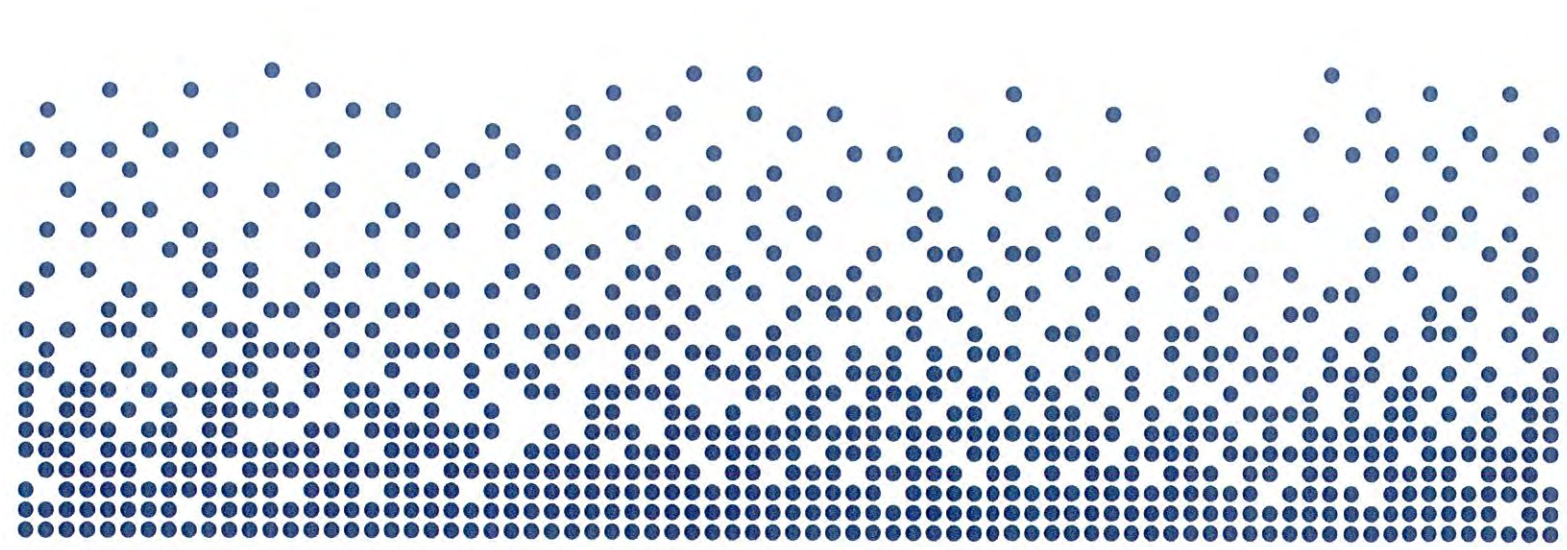
¹ Cushman & Wakefield Greater Toronto Area Office Market Beat Q2 2018.

² Ibid.



Figure 14: G.T.H.A. Average Major Office Net Market Rents (per sq.ft.)





Chapter 3

Durham Region

Competitiveness within G.G.H.

Context



3. Durham Region Competitiveness within G.G.H. Context

In the highly competitive regional market, there are a number of comparable municipalities with which Durham Region and its local municipalities compete for “export-based” business attraction and retention. Durham Region’s most immediate competition within the industrial sector includes Peel Region, York Region, Halton Region, and the City of Hamilton. Durham Region also competes in the industrial sector against communities in the G.G.H. “Outer Ring,” such as the Cities of Peterborough and Guelph, Counties of Peterborough and Northumberland, and Regions of Waterloo and Niagara. Within the office market, Durham Region competes most directly with municipalities within the G.T.H.A. This includes municipalities in Peel Region (i.e. Mississauga and Brampton), South York Region (i.e. Vaughan, Richmond Hill and Markham), South Halton Region (i.e. Oakville and Burlington), the City of Hamilton and Waterloo Region.

3.1 Comparative Analysis

There are a number of broad comparative factors that companies in most economic sectors will look at when considering location decisions and evaluating the competitiveness of a location. The Local Economies in Transition initiative completed by the Economic Developers Council of Ontario (EDCO) and a range of private-sector partners in 2008, outlines some of these key factors that influence decision making, as follows:

- **Labour force**, including population characteristics, employment/unemployment rates, availability of skilled and unskilled labour, and labour management relations;
- **Local industry**, including largest employers, recent projects and new companies, presence of suppliers and supply chain connections, and existing corporate research base;
- **Transportation and distribution**, including proximity to current/future markets, proximity to suppliers, proximity to major infrastructure (road, rail, air, water), and third-party trucking/logistics availability and capacity;
- **Development and costs**, including local/regional/provincial/federal tax rates, including the availability and cost of electricity, natural gas, water/sewer, and



telecommunications services, including industrial/commercial building availability and cost, and serviced industrial/commercial land availability and cost;

- **Business support environment**, including the availability of and connections to business financing, provincial/local incentives, and international resources, as well as the presence of local chambers of commerce and business associations, and presence of post-secondary programs and research capacity, and local employment and training services; and
- **Quality of place**, including the availability of healthcare, recreation and culture, and housing, as well as positive external perceptions.

These factors are explored herein, within the Durham Region and broader G.G.H. context, at an upper/single-tier municipal level with supplemental data provided in Appendix A. More detailed sector-specific assessments and a cost of development competitiveness analysis are presented in Chapters 4 and 6, respectively.

3.1.1 Labour Force Characteristics

The availability of a local skilled labour force is an increasingly important location factor in the “new economy.” Having a labour force that meets the needs and demands of current and future business is essential to the competitiveness of a community or region in attracting industry and job creators. When the labour force does not meet the demands of business and industry, it becomes difficult for a business to either continue operations at present capacity or expand to meet new opportunities.

Having an understanding of the composition and characteristics of a community's labour force is necessary in determining competitiveness. Competitiveness in labour force and employment characteristics is typically assessed based on both demographic and economic indicators, which are meant to provide insight into the existing ability of the labour force to meet demand, and the emerging trends in terms of growth and skills that will influence competitiveness on a longer-term basis.

Figure 15 summarizes the proportion of the population that is of working age (20 to 64 years of age) by select upper/single-tier municipality in the G.G.H. Comparatively, Durham Region has a relatively high proportion of population which is of working age (61% of total population), similar to York Region, Waterloo Region and Peel Region. In contrast, the proportion of population that is of working age is notably lower in Niagara Region, Peterborough and Northumberland County.



Figure 15: Working Age Population within Select G.G.H. Upper/Single-Tier Municipalities

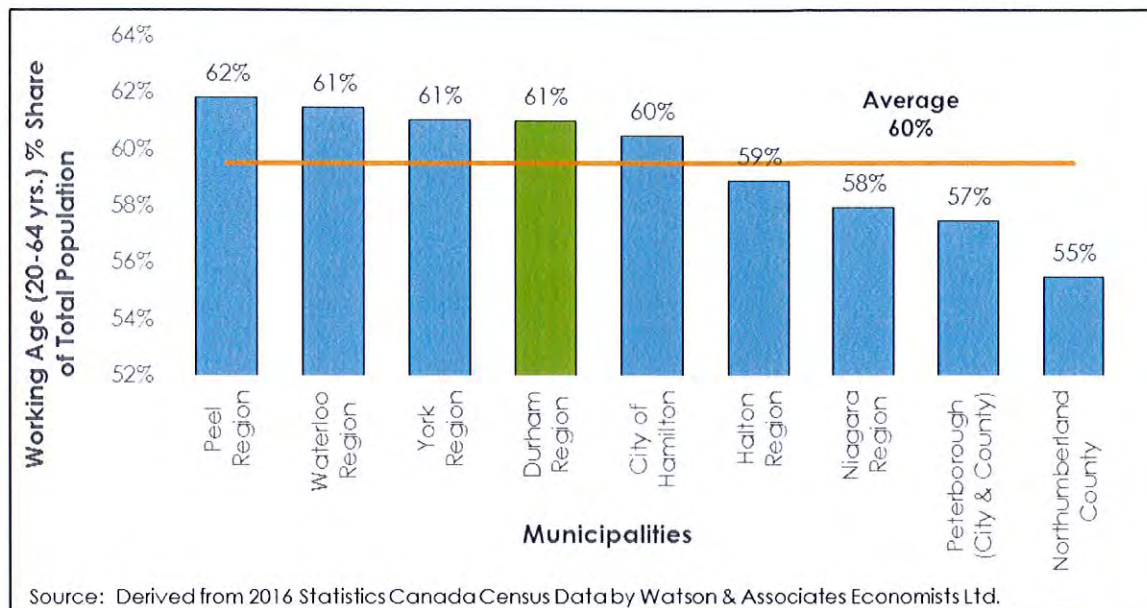
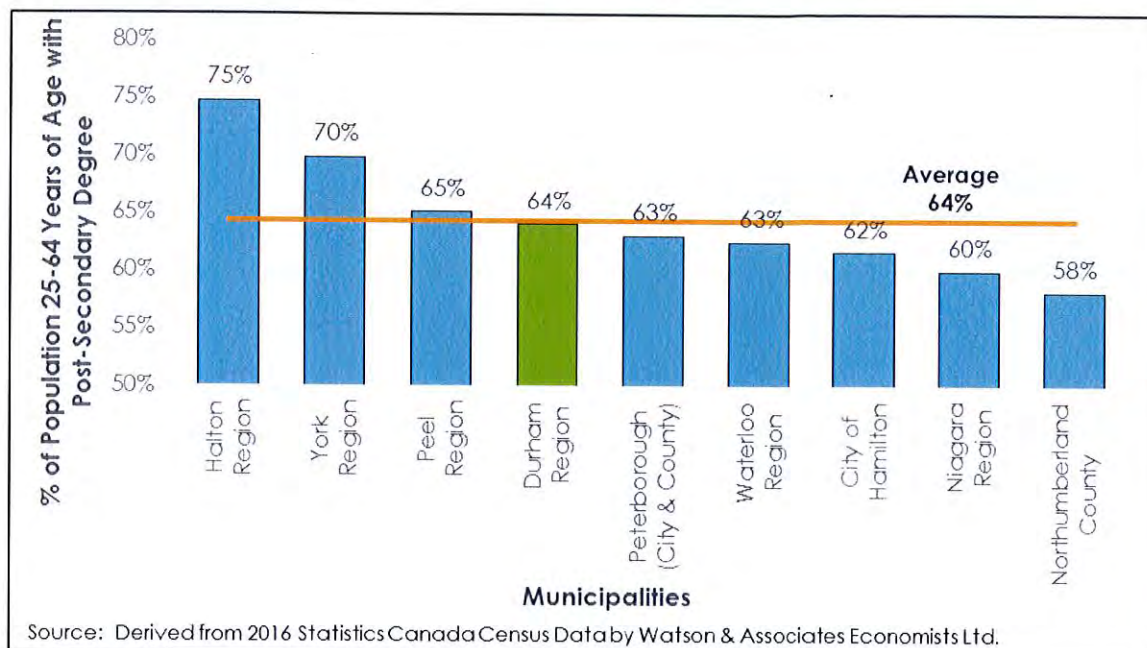


Figure 16 summarizes the proportion of the population (25 years and older) in Durham Region and the surveyed upper/single-tier municipalities that have a post-secondary degree, including a university or college degree or diploma. As shown, 64% of Durham Region's population aged 25 and older has a post-secondary degree, comparable to the survey average but notably lower than Halton Region and York Region. The share of the population aged 25 and older with a post-secondary degree is lowest in Niagara Region (60%) and Northumberland County (58%).



Figure 16: Population over the Age of 25 with a Post-Secondary Degree Within Select G.G.H. Upper/Single-Tier Municipalities



3.1.2 Transportation and Distribution

An efficient, dependable transportation and distribution network is an increasingly critical factor in location decisions for more industrial-oriented sectors of the economy. A strong transportation network offers companies access to the raw and semi-finished materials they need, while ensuring access to markets in close proximity and abroad. This translates to lower costs for businesses as well.

In general, the competitiveness of a community based on its transportation and distribution assets can be distilled down to a few factors, such as access to major highways, distance to key markets, proximity to water ports of exit, proximity to intermodal facilities, and proximity to air travel. Figure 17 summarizes Durham Region's relative ranking in the G.G.H. with respect to travel distance to major northeast North American markets, proximity to water ports of exit in the G.G.H., proximity to airports for cargo and passenger air travel and proximity to intermodal facilities. The following provides comparative insights about transportation and distribution characteristics at a regional level.



Distance to Major Northeast Metropolitan Markets

An examination of road-based travel distances (in km) from select G.G.H. upper/single-tier municipalities to major metropolitan region markets in northeast North America, including the Greater Toronto Area (G.T.A.), New York and Chicago, was undertaken. Between these three metropolitan markets, businesses have access of up to 36 million consumers. Strategically, the G.G.H is located in between these markets. In terms of access to these markets, western and southern G.G.H municipalities are at a competitive advantage, as businesses located in these areas have shorter travel distances (on average 100 km less) than locations in the eastern G.G.H.

Proximity to Water Ports, Airports and Intermodal Facilities

Qualitatively, each surveyed upper/single-tier municipality benefits from close proximity to a range of domestic and international transportation assets concentrated across the G.G.H. This includes a range of airports with domestic and international scheduled service and cargo-oriented operations, as well as intermodal infrastructure, and marine ports.

A comparison of travel distances between the select upper/single-tier municipalities in the G.G.H. to major water ports, airports and intermodal facilities in the G.G.H provides little differentiation in their competitiveness. In terms of market access, quality of infrastructure available, and access to major transportation and distribution assets, each municipality is competitively stable.

For air cargo connections, Toronto Pearson International Airport (T.P.I.A.) is Canada's largest passenger and cargo airport. Generally speaking, access to T.P.I.A. is within a two hours' drive for all comparator communities, with Peel, York and Halton Regions having the shortest commutes. Cargo connections by air favour the western municipalities of the G.G.H. Municipalities east of Toronto are faced with continuously increasing traffic times with no alternative air cargo outside of T.P.I.A. The City of Hamilton and Waterloo Region both have access to other cargo airports.

For marine port connections, the ports in Toronto, Oshawa, and Hamilton provide the largest capacity and variety for cargo shipping. Each port is connected to the St. Lawrence Seaway, providing municipalities direct shipping channels to Europe and other global destinations. In terms of competitive advantages, Durham Region is well



positioned via its local port network. The Port of Oshawa is a deep-sea port that ships, on average, \$23 million worth of cargo annually, specifically salt and steel products.

For intermodal connections, CN and CPR yards are located in Brampton and Vaughan respectively. The CN Brampton Intermodal Terminal is the largest rail terminal in Canada. Approximately, 60 per cent of CN's intermodal business passes through this terminal. Similarly, the CPR yards in Vaughan constitute one of CPR's largest cargo terminals in Canada. Annually, it handles over 700,000 twenty-foot equivalent units of cargo. Similar to the airport connections, municipalities west of Toronto are in closer proximity to the terminals both in terms of distance and traffic volume than municipalities to the east. Of municipalities east of Toronto, Durham Region is the closest municipality to these terminals.

A review of the proximity to airports that offer commercial passenger air services to more than five destinations from select G.G.H. upper/single-tier municipalities was also undertaken. This comprised airports located in the G.G.H. including T.P.I.A., Billy Bishop Toronto City Airport, John C. Munro Hamilton International Airport as well as Buffalo-Niagara International Airport and Ottawa International Airport. As noted earlier, T.P.I.A. provides the most passenger connections in Canada. A recently updated study on the airport's economic impact found that as the airport continues to grow as a hub, so do its enormous economic benefits for the G.G.H and all of Canada. T.P.I.A. provides direct, daily service to more than 67% of the world's economies. That connectivity provides the region with a competitive advantage. In terms of proximity, Durham Region is the fifth nearest municipality to T.P.I.A. In terms of overall passenger access, however, municipalities such as the City of Hamilton and Waterloo Region have seen their competitive positioning improve as their local international airports continue to see increases in passenger activity and new route creations.

Each municipality benefits from proximity to a range of domestic and international transportation assets across the G.G.H. This includes a range of airports with domestic and international scheduled service and cargo-oriented operations (e.g. no curfews), as well as intermodal infrastructure, and marine ports.

Despite each of the municipalities having access to the same infrastructure, the City of Hamilton and Halton Region hold the most well-rounded access to major markets, as illustrated in Figure 17. Peel Region, York Region and Waterloo Region also rank highly. Durham Region ranks sixth in the analysis, being on the eastern edge of the



G.T.H.A. and having longer commutes to major airports and key markets, in certain instances in excess of over 100 km compared to the top four communities. Durham Region's strongest transportation and distribution feature is its access to marine ports (in Oshawa and Bowmanville); however, these ports lack in cargo capacity when compared to the Port of Hamilton.

Figure 17: Transportation and Distribution Comparative Ranking

Category	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Access to Key Markets	7	6	4	2	1	3	8	9	5
Ports of Exit – Water Ports	3	5	1	2	4	8	7	9	6
Ports of Exit – Airport	7	5	3	2	1	6	8	9	4
Business Travel	6	4	2	1	2	6	8	9	5
Overall Rank	6	4	3	1	2	6	8	9	4

1 = Most Favourable; 9 = Least Favourable

3.1.3 Development and Costs

Development-oriented indicators and business costs represent a fundamental component of investment competitiveness. They can signal the strength of the local market from a development perspective, both in terms of feasibility and cost, as well as provide an indication of the diversity of market opportunities and market choice. In most respects, the availability and cost of development options are moderate to high priority location factors in most industrial and knowledge-based sectors of the economy.

The development and operating cost competitiveness of Durham Region is examined by select industry sector in Chapter 4. The cost competitiveness of industrial and office development and potential return on investment in Durham Region versus competing municipalities on a local municipal level is examined in detail in Chapter 6, through a series of pro-forma financial analyses assessing the costs of constructing and operating various prototypical developments.

Key cost parameters include land costs, development charges, property taxes and utilities' costs which are discussed below within a more general context.



Price of Serviced Employment Land

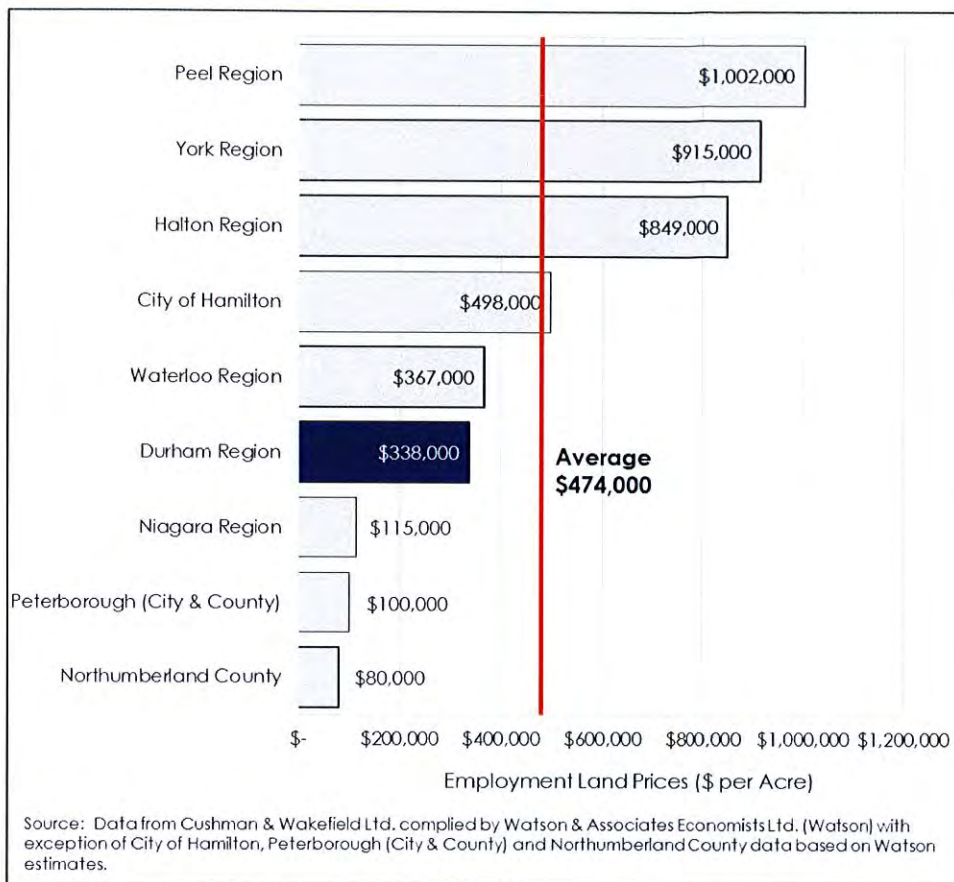
From a competitiveness perspective, employment land prices can provide a key advantage, especially for land-expansive uses such as transportation, wholesale trade/logistics, warehousing and large-scale manufacturing but is less of an issue for land intensive uses such as office development. Though competitive land costs provide an economic advantage in terms of the cost of development, very low land prices may be indicative of low market demand.

Figure 18 summarizes average employment land prices (\$/serviced acre) for Durham Region and comparator municipalities in the G.T.H.A. and G.G.H., based on recent market survey data.¹ As shown, employment land prices range between \$80,000 and \$1,000,000 per acre, with land prices generally highest in the west and north G.T.H.A. (York and Peel Regions) and lowest in Durham Region and “Outer Ring” G.G.H. communities. Employment land prices of Durham Region’s area municipalities range between \$300,000 and \$400,000 per acre, below the survey average of \$474,000/per acre, and well below Peel Region, York Region and Halton Region but higher than Peterborough, Niagara and Northumberland.

¹ Reflects both prestige and general employment lands.



Figure 18: Average Price of Serviced Employment Land (\$ per acre)



Development Charges

Development charges are also a component of total development cost. Figure 19 and Figure 20 illustrate the average industrial and commercial office development charges within Durham Region in comparison to other surveyed upper/single-tier municipalities in the G.G.H., respectively.¹

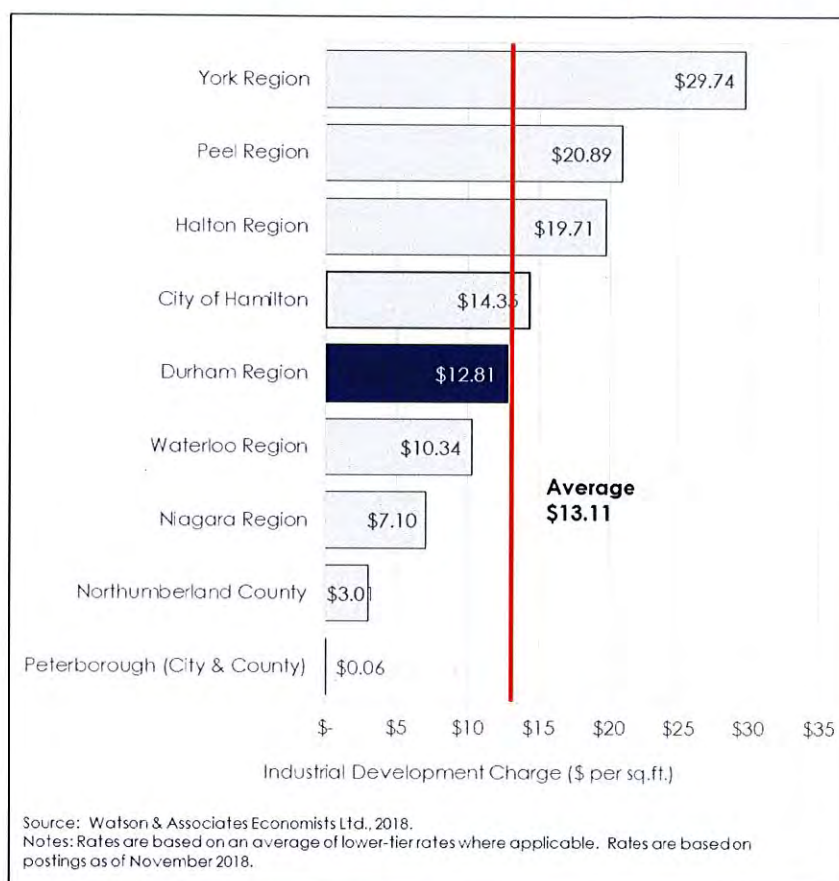
Average industrial development charges among the surveyed upper/single-tier municipalities average \$13.11 per sq.ft., ranging between \$0.06 and \$29.74 per sq.ft. with the highest rates in York Region, Peel Region and Halton Region. Average industrial development charge rates in Durham Region are close to the survey average, similar to the City of Hamilton, but are higher on average than in the G.G.H. “Outer

¹ Reflects local and upper tier as well as education development charges.



Ring” municipalities of Waterloo Region, Northumberland County, Niagara Region and Peterborough. Industrial development charges in Durham Region are generally the lowest of the surveyed G.T.H.A. municipalities.

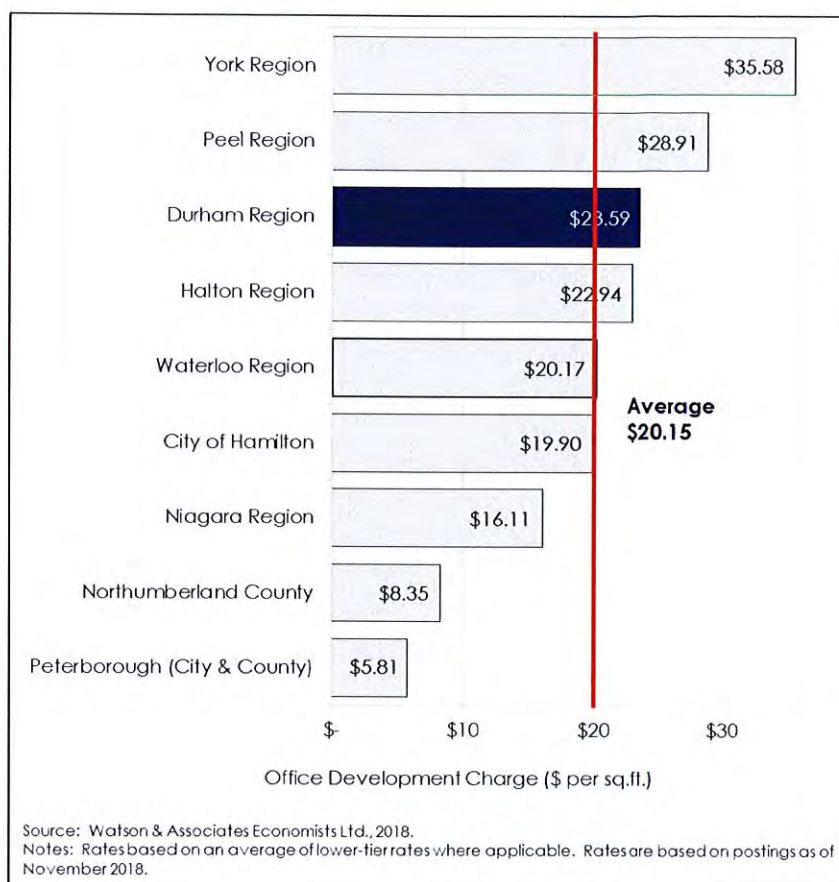
Figure 19: Average Industrial Development Charge Rates



With respect to office development charges, the survey average is \$20.15 per sq.ft., with rates highest in York Region, Peel Region municipalities. Average office development charges in Durham Region are marginally higher than the survey average, similar to the average in Halton Region, but higher than in the City of Hamilton and the surveyed G.G.H. “Outer Ring” communities including Waterloo Region, Niagara Region, Northumberland County and Peterborough.



Figure 20: Office Development Charge Rates



Municipal Property Taxes

Property tax rates represent a consideration for business location decisions since taxes impact operating profit annually. Figure 21 illustrates average industrial and office commercial property taxes expressed on a sq.ft. basis of building space within surveyed G.G.H. upper/single-tier municipalities based on 2017 area municipal property taxes. In 2018, Durham Regional Council revised its industrial tax policy to reduce industrial tax rates to make the Region more competitive from this perspective and is reflected in the subsequent analysis presented herein.

Industrial property taxes per sq.ft. are highest within the G.T.A. regions of Halton Region, Peel Region and York Region. The “Outer Ring” communities of Niagara Region, Waterloo Region and City of Hamilton have the lowest taxes per sq.ft. Industrial property taxes per sq.ft. in Durham Region are close to the survey average.



Office commercial property tax rates per sq.ft. in surveyed municipalities are highest in the Waterloo Region, Peel Region and Peterborough and lowest in Niagara Region and City of Hamilton. Office commercial property taxes in Durham Region are marginally higher than the survey average.

Figure 21: Average Industrial and Commercial Property Tax Rates per Sq.ft.

Property Tax Class	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Large Industrial	1.35	1.39	1.55	2.06	1.10	0.87	N/A	1.02	0.90
Office Commercial	3.36	3.19	3.62	3.20	3.03	2.79	N/A	3.47	3.73

Note: Values based on available municipal data.

Source: Adapted from BMA Management Consulting Inc. Municipal Study – 2017 Report by Watson & Associates Economists Ltd.

Spectrum: Darker Green = Advantage | Darker Red = Disadvantage

Utilities' Costs

Figure 22 presents electricity, natural gas and water/wastewater rates in the surveyed upper/single tier municipalities in the G.G.H. Comparatively, Durham Region and its local utility providers are competitively well positioned in the G.G.H. Of the G.T.H.A. upper-tier municipalities, Durham Region has lower utility costs than York Region while Halton Region and Peel Region offer slightly more competitive electricity costs and water/wastewater rates. When compared to other areas in the G.G.H. "Outer Ring", only Peterborough offers more competitive rates than Durham.



Figure 22: Delivery Cost of Electricity, Natural Gas, and Water/Wastewater

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Electricity Rates (Cents per kWh) – General Service Over 1,0000 kW									
Distribution Charge	2.92	2.48	2.48	5.02	2.48	3.44	9.18	2.71	5.27
Electricity Rates (\$ per kWh) – Small Commercial									
Distribution Charge	0.016	0.019	0.019	0.012	0.019	0.014	0.050	0.009	0.017
Natural Gas Rates (Cents/m³)									
Rate	10.65	10.65	10.65	10.65	10.65	10.65	15.92	10.65	15.92
Water/Wastewater Rates (\$/m³)									
Rate	\$2.88	\$4.14	\$2.41	\$2.44	\$3.10	\$3.06	\$2.48	\$1.36	\$4.16
Rank	4	7	2	3	6	5	9	1	8

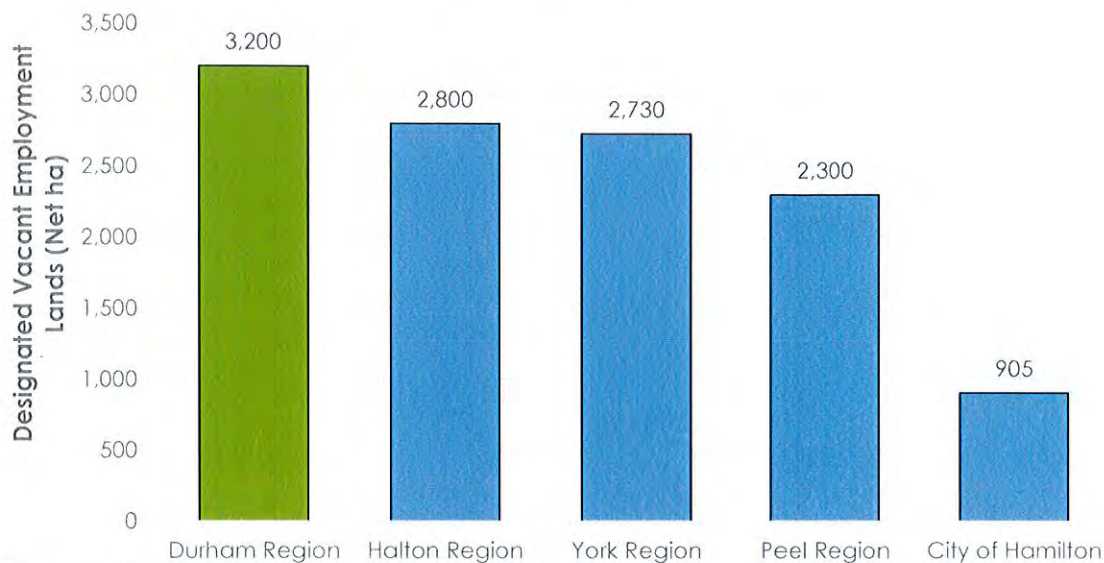
Source: Ontario Energy Board, Bill Calculator, Local Utility Companies
 Spectrum: Darker Green = Advantage | Darker Red = Disadvantage

Employment Land Supply

The competitiveness of Durham Region’s export-based economy is partly determined by the availability and quality of its developable employment lands. Figure 23 provides a summary of the supply of designated employment lands within Durham Region in comparison to select G.T.H.A. upper/single-tier municipalities.



Figure 23: Vacant Designated Employment Lands in the G.T.H.A.



Source: Watson & Associates Economists Ltd.

Durham Region has the largest supply of designated employment land in the G.T.H.A., totalling approximately 3,200 net ha. A large share of this is located in Pickering, Ajax, Whitby, Oshawa and Clarington. In comparison, Halton Region, York Region and Peel Region have a notable supply of vacant designated employment land, totalling 2,800 net ha, 2,730 net ha, and 2,300 net ha, respectively. The supply of vacant designated employment land in the City of Hamilton is smaller, totalling 905 net ha, respectively.

In the north and west G.T.H.A., the designated employment land supply is concentrated in Brampton, Vaughan, Milton, Halton Hills and Oakville. A number of larger, more mature urban municipalities in the north and west G.T.H.A. have diminishing supplies of vacant employment land, including Mississauga, Markham and Richmond Hill.

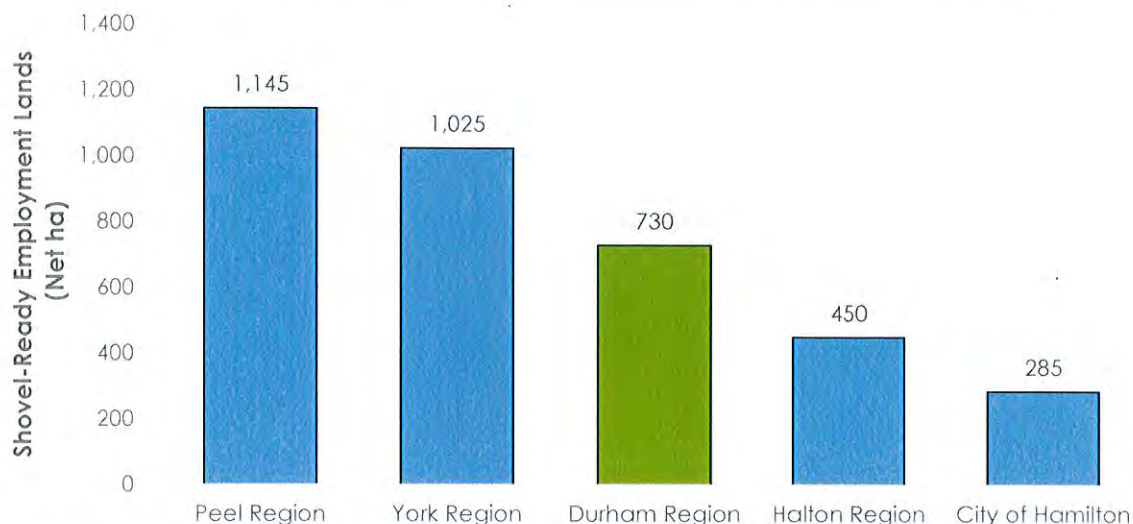
The supply of shovel-ready lands¹ is also a key measure of a municipality's economic competitiveness. Figure 24 summarizes the supply of serviced shovel-ready employment lands within the surveyed upper/single-tier municipalities in the G.G.H.

¹ Shovel-ready employment lands are defined as vacant parcels which have regional and local servicing in place (i.e. water, sewer, stormwater and roads infrastructure). In addition, all planning and environmental approvals are in place.



With respect to shovel-ready vacant employment lands, Durham Region has the third largest supply (730 net ha) next to Peel Region (1,145 net ha) and York Region (1,025 net ha). This is compared to 450 net ha in Halton Region and 285 net ha in the City of Hamilton.

Figure 24: Vacant Shovel-Ready Employment Lands within the G.T.H.A.



Source: Durham data derived from Durham Regions Supply of "Market Ready" Employment Land, 2018. Data for other municipalities compiled from Employment Land Municipal Survey from 2016 to 2018 by Watson & Associates Economists Ltd.

3.1.4 Business Support Environment

There are a wide range of potential factors that contribute to the perceived economic development or business friendliness of a community, ranging from the presence of business-supportive organizations, to the presence of key infrastructure assets and conditions that are receptive to investment (research centres and post-secondary institutions). Generally, both industrial and knowledge-based sectors of the economy can be influenced by this range of assets, making the performance of a community on these factors notable within the context of investment attraction.

The following tables present and compare insights about business support environment characteristics at a regional level. Based on the comparison of business support environments, Durham Region was ranked 3rd among its peers, as summarized in Figure 25. Durham Region is home to three post-secondary schools/campuses, along with nine research centres, some of which are ranked as top research centres by the National Research Council of Canada. Durham Region's municipalities are also well-



supported through six chambers of commerce. The chambers offer business programming, training and access to funding opportunities. Comparatively, Niagara Region and the City of Hamilton offer a better business support environment, particularly related to the active growth of its post-secondary schools' interest in creating research labs and business incubator programs centred on a variety of industry sectors.

Figure 25: Business Support Environment, Summary Ranking

Category	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Chambers of Commerce	3	2	6	4	6	1	5	6	7
Research Centres	5	6	3	7	2	3	-	-	1
Post-Secondary Schools	2	7	6	7	1	2	7	2	2
Rank	3	5	5	8	2	1	9	5	3

1 = Most Favourable; 9 = Least Favourable

3.1.5 Quality of Place

Qualitative factors, such as access to a local labour force, are becoming increasingly important in business location decision making, particularly in more “knowledge-based” sectors. In this regard, Durham Region needs to ensure that it is an attractive location for working-age families to settle in, by providing broad market choice in housing and a high quality of place experience.

The attributes of a community are an important consideration in the attraction and retention of both businesses and highly skilled talent. The quality of urban amenities, the quality and availability of housing stock, access to recreation and cultural amenities, healthcare providers and services, and affordable housing are all factors in decision making.

While there is a wide variety of elements and community assets that can contribute to the local quality of place, they are largely local in nature. Quality of life and place are linked and are essential components in economic growth, prosperity, and competitiveness.

As with the other comparator factors, the relative importance of quality of place among the target sectors varies. Quality of place has the least amount of influence over



location decisions in the advanced manufacturing and agri-business sectors, with only housing availability and cost rated as highly important.

Figure 26 provides insights about quality of place characteristics at a regional level, based on select indicators including the number of doctors per capita, cultural and recreational amenities, and housing costs.

Access to quality healthcare is an incentive for companies to locate to an area. It is also critical infrastructure that influences the retention and attraction of workers. Using the number of doctors per 100,000 was a proxy used for the access to healthcare services. Durham Region ranks 5th among the surveyed upper/single-tier municipalities. In terms of healthcare facilities (offices of physicians), the City of Hamilton offered the greatest access to healthcare providers, followed by Niagara Region. Durham Region ranked higher than Peel and York Regions but lower than Halton Region.

With respect to cultural and recreational assets, Durham Region ranked 5th. Durham Region ranked highly in terms of its cultural asset offerings (performing arts venues) and number of recreation centres, but scored low on its offerings surrounding restaurants, particularly fine dining opportunities. When compared to York and Peel Regions, Durham Region had less recreational assets per capita than York Region, but more offerings on average than Peel Region. Halton Region offered the greatest amount of recreational opportunities to its population among its comparator communities.

When considering housing costs, Durham Region ranks 4th, behind Niagara Region, Waterloo Region, and Hamilton. Of the G.T.A. upper-tier municipalities, Durham Region had the lowest average housing cost.

Overall, Durham Region ranks in the middle of the surveyed municipalities with respect to the quality of life indicators assessed. The Region scores marginally higher than York and Peel Regions but lower than Halton Region. In the broader G.G.H context, Niagara Region, the City of Hamilton and Waterloo Region all rank relatively high with respect to the quality of life indicators examined.



Figure 26: Quality of Life, Summary Score Ranking

Category	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Waterloo Region
Health	5	6	7	3	1	2	4
Recreation	5	3	6	1	4	2	7
Housing	4	7	5	6	3	1	2
Rank	5	6	7	3	2	1	4

1 = Most Favourable; 7 = Least Favourable

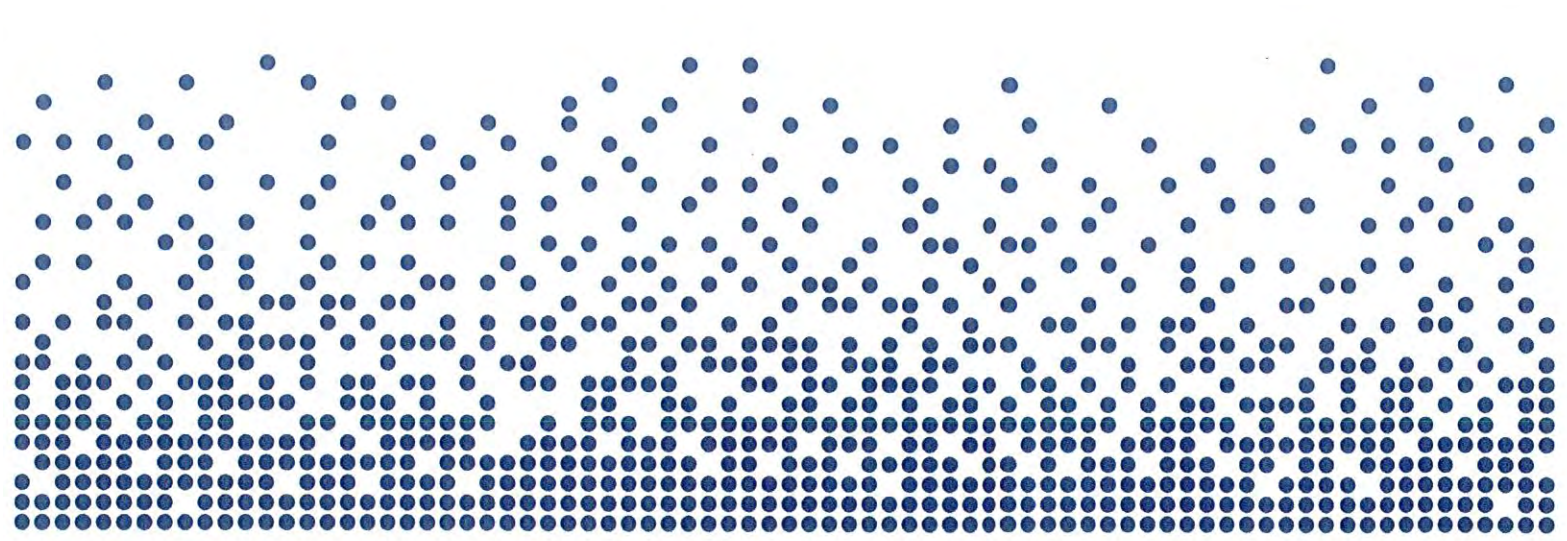
3.2 Observations

Based on the comparison of the surveyed upper/single-tier municipalities in the G.G.H., a number of observations can be drawn with respect to Durham Region’s competitive position.

Durham Region has a relatively high concentration of working-age population and has a highly skilled labour force which is well suited for knowledge-based sectors. The Region also offers a relatively high quality of life which is an increasingly important attribute for both employers and employees. Further, the Region ranks favourably with respect to business support.

The Region offers competitive serviced employment land costs and development charge rates which makes it attractive for new industrial and office development. The Durham also has a relatively large supply of designated and shovel-ready employment land compared to other upper/single tier municipalities in the G.T.H.A.

While Durham Region is centrally located in the G.G.H., the Region’s access to markets in Central Canada and the northeastern United States, and its access to a range of transportation and distribution networks is generally less favourable than other G.T.H.A municipalities and G.G.H. municipalities located to the west and south. Durham Region ranks in the middle with respect to non-residential property tax rates and utilities’ costs, which heavily influences the operating cost environment for businesses.



Chapter 4

Industry Sector Competitiveness Profiles



4. Industry Sector Competitiveness Profiles

At both the regional and local levels, location requirements of industry can vary considerably depending on the nature of the industry sector. The relative importance of these attributes is evolving in response to structural changes in the macro-economy which is impacting industrial and office development patterns within the G.G.H. and more broadly in Ontario. While the cost of development and access/proximity to major infrastructure have historically weighed heavily on business location decision making, the relative weighting of factors is beginning to shift. Quality factors are becoming increasingly important in business location decision making. This is particularly apparent in knowledge-based sectors.

With respect to industrial development, industrial activity is increasingly centred on production processes that are time-sensitive, driven by just-in-time manufacturing, e-commerce and an increasingly globalized environment. As a result, the location and site requirements within the industrial sector continue to evolve. For the Goods Movement sector, a major growth sector, the growing inter-dependence of companies and their suppliers continues to increase the importance of this integrated business process through various modes of transportation. In turn, this drives the need for more, bigger and better-located warehouses and logistics facilities. As such, large flexible tracts of land are required for large warehouses, storage yards and future expansion. Locational requirements are typically focused on direct access to distribution channels. This means that access to transportation infrastructure is critical, including access to 400-series highways and intermodal facilities. Given that these facilities tend to be land-extensive, competitive land costs are also an important consideration in site selection.

With an increasing emphasis on the “knowledge-based” and/or “creative class” economy, office development is becoming an increasingly dominant built form. Within the office sector, office development patterns are evolving in response to needs of office tenants. Office tenants are increasingly looking for access/proximity to high-order transit and services/amenities, as well as environments that feature mixed-use development and offer opportunities for live/work. The quality and location of new office space are considered very important tools to attract and retain talent.¹ While

¹ Emerging Trends in Real Estate, Canada and United States 2015, PricewaterhouseCoopers and Urban Land Institute.



development and operating costs influence location decisions for office development, it is typically of less importance than some of the other factors identified above.

4.1 Industry Sector Profile Overview

Building on the analysis presented in Chapter 3, the following assesses Durham Region's relative competitive position against comparator G.G.H. upper/single-tier municipalities within the context of five key industry targets sectors, including:

- Agri-business (food processing);
- Health Industries;
- IT (Digital Media);
- EN3 (Energy, Environment and Engineering); and
- Advanced Manufacturing.

The industry sector competitiveness analysis illustrates Durham Region's competitive positioning based on the range of factors identified in Chapter 3, which includes:

- Development Costs;
- Operating Costs (property taxes, utilities, labour costs);
- Industry Strength (labour force strength and industry supply chain);
- Transportation and Distribution (proximity to markets and access to major transportation infrastructure);
- Business Support Environment; and
- Quality of Place.

The selected comparator municipalities for each industry sector analysis are summarized in Figure 27, and were chosen based on a range of criteria:

- Likelihood of competition with Durham Region for future investment opportunities, given similar characteristics and/or geographic proximity;
- Similarities in business or industry composition, including targeted areas of investment attraction activity; and
- Availability of suitable data for comparison purposes, particularly as it relates to level of geography and currency of data.



Figure 27: Comparator Municipalities Surveyed for Industry Sector Competitiveness Analysis

Upper/Single Tier Municipalities	Agri Business	Health Industries	IT (Digital Media)	Energy, Environment and Engineering (EN3)	Advanced Manufacturing
York Region	✓	✓	✓	✓	✓
Peel Region	✓	✓	✓	✓	✓
Halton Region	✓	✓	✓	✓	✓
Hamilton, City	✓	✓	✓	✓	✓
Niagara Region	✓	✓	✓		
Northumberland County	✓			✓	✓
Peterborough (County & City)		✓		✓	✓
Waterloo Region			✓		

Comparator factors were chosen with the intent of balancing location factors that use accessible data and repeatable processes, with factors that are the highest priority for location decisions in five of Durham Region’s target sectors (i.e. agri-business, health industries, IT/digital media, EN3, and advanced manufacturing). In doing so, the latter consideration ensures that the assessment identifies industry-specific variations in competitiveness, which would otherwise be masked in a broad and generic community-to-community comparison. This chapter of the report outlines the results of the business competitiveness assessment, by thematic area and specific factors.

The comparator factors and relative competitiveness by select upper/single-tier municipality were assessed in more general terms in Chapter 3. The findings for transportation and distribution access, business support and quality of life factors between the comparator municipalities apply equally to the industry sectors examined herein and are reflected in the rankings accordingly.



Due to varying business activity, building space requirements, and labour needs between the industry sectors, a more industry-specific examination of development and operating cost factors was necessary to assess municipal competitiveness. To effectively measure the development and operating costs (i.e. property taxes, utilities, wages, and occupancy costs), prototypical development scenarios were prepared for each sector. These prototypical scenarios assess the cost of constructing and operating various business developments in each comparator municipality.

It is also recognized that each industry sector has unique industry cluster and supply chain characteristics which were considered as part of the industry strength factor competitiveness analysis.

Notes on Data

Where possible every effort has been made to ensure the consistency of data to be compared, including the reference years and level of geography. Unless otherwise stated, data is provided at the Census division level (CD). Industry data was collected using OMAFRA's EMSI Analyst tool.

4.2 Relative Importance of Competitiveness Factors by Industry Sector

Accurately assessing the competitiveness of a location relies on understanding that the emphasis placed on broad location factors varies significantly from industry to industry, and sector to sector.

Transportation and distribution characteristics have a varying level of importance for each target sector, ranging from minimal importance in most knowledge-based sectors, to high importance in most industrial sectors of the economy. Both health industries and IT/digital media industries place a low importance on most transportation characteristics, with the exception of proximity to an airport to enable business travel, which is still only moderately important. Advanced manufacturing and agri-business, on the other hand, highly value transportation and distribution assets, with particular emphasis on proximity to transportation assets and key markets, as well as availability of services.



Health industries and environmental, energy and engineering companies place a high importance on the availability, quality, and cost of electricity, natural gas, and telecommunications; the costs for permitting and construction; and the cost of land or lease rates. In comparison, advanced manufacturing and agri-business companies place only moderate importance on tax rates; high importance on the cost and availability of electricity; high importance on the costs for permitting and construction; and high importance on the availability and cost of industrial facilities, shovel-ready land and agricultural land. Meanwhile, IT/digital media companies place a high importance on the availability and quality of telecommunications; and the cost and availability of commercial space and lands.

Current research indicates that there are five types of factors, often characterized by “soft” or “hard” factors, that are most likely to shift over time. These five factors are often the starting point for many site selectors when considering criteria to weigh a location’s competitive strength.

Research indicates that there is an increasing emphasis on “soft” location factors such as the availability of skilled labour and the proximity to college/technical training. Soft location factors often refer to criteria that is not associated with cost, but provides employee or skill benefits to the business locating in that community. It reflects the community’s industry strength as it relates to its labour force profile (educated, skilled, semi-skilled, young, old) and the business support environment that provides businesses with education and training programs and other business support programs.

“Hard” location factors also influence location decisions. Hard location factors often refer to criteria that is associated with cost and time. Factors that impact transportation and distribution and development costs, such as highway accessibility, occupancy/construction costs, land costs, and proximity to logistic centres are more often being rated as “very important” or “important” to site selectors. Other key factors influencing location decisions include operating costs which would range from energy availability and costs, and corporate tax rates.

Using insights from site selection worksheets collected from best practices, weightings for each of the major categories of comparator factors assessed have been established by specific target sector. The weighting, as summarized in Figure 28, will guide the sector-specific competitiveness assessment.



Figure 28: Relative Importance of Competitiveness Factors by Target Industry Sector

Comparative Factor	Agri Business		Health Industries		IT (Digital Media)		Energy, Environment and Engineering (EN3)		Advanced Manufacturing	
	Weight	Rank	Weight	Rank	Weight	Rank	Weight	Rank	Weight	Rank
Development Costs (land cost, development charges)	25	2	15	3	5	6	25	2	25	2
Operating Costs (property taxes, utilities, average salaries)	15	3	25	2	25	2	35	1	15	3
Industry Strength (labour force strength and industry supply chain)	12	4	35	1	35	1	15	3	12	4
Transportation and Distribution (proximity to markets)	35	1	8	5	8	5	5	6	35	1
Business Support Environment (and education & training)	8	5	12	4	15	3	12	4	8	5
Quality of Place	5	6	5	6	12	4	8	5	5	6
Total	100		100		100		100		100	



Approach to Assessing Municipal Competitiveness by Industry Sector

The relative municipal competitiveness by industry sector is determined through consideration of the municipal ranking by competitiveness factor and the application of the factor weightings by corresponding industry sector. The weighting formula scores the municipality based on its ranking performance across each factor. The final score is a municipality's competitiveness score in that target sector. The higher the score, the greater the perceived municipal competitive position for that specific industry.

The formula below highlights how scores are calculated.

Community Factor Score

$$= (\text{Factor Weight} \div \text{Number of Comparator Communities}) \\ \times (\text{Number of Comparator Communities} + 1 - \text{Community Rank})$$

The following summarizes Durham Region's performance on a range of indicators aimed at establishing the competitiveness of the Region for investment in its target sectors.

4.3 Agriculture and Agri-Business Sector Industry Sector Competitiveness Profile

The agriculture and agri-business sector is defined as a distinct group of farms and companies that grow, harvest, process and distribute food, beverages and bio products. Often, the term agri-business is used to describe companies that supply goods and services to the agriculture sector – equipment dealers, feed and seed suppliers and veterinarians.

Agri-business consists of inputs to agriculture, agriculture production, food processing and distribution, food service and food retail. The agri-food and farming cluster is comprised of enterprises and institutions involved in growing, harvesting, processing and distributing food, beverage and bio products derived from agriculture. The phrase is used to describe the combined activities and outputs of primary production (farmers), food processing, food service providers (including hotels, restaurants, and institutions), food wholesalers/distributors and food retailers/merchandisers and the input suppliers and service providers to the cluster. Essential supporting activities that are a vital part



of the cluster are those that provide services, impart skills and training, undertake research and innovation and enable commercialization. Food and farming includes ornamental products, equestrian activities, bio products, and bio-energy applications.

Appendix B provides the detailed definition of agri-business as defined by NAIC codes.

The relative weighting of competitiveness factors for the agri-business sector is summarized in Figure 29.

Figure 29: Relative Weighting of Competitiveness Factors for the Agri-Business Sector

Comparative Factor	Agri Business	
	Weight	Rank
Transportation and Distribution (proximity to markets)	35	1
Development Costs (land cost, development charges)	25	2
Operating Costs (property taxes, utilities, average salaries)	15	3
Industry Strength (labour force strength and industry supply chain)	12	4
Business Support Environment (and education & training)	8	5
Quality of Place	5	6
Total	100	

The relative ranking of Durham Region with respect to the competitiveness factors for the agri-business sector, is discussed below and summarized in Figure 34.

Transportation and Distribution

Transportation and distribution is weighted the highest in the agri-business sector, reflecting the relative importance of having access to a large consumer market as the sector is largely driven by local demand. As discussed in Chapter 3, Durham Region ranks less favourably with respect to access to major key North American markets than many other municipalities in the G.G.H. Durham Region, however, is in reasonable proximity to Ontario's largest food terminal, located in Toronto. Durham Region also



has one of the larger ports of exit by water; the Port of Oshawa is a general cargo facility and is often pushing through agricultural products.

Development and Operating Costs

Development and operating costs within the agri-business sector was assessed through the lens of a 300,000 sq.ft. prototypical food processing facility (scenario detailed in Appendix C).

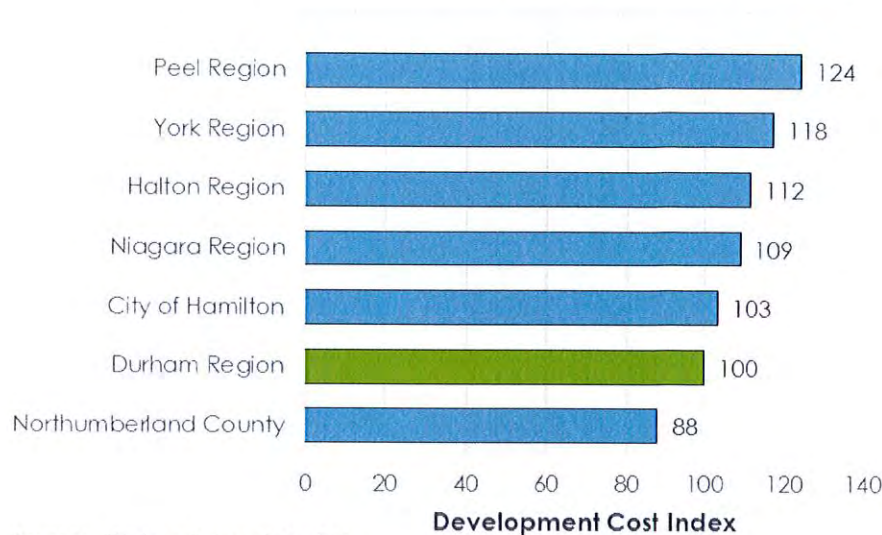
In terms of development costs, Durham Region offers food processors one of the more competitive options in the G.G.H. with only Northumberland County offering a better cost advantage, as illustrated in Figure 30. Durham Region's development cost competitiveness is largely attributed to relatively inexpensive land costs available to the industry.

In terms of operating costs, Durham Region has the lowest cost structure of the surveyed upper/single tier municipalities in the G.G.H. Specifically, Durham Region has a competitive advantage in its labour costs. Durham Region offers the lowest wages for the food processing sector of the comparator municipalities. This may attract start-up businesses that are not well-positioned to pay larger wages but are in need of access to affordable labour. Comparatively, Niagara Region, which is one of the largest agricultural communities in the G.G.H., has a slightly higher operating cost environment.

Based on the comparison of cost components within the comparator communities, Durham Region is highly cost competitive in terms of development costs and operating costs. Collectively, Durham Region is one of the most cost competitive environments for agri-business of the municipalities surveyed.

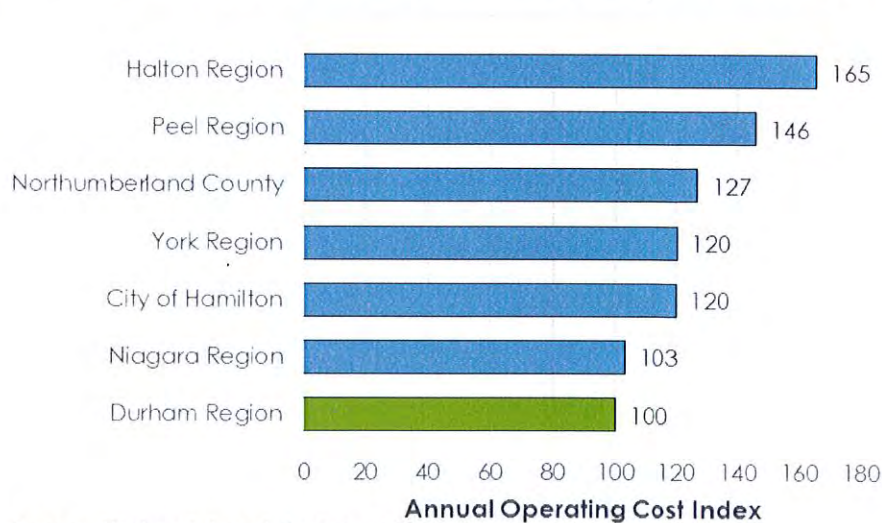


Figure 30: Development Costs Index (300,000 sq.ft. Food Processing Facility)



Source: Watson & Associates Ltd.

Figure 31: Operating Costs Index (300,000 sq.ft. Food Processing Facility)



Source: Watson & Associates Economists Ltd.

Industry Strength (labour force strength and industry supply chain)

Labour force and, more importantly, the available supply chain and suppliers are important factors for the agri-business sector. For food processing, investors identify proximity to raw agricultural products as a critical element to business location



requirements. For agricultural producers, close proximity to processing facilities or direct wholesaler opportunities is a critical element to sustaining farming operations.

Figure 32 and Figure 33 illustrate Durham Region's current business base and supply chain in the agricultural and agri-food sector, respectively. As illustrated, Durham Region has one of the highest percentages of in-region purchases (the amount of dollars transferred between local supply chain) in the G.G.H., indicating that most of its agri-business supply chain is sourced locally. In terms of total agricultural operations, Durham Region accounts for 18% of all farms within the seven comparator regions and 7% of all agri-businesses. In terms of industry supply chain, over 55% of Durham Region's agri-businesses purchase from local suppliers. In comparison, only York Region's and the City of Hamilton's agri-businesses have a higher percentage share. In-region purchases within Durham Region, however, is quite low, suggesting that larger purchases or requirements of the sector are imported from elsewhere.



Figure 32: Total Agri-Businesses By Region, December 2016

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County
Total Number of Agri-Businesses	1,239	2,098	1,628	877	838	1,879	733
Percentage of Total Agri-Businesses Across Comparator Communities	13%	23%	18%	9%	9%	20%	8%
Percentage of Total Agri-Businesses – Sub-total = Farms	18%	13%	8%	8%	11%	29%	13%
Percentage of Total Agri-Businesses – Sub-total = Manufacturing	7%	31%	27%	11%	8%	15%	1%
Rank	4	1	2	5	6	3	7

Source: Canadian Business Patterns December 2016 (December 2017 was released on February 8)
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage

Figure 33: Industry Supply Chain, 2013

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County
In-Region Purchases	\$323,084,112	\$1,121,983,502	\$3,644,740,383	\$895,876,340	\$814,705,891	\$741,766,737	\$162,688,207
% In-Region Purchases	55%	56%	47%	45%	62%	44%	29%
Rank	5	1	2	4	3	5	7

Source: EMSI Analyst, Input-Output Report, Industry Supply Chain, Agri-Business Sector, 2013
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Quality of Place and Business Support Programs

As highlighted in Chapter 3, Durham Region ranks favourably with respect to Quality of Place and Business Support Environment. The quality of life, business support programs, and education and training, are of lower importance in decision making for agri-business operations. The weightings suggest that these assets are the least influential factors for decision making, although research and training opportunities can support innovation within the sector.

Competitiveness Summary

The overall scoring and competitiveness rank of the comparator municipalities within the agri-business sector are summarized in Figure 34.

Overall, Durham Region ranks 2nd of the seven the municipalities assessed in terms of competitiveness in the agri-business sector, behind the City of Hamilton. Durham Region's competitive advantages include development and operating costs for prototypical food processing facilities and its business support environment. These factors had Durham Region score in the top 3 municipalities.

The competitive disadvantages identified were Durham Region's proximity to global markets, in particular trucking distances to major U.S. markets. Comparatively, Durham Region is located approximately 50 to 100 km further to these markets than Halton Region (ranks 1st for agri-business opportunities based on market proximity) and York Region (ranks 1st, for its industry strength). York and Halton Regions are also in closer proximity to the Ontario Food Terminal and G.G.H. intermodal terminals.

One advantage unique to Durham Region is its proximity to two marine ports, including the Port of Oshawa. Only the Ports of Hamilton and Toronto handle more agricultural products than the Port of Oshawa.



Figure 34: Relative Weighting Score and Ranking of Comparator Factors for the Agri-Business Sector

Factor	Available Score	Durham Region	R	York Region	R	Peel Region	R	Halton Region	R	City of Hamilton	R	Niagara Region	R	Northumberland County	R
Transportation and Distribution	35	15	4	20	5	25	3	35	1	30	2	15	5	5	7
Development Costs	25	21.4	5	10.7	2	3.6	7	10.7	5	17.9	3	14.3	4	25.0	1
Operating Costs	15	15	3	10.8	1	4.3	6	2.1	7	10.8	3	12.9	2	6.4	5
Industry Strength	12	5.1	1	12.0	5	10.3	2	6.9	4	8.6	3	5.1	5	1.7	7
Business Support Environment	8	5.7	4	4.6	3	4.6	4	2.3	6	6.9	2	8.0	1	1.1	7
Quality of Place	5	2.9	5	2.1	4	1.4	6	3.6	3	4.3	2	5.0	1	0.7	7
Total Score/ Final Rank	100	65.1	5	60.2	2	49.2	6	60.6	3	78.5	1	60.3	4	39.9	7

R = Rank

Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



4.4 Health Industries Sector Industry Competitiveness Profile

The Health Industries sector is defined as establishments primarily engaged in pharmaceutical and medicine manufacturing, general medicinal and surgical hospitals, chemical product manufacturing, providing health care by diagnosis and treatment, providing residential care for medical and social reasons, and providing social assistance, such as counselling, welfare, child protection, community housing and food services, vocational rehabilitation and child care, to those requiring such assistance. Appendix B provides the detailed definition of health industries as defined by NAIC codes.

The relative weighting of competitiveness factors for the health industries sector is summarized in Figure 35.

Figure 35: Relative Weighting of Comparator Factors for the Health Industries Sector

Comparative Factor	Health Industries	
	Weight	Rank
Industry Strength (labour force strength and industry supply chain)	35	1
Operating Costs (property taxes, utilities, average salaries)	25	2
Development Costs (land cost, development charges)	15	3
Business Support Environment (and education & training)	12	4
Transportation and Distribution (proximity to markets)	8	5
Quality of Place	5	6
Total Score	100	

The relative ranking of Durham Region with respect to the competitiveness factors in the health industries sector is discussed below.

Industry Strength (labour force strength and industry supply chain)

The 2017 edition of The World's Most Competitive Cities finds that the world's leading health industry cities tend to be characterized by two common elements – clusters of



superior talent emerging from local post-secondary and strong collaborative partnerships environment between companies. Both elements speak to the impact that industry strength can have in attracting like-minded companies.

Comparing local industry characteristics, Durham Region has the 3rd largest labour force that can support pharmaceutical manufacturing opportunities (behind York Region and Peel Region), as illustrated in Figure 36. Durham Region also has the 4th largest concentration of health industries. York Region and Peel Region are home to over 70% of all pharmaceutical and medicine manufacturing companies in the G.T.A. (excluding Toronto). The City of Hamilton, currently ranked 5th in terms of local industry presence, continues to see growth in the sector, and is in direct competition with Durham Region.



Figure 36: Labour Force and Local Industry Characteristics, Health Industries By Region, December 2016

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Peterborough City and County
Total Number of Health Industries	167	716	601	262	138	90	30
Percentage of Total Health Industries Across Comparator Communities	8.3%	35.7%	30.0%	13.1%	6.9%	4.5%	1.5%
Percentage of Total Health Industries – Sub-total = Pharmaceutical and Medicine Manufacturing	6.3%	32.1%	41.1%	10.7%	6.3%	2.7%	0.9%
Total Labour Force currently employed in Health Industries (Place of Residence)	12,540	14,184	23,337	7,448	12,702	5,897	3,344
Rank	4	2	1	3	5	6	7

Source: Canadian Business Patterns December 2017
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage

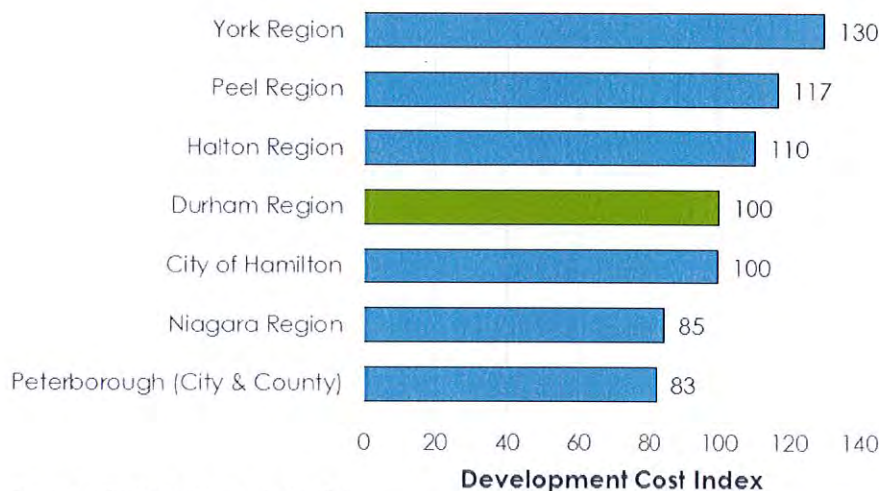


Development and Operating Costs

Development and operating costs within the health industries sector was assessed through the lens of a 200,000 sq.ft. research and development facility (scenario detailed in Appendix C).

In terms of development costs, Durham Region is better positioned than York, Peel and Halton Regions, but less competitive than Niagara Region and Peterborough, and comparable to the City of Hamilton, as illustrated in Figure 37. York, Peel and Halton Regions have relatively high land costs in the G.G.H.

Figure 37: Development Costs Index (200,000 sq.ft. R&D Facility)

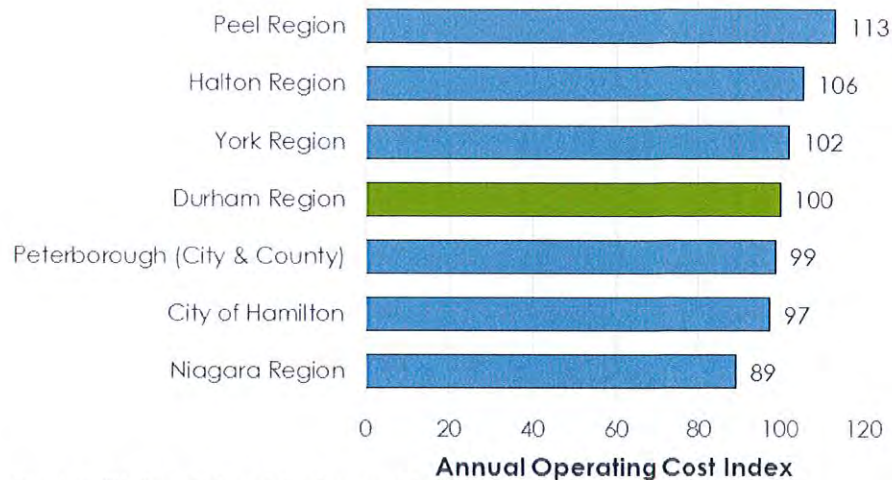


Source: Watson & Associates Ltd.

In terms of operating costs, Durham Region is close to the survey average, as illustrated in Figure 38. Durham has a higher-than-average operating cost than Peterborough, the City of Hamilton and Niagara Region but lower than other G.T.H.A. municipalities driven by higher than average electricity and labour costs. This is partially offset by relatively low property tax costs. This may attract more research-related businesses to Durham that are not well positioned to locate on more expensive locations in York Region and Peel Region. Additionally, labour costs in Durham Region are lower than York and Halton Regions, and equal to Peel Region.



Figure 38: Operating Costs Index (200,000 sq.ft. R&D Facility)



Source: Watson & Associates Economists Ltd.

Business Support Environment

As health industries expand and adapt, access to diagnostic and research lab services will also increase. Growth in the industry is dependent on proximity of these partners. Durham Region is well-positioned with its existing business support environment, with access to three post-secondary institutions, each with health industry programming, and six active research centres, such as the Software and Informatics Research Centre working on health technologies and the Lakeridge Health Oshawa Hospital known for its disease research.

Transportation and Distribution

Emerging markets are becoming ever more important for health industries. As developed countries around the world continue to constrain or cut health-care funding, governments in many emerging markets are making health care a priority. Access to these emerging markets will be an important contributor to health industry sales growth over the next few years. Proximity to business travel is often considered in this sector. As discussed in Chapter 3, Durham Region ranks somewhat unfavourably with respect to access to business air travel. T.P.I.A. is the closest business travel-oriented airport to Durham Region. Comparatively, T.P.I.A. is closer to York, Peel and Halton Regions while the City of Hamilton and Waterloo Region each have growing international



airports. With future lands dedicated for a potential airport in the Pickering area, Durham Region's competitiveness could improve in this regard over the longer term.

Quality of Place

Quality of place is of less importance in decision making for pharmaceutical manufacturing operations. Certain investors, however, are interested in areas that provide a high concentration of active doctors. As discussed in Chapter 3, Durham has a relatively higher number of doctors per capita compared to York and Peel Regions but has a lower concentration than the City of Hamilton and Niagara Region.

Competitiveness Summary

Based on the relative rankings by competitive factor identified and the industry specific weighting of the factors summarized in Figure 35, the overall scoring and competitiveness rank of the comparator municipalities within the health industries sector is summarized in Figure 39.

Overall, Durham Region ranks 3rd of the seven municipalities surveyed, behind Hamilton and Niagara, and slightly ahead of Peel and York Regions in terms of competitiveness in the health industries sector. Durham Region's competitive advantage is its business support environment, in particular, the research labs and post-secondary programs that are revolutionizing the industry. The Pharmaceutical Chemistry specialization program at the University of Ontario Institute of Technology (UOIT) is one of the top-ranking programs in the country.

The competitive disadvantage was Durham Region's existing business base of health industries. Unlike Peel Region and York Region that have a well-established pharmaceutical manufacturing cluster, only 8% of all health industries are in the pharmaceutical manufacturing industry. Peel Region and York Region both have over 30% of all health industries in those fields.



Figure 39: Relative Weighting Score of Comparator Factors for the Health Industries Sector

Factor	Available Score	Durham Region	R	York Region	R	Peel Region	R	Halton Region	R	City of Hamilton	R	Niagara Region	R	Peterborough	R
Industry Strength	35	20.0	4	30.0	2	35.0	1	25.0	3	15.0	5	10.0	6	5.0	7
Operating Costs	25	14.3	4	10.7	5	3.6	7	7.1	6	21.4	2	25	1	17.9	3
Development Costs	15	10.7	3	2.1	7	4.3	6	6.4	5	10.7	3	12.9	2	15.0	1
Business Support Environment	12	8.6	3	6.9	4	6.9	4	1.7	7	10.3	2	12.0	1	6.9	4
Transportation and Distribution	8	3.4	5	4.6	4	5.7	3	8.0	1	6.9	2	3.4	5	1.1	7
Quality of Place	5	2.9	4	2.1	5	1.4	6	3.6	3	4.3	2	5.0	1	0.7	7
Total Score/ Final Rank	100	59.9	3	56.4	5	56.9	4	51.8	6	68.6	1	68.3	2	46.6	7



4.5 Digital Media Industry Sector Competitiveness Profile

Information technology and the digital media sector continues to be one of the most transformative industries in the world. The expansion of mobile internet and cloud computing is accelerating, causing realignment of corporate strategies and site selection decisions. At the core of these industries, investors are looking for innovative environments that are rich in start-up training and education opportunities, flexible workspaces, and have large talent pools from which to recruit.

This sector is comprised of technologies such as desktop and laptop computers, software, peripherals, and connections to the internet that are intended to fulfil information processing and communications functions. This sector also includes industries primarily engaged in producing digital goods or services (film production, music production), or supplying technologies used to process, transmit or receive information.

Appendix B provides the detailed definition of the digital media sector as defined by NAIC codes.

The relative weighting of competitiveness factors for the digital media sector is summarized in Figure 40.

Figure 40: Relative Weighting of Comparator Factors for the Digital Media Sector

Comparative Factor	IT (Digital Media)	
	Weight	Rank
Industry Strength (labour force strength and industry supply chain)	35	1
Operating Costs (property taxes, utilities, average salaries)	25	2
Business Support Environment (and education & training)	15	3
Quality of Place	12	4
Transportation and Distribution (proximity to markets)	8	5
Development Costs (land cost, development charges)	5	6
Total Score	100	

The relative ranking of Durham Region with respect to the competitiveness factors in the digital media sector, is discussed below.



Industry Strength

Examining Durham Region's local industry characteristics for the digital media sector highlights the Region's position among its competitors, as summarized in Figure 41. Durham Region ranks 4th with a business base and labour pool smaller than York, Peel and Halton Regions. Surprisingly, Waterloo Region is home to fewer digital media businesses than Durham Region, despite Waterloo Region's reputation as a tech hub. This may be due to its space limitations for businesses and limited labour pool. Both York Region and Peel Region have labour pools in excess of 20,000 individuals compared to Durham Region, the City of Hamilton, Halton Region, Waterloo Region and Niagara Region that have fewer than 10,000.



Figure 41: Labour Force and Local Industry Characteristics, Digital Media Industries By Region, December 2016

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Waterloo Region
Total Number of Digital Media Businesses	2,036	9,627	7,982	3,479	1,048	6,18	1,535
Percentage of Total Digital Media Businesses Across Comparator Communities	7.7%	36.6%	30.3%	13.2%	4.0%	2.3%	5.8%
Total Labour Force Currently Employed in Digital Media (Place of Work)	4,710	20,030	17,116	6,899	3,561	2,339	7,912
Total Labour Force Currently Employed in Digital Media (Place of Residence)	9,339	24,176	20,556	9,614	4,822	3,168	7,696
Rank	4	1	2	3	5	7	6

Source: Canadian Business Patterns December 2017
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Operational Costs

In the digital media sector, labour costs play as a significant role. Digital media companies are often paying premium prices for workers to support their growth trajectory. In many Canadian regions that have a high concentration of IT or digital media works, salaries range well beyond \$100,000 annually. That being said, small digital media firms or start-up firms may not be able to compete with the wages offered by larger heavyweight industries. While, in this scenario, lower wages may signal a less-experienced worker, regions with a large output of IT or digital media graduates and low wages may prove to be ideal for start-up companies seeking growing environments.

Peel Region and York Region also have the highest average wage among the comparator communities. Aside from Niagara Region and the City of Hamilton, Durham Region has a lower cost of entry for digital media start-ups. The average wage in Durham Region's digital media firms is approximately \$15,000 less than York, Peel and Halton Regions, making it an attractive alternative to a business looking to come into the G.T.A.

Figure 42: Average Wage Characteristics, Digital Media Industries By Region, 2015

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Waterloo Region
	56,707	72,020	71,609	71,991	52,890	46,789	65,546
Rank	3	7	5	6	2	1	4

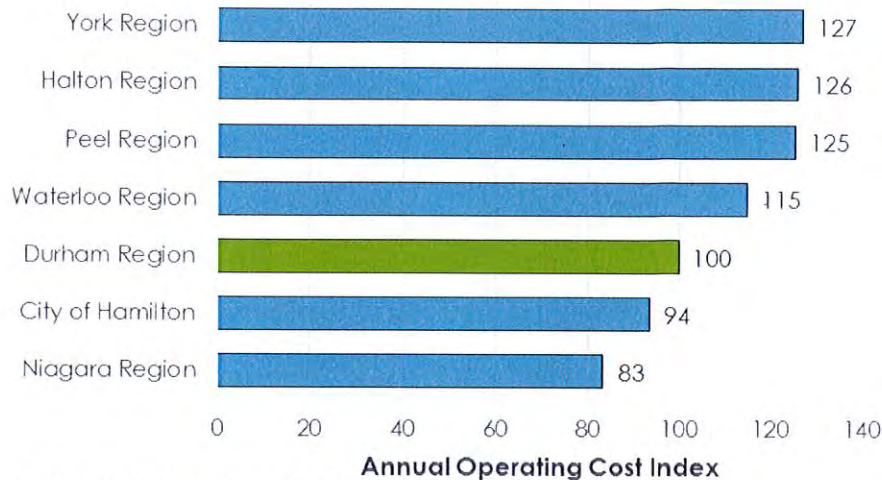
Source: EMSI Analyst

Spectrum: Darker Green = Advantage | Darker Red = Disadvantage

In terms of other operating costs, Durham Region is well positioned in small commercial utilities' costs and property taxes. Overall, Durham Region has less associated operational costs than York, Peel, Waterloo and Halton Regions. The City of Hamilton and Niagara Region offer more affordable operational costs than Durham Region.



Figure 43: Operating Costs Index – 25,000 sq.ft. Office Building Rental



Source: Watson & Associates Economists Ltd.

Business Support Environment

Digital media companies consider locations where highly concentrated industries can offer opportunities for innovative cross-pollination, in addition to locating in regions that provide skilled, cost-competitive labour. One key indicator examined was the average cost of space and number of co-working facilities available in each Region. After York Region, Durham Region has the most co-working facilities that encourage cross-pollination activities. In total, Durham Region has six facilities. CORE21 in Oshawa is a prime example of a premier co-working office space. CORE21 is home to more than 30 businesses and community groups and is located in Oshawa's downtown community. It provides temporary space, short- or long-term space, and space in a variety of shapes and sizes. Additionally, Durham Region has some of the lowest costs for space. Office rent and desk rent are second only to Niagara Region, which does not have the regional public transit access that Durham Region has.



Figure 44: Co-working Space Availability

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Waterloo Region
Number of Available Co-Working Spaces	6 facilities	7 facilities	2 facilities	4 facilities	6 facilities	4 facilities	6 facilities
Average Cost of Office Space (Desk)	\$200	\$265	\$150	\$200	\$225	\$150	\$125
Average Cost of Office Space (Office)	\$600	\$800	\$600	\$700	\$700	\$600	\$1200
Rank	2	3	2	7	3	1	3

Source: MDB Insight, 2018

Quality of Place

Quality factors, such as access to recreational and cultural amenities, are becoming increasingly important in business location decision making, particularly in more “knowledge-based” sectors. The attributes of a community are an important consideration in the attraction and retention of both businesses and highly skilled talent. The quality of a downtown, the quality and availability of housing stock, the quality of public transit, access to recreation and cultural amenities, health care providers and services, and affordable housing are all factors in decision making.

As discussed in Chapter 3, Durham Region ranked highly in terms of its cultural asset offerings (performing arts venues) and number of recreation centres, but scored low on its offerings surrounding restaurants, particularly fine dining opportunities. When compared to York and Peel Regions, Durham Region had less recreational assets per capita than York Region, but more offerings on average than Peel Region. Halton Region offered the highest amount of recreational opportunities to its population among its comparator communities.

Transportation and Distribution

Transportation and Distribution is weighted as one of the lowest factors in a digital media firm’s decision making. The digital media industry is not a logistically dependent sector. Products produced in the digital media industry are consumed online and or distributed through an electronic format – reducing the need for physical movement.



Competitiveness Summary

Overall, Durham Region ranks 4th of the seven comparator municipalities in terms of competitiveness in the digital media sector, as summarized in Figure 45. Durham Region's competitive advantages lie in its cost-competitive labour, talent pool emerging from key institutions such as the University of Ontario Institute of Technology, affordable desk and office space, and network of co-working spaces.

The analysis indicates that the competitiveness difference between the top five ranking municipalities is relatively small. This suggests that, overall, the G.T.H.A. offers a competitive environment for digital media growth. The only slight competitive disadvantage Durham Region has is in its industry strength. Both York Region and Peel Region have over triple the business size and existing labour pool.



Figure 45: Relative Weighting Score of Comparator Factors for the Digital Media Sector

Factor	Available Score	Durham Region	R	York Region	R	Peel Region	R	Halton Region	R	City of Hamilton	R	Niagara Region	R	Waterloo Region	R
Industry Strength	35	20.0	4	35.0	1	30.0	2	25.0	3	15.0	5	5.0	7	10.0	6
Operating Costs	25	17.9	3	3.6	7	10.7	5	7.1	6	21.4	2	25	1	14.3	4
Business Support Environment	15	12.9	2	8.6	4	12.9	2	2.1	7	8.6	4	15.0	1	8.6	4
Quality of Place	12	5.1	5	3.4	6	1.7	7	8.6	3	10.3	2	12.0	1	6.9	4
Transportation and Distribution	8	2.3	6	4.6	4	5.7	3	8.0	1	6.9	2	2.3	6	4.6	4
Development Costs	5	4.3	2	3.6	3	4.3	2	0.7	7	3.6	3	5.0	1	3.6	3
Total Score/ Final Rank	100	62.5	4	58.7	5	65.3	2	51.5	6	65.8	1	64.3	3	48.0	7



4.6 EN3 (Energy, Environment and Engineering) Industry Sector Competitiveness Profile

Durham Region's business community includes a vibrant EN3 cluster of energy, environmental and engineering sector businesses. The Region produces approximately 30 per cent of Ontario's electricity, and is a recognized energy cluster. Durham Region's two nuclear generating stations set that cluster in motion. Out of the 22 CANDU reactors in the country, 12 are located in Durham Region and have a combined generating capacity of approximately 6,600 megawatts. The environmental and engineering industries are also strong in Durham Region. They represent a united sector, with manufacturing and service businesses in all three fields.

Investors in the EN3 sector are interested in areas that have an existing cluster of similar industries and areas that have an experienced labour pool with skills in construction, engineering, professional and technical services.

The EN3 sector includes companies that have a fusion of interests in energy, environment and engineering related activity. This can include civil engineering, utility distribution, and environmental management. Appendix B provides the detailed definition of the EN3 sector as defined by NAIC codes.

The relative weighting of competitiveness factors for the EN3 sector are summarized in Figure 46.

Figure 46: Relative Weighting of Comparator Factors for the Energy, Environment and Engineering Sector

Comparative Factor	Energy, Environment and Engineering (EN3)	
	Weight	Rank
Operating Costs (property taxes, utilities, average salaries)	35	1
Development Costs (land cost, development charges)	25	2
Industry Strength (labour force strength and industry supply chain)	15	3
Business Support Environment (and education & training)	12	4
Quality of Place	8	5
Transportation and Distribution (proximity to markets)	5	6
Total Score	100	

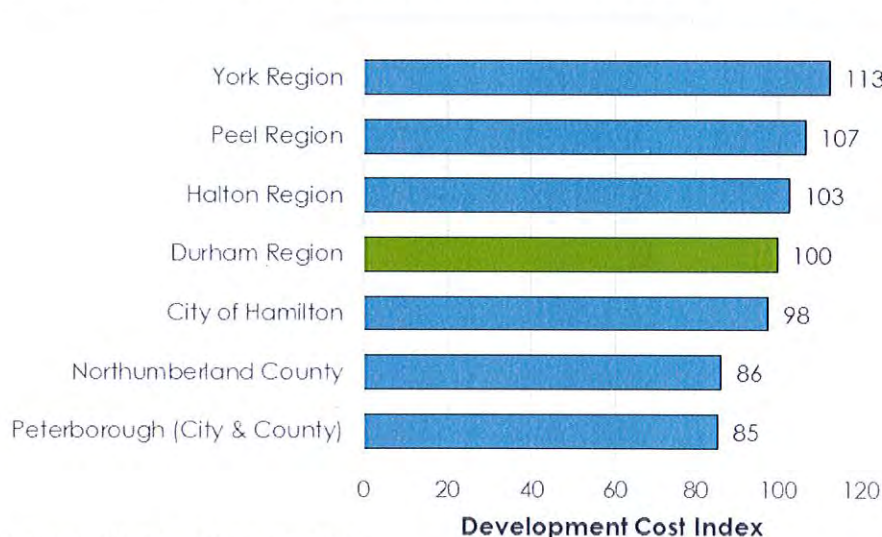


The relative ranking of Durham Region with respect to the competitiveness factors within the energy, environment and engineering sector is discussed below.

Development and Operating Costs

Development and operating costs within the EN3 sector was assessed through the lens of an engineering firm operating within a 50,000 sq.ft. office building (scenario detailed in Appendix C). In terms of development costs, Durham Region has one of the lower office development costs in the G.T.H.A., as summarized in Figure 47. Comparatively, Durham Region has a lower office development cost than York, Peel and Halton region.

Figure 47: Development Costs Index – 50,000 sq.ft. Office Building

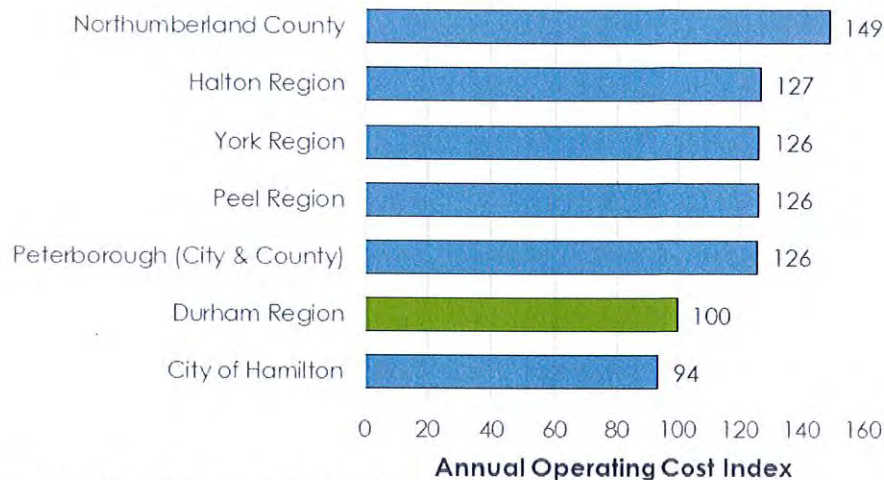


Source: Watson & Associates Ltd.

In terms of operating costs, Durham Region has the lowest commercial tax rates of the comparator municipalities. This specifically bodes well for industries in the EN3 sector, as large amounts of office space are required for fused activities. Taking into account labour wages, property taxes and utilities' costs, Durham Region has the second lowest operating costs in the sector, and is better positioned than Halton, York and Peel Regions and slightly behind the City of Hamilton, as illustrated in Figure 48.



Figure 48: Operating Costs Index – 50,000 sq.ft. Office Building



Source: Watson & Associates Economists Ltd.

Industry Strength

When examining Durham Region's local industry characteristics for the EN3 sector, the size of its labour force pool illustrates the magnitude of the sector's presence in the Region. The labour pool in Durham Region is less than the number of jobs available locally, making Durham Region the only comparator community to have to imported additional talent to fill industry demand. All other Regions have to export talent to another municipality. As of December 2016, Durham Region had over 250 EN3-related businesses that employed over 11,000 individuals in Durham. York Region had the most EN3-related businesses (at 663), but employed less than 5,000 employees, indicating that Durham Region's EN3 businesses were large employers and heavyweights in the industry.

Overall, Durham Region's continued growth in the EN3 sector will be dependent on the closing and remediation of the generation plants.



Figure 49: Labour Force and Local Industry Characteristics, EN3 Industries By Region, December 2016

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Peterborough City and County	Northumberland County
Total Number of EN3 Businesses	265	663	494	311	259	86	84
Percentage of Total EN3 Businesses Across Comparator Communities	12.3%	30.7%	22.8%	14.4%	12.0%	4.0%	3.9%
Total Labour Force Currently Employed in EN3 (Place of Work)	11,050	4,628	7,384	2,348	2,102	543	436
Total Labour Force Currently Employed in EN3 (Place of Residence)	10,979	6,794	7,894	3,795	3,249	1,155	117
Rank	3	1	2	4	5	6	7

Source: Canadian Business Patterns December 2017
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Business Support Environment

In terms of business support for EN3 firms, UOIT has a leading-edge Energy Systems and Nuclear Science Research Centre (ERC) which provides research in clean and green technologies. The facility houses UOIT's educational programs and research in geothermal, hydraulics, hydrogen, natural gas, smartgrid, electrical power systems, nuclear, solar and wind energy technologies. UOIT has also announced plans for a new \$100 million Centre for Advanced Research, Innovation and Entrepreneurship (CARIE). CARIE will act as a catalyst for a new cluster of advanced manufacturing research and development in strategic industries such as nuclear, electrical and alternative energy systems, automotive and transportation, new materials and robotics.

Durham College School of Skilled Trades, Apprenticeship and Renewable Technology also focuses on the energy sector and offers unique programs in a living lab environment with 350 rooftop solar panels, six vertical wind turbines and 35 geothermal wells located on the campus. Programs include one for Renewable Energy Technician and Power Engineering.

As discussed in Chapter 3, Durham Region was ranked relatively high with respect to the business support environment. Comparatively, only Niagara Region and the City of Hamilton offer a better business support environment, particularly related to the active growth of its post-secondary schools' interest in creating research labs and business incubator programs centred on energy, environmental and engineering industries.

Quality of Place

When considering quality of place, Durham Region offers clean, green outdoor spaces, a diversity of housing options, and unique communities, each desirable by a worker in the EN3 space. As highlighted in Chapter 3, Durham Region ranks favourably with respect to quality of place. The relative importance of quality of life is mostly on the lower-end of the scale in decision making.

Transportation and Distribution

In terms of transportation and distribution, the weightings suggest that these assets are the least influential factors for decision making. The EN3 sector, however, is a mobile workforce, often commuting various distances for various worksites, and while



commuting within Durham Region is not a challenge, overcoming commuting to work in other parts of the G.G.H. may have some impact on an investor's decision.

Competitiveness Summary

Overall, Durham Region ranked 2nd of the seven comparator municipalities in terms of competitiveness in the EN3 sector, as illustrated in Figure 50. Durham Region's competitive advantages lie in its labour force pool, strength of its local industry cluster and development and related costs. Durham Region's post-secondary schools also provide several programs related to the sector.



Figure 50: Relative Weighting Score of Comparator Factors for the Energy, Environment and Engineering Sector

Factor	Available Score	Durham Region	R	York Region	R	Peel Region	R	Halton Region	R	City of Hamilton	R	Peterborough City and County	R	Northumberland County	R
Development Costs	35	20.0	4	5.0	7	10.0	6	15.0	5	25.0	3	35.0	1	30.0	2
Operating Costs	25	21.4	2	17.9	3	17.9	3	7.1	6	25.0	1	17.9	3	3.6	7
Industry Strength	15	10.7	3	15.0	1	12.9	2	8.6	4	6.4	5	4.3	6	2.1	7
Business Support Environment	12	10.3	2	6.9	4	6.9	4	3.4	6	12.0	1	6.9	4	1.7	7
Quality of Place	8	5.7	3	4.6	4	3.4	5	6.9	2	8.0	1	2.3	6	2.3	6
Transportation and Distribution	5	2.1	5	2.9	4	3.6	3	5.0	1	4.3	2	0.7	7	1.4	6
Total Score/ Final Rank	100	70.2	2	52.3	5	54.7	4	46.0	6	80.7	1	67.1	3	41.1	7



4.7 Advanced Manufacturing Industry Sector Competitiveness Profile

Advanced manufacturing is a knowledge-intensive sector and is defined as the integration and utilization of technologies in a system of production to improve processes and techniques to produce goods and services faster, cheaper and cleaner. It is a subsector of manufacturing where innovation and the adoption of new technologies play a significant role in the competitive positioning and long-term sustainability of a company's operation. Appendix B provides the detailed definition of the advanced manufacturing sector as defined by NAIC codes.

When it comes to advanced manufacturing companies, two decisions are often made, each dependant on the company's desire. If the company is cost-dependent, then investors will place moderate importance on tax rates; high importance on the cost and availability of electricity; high importance on the costs for permitting and construction; and high importance on the availability and cost of industrial facilities and shovel-ready land. If the company is performance-driven, then investors will place emphasis on the size, engagement, skill level, and cost of labour as a high priority, as well as factors like local business characteristics (e.g. major employers, target industries), recent investments, and industry clustering/value chain connections among local industry characteristics.

The relative weighting of competitiveness factors for the advanced manufacturing sector is summarized in Figure 51.

Figure 51: Relative Weighting of Comparator Factors for the Advanced Manufacturing Sector

Comparative Factor	Advanced Manufacturing	
	Weight	Rank
Transportation and Distribution (proximity to markets)	35	1
Development Costs (land cost, development charges)	25	2
Operating Costs (property taxes, utilities, average salaries)	15	3
Industry Strength (labour force strength and industry supply chain)	12	4
Business Support Environment (and education & training)	8	5
Quality of Place	5	6
Total Score	100	



The relative ranking of Durham Region with respect to the competitiveness factors in the advanced manufacturing sector is discussed below.

Transportation and Distribution

Similar to the agri-business sector, transportation and distribution is weighted the highest in the advanced manufacturing sector, reflecting the relative importance of having access to a large consumer market, as the sector is largely driven by exported goods. As discussed in Chapter 3, Durham Region ranks less favourably in terms of access to major key markets than many other comparator municipalities. Of the selected comparator communities, Durham Region is one of the farthest communities from a U.S. border crossing. In terms of proximity to intermodal terminals, Durham Region is comparably close to both CN and CPR yards in Brampton and Vaughan, respectively.

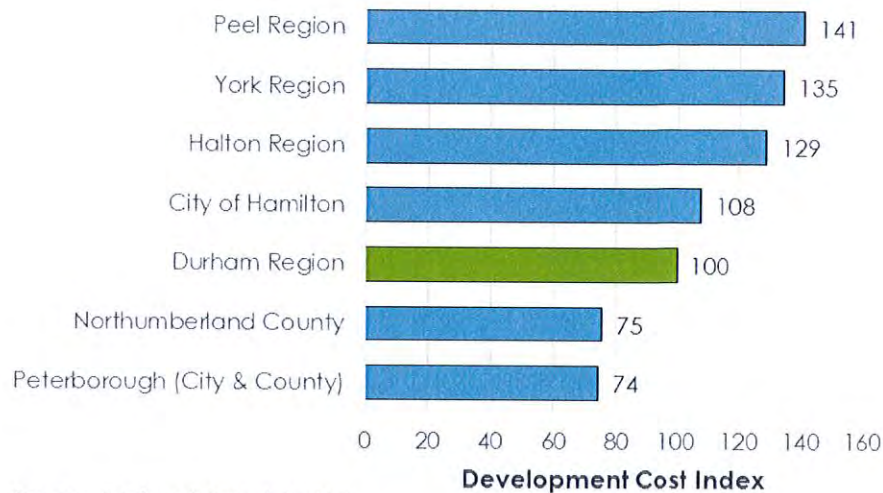
Development and Operating Costs

Development and operating costs within the advanced manufacturing sector were assessed through the lens of a 200,000 sq.ft. advanced manufacturing firm (scenario detailed in Appendix C).

In terms of development costs, Durham Region is significantly lower than Halton, York and Peel Regions, and slight lower than the City of Hamilton, as illustrated in Figure 52. Comparatively, land costs or average price of serviced vacant industrial/employment land is less expensive in Durham Region. With land costs considered a high importance for location decisions in advanced manufacturing, competitive land prices bode well for Durham Region's competitiveness. Comparatively, Northumberland County and Peterborough have a slightly more affordable cost to land but are also further from the G.T.A core.



Figure 52: Development Costs Index – 200,000 sq.ft. Facility



Source: Watson & Associates Ltd.

In terms of overall operating cost competitiveness, Durham Region ranks less favourably, as summarized in Figure 54. For higher consumption uses in sectors like advanced manufacturing, utilities' costs can play a key role in location decisions, based on the effect they can have on long-term operations. Electricity availability and cost remains the only utilities' factors that are considered high importance for location decisions in advanced manufacturing. Durham Region has relatively higher utilities' costs than York Region, the City of Hamilton and Peel Region.

Additionally, average wage characteristics suggest that Durham Region has a higher than average labour costs in the sector. When compared to Peel Region, Durham Region has a slightly higher average salary. Competitors such as the City of Hamilton, Peterborough and Northumberland County each have industries that offer lower salary ranges.



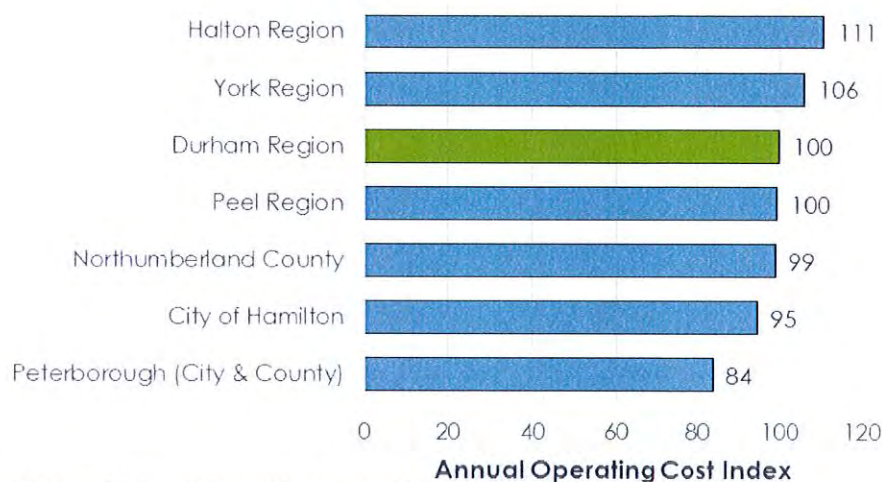
Figure 53: Average Wage Characteristics, Advanced Manufacturing Industries By Region, 2015

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Peterborough City and County	Northumberland County
Average Wage (\$)	61,679	65,681	61,525	67,874	57,648	51,757	58,992
Rank	5	6	4	7	2	1	3

Source: EMSI Analyst

Spectrum: Darker Green = Advantage | Darker Red = Disadvantage

Figure 54: Operating Costs Index – 200,000 sq.ft. Facility



Source: Watson & Associates Economists Ltd.

Industry Strengths

When examining local supply chains for the advanced manufacturing industry, Peel Region is identified as the G.T.A.'s premier advanced manufacturing market. While York Region might have the largest in-region purchase, the majority of its advanced manufacturing industries are importing goods into the area (40% of all supplier goods are available in the Region). In Peel Region, that figure is 64%, suggesting that the majority of suppliers for Peel Region's advanced manufacturing industries are also located in Peel Region. Durham Region and the City of Hamilton are the only other comparator communities that also have the majority of their advanced manufacturing industries' supply chain located locally.



Examining local industry characteristics, York Region and Peel Region have a strong presence of advanced manufacturing activity. Both Regions have over 300 advanced manufacturing businesses, employing more than 11,000 individuals. Similar to Durham Region's EN3 cluster, York Region is an importer of talent. Interestingly, Durham Region has a stronger advanced manufacturing presence than the City of Hamilton, despite Hamilton having a strong manufacturing history.



Figure 55: Labour Force and Local Industry Characteristics, Advanced Manufacturing Industries By Region, December 2016

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Peterborough City and County	Northumberland County
Total Number of Advanced Manufacturing Businesses	90	370	343	133	69	22	14
Percentage of Total Advanced Manufacturing Businesses Across Comparator Communities	8.6%	35.5%	32.9%	12.8%	6.6%	2.1%	1.3%
Total Labour Force Currently Employed in Advanced Manufacturing (Place of Work)	4,187	11,878	12,998	6,013	2,033	239	819
Total Labour Force Currently Employed in Advanced Manufacturing (Place of Residence)	5,492	9,220	14,332	4,599	3,220	301	811
Rank	4	2	1	3	5	7	6

Source: Canadian Business Patterns December 2017
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage

Figure 56: Industry Supply Chain, 2013

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Peterborough City and County	Northumberland County
In-Region Purchases	\$363,604,552	\$1,891,074,068	\$1,577,315,882	\$683,794,010	\$294,222,018	\$13,293,608	\$88,858,009
% In-Region Purchases	59%	40%	64%	50%	63%	43%	37%
Rank	3	2	1	5	4	7	6

Source: EMSI Analyst, Input-Output Report, Industry Supply Chain, Advanced Manufacturing Sector, 2013
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Competitiveness Summary

Based on the relative rankings by competitive factor identified and the industry specific weighting of the factors summarized in Figure 51, the overall scoring and competitiveness rank of the comparator municipalities within the advanced manufacturing sector are summarized in Figure 57.

Overall, Durham Region ranked 2nd of the seven comparator municipalities with respect to competitiveness in the advanced manufacturing sector. Durham Region's competitive advantages lie in its local supply chain, the cost-competitiveness of its development, property taxes, and the strength of its business environment from available incentives and accelerator funds to local research centres, such as the Automotive Centre of Excellence.

Durham Region's competitive disadvantage is its proximity to major U.S. markets, comparatively; it is one of the furthest away from a U.S. border crossing (although the deep-water port in Oshawa provides a slight advantage). Durham Region's cluster of advanced manufacturing industries is predominantly located in Pickering, Whitby and Oshawa, close to Toronto and is in direct competition with Markham, the third largest manufacturing cluster in the G.T.A., second to Vaughan and Mississauga.



Figure 57: Relative Weighting Score of Comparator Factors for the Advanced Manufacturing Sector

Factor	Available Score	Durham Region	R	York Region	R	Peel Region	R	Halton Region	R	City of Hamilton	R	Peterborough City and County	R	Northumberland County	R
Transportation and Distribution	35	15	5	20	4	25	3	35	1	30	2	5	7	10	6
Development Costs	25	17.9	3	7.1	6	3.6	7	10.7	5	14.3	4	25.0	1	21.4	2
Operating Costs	15	8.6	4	4.3	6	8.6	4	2.1	7	12.9	2	15.0	1	10.7	3
Industry Strength	12	8.6	3	10.3	2	12.0	1	5.1	5	6.9	4	1.7	7	3.4	6
Business Support Environment	8	6.9	2	4.6	4	4.6	4	2.3	6	8.0	1	4.6	4	1.1	7
Quality of Place	5	3.6	3	2.9	4	2.1	5	4.3	2	5.0	1	1.4	6	1.4	6
Total Score/ Final Rank	100	60.6	2	49.2	6	55.9	4	59.5	3	77.1	1	52.7	5	48.0	7



4.8 Competitiveness Observations

While the initial competitiveness analysis completed for each sector is an important exercise and necessary first step to identifying the best options for economic improvement, there is a need to dig deeper to determine Durham Region's competitive advantages and disadvantages for future investment attraction and development within the Region.

Competitive advantages and disadvantages are different than strengths and weaknesses. Strengths and weaknesses may be common to Durham Region as well as its competitors, while competitive advantages and disadvantages will differentiate the region from its competitors. Durham Region has a better chance of continued success if it can target its economic development activities to promote the advantages that are valued by its target sectors. Competitive advantages form the centre for Durham Region's unique value proposition – the “wow” factor that will motivate potential investors to take a closer look.

Competitive disadvantages are those elements that the community needs to help fix (or become less of an obstacle) if it is critical to investment attraction and marketing efforts in specific target sectors. Competitive disadvantages can be ignored as long as there is agreement not to try and pursue investment that will find those qualities a challenge. In the case of Durham Region's competitiveness, competitive disadvantages will be prioritized given their relative influence over location decisions in each of the target sectors.

Competitive advantages are rooted in the strengths of a particular region. Though those strengths positively influence investment in an area, they may be shared other communities, and as such, do little to truly differentiate the community for the purposes of investment attraction. The competitiveness profiles outlined several areas where Durham Region has strength as a potential investment location:

- Relatively low industrial and office commercial lease rates;
- Competitive property taxes for industrial and commercial office development;
- Competitive development costs;
- Affordable wages for start-up businesses;
- Access to high quality infrastructure;

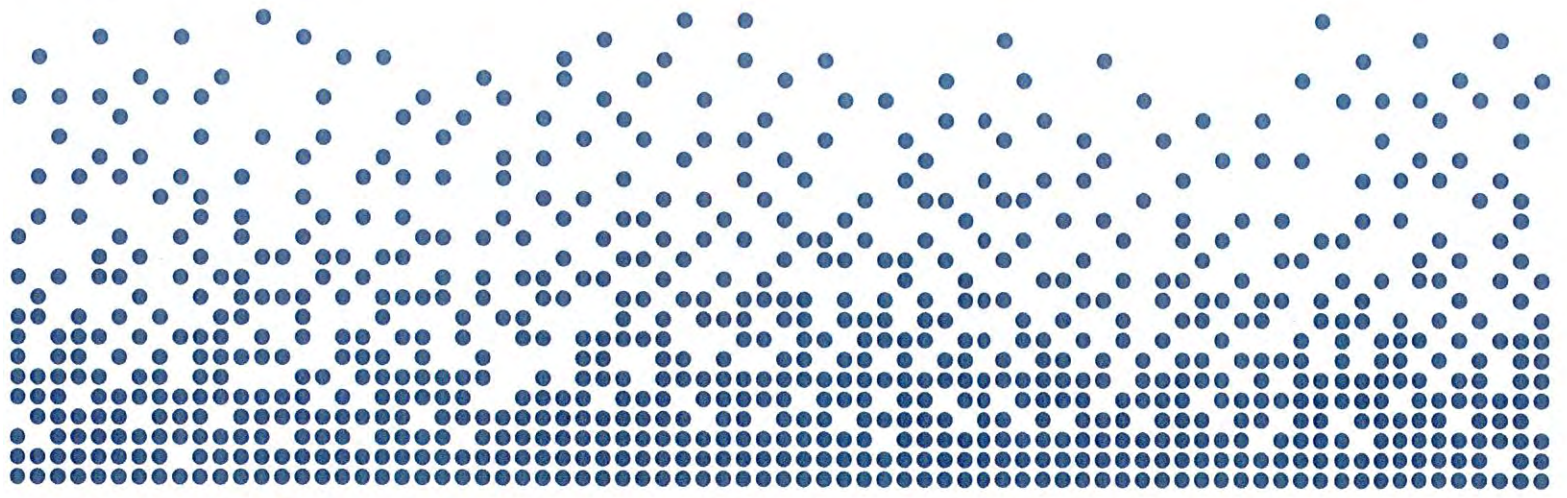


- Strong technical and college level programming, aligned with local labour market;
- Emerging presence of research and innovation assets; and
- High quality of place.

As with competitive advantages, competitive disadvantages are rooted in the weaknesses of a region. Some weaknesses, if shared among multiple competitors may not prominently influence investment. It is the competitive disadvantages – those areas where the characteristics of the weakness in the community differentiate it from other areas – that potentially have the most influence over investment decisions. The competitiveness profiles outlined identified several weaknesses:

- Small share of emerging skilled workforce (i.e. 25 to 34 years old);
- Limited availability of transportation and logistics services (outside of the port of Oshawa, Durham Region does not have an intermodal terminal or airport);
- Longer import and export lead times than comparators; and
- Average general logistics industry performance when compared to York Region and Peel Region.

Overall, comparatively, Durham Region was ranked as one of the more competitive regions in the G.G.H. when it comes to investment in the five sectors. Its competitive advantages are well suited for increased investment in the agricultural/agri-food sector (food processing), digital media sector, and the EN3 industry. Its competitive disadvantages do limit its investment opportunities in health industries and advanced manufacturing when compared to other G.T.H.A. locations which tend to have larger established clusters and supply chains in these sectors.



Chapter 5

Durham Region's Employment Areas Competitive Assessment



5. Durham Region's Employment Areas Competitive Assessment

As previously discussed, Durham Region competes directly with other municipalities in the broader regional market for employment lands development, most notably with municipalities in the G.T.H.A. and neighbouring communities in the G.G.H.

Durham Region's Employment Areas are an integral part of the Region's economic development potential. The Region's designated employment lands accommodate a broad range of industrial and office uses and, to a more limited extent, commercial and institutional uses, including employment supportive uses.

A major factor in the future competitiveness of Durham Region's economic base is dependent, in part, on the attributes of its Employment Areas. This section provides an assessment of Durham Region's key Employment Areas and their relative competitive position and ability to accommodate forecast employment land demand over the forecast period. Key Employment Areas within the broader regional market are explored herein to better understand Durham Region's relative competitive position with respect to employment land development.

5.1 Durham Region's Employment Areas Overview

Durham Region has a series of existing and planned Employment Areas located throughout the Region, concentrated along the Highway 401 and Highway 407 corridors.

A major factor in the future competitiveness of Durham Region's economic base is the supply and quality of vacant lands to accommodate industrial and office development within its Employment Areas. Figure 58 summarizes the status of the Region's urban employment lands base. Key observations include the following:

- The Region has 5,611 net ha (13,864 net acres) of designated developed and vacant developable lands within Employment Areas;¹

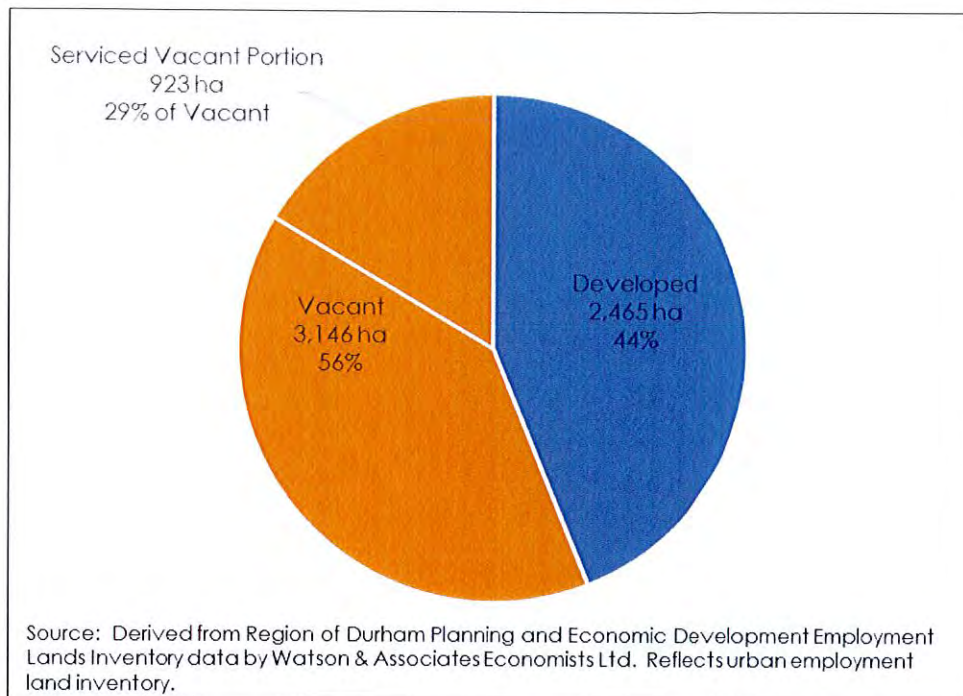
¹ Region of Durham Planning and Economic Development Employment Lands Inventory data. Reflects urban employment land inventory.



- Of the total identified net land area, a significant share, 56% (3,146 net ha), is vacant;
- Of the Region's vacant employment land inventory, 29% (923 net ha) has Regional servicing while the remaining 71% (2,223 net ha) is unserviced;
- Many older Employment Areas in South Durham along the Highway 401 corridor are approaching buildout, including Pickering West, Ajax West, Whitby South, Oshawa Southwest and Oshawa Southeast;
- The largest supply of serviced vacant designated employment lands within South Durham is located in Ajax East (largely within the Caruthers Creek Business Park) and in Clarington (Bowmanville East and Clarington Energy and Technology Park);
- Within North Durham, the supply of existing vacant employment lands is limited, with the exception of the Scugog Industrial Park in Scugog;
- Overall, Durham Region has a sufficient supply of short-term serviced vacant employment lands but there is limited shovel ready supply in Oshawa, Whitby and Pickering; and
- The Region's planned Employment Areas, concentrated along the Highway 407 corridor, offer significant longer-term development opportunities. This includes the Pickering Innovation Corridor in Seaton (600 net ha), West/North Whitby (590 net ha) and North Oshawa (345 net ha).



Figure 58: Durham Region Employment Lands Inventory



Transportation infrastructure and accessibility are key features which determine an Employment Area's competitiveness.

The extension of Highway 407 has greatly improved accessibility within Durham Region, as well as provided connectivity to Employment Areas situated along this corridor. Construction is underway to extend Highway 407 to Highway 35/115. The two connecting highways (Highway 412 and Highway 418) from Highway 407 to Highway 401 provide for strong north-south connectors between Highway 401 and 407. Among Employment Areas in Durham Region, vacant employment lands situated along the extension corridor in the City of Pickering, Town of Whitby and the City of Oshawa will have the greatest benefit. Combined with the recent widening of Highway 401 to ten lanes through Ajax to Salem Road, the extension of Highway 407 and the construction of connecting Highways 412 and 418, however, will continue to reduce traffic congestion along the Highway 401 corridor through Durham Region and offer an alternative route for Goods Movement.

All Employment Areas in South Durham are in proximity to 400-series highways and are located along the Highway 401 and 407 corridors or along Highway 412. Employment



Areas in North Durham are located along provincial highways (e.g. Highway 12) or along major regional roadways.

Durham Region's Employment Areas generally provide very good or excellent vehicular circulation and access, and they are well-designed for heavy truck traffic. This includes major arterial roadways which bound or intersect the parks with arterial roads connected to major highways without impeding on residential land uses.

5.2 Regional Comparative Analysis of Employment Areas

Key Employment Areas within Durham Region and comparator municipalities with notable opportunities to accommodate future growth are explored herein, to better understand the Region's relative competitive position with respect to employment land development.

The following provides a brief profile of each of these competing Employment Areas within the broader regional market, with respect to physical and economic characteristics, transportation attributes and development potential.

5.2.1 Key Durham Region Employment Areas

Carruthers Creek Business Park

The Carruthers Creek Employment Area, located in Ajax East, offers significant opportunities for development. The Carruthers Creek Business Park offers 143 hectares of vacant employment land, accounting for more than half of the vacant employment land supply in the Town of Ajax.¹ Of this supply, 18% is considered shovel-ready.

The Employment Area is strategically located between Highway 401, the Highway 407 alignment and in proximity to Highway 412. The park is a well-established, serviced prestige Employment Area of critical mass (+200 ha) which is a highly marketable Employment Area for multi-tenant industrial, advanced manufacturing, transportation and warehousing. Lands have access to Highway 412 and are strategically located

¹ Watson 2017 Ajax Employment Lands Study.



between Highway 401 and Highway 407. Land prices are competitive compared to similar locations in the west/north G.T.H.A.

Clarington Energy Business Park

Clarington's existing employment base is heavily oriented towards the utilities and energy sector. Considerable opportunity exists for further development of the Clarington Energy Business Park which is focused on the energy and utilities sectors.

The park is located along the Highway 401 corridor. It is a relatively large industrial park (250+ ha), anchored by a large existing tenant (Darlington Energy Complex – training centre) and in proximity to an energy cluster (Darlington nuclear station). The park is in proximity to Highway 401 and offers competitive land prices, which are attractive features for land expansive users, and it has significant development opportunities, including 245 net ha (605 net acres) of vacant employment land. The park is well-suited for utilities, research and development, and manufacturing.

Northwood Business Park

The Northwood Business Park is a 105 ha (260 acre) planned Employment Area in North Oshawa, bound by Thornton Avenue in the south, Oshawa Creek to the east and the Whitby-Oshawa municipal boundary to the west.

The easterly extension of Highway 407, the continued expansion of UOIT/Durham College, and the proposed development of a knowledge-based research park in North Oshawa are expected to increase future employment demand in Oshawa over the long term. The Northwood Business Park will be well-positioned to accommodate future employment land demand in the area.

A Master Stormwater Management Plan was recently completed for the Employment Area. Servicing of the park is underway and improvements along Thornton Road have already been made. This area is located in proximity to key infrastructure including Highway 407 and the Oshawa Executive Airport.

Pickering Innovation Corridor

The Pickering Innovation Corridor, covering an area of 324 ha (800 acres), is located in the north half of the new greenfield community of Seaton, along the Highway 407 corridor in Pickering.



Given the exposure and access along the Highway 407 corridor, and its proximity to the City of Toronto and surrounding employment markets in the west and north G.T.H.A., the Pickering Innovation Corridor is considered a highly marketable Employment Area. The Employment Area is anticipated to accommodate a wide range of prestige employment uses related to business/professional services, research and development, as well as ancillary and associated retail. This includes a significant share of office development.

The Pickering Innovation Corridor has a strategic advantage for both commuters who reside within Durham Region as well as local employers looking to attract skilled labour from the west and northwest. The Pickering Innovation Corridor is also located next to lands designated for a future airport.

Regional servicing of the Pickering Innovation Corridor is expected by 2019.

Scugog Industrial Park

The northern communities of Durham Region have a distinct economic structure, characterized by a blend of expansive rural lands and vibrant urban settlement areas. The economic base in northern Durham Region is also highly oriented towards small businesses and home-based occupations.

A key Employment Area in northern Durham Region with opportunities to accommodate development is the Scugog Industrial Park in Scugog. The Employment Area is located next to the settlement area of Port Perry along Reach Road, with excellent access/proximity to Highway 7. The park is home to largely small-scale businesses focused on construction, manufacturing and warehousing.

There is market demand for rural-based light industrial development within the G.T.H.A. context and limited options in neighbouring municipalities. The Scugog Industrial Park has 170 net ha (420 net acres) of vacant employment land of which about one-third is fully serviced. The park offers development opportunities for a broad range of general industrial uses and is highly competitive with respect to the price of land.

West/North Whitby

The Town of Whitby has a large planned Employment Area located along Highway 412 (West Whitby) and Highway 407 (North Whitby). The area is centrally located within



Durham Region, has excellent highway access, and offers approximately 590 ha (1,450 acres) for employment lands development catering to a broad range of industrial, office and other commercial sectors.¹

5.2.2 Comparator Employment Area Profiles

Within the broader G.T.H.A. and G.G.H. “Outer Ring,” a number of major and emerging Employment Areas are highly competitive and anticipated to accommodate a significant share of employment lands development over the coming decades. Key Employment Areas and corridors are profiled below.

Halton Region

Halton has fourteen existing, and seven planned, Employment Areas located throughout the Region. The Region’s Employment Areas are largely located along the Q.E.W. and Highway 401 corridors. Three key Employment Areas expected to accommodate a significant share of employment lands development include Derry Green Business Park in Milton, North Oakville Employment Area in Oakville and the Premier Gateway Business Park in Halton Hills.

Derry Green Business Park, Milton

The Derry Green Business Park encompasses unbuilt employment lands located south of Highway 401 in Milton. The park is approximately 390 net ha (965 net acres) in size. It offers excellent access/exposure to Highway 401 and a large contiguous land area with potential to create a critical mass to accommodate a wide range of prestige and general employment uses. Servicing of the park is underway and is planned to be completed by early 2018.

North Oakville Employment Districts – East and West, Oakville

The North Oakville Employment District lands include approximately 500 net ha (1,235 net acres) of employment land located north of Dundas Street, which is expected to be available for development post-2021. The lands have excellent access/exposure potential to Highway 407.

¹ Town of Whitby Economic Development website.



The lands are well-positioned to accommodate a broad range of industrial uses such as advanced manufacturing, distribution/logistics, as well as office development and “knowledge-based” sectors related to business services and professional, scientific and technical services. The development of the new hospital in North Oakville and a Health Sciences node is anticipated to act as a catalyst in attracting knowledge-based industries related to the health sector.

Premier Gateway Business Park, Halton Hills

The Premier Gateway Business Park is situated on the southern edge of Halton Hills along the north side of Highway 401, between the Town of Milton and the City of Mississauga to the east. The park is an emerging Employment Area that has seen significant industrial and commercial retail development activity over the past five years.

The area offers excellent exposure and access to Highways 401 and 407 and is geographically well-positioned along the Highway 401 corridor. The Employment Area offers significant vacant land, totalling approximately 440 net ha (1,090 net acres) (including large parcels) available for development at competitive land prices.

Peel Region

With approximately 9,000 ha (22,000 acres) of developed employment land, Peel Region has the largest developed employment lands base in the G.G.H. The Region has a high concentration of industrial space and major office inventory. The high presence of employment lands is attributed to the Region’s strong transportation infrastructure which includes a strong network of 400-series highways, proximity to the T.P.I.A. and a major intermodal facility in Brampton. Employment lands in Mississauga are approaching buildout and remaining greenfield opportunities are largely located in Brampton and Caledon.

Bram West Employment Area (Churchill Business Community)

The Bram West Employment Area, also known as the Churchill Business Community, is a large, newer, prestige Employment Area located in southwest Brampton and contains a large share of the City’s remaining vacant employment lands. Bram West is located immediately north of Highway 407, between Winston Churchill Boulevard and Mississauga Road.



The Employment Area, which covers an area of 425 net ha and is approximately half built out, has seen a significant share of Brampton's recent industrial development activity. Over the past decade, the Employment Area has seen significant development activity in wholesale trade, distribution/logistics and corporate office accommodated in large-scale industrial development and major office development.

The Employment Area has excellent access to Highways 407 and 401 and offers significant opportunities for large-scale industrial development related to wholesale trade, distribution/logistics, as well as major office.

York Region

Of York Region's 4,500 net ha (11,000 net acres) of developed employment lands, more than 80% is located in the southern half of the Region, concentrated in the municipalities of Vaughan, Richmond Hill and Markham. The large concentration of employment lands and employment in southern York Region is attributed to the highly marketable and competitive environment. This is largely due to the extensive transportation infrastructure of the area, including a network of 400-series highways, access to commercial air travel, freight and delivery services via T.P.I.A., intermodal facilities and proximity to U.S. employment markets. As a result, municipalities such as Vaughan, Richmond Hill and Markham have traditionally been successful in attracting a steady absorption of new industries with a broad range of industrial and commercial sectors.

Highway 404 Corridor, Markham/Richmond Hill

The Highway 404 corridor in Markham and Richmond Hill is home to a large number of Employment Areas. Highly prestige in nature, the area has a substantial concentration of major office development centred around Highways 404 and 407. The northern portions of the corridor have significant large-scale industrial development which has been constructed over the past decade. The area is highly marketable for prestige employment uses, but land prices are among the highest in the G.T.H.A. The area has a notable supply of vacant employment land remaining, largely located in the northern half of the corridor.

Meanwhile, vacant employment lands in Markham and Richmond Hill along Highways 404 and 407 provide extensive high-profile sites in prestige settings but are relatively expensive.



Highway 400/427 Corridor, Vaughan

The Highway 400/427 area in Vaughan is home to a large and diverse cluster of Employment Areas which has experienced strong employment lands absorption over the past decade. The area has seen strong growth in major office development and industrial development in the transportation and warehousing sectors. The area is well-served by a range of major highways (Highways 400, 427 and 407) as well as the Vaughan Intermodal facility. Currently, the area has approximately 500 net ha (1,235 net acres) of vacant designated employment land, including 125 net ha (310 net acres) of shovel-ready land.

Vaughan, in particular, has attracted significant industrial development due to its proximity to T.P.I.A. and the intermodal facility located within the municipality. This includes the Highway 400/407 area where development has been concentrated in wholesale trade, business services and manufacturing, and the Highway 427/407 area which continues to attract a significant amount of industrial development, primarily in the wholesale trade, transportation and warehousing sectors.

According to the York Region Land Budget, all of the employment lands in the City of Vaughan are planned to be serviced by 2021,¹ including approximately 875 net ha (2,160 net acres) of employment lands which are largely located in the Vaughan Enterprise Zone (located in the City's west-end) and the 400 North Employment Lands area (located in the City's north-end adjacent to the Highway 400 corridor). The 400 North Employment Lands, which surround the northern section of Highway 400 in Vaughan, total approximately 420 net ha (1,035 net acres).

Queensville/Highway 404 Employment Area, East Gwillimbury

East Gwillimbury is forecast to accommodate a significant share of York Region's employment lands employment over the next 25 years. A significant share of future employment growth is expected to be accommodated in the Queensville/Highway 404 Employment Area, a planned employment area located along the Highway 404 extension (completed in 2014), which includes 200 gross ha (500 gross acres) of vacant

¹ York Region, York Region Vacant Employment Land Inventory, Clause No. 16 in Report No. 11 of Committee of the Whole, June 26, 2014.



designated employment land. Lands in the area have also been designated for a future post-secondary institution.

Hamilton and G.G.H. “Outer Ring”

The City of Hamilton and the G.G.H. “Outer Ring” offer a diverse range of development opportunities on employment lands in both urban and more rural settings. Two emerging Employment Areas highlighted herein are the Hamilton Airport Employment Growth District (A.E.G.D.), and the Major Bennett Business Park and future southwest expansion area in the City of Peterborough.

Hamilton Airport Employment Growth District (A.E.G.D.)

The Hamilton A.E.G.D. includes approximately 550 net ha (1,370 net acres) of designated employment land and is not considered shovel-ready. The A.E.G.D. presents a strategically important Employment Area for the City of Hamilton. The A.E.G.D. offers the potential for a major new employment node within the context of a multi-modal transportation hub that includes the Hamilton International Airport (H.I.A.). The A.E.G.D. can accommodate a wide range of employment and employment-related land uses.

Major Bennett Industrial Park and Annexation Lands, Peterborough

The Major Bennett Industrial Park in southwest Peterborough is a 150 ha (370 acre) Employment Area. The park has a concentration of employment in advanced manufacturing, food processing, and wholesale trade. With approximately 40 net ha (100 net acres) of vacant serviced land remaining, the park is approaching buildout. The park offers competitive land prices, but limited market choice, and it has excellent access/exposure to Highways 115 and 7.

A proposed annexation from the Township of Cavan Monaghan would expand the employment land supply in southwest Peterborough by approximately 400 ha (1,000 acres) of employment land immediately to the west of the Major Bennett Industrial Park. These lands, contiguous in nature, have direct access/exposure to Highways 115 and 7, and would be highly marketable for a range of industrial uses. These would greatly expand the City’s employment land supply and are intended to accommodate a significant share of future employment land demand in Peterborough over the longer term.

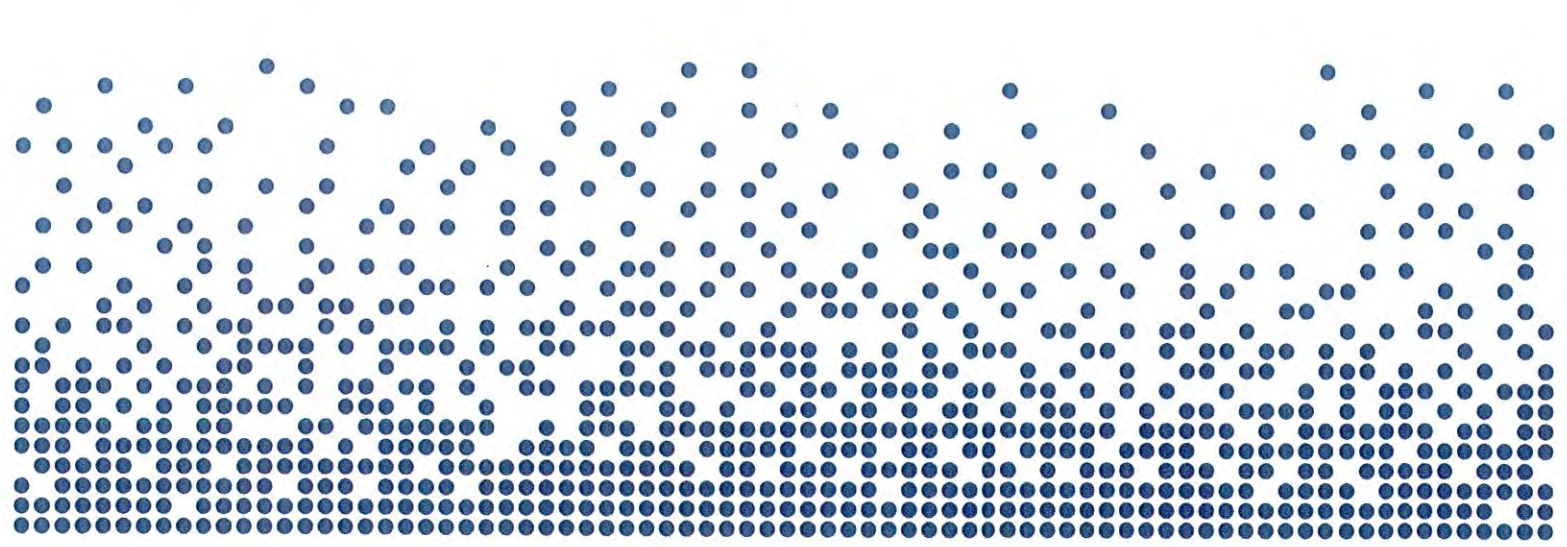


5.3 Observations

Durham offers a number of active employment areas which are highly marketable. However, the market choice of shovel ready employment lands that are “market ready” is somewhat limited.¹ Durham does offers significant employment lands development opportunities to accommodate growth over the medium and longer term. This includes strong market potential along the Highway 407 corridor in Pickering, Whitby and Oshawa.

Within the broader G.G.H. market, there are a number of key existing and planned employment areas which are highly marketable which pose direct competition for Durham over the coming decades.

¹ Durham Region’s Supply of “Market Ready” Employment Land, 2018, study identified 150 net ha (370 net acres) of vacant serviced employment land that are “market ready”. “Market Ready” refers to lands that are vacant, serviced, and for sale in the short term.



Chapter 6

Detailed Cost Competitiveness and Financial Feasibility Analysis



6. Detailed Cost Competitiveness and Financial Feasibility Analysis

As previously discussed, one factor influencing business decisions on where to locate industrial and office development is the cost competitiveness (both capital investment and operating costs) of the development in relation to the market demand and potential return on investment. Further, it is critical that the revenue generation potential of a development be assessed with corresponding capital and operating costs through a cost benefit analysis, using a cost-based approach, to evaluate the economic attractiveness of the development.

The cost competitiveness, economic viability and investment potential of industrial and office development within Durham Region was examined through a series of pro-forma financial analyses. This is presented through the assessment of the feasibility of constructing and operating various prototypical industrial and office developments within each of Durham Region's local municipalities in relation to select comparator municipalities within the G.G.H.¹

The analysis is intended to help inform the Region on the relative cost of development competitiveness and financial viability of industrial and office development through the lens of a prototypical development pro forma. The actual project specific development costs, revenues and return on investment may vary from that presented herein. Further, the financial feasibility is assessed solely through the revenue potential and cost of development metrics utilizing market averages and does not consider market supply or demand for non-residential building space within the local market and the respective development's potential uptake/absorption.

The cost competitiveness of development and financial feasibility analyses of select prototypical office development were completed through the following means:

¹ The comparator municipalities included in the assessment vary by development type. For industrial development, a broad range of municipalities across the G.T.H.A. and G.G.H. are included. For office development, the analysis focuses on municipalities with established office markets within the G.T.H.A.



- **Total Development Cost/Annualized Cost** – Comprises the total cost of development across municipalities and shows the impact of annualized cost components on total costs;
- **Residual Land Value Analysis** – Reflects both revenue potential and development costs under a rental revenue stream which evaluates the financial viability of a development project providing rental income over a 25-year time period.

For the purposes of this exercise, four general industrial developments including a 75,000 sq.ft., 150,000 sq.ft., 300,000 sq.ft., and 750,000 sq.ft. industrial building were examined. The analysis also considered two major office developments (a 150,000 sq.ft. Class A conventional multi-storey office building and a 150,000 sq.ft. flex office building). The physical characteristics of the building typologies and their respective land requirements are summarized in Figure 59. The prototypical buildings reflect suburban-type developments with surface parking accommodated on employment lands.

Figure 59: Prototypical Non-residential Developments and Physical Characteristics

Building Type	Building GFA (sq.ft.)	Floor Space Index	Land Area	
			Net ha	Net Acres
Industrial Building	75,000	30%	2.3	5.7
	150,000	35%	4.0	9.8
	300,000	38%	7.3	18.1
	750,000	40%	17.4	43.0
Multi-Storey Office Building	150,000	55%	2.5	6.3
Flex Office Building	150,000	30%	4.6	11.5

Source: Watson & Associates Economists Ltd.

6.1 Total Development Annualized Cost Framework

The cost competitiveness of the select prototypical development was completed through the compilation of total development cost across the comparator municipalities and illustrates the impact of operating cost components (reflecting property taxes) on total costs on an annualized basis.



In the generation of the total development cost of a prototypical development (expressed in dollars per sq.ft.), the following input costs were included, as illustrated in the example in Figure 60:

- (A) Land Cost – average price of serviced vacant employment land per acre based on current market data) multiplied by the acreage requirement based on an assumed F.S.I., e.g. 38%, divided by the G.F.A. for the building size being considered (e.g. 300,000 sq.ft.), as reflected in (B);
- (C) Construction Costs – reflects hard construction costs (e.g. materials, labour) and soft costs (e.g. engineering, consulting services) based on industry averages; construction costs per sq.ft. vary by project type (i.e. industrial or office and building G.F.A.) and vary across the municipalities surveyed;
- (D) Development Charges – on a sq.ft. basis, as per the various municipal D.C. schedules;
- (E) Developer Project Profit – a flat percentage of the total cost (land + construction + development charges per sq.ft.) at 5%; and
- The sum of (B) to (E) yields total development cost (F).

The total development cost was then annualized¹ to determine the average annual cost of developing a building over a defined time period (i.e. 25 years) in order to compare with annual operating costs.

Generating an annualized cost (G) from the total development cost determines the average annual cost of developing and operating a building over a defined time period (i.e. 25 years). The total annualized cost per sq.ft. reflects the annualized development cost per sq.ft., determined by applying an annualization factor² of 6.5%, plus the annual property taxes per sq.ft. (J). Property taxes are based on local tax rates³ with annual property taxes estimated based on average assessment value. The property assessment values were derived from a survey of comparable developments across Durham Region and the surveyed municipalities to derive approximate municipal-

¹ Annualized cost determined using an annualization factor of 6.5% which is based on a 25-year period and discount rate of 4.1% which is representative of industry trends.

² Annualization factor of 6.5% based on a 25-year period and discount rate of 4.1% which is representative of industry trends.

³ Reflects lower/single-tier, upper-tier (where applicable) and education property taxes.



specific assessment values which formed the basis for calculating annual property tax estimates.

The annual operating costs (i.e. property taxes) were combined with the annualized development costs to generate the total annualized cost per sq.ft. (K) within each market surveyed.

Figure 60: Illustration of Development/Annualized Cost Calculation

Development Cost - Town of Ajax, 300,000 sq.ft. Industrial Building		
Land Cost (per acre)	(A)	\$380,000
Land Cost (per sq.ft. of building)	(B)	\$22.95 (A) x 18.12 / 300,000
Construction cost (per sq.ft.)	(C)	\$77.33
Development Charges (per sq.ft.)	(D)	\$16.78
Developer Profit	(E)	\$5.85 5% x (B+C+D)
Total Development Cost (per sq.ft.)	(F)	\$122.91 (B+C+D+E)
Annualized Development Cost (per sq.ft.)	(G)	\$7.99 F x 6.5%
Property Tax Rate (%)	(H)	3.23
Assessment (per sq.ft.)	(I)	\$86.35
Taxes (per sq.ft.)	(J)	\$2.79 (H x I)
Total Annualized Costs (per sq.ft.)	(K)	\$10.78 (G+J)

Source: Watson & Associates Economists Ltd.

6.2 Development/Operating Cost Comparative Assessment

The following provides a summary of annualized costs for the prototypical non-residential developments within Durham Region's local municipalities and the surveyed comparator municipalities. Detailed results are presented in Appendix D.

Industrial Development

Figure 61 summarizes the annualized cost (expressed in dollars per sq.ft.) for a 75,000 sq.ft., 150,000 sq.ft., 300,000 sq.ft. and 750,000 sq.ft. industrial building, within the municipalities surveyed. Key observations include:

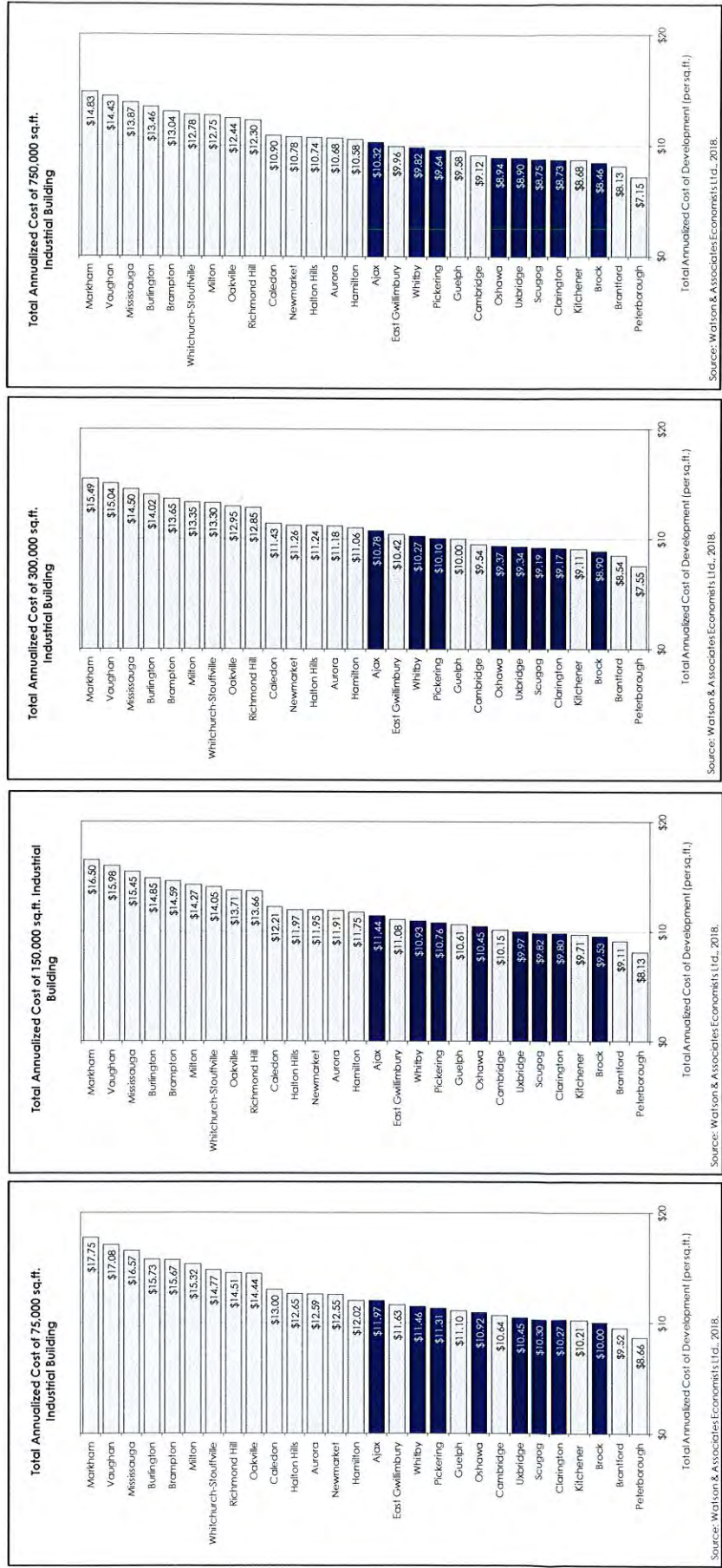
- Annualized cost of industrial development (expressed in dollars per sq.ft.) is highest for a 75,000 sq.ft. building, ranging between \$8.66 and \$17.75 per sq.ft., and lowest for a 750,000 sq.ft. building, ranging between \$7.15 and \$14.83 per sq.ft.;
- Cost of development (on a square foot basis) for industrial development generally declines as building size increases, due to a lower construction cost per sq.ft. and higher land utilization (higher coverage); and



- Durham Region municipalities are cost competitive for industrial development, with costs notably lower than West G.T.H.A. municipalities in Peel and Halton Regions, and the North G.T.H.A. communities of Vaughan, Richmond Hill, Markham, Aurora and Newmarket. Durham Region municipalities, however, are similar or less cost competitive than the G.G.H. “Outer Ring” municipalities, most notably Brantford and Peterborough, which have the lowest cost of industrial development of the municipalities surveyed.



Figure 61: Annualized Development Costs of Industrial Buildings





Office Development

Figure 62 summarizes the annualized cost (expressed in dollars per sq.ft.) for a 150,000 sq.ft. Class A office building, and a 150,000 sq.ft. flex office building, within the municipalities surveyed. Highlights include:

- Annualized cost of office development (expressed in dollars per sq.ft.) for a 150,000 sq.ft. major office building ranges between \$17.72 and \$26.40 per sq.ft.;
- In comparison, the annualized cost for a 150,000 sq.ft. flex office building ranges between \$15.17 and \$30.47 per sq.ft., notably lower than for the Class A office buildings due to lower construction costs;
- Of the municipalities surveyed, Richmond Hill has the highest construction annualized cost of development for office buildings, followed by Mississauga, Brampton, Oakville, Markham, Vaughan, Hamilton and Burlington, which is largely due to the high cost of land; and
- Durham Region municipalities offer among the lowest annualized cost for office development of the municipalities surveyed, comparable to the City of Waterloo.



Figure 62: Annualized Development Costs of Office Buildings





6.3 Market Feasibility Comparative Assessment

This section summarizes the financial feasibility of the select industrial and office developments across Durham Region's local municipalities and the surveyed comparator markets through a residual land value analysis from a rental revenue stream perspective.¹ Full details are provided in Appendix E.

6.3.1 Residual Land Value Analysis Framework

Utilizing the capital and operating costs identified in section 6.2, along with potential revenue streams determined by current average net market rents (per sq.ft.), a residual land value analysis was prepared.

As illustrated through the example calculation in Figure 63, the residual land value analysis capitalizes the rental revenue stream per sq.ft. (A) (applying an annualization factor of 6.5%) to generate a present value of future cash flows (B). This is compared to the sum of the profit provision per sq.ft. (C) and development costs, which is comprised of the development charges (D) building construction cost (E), to derive the residual land value (F). The residual (when multiplied by the floor area of the building and expressed on a per acre basis) is the value associated with the investment in the land, as presented in (G). This is expressed as a percentage of the land value (Residual Land Value to Market Land Price Ratio), shown as (I). The greater the residual land value to market land price ratio, the greater the financial feasibility of the project. A negative value suggests that the project is uneconomic even if land cost is zero. A positive value that is less than 1 indicates that the residual land value is less than the market price of land, which suggests that the project would not be feasible at current market land prices.² A ratio of 1 or greater indicates that the project would likely be financially feasible.

¹ The analysis considers all development typologies presented in section 6.1, except the 150,000 flex office development for which insufficient market rent data was available to complete the assessment.

² Project development may not be subject to current market prices for land (i.e. developer purchased land at lower than current market price), and thus, the project may be financially feasible even if the residual land value ratio is less than 1.



Figure 63: Illustration of Residual Land Value Ratio Calculation under Rental Revenue Scenario

Residual Land Value - Town of Ajax, 300,000 sq.ft. Industrial Building

Annual Rent (per sq.ft.)	(A)	\$5.92
Present Value of Future Cash Flow	(B)	\$98.60 (A) / 6.5%
Less Profit	(C)	\$4.93 (B) x 5%
Development Charges (per sq.ft.)	(D)	\$16.78
Construction cost (per sq.ft.)	(E)	\$77.33
Residual Land Value (per sq.ft.)	(F)	-\$0.44 (B) - (C+D+E)
Residual Land Value (per acre)	(G)	-\$7,000 (F) x 300,000 / 18.12
Employment Land Market Price	(H)	\$380,000
Residual Land Value to Employment Land Price Ratio	(I)	0.0 (G) / (H)

Source: Watson & Associates Economists Ltd.

6.3.2 Residual Land Value Analysis Comparative Assessment

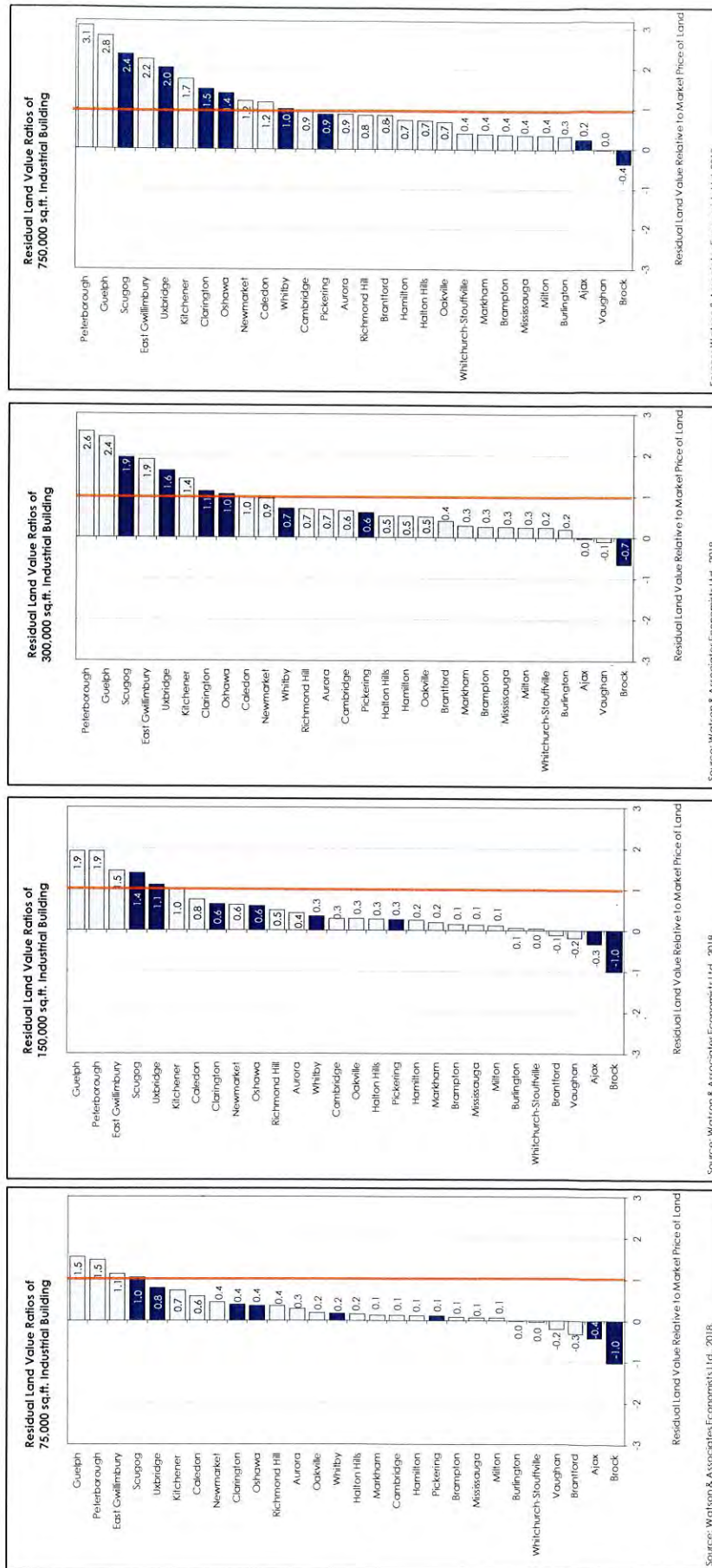
Industrial

Figure 64 summarizes the residual land value ratio for 75,000 sq.ft., 150,000 sq.ft., 300,000 sq.ft. and 750,000 sq.ft. industrial buildings, for the municipalities surveyed, under a rental revenue stream scenario. Key observations include the following:

- Despite the relative favourable industrial market rents, some challenges remain with respect to the financial feasibility of industrial development in the G.T.H.A. and broader G.G.H.;
- Development of smaller industrial buildings (i.e. less than 150,000 sq.ft.) is generally not financially viable throughout the markets surveyed, due to higher costs of construction on a square foot basis;
- The feasibility of larger industrial developments is more favourable; and
- The feasibility for larger industrial development is strongest in G.G.H. "Outer Ring" municipalities, as well as northern York Region, North Durham (Scugog, Uxbridge), as well as Whitby, Oshawa, Clarington and Pickering; comparatively, the feasibility of industrial development in Ajax and Brock is less favourable.



Figure 64: Residual Land Value Ratios under Rental Revenue Stream of Industrial Buildings





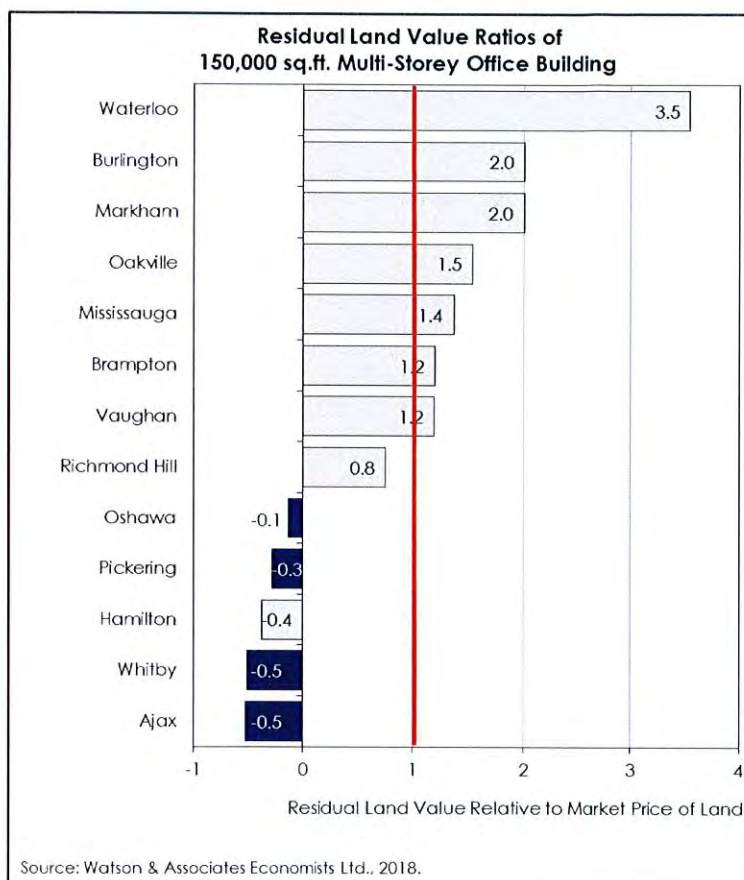
Office

Figure 65 summarizes the residual land value ratio for a 150,000 sq.ft. multi-storey Class A office building for the municipalities surveyed, under a rental revenue stream scenario. Key observations include the following:

- Relative to industrial development, office development is generally more financially viable in core G.T.H.A. markets than industrial development;
- In most markets surveyed, the financial feasibility of office development under a rental revenue scenario is highly favourable;
- Market conditions for office development are most favourable in Waterloo, Burlington, Oakville, Markham, Mississauga, Vaughan, and Brampton;
- The feasibility for major office development in Oshawa, Whitby, Pickering, Ajax and Hamilton is relatively unfavourable due to relatively low market rents.



Figure 65: Residual Land Value Ratios under Rental Revenue Stream of Major Office Building





6.4 Observations

Based on the analysis completed above, Durham Region municipalities are cost competitive with comparator municipalities surveyed in the G.T.H.A. with respect to industrial and office development. Having said that, many G.G.H. “Outer Ring” communities are more cost competitive for industrial development than Durham Region.

With respect to market feasibility, most Durham municipalities including Whitby, Oshawa, Clarington, Scugog and Uxbridge are competitive in the industrial sector, while office development feasibility is generally unfavourable in Durham due to relatively low market rents.



Chapter 7

Conclusions



7. Conclusions

Based on the extensive analysis presented herein, Durham Region's overall competitive position is discussed below.

In many respects, Durham Region's long-term economic growth potential is largely tied to the success of the G.T.H.A. and G.G.H. as a whole. As such, a key driver of Durham Region's future economic potential is its geographic location within the G.G.H. – one of the fastest growing City/Regions in North America. While the G.G.H. is a highly competitive region and the broader long-term employment and development outlook is positive, Durham Region competes directly for industrial and office development with other locations in the G.T.H.A. and G.G.H. "Outer Ring" municipalities. Municipal competitiveness is typically driven by a broad range of hard and soft factors at the regional, local and site levels, which can strongly influence business location decisions both for new development and expansion.

A factor influencing business decisions on where to locate is the cost competitiveness (both capital investment and operating costs) of the development in relation to market demand and potential return on investment. Industrial and office development and operating costs in Durham Region municipalities is cost competitive relative to comparator G.T.H.A. municipalities. Notwithstanding this, it is important to also consider that Durham Region's relative cost competitiveness is less favourable when compared to other surrounding municipalities throughout the G.G.H. "Outer Ring." With respect to market feasibility, industrial and office developments in Durham Region are generally less favourable than many other surveyed municipalities in the broader market due to lower net market rents.

The competitiveness of Durham Region's export-based economy is also partly determined by the availability and quality of its developable employment lands. While the Region has a relatively large supply of designated vacant employment lands, the supply of serviced and shovel-ready employment lands is more limited. The Region's supply of shovel-ready employment lands is expected to improve significantly over the medium term, with new employment areas becoming development ready along the Highway 407 corridor which will greatly benefit the competitive position of South Durham. However, North Durham has more limited opportunities for employment lands development.



The supply of vacant employment lands across the G.T.H.A is steadily diminishing for a number of the larger, more mature urban municipalities in this area, which continues to generate outward development pressures across the G.G.H, including Durham Region. Over time, Durham Region's competitive position with respect to market choice of employment lands is expected to continue to improve.

Access to transportation infrastructure is also a major factor in shaping non-residential development patterns and business location decisions across the G.G.H. The extension of Highway 407 has greatly improved accessibility within Durham Region; as well, it provides connectivity to Employment Areas situated along this corridor. The completion of the Highway 407 extension to Highway 35/115 and the Highway 418 connector between Highways 401 and 407 will enhanced transportation network connections and the Region's competitiveness further.

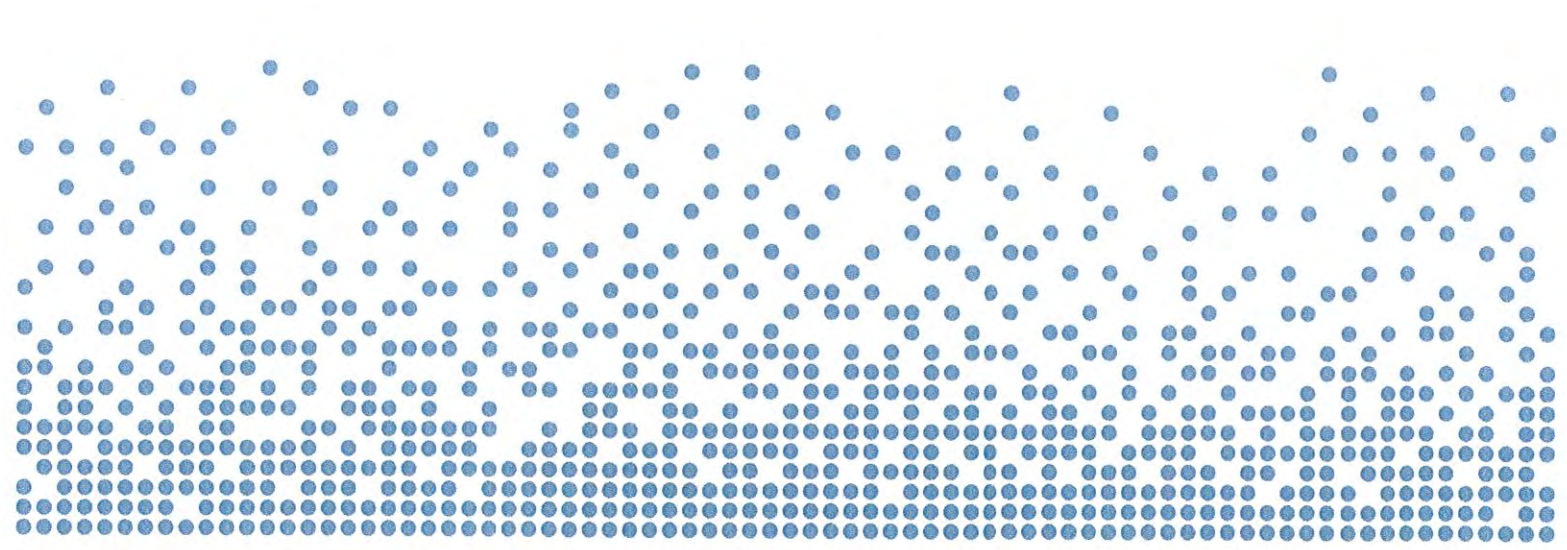
While Durham Region has strong access to 400-series highways, water ports, a labour force pool and post-secondary institutions, the Region's location is less favourable with respect to proximity to intermodal facilities, major airports and key major markets in northeast North America, than other G.T.H.A. municipalities.

Quality of life is a factor influencing the residential location decisions of individuals and their families. It is also a factor considered by companies in relocation decisions. Durham Region has a reputation for being a vibrant, growing, affordable, low-crime location in which to live in Ontario, with access to a wide range of recreational opportunities. Talent attraction and retention will be a key issue in Durham Region's competitiveness going forward. A factor in the Region's economic growth, therefore, will be the extent to which it can develop "quality of life" enhancements to appeal to mobile young talent, while not detracting from its attractiveness for other population segments.

Durham Region ranks as one of the more competitive upper/single tier municipalities in the G.G.H. with respect to investment in the five industry sectors profiled – agri-business, health industries, digital media, EN3 and advanced manufacturing. Its competitive advantages are well suited for increased investment in the agricultural/agri-food sector (food processing), digital media sector, and the EN3 industry. Its competitive disadvantages do limit its investment opportunities in health industries and advanced manufacturing when compared to other G.T.H.A. municipalities, which tend to have larger established clusters and supply chains in these sectors.



Based on the analysis contained herein, the Region of Durham is well-positioned to capture a significant share of G.G.H.-wide industrial and office development growth potential, including that specific to the five target industry sectors profiled herein. It is important to acknowledge, however, that from a provincial standpoint Durham Region will compete not only with G.T.H.A. municipalities, but increasingly with the surrounding G.G.H. "Outer-Ring." In order to maintain and enhance its economic competitiveness, the Region must continue to be innovative and pro-active in its efforts to attract and market future development.



Appendix A

Competitive Factors Supplemental Data



APPENDIX A

Transportation and Distribution

Figure A-1: Travel Distances to Key Markets (Kilometres)

Market	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Toronto (6 million pop.)	68	50	47	55	70	122	125	139	117
New York (20 million pop.)	871	843	763	741	714	658	758	798	817
Chicago (10 million pop.)	884	856	808	789	772	826	946	953	757
Rank	7	6	4	2	1	3	8	9	5

Source: Google Maps, Distance from City Centre to Region Centre.
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Figure A-2: Distances to Port of Exit, In Order of Cargo Capacity, Water Ports and Airports (Kilometres)

Port of Exit	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Water Ports									
Hamilton	137	109	66	44	2	64	191	206	70
Toronto	64	51	45	57	69	121	125	140	113
Oshawa	15	80	102	113	150	202	67	81	172
Clarkson	102	85.6	40	33	41	93	156	170	92
Port Colborne	216	188	140	118	92	23	270	285	162
Bowmanville	30	93	116	127	164	195	53	67	172
Rank	3	5	1	2	4	8	7	9	6
Airports									
Toronto Pearson International Airport	75	47	26	34	63	115	133	148	93
John C. Munro Hamilton International Airport	152	124	77	55	20	59	206	221	73
Rank	7	5	3	2	1	6	8	9	4
Major Intermodal Facilities									
CN Brampton Intermodal Terminal	70	29	20	30	67	120	146	139	89
CPR Vaughan Intermodal Terminal	75	23	20	43	80	132	150	143	102
Rank	5	2	1	3	4	7	9	8	6

Source: Google Maps. Distance from City Centre to Region Centre. Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Figure A-3: Distances to Airports That Offer Business Travel to More Than Five Destinations,
In Order of Available Destinations (Kilometres)

Airport	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Toronto Pearson International Airport	75	47	26	34	63	115	133	148	93
Buffalo-Niagara International Airport	243	215	168	146	119	68	298	312	190
Ottawa International Airport	348	456	468	489	527	557	322	276	499
John C. Munro Hamilton International Airport	152	124	77	55	20	59	206	221	73
Billy Bishop Toronto City Airport	66	53	44	52	66	118	128	142	110
Rank	6	4	2	1	2	6	8	9	5

Source: Google Maps, Distance from City Centre to Region Centre.
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Business Support Environment

Figure A-4: Number of Active Chambers of Commerce

Category	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Chamber of Commerce	6	9	3	5	3	10	4	3	2
Final Rank	3	2	6	4	6	1	5	6	7

Source: Ontario Chambers of Commerce

Figure A-5: Number of Active Research Centres

Category	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Research Centres	9	8	10	6	11	10	-	-	18
Final Rank	5	6	3	7	2	3	-	-	1

Source: National Research Council of Canada

Figure A-6: Number of Active Post-Secondary Schools

Category	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Northumberland County	Peterborough City and County	Waterloo Region
Post-Secondary Schools	3	1	2	1	4	3	1	3	3
Final Rank	2	7	6	7	1	2	7	2	2

Source: Council of Ontario Universities and Colleges Ontario



Quality of Place

Figure A-6: Doctors Per 100,000 People By Comparator Community, 2016

	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Waterloo Region
Offices of Physicians	239	231	213	256	837	284	242
Rank	5	6	7	3	1	2	4

Source: Canadian Community Health Survey, Statistics Canada, 2016

Figure A-7: Cultural and Recreational Amenities, 2017

Region	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Waterloo Region
Total Number of Restaurants (Fine Dining)	346	803	635	451	363	366	107
Total Number of Performing Arts Venues	22	18	6	6	2	12	3
Total Number of Professional Sports Organizations	1	1	3	2	1	1	1
Total Number of Recreation Centres	40	50	43	52	36	22	18
Recreational Assets per 100,000	61	75	47	90	72	88	24
Rank	5	3	6	1	4	2	7

Source: Canadian Framework for Cultural Statistics, Statistics Canada, 2016 and Related Local Directory Searches, 2017
Spectrum: Darker Green = Advantage | Darker Red = Disadvantage



Figure A-8: Average Housing Costs, 2017

Region	Durham Region	York Region	Peel Region	Halton Region	City of Hamilton	Niagara Region	Waterloo Region
Average Housing Costs	\$503,610	\$871,831	\$618,409	\$715,422	\$485,415	\$323,219	\$395,678
Rank	4	7	5	6	3	1	2

Source: Local Regional Real Estate Boards



Appendix B

Industry Sector NAICS Codes



Agri-Business Sector

The following illustrates the detailed definition of agri-business as defined by NAIC codes.

Code	NAIC Description
1110	Farms
1150	Support activities for farms
3111	Animal food manufacturing
3112	Grain and oilseed milling
3113	Sugar and confectionery product manufacturing
3114	Fruit and vegetable preserving and specialty food manufacturing
3115	Dairy product manufacturing
3116	Meat product manufacturing
3118	Bakeries and tortilla manufacturing
3119	Other food manufacturing
3121	Beverage manufacturing
3122	Tobacco manufacturing
4111	Farm product merchant wholesalers
4131	Food merchant wholesalers
4171	Farm, lawn and garden machinery and equipment merchant wholesalers
4183	Agricultural supplies merchant wholesalers

Health Industries Sector

The following illustrates the detailed definition of health industries as defined by NAIC codes.

Code	NAIC Description
3254	Pharmaceutical and Medicine Manufacturing
3391	Medical Equipment and Supplies Manufacturing
4145	Pharmaceuticals, Toiletries, Cosmetics and Sundries Wholesaler-Distributors
6215	Medical and Diagnostic Laboratories
6221	General Medical and Surgical Hospitals
6222	Psychiatric and Substance Abuse Hospitals
6223	Specialty (Except Psychiatric and Substance Abuse) Hospitals



Digital Media

The following illustrates the detailed definition of the digital media sector as defined by NAIC codes.

Code	NAIC Description
5111	Newspaper, periodical, book and directory publishers
5112	Software Publishers
5121	Motion Picture and Video Industries
5122	Sound Recording Industries
5151	Radio and Television Broadcasting
5191	Other Information Services
5415	Computer Systems Design and Related Services

3E (Energy, Environment and Engineering)

The following illustrates the detailed definition of the EN3 sector as defined by NAIC codes.

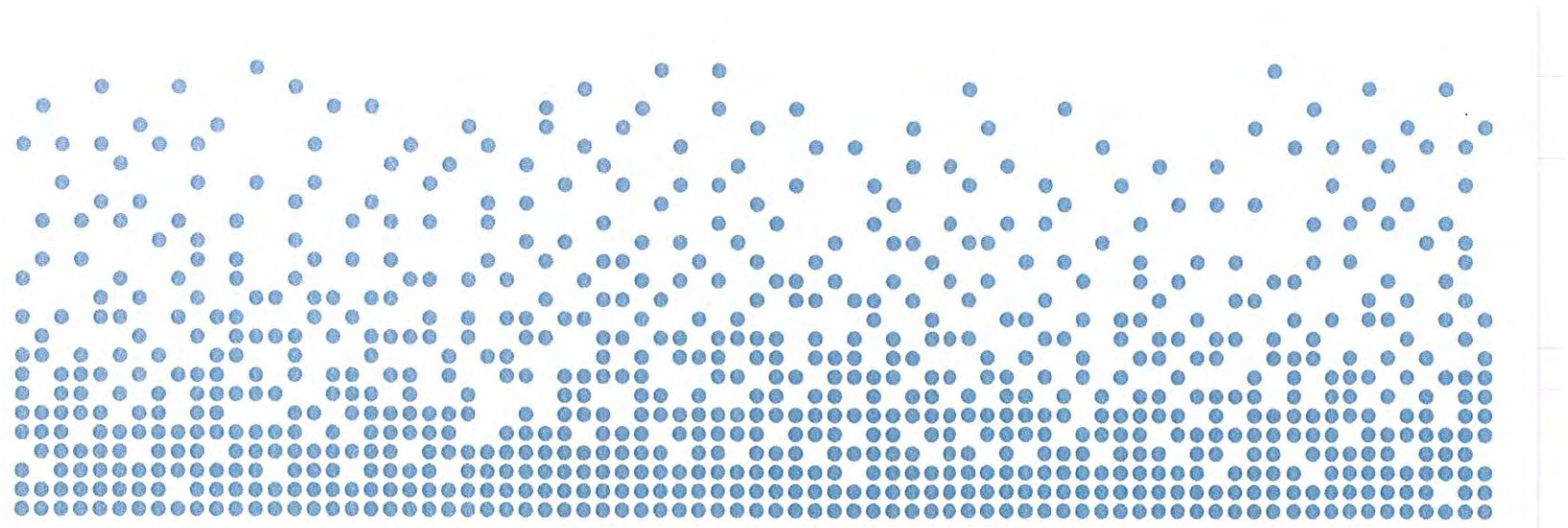
Code	NAIC Description
2211	Electric Power Generation, Transmission and Distribution
2212	Natural Gas Distribution
2213	Water, Sewage and Other Systems
2371	Utility System Construction
4861	Pipeline Transportation of Crude Oil
4862	Pipeline Transportation of Natural Gas
4869	Other Pipeline Transportation
5417	Scientific Research and Development Services



Advanced Manufacturing

The following illustrates the detailed definition of the advanced manufacturing sector as defined by NAIC codes.

Code	NAIC Description
3133	Textile and Fabric Finishing and Fabric Coating
3222	Converted Paper Product Manufacturing
3255	Paint, Coating and Adhesive Manufacturing
3262	Rubber Product Manufacturing
3272	Glass and Glass Product Manufacturing
3273	Cement and Concrete Product Manufacturing
3321	Forging and Stamping
3363	Motor Vehicles Parts Manufacturing



Appendix C

Industry-Specific Prototypical Developments

TABLE C-1: INDUSTRY-SPECIFIC PROTOTYPICAL DEVELOPMENT CHARACTERISTICS

Sector	Location	Development Scenario	Building		Parcel		Employment
			sq. m.	sq. ft.	Net ha	Net Acres	
Advanced Manufacturing Facility	Employment Area (Urban)	Construct and Occupy	18,580	200,000	6.2	15.3	300
Agri-Business Sector (Food Processing)	Rural Industrial	Construct and Occupy	27,870	300,000	0.3	23.0	600
Digital Media (Office Building - Class A)	Employment Area (Urban)	Lease Office Space	2,325	25,000	0.6	1.4	125
EN3 (PSTS - Office Building - Class A)	Employment Area (Urban)	Construct and Occupy	4,645	50,000	0.3	0.8	200
Health Industries Sector (R&D Facility)	Employment Area (Urban)	Construct and Occupy	18,580	200,000	5.3	13.1	400

Source: Watson & Associates Economists Ltd.

FIGURE C-1: ASSESSMENT OF TOTAL DEVELOPMENT COST/OPERATING COST

Agri-Business Sector (Food Processing)
 Building 300,000 square feet
 Land 22.96 Acres (35% FSI)

DEVELOPMENT COSTS

Market Area	Land Cost per Acre ¹	Land Cost per Sq.ft. of Building GFA	Construction Cost per Sq.ft. ²	Development Charges/ Impact Fees per Sq.ft. ³	Developer Profit (5%) per Sq.ft.	Total Development Cost per Sq.ft.	Total Development Cost
	A	B	C	D	E	F	G
		A x 22.96 / 300000			5% of (B+C+D)	B+C+D+E	F x 300000
Durham Region	\$77,115	\$5.90	\$78.96	\$12.81	\$4.88	\$102.56	\$30,769,293
York Region	\$79,298	\$6.07	\$78.96	\$29.74	\$5.74	\$120.52	\$36,154,743
Peel Region	\$283,831	\$21.72	\$78.96	\$20.89	\$6.08	\$127.66	\$38,297,490
Haltim Region	\$134,969	\$10.33	\$78.96	\$19.71	\$5.45	\$114.46	\$34,337,661
City of Hamilton	\$118,047	\$9.03	\$77.54	\$14.35	\$5.05	\$105.97	\$31,790,739
Niagara Region	\$350,000	\$26.79	\$72.56	\$7.10	\$5.32	\$111.77	\$33,531,375
Northumberland County	\$118,047	\$9.03	\$73.98	\$3.01	\$4.30	\$90.33	\$27,098,097

OPERATING COSTS

Market Area	Tax Rate ⁴	Assessment per Sq.ft. ⁵	Taxes per Sq.ft.	Water/Wastewater Costs per Sq.ft. ⁶	Electricity Costs per Sq.ft. ⁶	Natural Gas Costs per Sq.ft. ⁶	Labour Costs per Sq.ft. ⁷	Total Annual Operating Costs per Sq.ft.	Total Annual Operating Cost
	H	I	J	K	L	M	N	O	P
			H x I / 100					J+K+L+M+N	O x 300000
Durham Region	3.4032	\$55.24	\$1.88	\$2.40	\$2.76	\$1.19	\$70.24	\$78.47	\$23,540,377
York Region	1.9981	\$65.28	\$1.70	\$3.45	\$2.55	\$1.19	\$85.52	\$94.40	\$28,320,651
Peel Region	2.2420	\$76.95	\$1.73	\$2.01	\$2.55	\$1.19	\$106.99	\$114.45	\$34,335,922
Haltim Region	2.5718	\$65.29	\$2.19	\$2.03	\$3.39	\$1.19	\$120.98	\$129.77	\$38,932,052
City of Hamilton	5.7129	\$41.72	\$2.38	\$2.58	\$2.55	\$1.19	\$85.10	\$93.80	\$28,139,356
Niagara Region	4.0965	\$44.01	\$1.80	\$2.55	\$2.67	\$1.19	\$72.33	\$80.54	\$24,160,618
Northumberland County	7.0700	\$43.13	\$3.05	\$2.06	\$4.35	\$1.77	\$88.56	\$99.79	\$29,937,882

Source: Watson & Associates Economists Ltd.

Notes:

1. Land prices are based on data from MDB Insight.
2. Watson & Associates Economists Ltd. estimate. Locational variation based on RSM means locational factor data.
3. Development charge rates are based on an area municipal average where applicable. Rates based on postings on November 2018.
4. Based on area municipal averages posted on November 2018.
5. Assessment per sq. ft. is based on Watson & Associates Economists Ltd. survey averages.
6. Costs for water/wastewater, natural gas and electricity are based on industry average consumption rates and local cost data.
7. Labour costs are based on EMSI Analyst data.

FIGURE C-2: ASSESSMENT OF TOTAL DEVELOPMENT COST/OPERATING COST

Health Industries Sector (R&D Facility)

Building 200,000 square feet
Land 13.12 Acres (35% FSI)

DEVELOPMENT COSTS

Market Area	Land Cost per Acre ¹	Land Cost per Sq.ft. of Building GFA	Construction Cost per Sq.ft. ²	Development Charges/ Impact Fees per Sq.ft. ³	Developer Profit (5%) per Sq.ft.	Total Development Cost per Sq.ft.	Total Development Cost
	A	B	C	D	E	F	G
		A x 13.12 / 200000			5% of (B+C+D)	B+C+D+E	F x 200000
Durham Region	\$381,250	\$25.01	\$247.87	\$23.59	\$14.82	\$311.29	\$62,258,319
York Region	\$1,596,667	\$102.10	\$247.87	\$35.58	\$19.28	\$404.83	\$80,966,698
Peel Region	\$1,070,000	\$70.18	\$247.87	\$28.91	\$17.35	\$364.32	\$72,863,138
Halton Region	\$855,000	\$56.08	\$247.87	\$22.94	\$16.34	\$343.23	\$68,646,497
City of Hamilton	\$498,000	\$32.66	\$243.41	\$19.90	\$14.80	\$310.77	\$62,153,779
Niagara Region	\$114,900	\$7.54	\$227.77	\$16.11	\$12.57	\$263.99	\$52,798,345
Peterborough (City & County)	\$100,000	\$6.56	\$232.24	\$5.81	\$12.23	\$256.84	\$51,368,586

OPERATING COSTS

Market Area	Tax Rate ⁴	Assessment per Sq.ft. ⁶	Taxes per Sq.ft.	Water/Wastewater Costs per Sq.ft. ⁵	Electricity Costs per Sq.ft. ⁸	Natural Gas Costs per Sq.ft. ⁹	Labour Costs per Sq.ft. ⁷	Total Annual Operating Costs per Sq.ft.	Total Annual Operating Cost
	H	I	J	K	L	M	N	O	P
			H x I / 100					J+K+L+M+N	O x 200000
Durham Region	2.6033	\$170.65	\$4.44	\$0.26	\$1.54	\$0.15	\$124.49	\$130.88	\$26,176,254
York Region	1.6359	\$328.62	\$5.38	\$0.37	\$1.42	\$0.15	\$126.52	\$133.84	\$26,767,016
Peel Region	2.0628	\$357.42	\$7.37	\$0.22	\$1.42	\$0.15	\$139.29	\$148.44	\$29,688,399
Halton Region	1.7420	\$353.35	\$6.16	\$0.22	\$1.89	\$0.15	\$130.10	\$138.51	\$27,701,219
City of Hamilton	3.2521	\$186.42	\$6.06	\$0.28	\$1.42	\$0.15	\$119.68	\$127.59	\$25,518,385
Niagara Region	3.1098	\$158.36	\$4.92	\$0.28	\$1.49	\$0.15	\$110.00	\$116.84	\$23,367,483
Peterborough (City & County)	3.3700	\$154.07	\$5.19	\$0.12	\$1.38	\$0.15	\$122.85	\$129.69	\$25,938,943

Source: Watson & Associates Economists Ltd.

Notes:

- Land prices are based on data from Cushman & Wakefield Ltd. compiled by Watson & Associates Economists Ltd. (Watson) with exception of City of Hamilton, Peterborough (City & County) and Northumberland County data based on Watson estimates.
- Watson & Associates Economists Ltd. estimate. Locational variation based on RSMeans locational factor data.
- Development charge rates are based on an area municipal average where applicable. Rates based on postings on November 2018.
- Based on area municipal averages posted on November 2018.
- Assessment per sq.ft. is based on Watson & Associates Economists Ltd. survey averages.
- Costs for water/wastewater, natural gas and electricity are based on industry average consumption rates and local cost data.
- Labour costs are based on EMSI Analyst data.

FIGURE C-3: ASSESSMENT OF OPERATING COST

Digital Media (Office Building - Class A)

Building 25,000 square feet
Land 1.43 Acres (40% FSI)

OPERATING COSTS

Market Area	Net Market Rent ¹	TMI ¹	Water/Wastewater Costs per Sq.ft. ²	Electricity Costs per Sq.ft. ²	Natural Gas Costs per Sq.ft. ²	Labour Costs per Sq.ft. ³	Total Annual Operating Costs per Sq.ft.	Total Annual Operating Cost
	A	B	C	D	E	F	G	H
							A+B+C+D+E+F	G x 25000
Durham Region	\$13.63	\$13.38	\$0.23	\$1.42	\$0.08	\$283.54	\$312.28	\$7,806,891
York Region	\$20.23	\$14.96	\$0.33	\$1.31	\$0.08	\$360.10	\$397.01	\$9,925,258
Peel Region	\$19.22	\$12.94	\$0.19	\$1.31	\$0.08	\$358.05	\$391.79	\$9,794,721
Halton Region	\$18.28	\$13.14	\$0.20	\$1.74	\$0.08	\$359.96	\$393.39	\$9,834,759
City of Hamilton	\$12.78	\$13.23	\$0.25	\$1.31	\$0.08	\$264.45	\$292.10	\$7,302,409
Niagara Region	\$13.00	\$11.00	\$0.25	\$1.37	\$0.08	\$233.95	\$259.64	\$6,491,041
Waterloo Region	\$17.25	\$11.68	\$0.33	\$1.61	\$0.12	\$327.73	\$358.73	\$8,968,172

Source: Watson & Associates Economists Ltd.

Notes:

1. Based on average market rent data.
2. Costs for water/wastewater, natural gas and electricity are based on industry average consumption rates and local cost data.
3. Labour costs are based on EMSI Analyst data.

FIGURE C-4: ASSESSMENT OF TOTAL DEVELOPMENT COST/OPERATING COST

EN3 (PSTS - Office Building - Class A)

Building 50,000 square feet
Land 0.82 Acres (40% FSI)

DEVELOPMENT COSTS

Market Area	Land Cost per Acre ¹	Land Cost per Sq.ft. of Building GFA	Construction Cost per Sq.ft. ²	Development Charges/ Impact Fees per Sq.ft. ³	Developer Profit (5%) per Sq.ft.	Total Development Cost per Sq.ft.	Total Development Cost
	A	B	C	D	E	F	G
		A x 0.82 / 50000			5% of (B+C+D)	B+C+D+E	F x 50000
Durham Region	\$381,250	\$6.25	\$218.06	\$23.59	\$12.40	\$260.30	\$13,014,860
York Region	\$1,556,667	\$25.53	\$218.06	\$35.58	\$13.96	\$293.13	\$14,656,410
Peel Region	\$1,070,000	\$17.55	\$218.06	\$28.91	\$13.23	\$277.75	\$13,887,350
Haltim Region	\$855,000	\$14.02	\$218.06	\$22.94	\$12.75	\$267.77	\$13,388,433
City of Hamilton	\$498,000	\$8.17	\$214.13	\$19.90	\$12.11	\$254.31	\$12,715,416
Peterborough (City & County)	\$100,000	\$1.64	\$204.31	\$3.81	\$10.59	\$222.35	\$11,117,464
Northumberland County	\$80,000	\$1.31	\$204.31	\$8.35	\$10.70	\$224.67	\$11,233,373

OPERATING COSTS

Market Area	Tax Rate ⁴	Assessment per Sq.ft. ⁵	Taxes per Sq.ft.	Water/Wastewater Costs per Sq.ft. ⁶	Electricity Costs per Sq.ft. ⁶	Natural Gas Costs per Sq.ft. ⁶	Labour Costs per Sq.ft. ⁷	Total Annual Operating Costs per Sq.ft.	Total Annual Operating Cost
	H	I	J	K	L	M	N	O	P
			H x I / 100					J+K+L+M+N	O x 50000
Durham Region	2.6033	\$142.70	\$3.71	\$0.23	\$1.42	\$0.08	\$226.83	\$232.27	\$11,613,650
York Region	1.6359	\$237.94	\$3.89	\$0.33	\$1.31	\$0.08	\$288.08	\$293.69	\$14,684,609
Peel Region	2.0628	\$272.49	\$5.62	\$0.19	\$1.31	\$0.08	\$286.44	\$293.64	\$14,681,892
Haltim Region	1.7420	\$275.66	\$4.80	\$0.20	\$1.74	\$0.08	\$287.96	\$294.78	\$14,739,064
City of Hamilton	3.2521	\$152.55	\$4.96	\$0.25	\$1.31	\$0.08	\$211.56	\$218.16	\$10,907,867
Peterborough (City & County)	3.3700	\$133.38	\$4.49	\$0.11	\$1.27	\$0.08	\$286.46	\$292.41	\$14,620,635
Northumberland County	4.0300	\$134.77	\$5.43	\$0.20	\$2.23	\$0.12	\$338.26	\$346.24	\$17,311,872

Source: Watson & Associates Economists Ltd.

Notes:

1. Land prices are based on data from Cushman & Wakefield Ltd., compiled by Watson & Associates Economists Ltd., (Watson) with exception of City of Hamilton, Peterborough (City & County) and Northumberland County data based on Watson estimates.
2. Watson & Associates Economists Ltd. estimate. Locational variation based on RSMeans locational factor data.
3. Development charge rates are based on an area municipal average where applicable. Rates based on postings on November 2018.
4. Based on area municipal averages posted on November 2018.
5. Assessment per sq.ft. is based on Watson & Associates Economists Ltd. survey averages.
6. Costs for water/wastewater, natural gas and electricity are based on industry average consumption rates and local cost data.
7. Labour costs are based on EMSI Analyst data.

FIGURE C-5: ASSESSMENT OF TOTAL DEVELOPMENT COST/OPERATING COST

Advanced Manufacturing Facility

Building 200,000 square feet
Land 15.30 Acres (30% FSI)

DEVELOPMENT COSTS

Market Area	Land Cost per Acre ¹	Land Cost per Sq.ft. of Building GFA	Construction Cost per Sq.ft. ²	Development Charges/ Impact Fees per Sq.ft. ³	Developer Profit: (5%) per Sq.ft.	Total Development Cost per Sq.ft.	Total Development Cost
	A	B	C	D	E	F	G
		A x 15.3 / 200000			5% of (B+C+D)	B+C+D+E	F x 200000
Durham Region	\$335,000	\$25.63	\$108.92	\$12.81	\$7.37	\$154.73	\$30,945,808
York Region	\$781,429	\$59.78	\$108.92	\$29.74	\$9.92	\$208.36	\$41,672,898
Peel Region	\$1,023,333	\$78.29	\$108.92	\$20.89	\$10.40	\$218.50	\$43,700,342
Haltim Region	\$807,500	\$61.77	\$108.92	\$19.71	\$9.52	\$199.93	\$39,985,603
City of Hamilton	\$498,000	\$38.10	\$106.96	\$14.35	\$7.97	\$167.37	\$33,474,165
Peterborough (City & County)	\$100,000	\$7.65	\$102.05	\$0.00	\$5.49	\$115.19	\$23,037,055
Northumberland County	\$80,000	\$6.12	\$102.05	\$3.01	\$5.56	\$116.74	\$23,347,208

OPERATING COSTS

Market Area	Tax Rate ⁴	Assessment per Sq.ft. ⁵	Taxes per Sq.ft.	Water/Wastewater Costs per Sq.ft. ⁶	Electricity Costs per Sq.ft. ⁵	Natural Gas Costs per Sq.ft. ⁵	Labour Costs per Sq.ft. ⁷	Total Annual Operating Costs per Sq.ft.	Total Annual Operating Cost
	H	I	J	K	L	M	N	O	P
			H x I / 100					J+K+L+M+N	O x 200000
Durham Region	3.4032	\$83.33	\$2.84	\$0.49	\$3.28	\$0.46	\$92.52	\$99.59	\$19,917,363
York Region	1.9981	\$147.44	\$2.95	\$0.71	\$3.02	\$0.46	\$98.52	\$105.66	\$21,131,495
Peel Region	2.2420	\$131.70	\$2.95	\$0.41	\$3.02	\$0.46	\$92.29	\$99.14	\$19,827,040
Haltim Region	2.5718	\$148.99	\$3.83	\$0.42	\$4.02	\$0.46	\$101.81	\$110.54	\$22,108,092
City of Hamilton	5.7129	\$65.90	\$3.76	\$0.53	\$3.02	\$0.46	\$86.47	\$94.25	\$18,849,824
Peterborough (City & County)	3.6100	\$61.01	\$2.20	\$0.23	\$2.94	\$0.46	\$77.64	\$83.47	\$16,694,670
Northumberland County	7.0700	\$55.74	\$3.94	\$0.42	\$5.16	\$0.69	\$88.49	\$98.70	\$19,739,899

Source: Watson & Associates Economists Ltd.

Notes:

- Land prices are based on data from Cushman & Wakefield Ltd. compiled by Watson & Associates Economists Ltd. (Watson) with exception of City of Hamilton, Peterborough (City & County) and Northumberland County data based on Watson estimates.
- Watson & Associates Economists Ltd. estimate. Locational variation based on RSMeans locational factor data.
- Development charge rates are based on an area municipal average where applicable. Rates based on postings on November 2018.
- Based on area municipal averages posted on November 2018.
- Assessment per sq.ft. is based on Watson & Associates Economists Ltd. survey averages.
- Costs for water/wastewater, natural gas and electricity are based on industry average consumption rates and local cost data.
- Labour costs are based on EMSI Analyst data.



Appendix D

Assessment of Development Cost/Annualized Cost

SCHEDULE D-1: ASSESSMENT OF TOTAL DEVELOPMENT COST/ANNUALIZED COST

Industrial Building - 75,000 sq.ft.
 75,000 square feet
 5.70 acres (30 percent coverage)
 Building
 Land
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I	J	
	Land Cost Per Acre	Land Cost Per Sq.ft. of Building	Construction Cost Per Sq.ft.	Development Charges Per Sq.ft.	Developer Profit (5%) Per Sq.ft.	Total Dev't Cost Per Sq.ft.	Annualized Dev't Cost (6.5%) Per Sq.ft.	Tax Rate	Assessment Per Sq.ft.	Taxes Per Sq.ft.	Total Annualized Costs
		A x 5.7/75000			5% of (B+C+D)	B+C+D+E	F x 6.5%			F x H / 100	G + I + J
GTHA											
Durham Region											
Alax	\$380,000	\$28.88	\$68.81	\$16.88	\$6.73	\$141.29	\$9.18	3.2004	\$66.35	\$2.79	\$11.97
Brook	\$300,000	\$22.80	\$68.81	\$12.54	\$6.21	\$130.35	\$8.47	3.5285	\$43.36	\$1.63	\$10.00
Clarrington	\$300,000	\$22.80	\$68.81	\$12.13	\$6.19	\$129.92	\$8.45	3.3903	\$53.94	\$1.83	\$10.27
Oshawa	\$320,000	\$22.80	\$68.81	\$9.96	\$6.08	\$127.65	\$8.30	4.0427	\$64.92	\$2.62	\$10.92
Pickering	\$400,000	\$30.40	\$68.81	\$12.99	\$6.61	\$138.81	\$9.02	3.2379	\$70.54	\$2.28	\$11.31
Scugog	\$300,000	\$22.80	\$68.81	\$12.95	\$6.23	\$130.78	\$8.50	3.1688	\$56.62	\$1.79	\$10.30
Uxbridge	\$300,000	\$22.80	\$68.81	\$12.76	\$6.22	\$130.59	\$8.49	3.0782	\$53.58	\$1.96	\$10.45
Whitby	\$360,000	\$28.88	\$68.81	\$12.37	\$6.50	\$136.56	\$8.86	3.5488	\$72.75	\$2.56	\$11.46
Peel Region											
Brampton	\$1,160,000	\$88.16	\$88.81	\$19.25	\$9.81	\$206.02	\$13.39	2.3624	\$96.51	\$2.28	\$15.67
Caledon	\$740,000	\$56.24	\$88.81	\$18.11	\$8.16	\$171.31	\$11.14	2.1554	\$86.43	\$1.86	\$13.00
Mississauga	\$1,170,000	\$88.92	\$88.81	\$25.70	\$10.17	\$213.60	\$13.88	2.2082	\$121.63	\$2.69	\$16.57
York Region											
Aurora	\$590,000	\$44.84	\$88.81	\$26.94	\$8.03	\$168.62	\$10.96	2.0657	\$78.87	\$1.63	\$12.59
East Gwillimbury	\$400,000	\$30.40	\$88.81	\$25.40	\$7.23	\$151.84	\$9.87	2.0846	\$84.44	\$1.76	\$11.63
Markham	\$1,370,000	\$104.12	\$88.81	\$33.96	\$11.34	\$238.23	\$15.48	1.8743	\$120.60	\$2.26	\$17.75
Newmarket	\$480,000	\$36.48	\$88.81	\$28.31	\$7.68	\$161.28	\$10.48	2.1261	\$87.32	\$2.07	\$12.55
Richmond Hill	\$910,000	\$61.56	\$88.81	\$30.28	\$9.03	\$189.68	\$12.33	1.9099	\$114.26	\$2.18	\$14.51
Vaughan	\$1,170,000	\$88.92	\$88.81	\$36.74	\$10.72	\$225.19	\$14.64	1.9146	\$127.41	\$2.44	\$17.08
Whitchurch-Stouffville	\$650,000	\$49.40	\$88.81	\$27.14	\$8.27	\$173.62	\$11.29	2.0116	\$173.29	\$3.49	\$14.77
Halton Region											
Burlington	\$870,000	\$66.12	\$88.81	\$21.45	\$8.82	\$185.20	\$12.04	2.7106	\$136.20	\$3.69	\$19.73
Halton Hills	\$590,000	\$44.84	\$88.81	\$15.71	\$7.47	\$156.63	\$9.30	2.6391	\$93.20	\$2.46	\$12.65
Milton	\$1,110,000	\$84.36	\$88.81	\$17.27	\$9.52	\$199.96	\$13.00	2.3368	\$99.25	\$2.32	\$15.32
Oakville	\$660,000	\$50.16	\$88.81	\$24.42	\$8.17	\$171.56	\$11.15	2.8019	\$126.26	\$3.29	\$14.44
Hamilton	\$498,000	\$37.85	\$87.21	\$14.35	\$6.97	\$146.37	\$9.51	5.0387	\$49.76	\$2.51	\$12.02
OUTSIDE GTHA											
Brantford	\$225,000	\$17.10	\$84.81	\$6.83	\$5.44	\$114.18	\$7.42	3.82102	\$55.02	\$2.10	\$9.52
Cambridge	\$350,000	\$26.60	\$92.41	\$10.45	\$5.97	\$125.43	\$8.15	3.10803	\$79.98	\$2.49	\$10.64
Guelph	\$350,000	\$26.60	\$82.41	\$9.97	\$5.95	\$124.93	\$8.12	3.28688	\$80.72	\$2.98	\$11.10
Kitchener	\$350,000	\$26.60	\$82.41	\$10.22	\$5.86	\$125.19	\$8.14	2.96151	\$69.65	\$2.07	\$10.21
Peterborough	\$250,000	\$19.00	\$83.21	\$0.00	\$6.53	\$109.04	\$7.09	3.23401	\$48.69	\$1.57	\$8.66

Source: Watson & Associates Economists Ltd.

1. Land value based on mid-range of typical per acre cost for high quality serviced employment land appropriate for general industrial uses provided by Cushman & Wakefield Ltd., with exception of Hamilton based on Watson & Associates Economists Ltd. estimate.
2. Watson & Associates Economists Ltd. Locational variation based on RSMeans locational factor data.
3. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education development charges posted on November 2018.
4. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education taxes posted on November 2018.

SCHEDULE D-2: ASSESSMENT OF TOTAL DEVELOPMENT COST/ANNUALIZED COST
Industrial Building - 150,000 sq.ft.

150,000 square feet
 Building
 Land
 9.84 acres (35 percent coverage)
 Developer Profit
 5%
 Annualization Factor
 6.5%

	A	B	C	D	E	F	G	H	I	J	
	Land Cost Per Acre	Land Cost Per Sq.ft. of Building	Construction Cost Per Sq.ft.	Development Charges Per Sq.ft.	Developer Profit (5%) Per Sq.ft.	Total Dev't Cost Per Sq.ft.	Annualized Dev't Cost (6.5%) Per Sq.ft.	Tax Rate	Assessment Per Sq.ft.	Taxes Per Sq.ft.	Total Annualized Costs
	A x 9.84 / 150000	B	C	D	E 5% of (B+C+D)	F B+C+D+E	G F x 6.5%	H	I F x H / 100	J G+I	
GTHA											
Durham Region											
Ajax	\$380,000	\$24.93	\$84.96	\$16.81	\$6.34	\$133.04	\$8.65	3.2304	\$66.35	\$2.79	\$11.44
Brock	\$300,000	\$19.68	\$84.96	\$12.54	\$5.86	\$123.04	\$8.00	3.5285	\$43.36	\$1.53	\$9.53
Clarington	\$300,000	\$19.68	\$84.96	\$12.13	\$5.84	\$122.61	\$7.97	3.3903	\$53.94	\$1.83	\$9.80
Oshawa	\$320,000	\$19.68	\$84.96	\$9.96	\$6.73	\$120.33	\$7.82	4.0427	\$64.92	\$2.82	\$10.45
Pickering	\$400,000	\$26.24	\$84.96	\$12.99	\$6.21	\$130.40	\$8.48	3.2379	\$70.54	\$2.28	\$10.76
Scugog	\$300,000	\$19.68	\$84.96	\$12.95	\$5.88	\$123.47	\$8.03	3.1888	\$63.62	\$1.79	\$9.82
Uxbridge	\$300,000	\$19.68	\$84.96	\$12.76	\$5.87	\$123.27	\$8.01	3.0782	\$63.56	\$1.96	\$9.97
Whitby	\$380,000	\$24.93	\$84.96	\$12.37	\$6.11	\$128.38	\$8.34	3.5488	\$72.75	\$2.58	\$10.93
Peel Region											
Brampton	\$1,160,000	\$76.10	\$84.96	\$19.25	\$9.02	\$189.32	\$12.31	2.3624	\$96.51	\$2.28	\$14.59
Caledon	\$740,000	\$48.54	\$84.96	\$18.11	\$7.58	\$159.20	\$10.35	2.1554	\$66.43	\$1.86	\$12.21
Mississauga	\$1,170,000	\$76.75	\$84.96	\$25.28	\$9.35	\$196.34	\$12.76	2.2082	\$121.63	\$2.69	\$15.45
York Region											
Aurora	\$590,000	\$38.70	\$84.96	\$26.94	\$7.53	\$158.14	\$10.28	2.0657	\$78.87	\$1.63	\$11.91
East Gwillimbury	\$400,000	\$26.24	\$84.96	\$25.40	\$6.83	\$143.43	\$9.32	2.0946	\$64.44	\$1.76	\$11.08
Markham	\$1,370,000	\$99.87	\$84.96	\$33.85	\$10.43	\$219.12	\$14.24	1.8743	\$120.60	\$2.26	\$16.50
Newmarket	\$480,000	\$31.49	\$84.96	\$28.31	\$7.24	\$152.00	\$9.88	2.1261	\$97.32	\$2.07	\$11.95
Richmond Hill	\$810,000	\$53.14	\$84.96	\$30.11	\$8.41	\$176.62	\$11.48	1.9099	\$114.26	\$2.18	\$13.66
Vaughan	\$1,170,000	\$76.75	\$84.96	\$36.70	\$9.92	\$208.33	\$13.94	1.9146	\$127.41	\$2.44	\$15.98
Whitchurch-Stouffville	\$650,000	\$42.64	\$84.96	\$27.14	\$7.74	\$162.48	\$10.96	2.0116	\$173.29	\$3.49	\$14.05
Halton Region											
Burlington	\$870,000	\$57.07	\$84.96	\$21.45	\$8.17	\$171.66	\$11.16	2.7106	\$136.20	\$3.69	\$14.85
Halton Hills	\$590,000	\$38.70	\$84.96	\$15.71	\$6.97	\$146.35	\$9.51	2.6391	\$93.20	\$2.46	\$11.97
Milton	\$1,110,000	\$72.82	\$84.96	\$17.27	\$8.75	\$183.81	\$11.95	2.3358	\$99.25	\$2.32	\$14.27
Oakville	\$660,000	\$43.30	\$84.96	\$24.42	\$7.63	\$160.31	\$10.42	2.6019	\$126.26	\$3.29	\$13.71
Hamilton	\$498,000	\$32.67	\$83.43	\$14.35	\$6.52	\$136.97	\$8.90	5.7129	\$49.76	\$2.84	\$11.75
OUTSIDE GTHA											
Brantford	\$225,000	\$14.76	\$81.14	\$6.83	\$5.14	\$107.87	\$7.01	3.82102	\$55.02	\$2.10	\$9.11
Cambridge	\$350,000	\$22.96	\$78.84	\$10.45	\$5.61	\$117.86	\$7.66	3.10803	\$79.98	\$2.49	\$10.15
Guelph	\$350,000	\$22.96	\$78.84	\$9.97	\$5.59	\$117.36	\$7.63	3.28658	\$90.72	\$2.98	\$10.61
Kitchener	\$350,000	\$22.96	\$78.84	\$10.22	\$5.60	\$117.62	\$7.65	2.96151	\$69.85	\$2.07	\$9.71
Peterborough	\$250,000	\$16.40	\$79.61	\$0.00	\$4.80	\$100.81	\$6.55	3.23401	\$48.69	\$1.57	\$8.13

Source: Watson & Associates Economists Ltd.

- Notes:
 1. Land value based on mid-range of typical per acre cost for high quality serviced employment land appropriate for general industrial uses provided by Cushman & Wakefield Ltd., with exception of Hamilton based on Watson & Associates Economists Ltd. estimate.
 2. Watson & Associates Economists Ltd. Local variation based on RSMMeans locational factor data.
 3. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education development charges posted on November 2018.
 4. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education taxes posted on November 2018.

SCHEDULE D-3: ASSESSMENT OF TOTAL DEVELOPMENT COST/ANNUALIZED COST

Industrial Building - 300,000 sq.ft.
 300,000 square feet
 Land 18.12 acres (38 percent coverage)
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I	J	
	Land Cost Per Acre	Land Cost Per Sq.ft. of Building	Construction Cost Per Sq.ft.	Development Charges Per Sq.ft.	Developer Profit (5%) Per Sq.ft.	Total Dev't Cost Per Sq.ft.	Annualized Dev't Cost (6.5%) Per Sq.ft.	Tax Rate	Assessment Per Sq.ft.	Taxes Per Sq.ft.	Total Annualized Costs
	A x 18.12 / 300,000	B x 18.12 / 300,000	C	D	5% of (B+C+D)	B+C+D+E	F x 6.5%	H		F x H / 100	G + I + J
GTHA											
Durham Region											
Ajax	\$380,000	\$22.95	\$77.33	\$16.78	\$5.85	\$122.91	\$7.99	3.2304	\$86.35	\$2.79	\$10.78
Brock	\$300,000	\$18.12	\$77.33	\$12.54	\$5.40	\$113.39	\$7.37	3.5285	\$43.36	\$1.53	\$8.90
Clarrington	\$300,000	\$18.12	\$77.33	\$12.13	\$5.38	\$112.96	\$7.34	3.3903	\$53.94	\$1.83	\$9.17
Oshawa	\$320,000	\$18.12	\$77.33	\$9.96	\$5.27	\$110.68	\$7.19	4.0427	\$53.94	\$2.28	\$9.37
Pickering	\$400,000	\$24.16	\$77.33	\$12.99	\$5.72	\$120.20	\$7.81	3.2379	\$70.54	\$2.28	\$10.10
Scugog	\$300,000	\$18.12	\$77.33	\$12.95	\$5.42	\$113.82	\$7.40	3.1688	\$56.62	\$1.79	\$9.19
Uxbridge	\$300,000	\$18.12	\$77.33	\$12.76	\$5.41	\$113.62	\$7.39	3.0782	\$63.68	\$1.96	\$9.34
Whitby	\$380,000	\$22.95	\$77.33	\$12.37	\$5.63	\$118.29	\$7.69	3.5488	\$72.75	\$2.58	\$10.27
Peel Region											
Brampton	\$1,160,000	\$70.06	\$77.33	\$19.25	\$8.33	\$174.97	\$11.37	2.3624	\$96.51	\$2.28	\$13.65
Caledon	\$740,000	\$44.70	\$77.33	\$18.11	\$7.01	\$147.14	\$9.56	2.1554	\$86.43	\$1.86	\$11.43
Mississauga	\$1,170,000	\$70.67	\$77.33	\$25.07	\$8.65	\$181.72	\$11.81	2.2082	\$121.63	\$2.69	\$14.50
York Region											
Aurora	\$590,000	\$35.64	\$77.33	\$26.94	\$7.00	\$146.90	\$9.55	2.0657	\$78.87	\$1.63	\$11.18
East Gwillimbury	\$400,000	\$24.16	\$77.33	\$25.40	\$6.34	\$133.24	\$8.66	2.0846	\$84.44	\$1.76	\$10.42
Markham	\$1,370,000	\$82.75	\$77.33	\$33.79	\$9.69	\$203.57	\$13.23	1.8743	\$120.60	\$2.26	\$15.49
Newmarket	\$480,000	\$28.99	\$77.33	\$28.31	\$6.73	\$141.36	\$9.19	2.1261	\$97.32	\$2.07	\$11.26
Richmond Hill	\$810,000	\$48.92	\$77.33	\$30.02	\$7.81	\$164.09	\$10.67	1.9099	\$114.26	\$2.18	\$12.85
Vaughan	\$1,170,000	\$70.67	\$77.33	\$36.66	\$9.23	\$193.89	\$12.60	1.9146	\$127.41	\$2.44	\$15.04
Whitchurch-Stouffville	\$650,000	\$39.26	\$77.33	\$27.14	\$7.19	\$150.92	\$9.81	2.0116	\$173.29	\$3.49	\$13.30
Halton Region											
Burlington	\$870,000	\$52.55	\$77.33	\$21.45	\$7.57	\$158.90	\$10.33	2.7106	\$136.20	\$3.69	\$14.02
Halton Hills	\$590,000	\$35.64	\$77.33	\$15.71	\$6.43	\$135.12	\$8.76	2.6391	\$93.20	\$2.46	\$11.24
Milton	\$1,110,000	\$67.04	\$77.33	\$17.27	\$8.08	\$169.73	\$11.03	2.3358	\$99.25	\$2.32	\$13.35
Oakville	\$960,000	\$39.86	\$77.33	\$24.42	\$7.08	\$148.70	\$9.67	2.6019	\$126.26	\$3.29	\$12.95
Hamilton	\$498,000	\$30.08	\$75.94	\$14.35	\$6.02	\$126.38	\$8.21	5.7129	\$49.76	\$2.84	\$11.06
OUTSIDE GTHA											
Brantford	\$225,000	\$13.59	\$73.85	\$6.83	\$4.71	\$88.98	\$6.43	3.82102	\$55.02	\$2.10	\$8.54
Cambridge	\$350,000	\$21.14	\$71.76	\$10.45	\$5.17	\$108.52	\$7.05	3.10803	\$79.98	\$2.49	\$9.54
Guelph	\$350,000	\$21.14	\$71.76	\$9.97	\$5.14	\$108.02	\$7.02	3.28658	\$90.72	\$2.98	\$10.00
Kitchener	\$350,000	\$21.14	\$71.76	\$10.22	\$5.16	\$108.28	\$7.04	2.98151	\$69.85	\$2.07	\$9.11
Peterborough	\$250,000	\$15.10	\$72.45	\$0.00	\$4.38	\$91.93	\$5.98	3.23401	\$48.69	\$1.57	\$7.55

Source: Watson & Associates Economists Ltd.

- Notes:
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 2. Watson & Associates Economists Ltd. Local variation based on RSMeans locational factor data.
 3. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education development charges posted on November 2018.
 4. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education taxes posted on November 2018.

SCHEDULE D-4: ASSESSMENT OF TOTAL DEVELOPMENT COST/ANNUALIZED COST

Industrial Building - 750,000 sq.ft.
 Land 750,000 square feet
 Building 43.04 acres (40 percent coverage)
 Land 5%
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I	J	
	Land Cost Per Acre	Land Cost Per Sq.ft. of Building	Construction Cost Per Sq.ft.	Development Charges Per Sq.ft.	Developer Profit (5%) Per Sq.ft.	Total Dev't Cost Per Sq.ft.	Annualized Dev't Cost (6.5%) Per Sq.ft.	Tax Rate	Assessment Per Sq.ft.	Taxes Per Sq.ft.	Total Annualized Costs
	A x 43.04 / 750000	B	C	D	E of (B+C+D)	F = B+C+D+E	F x 6.5%	H	F x H / 100	J = G + I	
GTHA											
Durham Region											
Ajax	\$380,000	\$21.81	\$71.81	\$16.76	\$5.52	\$115.89	\$7.53	3.2304	\$66.35	\$2.79	\$10.32
Brock	\$300,000	\$17.22	\$71.81	\$12.54	\$5.08	\$106.64	\$6.93	3.5285	\$43.36	\$1.53	\$8.46
Clarington	\$300,000	\$17.22	\$71.81	\$12.13	\$5.06	\$105.21	\$6.90	3.3903	\$53.94	\$1.83	\$8.73
Oshawa	\$320,000	\$17.22	\$71.81	\$9.96	\$4.95	\$103.93	\$6.76	4.0427	\$53.94	\$2.18	\$8.94
Pickering	\$400,000	\$22.95	\$71.81	\$12.99	\$5.39	\$113.14	\$7.35	3.2379	\$70.54	\$2.28	\$9.64
Scugog	\$300,000	\$17.22	\$71.81	\$12.95	\$5.10	\$107.07	\$6.96	3.1688	\$56.62	\$1.79	\$8.75
Uxbridge	\$300,000	\$17.22	\$71.81	\$12.76	\$5.09	\$106.87	\$6.95	3.0762	\$63.58	\$1.96	\$8.90
Whitby	\$380,000	\$21.81	\$71.81	\$12.37	\$5.30	\$111.29	\$7.23	3.5488	\$72.75	\$2.58	\$9.82
Peel Region											
Brampton	\$1,160,000	\$66.57	\$71.81	\$19.25	\$7.88	\$165.50	\$10.76	2.3624	\$96.51	\$2.28	\$13.04
Caledon	\$740,000	\$42.47	\$71.81	\$18.11	\$6.62	\$135.00	\$8.94	2.1554	\$86.43	\$1.86	\$10.90
Mississauga	\$1,170,000	\$67.14	\$71.81	\$24.95	\$8.19	\$172.09	\$11.19	2.2082	\$121.63	\$2.69	\$13.87
York Region											
Aurora	\$590,000	\$33.86	\$71.81	\$26.94	\$6.63	\$139.24	\$9.05	2.0657	\$78.87	\$1.63	\$10.68
East Gwillimbury	\$400,000	\$22.95	\$71.81	\$25.40	\$6.01	\$125.17	\$8.20	2.0846	\$64.44	\$1.76	\$9.96
Markham	\$1,370,000	\$33.72	\$71.81	\$28.31	\$9.21	\$193.36	\$12.57	1.8743	\$120.60	\$2.26	\$14.83
Newmarket	\$480,000	\$27.55	\$71.81	\$28.31	\$6.38	\$134.05	\$9.71	2.1261	\$97.32	\$2.07	\$10.78
Richmond Hill	\$810,000	\$46.48	\$71.81	\$29.97	\$7.41	\$155.68	\$10.12	1.9099	\$114.26	\$2.18	\$12.30
Vaughan	\$1,170,000	\$67.14	\$71.81	\$36.67	\$8.78	\$184.40	\$11.99	1.9146	\$127.41	\$2.44	\$14.43
Whitchurch-Stouffville	\$650,000	\$37.30	\$71.81	\$27.14	\$6.81	\$143.06	\$9.30	2.0116	\$173.29	\$3.49	\$12.78
Halton Region											
Burlington	\$870,000	\$49.93	\$71.81	\$21.45	\$7.16	\$150.35	\$9.77	2.7106	\$136.20	\$3.69	\$13.46
Halton Hills	\$590,000	\$33.86	\$71.81	\$15.71	\$6.07	\$127.45	\$9.28	2.6391	\$93.20	\$2.46	\$10.74
Milton	\$1,110,000	\$63.70	\$71.81	\$17.27	\$7.94	\$160.42	\$10.43	2.3358	\$93.25	\$2.32	\$12.73
Oakville	\$660,000	\$37.88	\$71.81	\$24.42	\$6.71	\$140.81	\$9.15	2.6019	\$126.26	\$3.29	\$12.44
Hamilton	\$496,000	\$28.58	\$70.51	\$14.35	\$5.67	\$119.11	\$7.74	5.7129	\$49.76	\$2.84	\$10.58
OUTSIDE GTHA											
Brantford	\$225,000	\$12.91	\$68.57	\$6.83	\$4.42	\$92.73	\$6.03	3.82102	\$55.02	\$2.10	\$8.13
Cambridge	\$350,000	\$20.09	\$66.63	\$10.45	\$4.86	\$102.03	\$6.63	3.10803	\$79.98	\$2.49	\$9.12
Geelph	\$350,000	\$20.09	\$66.63	\$9.97	\$4.83	\$101.53	\$6.60	3.28658	\$90.72	\$2.98	\$9.68
Kitchener	\$350,000	\$20.09	\$66.63	\$10.22	\$4.85	\$101.79	\$6.62	2.86151	\$68.85	\$2.07	\$8.68
Peterborough	\$250,000	\$14.35	\$67.28	\$0.00	\$4.08	\$85.71	\$5.57	3.23401	\$46.69	\$1.57	\$7.15

Source: Watson & Associates Economists Ltd

- Notes
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 2. Watson & Associates Economists Ltd. Local variation based on RSMeans locational factor data.
 3. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education development charges posted on November 2018.
 4. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education taxes posted on November 2018.

SCHEDULE D-5: ASSESSMENT OF TOTAL DEVELOPMENT COST/ANNUALIZED COST

Multi-storey Office Building - 150,000 sq.ft.

Building
 Land 150,000 square feet
 Land 6.26 acres (65 percent coverage)
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I	J	
	Land Cost Per Acre	Land Cost Per Sq.ft. of Building	Construction Cost Per Sq.ft.	Development Charges Per Sq.ft.	Developer Profit (%) Per Sq.ft.	Total Dev't Cost Per Sq.ft.	Annualized Dev't Cost (6.5%) Per Sq.ft.	Tax Rate	Assessment Per Sq.ft.	Taxes Per Sq.ft.	Total Annualized Costs
	A	B	C	D	E	F	G	H	I	J	
	A	A x 6.26 / 150,000	C	D	5% of (B+C-D)	B+C+D+E	F x 6.5%	H	F x H / 100	G+I	
GTHA											
Durham Region											
Ajax	\$400,000	\$16.69	\$183.18	\$24.90	\$11.24	\$236.01	\$15.34	2.4975	\$148.14	\$3.70	\$19.04
Oshawa	\$325,000	\$13.56	\$183.18	\$27.08	\$11.19	\$235.01	\$15.28	2.8706	\$101.01	\$2.90	\$18.18
Pickering	\$400,000	\$16.69	\$183.18	\$21.50	\$11.07	\$232.44	\$15.11	2.5024	\$158.87	\$3.98	\$19.08
Whitby	\$400,000	\$16.69	\$183.18	\$20.88	\$11.04	\$231.79	\$15.07	2.5429	\$104.74	\$2.66	\$17.73
Peel Region											
Brampton	\$1,000,000	\$41.73	\$183.18	\$25.83	\$12.54	\$263.28	\$17.11	2.1415	\$260.77	\$5.58	\$22.70
Mississauga	\$1,140,000	\$47.58	\$183.18	\$32.76	\$13.18	\$276.69	\$17.98	1.9840	\$268.85	\$5.33	\$23.32
York Region											
Markham	\$920,000	\$38.39	\$183.18	\$38.79	\$13.02	\$273.38	\$17.77	1.6120	\$257.85	\$4.16	\$21.93
Richmond Hill	\$2,750,000	\$114.77	\$183.18	\$29.71	\$16.38	\$344.04	\$22.36	1.8413	\$246.05	\$4.04	\$26.40
Vaughan	\$1,000,000	\$41.73	\$183.18	\$35.54	\$13.02	\$273.47	\$17.78	1.6543	\$212.44	\$3.51	\$21.29
Halton Region											
Burlington	\$520,000	\$21.70	\$183.18	\$21.45	\$11.32	\$237.65	\$15.45	1.7779	\$251.29	\$4.47	\$19.91
Oakville	\$1,190,000	\$49.66	\$183.18	\$24.42	\$12.86	\$270.12	\$17.56	1.7061	\$270.54	\$4.62	\$22.17
Hamilton	\$468,000	\$20.78	\$179.88	\$19.90	\$11.03	\$231.59	\$15.05	3.2521	\$138.92	\$4.52	\$19.57
OUTSIDE GTHA											
City of Waterloo	\$400,000	\$16.69	\$169.88	\$20.17	\$10.34	\$217.18	\$14.12	2.9188	\$147.56	\$4.31	\$19.42

Source: Watson & Associates Economists Ltd.

- Notes:
1. Land value based on mid-range of typical per acre cost for high quality serviced employment land appropriate for general industrial uses provided by Cushman & Wakefield Ltd., with exception of Hamilton based on Watson & Associates Economists Ltd. estimate.
 2. Watson & Associates Economists Ltd. Localized variation based on RSM Means locational factor data.
 3. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education development charges posted on November 2018.
 4. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education taxes posted on November 2018.

SCHEDULE D-6: ASSESSMENT OF TOTAL DEVELOPMENT COST/ANNUALIZED COST

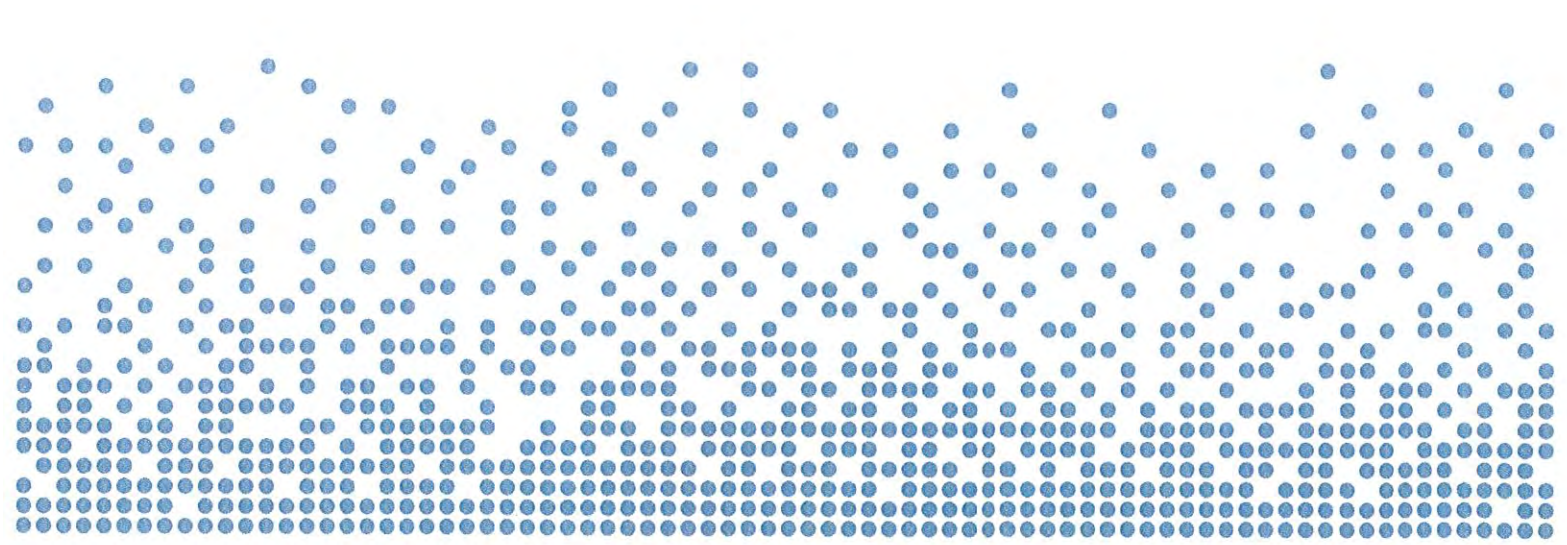
One-storey Flex Office Building - 150,000 sq.ft.

Building 150,000 square feet
 Land 11.48 acres (30 percent coverage)
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I	J	
	Land Cost Per Acre ¹	Land Cost Per Sq.ft. of Building	Construction Cost Per Sq.ft. ²	Development Charges Per Sq.ft. ³	Developer Profit (5%) Per Sq.ft.	Total Dev't Cost Per Sq.ft.	Annualized Dev't Cost (6.5%) Per Sq.ft.	Tax Rate ⁴	Assessment Per Sq.ft.	Taxes Per Sq.ft.	Total Annualized Costs
	A x 11.48 / 150,000	B	C	D	E = (B+C+D) / 5%	B+C+D+E	F x 6.5%	H	I	F x H / 100	G + I
GTHA											
Durham Region											
Ajax	\$400,000	\$30.61	\$137.38	\$24.90	\$9.64	\$202.54	\$13.17	2.4975	\$127.13	\$3.18	\$16.34
Oshawa	\$325,000	\$24.87	\$137.38	\$27.08	\$9.47	\$198.80	\$12.62	2.8706	\$85.45	\$2.45	\$16.37
Pickering	\$400,000	\$30.61	\$137.38	\$21.50	\$9.47	\$198.97	\$12.93	2.5024	\$135.99	\$3.40	\$16.34
Whitby	\$400,000	\$30.61	\$137.38	\$20.88	\$9.44	\$198.32	\$12.89	2.5429	\$89.62	\$2.28	\$15.17
Peel Region											
Brampton	\$1,000,000	\$76.53	\$137.38	\$25.83	\$11.99	\$251.73	\$16.36	2.1415	\$249.34	\$5.34	\$21.70
Mississauga	\$1,140,000	\$87.25	\$137.38	\$28.92	\$12.68	\$266.23	\$17.31	1.9840	\$258.69	\$5.13	\$22.44
York Region											
Markham	\$920,000	\$70.41	\$137.38	\$43.49	\$12.56	\$263.85	\$17.15	1.6120	\$248.86	\$4.01	\$21.16
Richmond Hill	\$2,750,000	\$210.47	\$137.38	\$30.29	\$18.91	\$397.05	\$25.81	1.6413	\$283.96	\$4.66	\$30.47
Vaughan	\$1,000,000	\$76.53	\$137.38	\$35.67	\$12.48	\$262.06	\$17.03	1.6543	\$203.58	\$3.37	\$20.40
Halton Region											
Burlington	\$520,000	\$39.80	\$133.05	\$21.45	\$9.72	\$204.02	\$13.26	1.7779	\$215.73	\$3.84	\$17.10
Oakville	\$1,190,000	\$91.07	\$133.05	\$24.42	\$12.43	\$260.97	\$16.96	1.7061	\$261.37	\$4.46	\$21.42
Hamilton	\$498,000	\$38.11	\$134.91	\$19.90	\$9.65	\$202.57	\$13.17	3.2521	\$121.51	\$3.95	\$17.12
OUTSIDE GTHA											
City of Waterloo	\$400,000	\$30.61	\$127.48	\$20.17	\$8.91	\$187.17	\$12.17	2.9188	\$127.18	\$3.71	\$15.88

Source: Watson & Associates Economists Ltd.

- Notes:
1. Land value based on mid-range of typical per acre cost for high quality serviced employment land appropriate for general industrial uses provided by Cushman & Wakefield Ltd., with exception of Hamilton based on Watson & Associates Economists Ltd. estimate.
 2. Watson & Associates Economists Ltd. Locational variation based on RSMeans locational factor data.
 3. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education development charges posted on November 2018.
 4. Reflects Lower/Single Tier, Upper Tier (where applicable) and Education taxes posted on November 2018.



Appendix E

Residual Land Value Analysis – Rental Revenue Scenario

SCHEDULE E-1: ESTIMATE OF RESIDUAL LAND VALUE FOR 75,000 SQUARE FOOT INDUSTRIAL BUILDING AT CURRENT RENT LEVELS

Building 75,000 square feet
 Property 5.70 acres
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I
	Annual Rent ¹ (\$ per sq.ft.)	Present Value of Future Cash Flow (6.5%) (\$ per sq.ft.)	Less Profit (6%) (\$ per sq.ft.)	Development Charges (\$ per sq.ft.)	Construction Cost (\$ per sq.ft.)	Residual Land Value (\$ per sq.ft.)	Residual Land Value Per Acre	Employment Land Market Price Price per Acre	Residual Land Value to Market Land Price Ratio
	A	B	C	D	E	F	G	H	I
		A/6.5%	B x 5%			B - (C+D+E)	F x 75,000 / 5.7		G / H
Durham Region									
Ajax	\$5.92	\$98.60	\$4.93	\$16.68	\$88.81	-\$12.02	-\$158,000	\$380,000	-0.4
Brock	\$4.92	\$82.00	\$4.10	\$12.54	\$88.81	-\$23.45	-\$309,000	\$300,000	-1.0
Clarington	\$6.93	\$115.50	\$5.78	\$12.13	\$88.81	\$8.79	\$116,000	\$300,000	0.4
Oshawa	\$6.79	\$113.10	\$5.66	\$9.96	\$88.81	\$8.68	\$114,000	\$320,000	0.4
Pickering	\$6.63	\$110.50	\$5.53	\$12.99	\$88.81	\$3.18	\$42,000	\$400,000	0.1
Scugog	\$7.91	\$131.90	\$6.60	\$12.95	\$88.81	\$23.55	\$310,000	\$300,000	1.0
Uxbridge	\$7.54	\$125.70	\$6.28	\$12.76	\$88.81	\$17.85	\$255,000	\$300,000	0.8
Whitby	\$6.70	\$111.60	\$5.58	\$12.37	\$88.81	\$4.64	\$64,000	\$380,000	0.2
GTHA									
Peel Region									
Brampton	\$7.28	\$121.40	\$6.07	\$19.25	\$88.81	\$7.28	\$96,000	\$1,160,000	0.1
Calton	\$9.81	\$146.80	\$7.34	\$18.11	\$88.81	\$32.54	\$428,000	\$740,000	0.6
Mississauga	\$7.62	\$127.00	\$6.35	\$25.70	\$88.81	\$6.14	\$81,000	\$1,170,000	0.1
York Region									
Aurora	\$8.11	\$135.20	\$6.76	\$26.94	\$88.81	\$12.69	\$167,000	\$590,000	0.3
East Gwillimbury	\$9.37	\$156.20	\$7.81	\$25.40	\$88.81	\$34.18	\$450,000	\$400,000	1.1
Markham	\$8.56	\$142.70	\$7.14	\$33.96	\$88.81	\$12.80	\$168,000	\$1,370,000	0.1
Newmarket	\$8.40	\$140.00	\$7.00	\$28.31	\$88.81	\$15.88	\$209,000	\$480,000	0.4
Richmond Hill	\$8.90	\$148.40	\$7.42	\$30.28	\$88.81	\$21.89	\$288,000	\$810,000	0.4
Vaughan	\$6.78	\$113.00	\$5.65	\$36.74	\$88.81	-\$18.19	-\$239,000	\$1,170,000	-0.2
Whitchurch-Stouffville	\$7.20	\$120.00	\$6.00	\$27.14	\$88.81	-\$1.95	-\$26,000	\$650,000	0.0
Halton Region									
Burlington	\$6.04	\$115.60	\$5.78	\$21.45	\$88.81	-\$0.44	\$6,000	\$670,000	0.0
Hilton Hills	\$7.05	\$117.40	\$5.87	\$15.71	\$88.81	\$7.01	\$92,000	\$990,000	0.2
Milton	\$7.05	\$117.40	\$5.87	\$17.27	\$88.81	\$5.45	\$72,000	\$1,110,000	0.1
Oakville	\$7.70	\$128.40	\$6.42	\$24.42	\$88.81	\$8.75	\$115,000	\$680,000	0.2
Hamilton	\$6.68	\$111.30	\$5.57	\$14.35	\$87.21	\$4.18	\$55,000	\$498,000	0.1
OUTSIDE GTHA									
Brantford	\$5.45	\$90.80	\$4.54	\$6.83	\$84.81	-\$5.38	-\$71,000	\$225,000	-0.3
Cambridge	\$6.06	\$101.00	\$5.05	\$10.45	\$82.41	\$3.09	\$41,000	\$350,000	0.1
Guelph	\$8.41	\$140.20	\$7.01	\$9.97	\$82.41	\$40.81	\$537,000	\$350,000	1.5
Kitchener	\$7.07	\$117.90	\$5.90	\$10.22	\$82.41	\$19.37	\$255,000	\$350,000	0.7
Peterborough	\$7.03	\$117.10	\$5.86	\$0.00	\$83.21	\$28.04	\$369,000	\$250,000	1.5

Source: Watson & Associates Economists Ltd.

Notes:

1. Rents derived from market data provided by Cushman & Wakefield except for Hamilton market rents from Colliers Oakville-Burlington-Hamilton Market Report. Actual rent levels will depend on a number of factors including type of building and available facilities.

SCHEDULE E-2: ESTIMATE OF RESIDUAL LAND VALUE FOR 150,000 SQUARE FOOT INDUSTRIAL BUILDING AT CURRENT RENT LEVELS

Building 150,000 square feet
 Property 9.84 acres
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I
	Annual Rent ¹ (\$ per sq.ft.)	Present Value of Future Cash Flow (6.5%) (\$ per sq.ft.)	Less Profit (6%) (\$ per sq.ft.)	Development Charges (\$ per sq.ft.)	Construction Cost (\$ per sq.ft.)	Residual Land Value (\$ per sq.ft.)	Residual Land Value Per Acre	Employment Land Market Price Price per Acre	Residual Land Value to Market Land Price Ratio
	A	B	C	D	E	F	G	H	I
		A / 6.5%	B x 5%			B - (C+D+E)	F x 150,000 / 9.84		G / H
Durham Region									
Ajax	\$5.92	\$98.60	\$4.93	\$16.81	\$84.96	-\$8.10	-\$124,000	\$380,000	-0.3
Brock	\$4.92	\$82.00	\$4.10	\$12.54	\$84.96	-\$19.60	-\$299,000	\$300,000	-1.0
Clarrington	\$6.93	\$115.50	\$5.78	\$12.13	\$84.96	\$12.63	\$193,000	\$300,000	0.6
Oshawa	\$6.79	\$113.10	\$5.66	\$9.96	\$84.96	\$12.52	\$191,000	\$320,000	0.6
Pickering	\$6.63	\$110.50	\$5.53	\$12.99	\$84.96	\$7.02	\$107,000	\$460,000	0.3
Sougou	\$7.91	\$131.90	\$6.60	\$12.85	\$84.96	\$27.39	\$418,000	\$300,000	1.4
Uxbridge	\$7.54	\$125.70	\$6.29	\$12.76	\$84.96	\$21.69	\$331,000	\$300,000	1.1
Whitby	\$6.70	\$111.60	\$5.56	\$12.37	\$84.96	\$8.66	\$132,000	\$380,000	0.3
GTHA									
Peel Region									
Brampton	\$7.28	\$121.40	\$6.07	\$19.25	\$84.96	\$11.12	\$170,000	\$1,160,000	0.1
Caledon	\$8.81	\$146.80	\$7.34	\$18.11	\$84.96	\$36.39	\$555,000	\$740,000	0.8
Mississauga	\$7.62	\$127.00	\$6.35	\$25.28	\$84.96	\$10.41	\$159,000	\$1,170,000	0.1
York Region									
Aurora	\$8.11	\$135.20	\$6.76	\$26.94	\$84.96	\$16.54	\$252,000	\$590,000	0.4
East Gwillimbury	\$9.37	\$156.20	\$7.81	\$25.40	\$84.96	\$38.03	\$580,000	\$400,000	1.5
Markham	\$8.58	\$142.70	\$7.14	\$33.85	\$84.96	\$16.75	\$255,000	\$1,370,000	0.2
Newmarket	\$8.40	\$140.00	\$7.00	\$28.31	\$84.96	\$19.73	\$301,000	\$480,000	0.6
Richmond Hill	\$8.90	\$148.40	\$7.42	\$30.11	\$84.96	\$25.91	\$395,000	\$810,000	0.5
Vaughan	\$6.78	\$113.00	\$5.65	\$36.70	\$84.96	-\$14.31	-\$218,000	\$1,170,000	-0.2
Whitchurch-Stouffville	\$7.20	\$120.00	\$6.00	\$27.14	\$84.96	\$1.90	\$25,000	\$650,000	0.0
Halton Region									
Burlington	\$6.94	\$115.60	\$5.78	\$21.45	\$84.96	\$3.40	\$52,000	\$870,000	0.1
Hilton Hills	\$7.05	\$117.40	\$5.87	\$15.71	\$84.96	\$10.85	\$165,000	\$590,000	0.3
Milton	\$7.05	\$117.40	\$5.87	\$9.29	\$84.96	\$9.29	\$142,000	\$1,110,000	0.1
Oakville	\$7.70	\$128.40	\$6.42	\$24.42	\$84.96	\$12.60	\$192,000	\$680,000	0.3
Hamilton	\$6.68	\$111.30	\$5.57	\$14.35	\$83.43	\$7.96	\$121,000	\$488,000	0.2
OUTSIDE GTHA									
Brantford	\$5.45	\$90.80	\$4.54	\$6.83	\$81.14	-\$11.71	-\$26,000	\$225,000	-0.1
Cambridge	\$6.06	\$101.00	\$5.05	\$10.45	\$78.84	\$6.66	\$102,000	\$350,000	0.3
Guelph	\$8.41	\$140.20	\$7.01	\$9.97	\$78.84	\$44.38	\$876,000	\$350,000	1.9
Kitchener	\$7.07	\$117.90	\$5.90	\$10.22	\$78.84	\$22.94	\$350,000	\$350,000	1.0
Peterborough	\$7.03	\$117.10	\$5.86	\$0.00	\$79.61	\$31.64	\$482,000	\$250,000	1.9

Source: Watson & Associates Economists Ltd.

Notes:
 1. Rents derived from market data provided by Cushman & Wakefield except for Hamilton market rents from Colliers Oakville-Burlington-Hamilton Market Report. Actual rent levels will depend on a number of factors including type of building and available facilities.

SCHEDULE E-3: ESTIMATE OF RESIDUAL LAND VALUE FOR 300,000 SQUARE FOOT INDUSTRIAL BUILDING AT CURRENT RENT LEVELS

Building
Property
300,000 square feet
18.12 acres
Developer Profit
5%
Annualization Factor
6.5%

	Annual Rent ¹ (\$ per sq.ft.)	Present Value of Future Cash Flow (6.5%)		Less Profit (6%) (\$ per sq.ft.)	Development Charges (\$ per sq.ft.)	Construction Cost (\$ per sq.ft.)	Residual Land Value (\$ per sq.ft.)	Residual Land Value Per Acre	Employment Land Market Price Price per Acre	Residual Land Value to Market Land Price Ratio
		A	B							
Durham Region										
Alax	\$5.92	\$98.60	\$4.93	\$16.78	\$77.33	-\$0.44	-\$7.00	\$380,000	0.0	
Brock	\$4.92	\$82.00	\$4.10	\$12.54	\$77.33	-\$11.97	-\$198,000	\$300,000	-0.7	
Clarington	\$6.93	\$115.50	\$5.78	\$12.13	\$77.33	\$20.26	\$335,000	\$300,000	1.1	
Oshawa	\$6.79	\$113.10	\$5.66	\$9.96	\$77.33	\$20.15	\$324,000	\$300,000	1.0	
Pickering	\$6.63	\$110.50	\$5.53	\$12.99	\$77.33	\$14.65	\$243,000	\$400,000	0.6	
Scugog	\$7.91	\$131.90	\$6.60	\$12.95	\$77.33	\$35.03	\$580,000	\$300,000	1.9	
Uxbridge	\$7.54	\$125.70	\$6.29	\$12.76	\$77.33	\$28.32	\$485,000	\$300,000	1.6	
Whitby	\$6.70	\$111.60	\$5.58	\$12.37	\$77.33	\$16.32	\$270,000	\$380,000	0.7	
GTHA										
Peel Region										
Brampton	\$7.28	\$121.40	\$6.07	\$19.25	\$77.33	\$18.75	\$310,000	\$1,160,000	0.3	
Caledon	\$8.81	\$146.80	\$7.34	\$18.11	\$77.33	\$44.02	\$729,000	\$740,000	1.0	
Mississauga	\$7.62	\$127.00	\$6.35	\$25.07	\$77.33	\$18.25	\$302,000	\$1,170,000	0.3	
York Region										
Aurora	\$8.11	\$135.20	\$6.76	\$26.94	\$77.33	\$24.17	\$400,000	\$590,000	0.7	
East Gwillimbury	\$9.37	\$156.20	\$7.81	\$25.40	\$77.33	\$45.66	\$756,000	\$400,000	1.9	
Markham	\$8.56	\$142.70	\$7.14	\$33.79	\$77.33	\$24.44	\$405,000	\$1,370,000	0.3	
Newmarket	\$8.40	\$140.00	\$7.00	\$28.31	\$77.33	\$27.36	\$453,000	\$480,000	0.9	
Richmond Hill	\$8.90	\$148.40	\$7.42	\$30.02	\$77.33	\$33.63	\$557,000	\$810,000	0.7	
Vaughan	\$6.76	\$113.00	\$5.65	\$36.66	\$77.33	-\$6.64	-\$110,000	\$1,170,000	-0.1	
Whitechurch-Stouffville	\$7.20	\$120.00	\$6.00	\$27.14	\$77.33	\$9.53	\$198,000	\$650,000	0.2	
Halton Region										
Burlington	\$6.94	\$115.60	\$5.78	\$21.45	\$77.33	\$11.04	\$183,000	\$870,000	0.2	
Halton Hills	\$7.05	\$117.40	\$5.87	\$15.71	\$77.33	\$18.49	\$306,000	\$590,000	0.5	
Milton	\$7.05	\$117.40	\$5.87	\$17.27	\$77.33	\$16.93	\$280,000	\$1,110,000	0.3	
Oakville	\$7.70	\$128.40	\$6.42	\$24.42	\$77.33	\$20.23	\$335,000	\$660,000	0.5	
Hamilton	\$6.68	\$111.30	\$5.57	\$14.35	\$75.94	\$15.45	\$256,000	\$498,000	0.5	
OUTSIDE GTHA										
Brantford	\$5.45	\$90.80	\$4.54	\$6.83	\$73.85	\$5.58	\$92,000	\$225,000	0.4	
Cambridge	\$6.06	\$101.00	\$5.05	\$10.45	\$71.76	\$13.74	\$227,000	\$350,000	0.6	
Guelph	\$8.41	\$140.20	\$7.01	\$9.97	\$71.76	\$51.46	\$852,000	\$350,000	2.4	
Kitchener	\$7.07	\$117.90	\$5.90	\$10.22	\$71.76	\$30.02	\$497,000	\$550,000	1.4	
Peterborough	\$7.03	\$117.10	\$5.86	\$0.00	\$72.45	\$38.79	\$642,000	\$250,000	2.6	

Source: Watson & Associates Economists Ltd.

Notes:

1. Rents derived from market data provided by Cushman & Wakefield except for Hamilton market rents from Colliers Oakville-Burlington-Hamilton Market Report. Actual rent levels will depend on a number of factors including type of building and available facilities.

SCHEDULE E-4: ESTIMATE OF RESIDUAL LAND VALUE FOR 750,000 SQUARE FOOT INDUSTRIAL BUILDING AT CURRENT RENT LEVELS

Building 750,000 square feet
 Property 43.04 acres
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I
	Annual Rent ¹ (\$ per sq.ft.)	Present Value of Future Cash Flow (6.5%) (\$ per sq.ft.)	Less Profit (5%) (\$ per sq.ft.)	Development Charges (\$ per sq.ft.)	Construction Cost (\$ per sq.ft.)	Residual Land Value (\$ per sq.ft.)	Residual Land Value Per Acre	Employment Land Market Price Price per Acre	Residual Land Value to Market Land Price Ratio
	A	B x 6.5%	B x 5%	D	E	F - (C+D+E)	F x 750,000 / 43.04	H	G / H
Durham Region									
Ajax	\$5.92	\$98.60	\$4.93	\$16.76	\$71.81	\$5.10	\$89,000	\$380,000	0.2
Brock	\$4.92	\$82.00	\$4.10	\$12.54	\$71.81	-\$6.45	-\$112,000	\$300,000	-0.4
Clarrington	\$6.93	\$115.50	\$5.78	\$12.13	\$71.81	\$25.79	\$449,000	\$300,000	1.5
Oshawa	\$6.79	\$113.10	\$5.66	\$9.96	\$71.81	\$25.68	\$447,000	\$320,000	1.4
Pickering	\$6.63	\$110.60	\$5.53	\$12.99	\$71.81	\$20.18	\$352,000	\$400,000	0.9
Scugog	\$7.91	\$131.90	\$6.60	\$15.95	\$71.81	\$40.55	\$707,000	\$300,000	2.4
Uxbridge	\$7.54	\$123.70	\$6.28	\$12.76	\$71.81	\$34.85	\$607,000	\$300,000	2.0
Whitby	\$6.70	\$111.60	\$5.56	\$12.37	\$71.81	\$21.84	\$381,000	\$380,000	1.0
GTHA									
Peel Region									
Brampton	\$7.28	\$121.40	\$6.07	\$19.25	\$71.81	\$24.28	\$423,000	\$1,160,000	0.4
Caledon	\$8.81	\$146.80	\$7.34	\$18.11	\$71.81	\$49.54	\$863,000	\$740,000	1.2
Mississauga	\$7.62	\$127.00	\$6.35	\$24.95	\$71.81	\$23.89	\$416,000	\$1,170,000	0.4
York Region									
Aurora	\$8.11	\$135.20	\$6.76	\$26.94	\$71.81	\$29.69	\$517,000	\$590,000	0.9
East Gwillimbury	\$9.37	\$156.20	\$7.81	\$25.40	\$71.81	\$51.18	\$892,000	\$400,000	2.2
Markham	\$8.56	\$142.70	\$7.14	\$33.72	\$71.81	\$30.03	\$523,000	\$1,370,000	0.4
Newmarket	\$8.40	\$140.00	\$7.00	\$28.31	\$71.81	\$32.88	\$573,000	\$460,000	1.2
Richmond Hill	\$8.90	\$148.40	\$7.42	\$29.97	\$71.81	\$39.20	\$663,000	\$810,000	0.8
Vaughan	\$6.78	\$113.00	\$5.65	\$36.67	\$71.81	-\$1.12	-\$20,000	\$1,170,000	0.0
Whitchurch-Stouffville	\$7.20	\$120.00	\$6.00	\$27.14	\$71.81	\$15.05	\$282,000	\$650,000	0.4
Halton Region									
Burlington	\$6.94	\$115.60	\$5.78	\$21.45	\$71.81	\$16.56	\$289,000	\$870,000	0.3
Halton Hills	\$7.05	\$117.40	\$5.87	\$15.71	\$71.81	\$24.01	\$418,000	\$590,000	0.7
Milton	\$7.05	\$117.40	\$5.87	\$17.27	\$71.81	\$22.45	\$391,000	\$1,110,000	0.4
Oakville	\$7.70	\$128.40	\$6.42	\$24.42	\$71.81	\$25.75	\$449,000	\$680,000	0.7
Hamilton	\$6.68	\$111.30	\$5.57	\$14.35	\$70.51	\$20.87	\$384,000	\$498,000	0.7
OUTSIDE GTHA									
Bramford	\$5.45	\$90.80	\$4.54	\$6.83	\$68.57	\$10.85	\$189,000	\$225,000	0.8
Cambridge	\$6.06	\$101.00	\$5.05	\$10.45	\$66.63	\$18.87	\$329,000	\$350,000	0.9
Guelph	\$8.41	\$140.20	\$7.01	\$9.97	\$66.63	\$56.58	\$986,000	\$350,000	2.8
Kitchener	\$7.07	\$117.90	\$5.90	\$10.22	\$66.63	\$35.15	\$612,000	\$350,000	1.7
Peterborough	\$7.03	\$117.10	\$5.86	\$9.00	\$67.28	\$43.97	\$766,000	\$250,000	3.1

Source: Watson & Associates Economists Ltd.

Notes:
 1. Rents derived from market data provided by Cushman & Wakefield except for Hamilton market rents from Colliers Oakville-Burlington-Hamilton Market Report. Actual rent levels will depend on a number of factors including type of building and available facilities.

SCHEDULE E-5: ESTIMATE OF RESIDUAL LAND VALUE FOR 150,000 SQUARE FOOT OFFICE BUILDING AT CURRENT RENT LEVELS

Building GFA 150,000 square feet
 Building GLA 135,000 square feet
 Property 6.26 acres
 Developer Profit 5%
 Annualization Factor 6.5%

	A	B	C	D	E	F	G	H	I
	Annual Rent' (\$ per sq.ft.)	Present Value of Future Cash Flow (6.5%) (\$ per sq.ft.)	Less Profit (6%) (\$ per sq.ft.)	Development Charges (\$ per sq.ft.)	Construction Cost (\$ per sq.ft.)	Residual Land Value (\$ per sq.ft.)	Residual Land Value Per Acre	Employment Land Market Price Price per Acre	Residual Land Value to Market Land Price Ratio
	A	A x 6.5%	B x 5%	D	E	B - (C+D+E)	F x 150,000 / 6.26	H	I G/H
Durham Region									
Ajax	\$12.59	\$209.80	\$10.49	\$24.90	\$183.18	-\$8.77	-\$210,000	\$400,000	-0.5
Oshawa	\$13.16	\$219.40	\$10.97	\$27.08	\$183.18	-\$11.83	-\$44,000	\$325,000	-0.1
Pickering	\$12.63	\$210.50	\$10.53	\$21.50	\$183.18	-\$4.70	-\$113,000	\$400,000	-0.3
Whiteby	\$12.36	\$205.90	\$10.30	\$20.88	\$183.18	-\$8.46	-\$203,000	\$400,000	-0.5
GTHA									
Peel Region									
Brampton	\$16.36	\$272.70	\$13.64	\$25.83	\$183.18	\$50.06	\$1,169,000	\$1,000,000	1.2
Mississauga	\$17.75	\$295.90	\$14.80	\$32.76	\$183.18	\$65.17	\$1,562,000	\$1,140,000	1.4
York Region									
Markham	\$18.88	\$314.70	\$15.74	\$38.79	\$183.18	\$77.00	\$1,845,000	\$920,000	2.0
Richmond Hill	\$18.92	\$315.40	\$15.77	\$39.71	\$183.18	\$66.74	\$2,078,000	\$2,750,000	0.8
Vaughan	\$16.96	\$282.60	\$14.13	\$35.54	\$183.18	\$45.76	\$1,192,000	\$1,000,000	1.2
Halton Region									
Burlington	\$15.68	\$261.30	\$13.07	\$21.45	\$183.18	\$43.61	\$1,045,000	\$520,000	2.0
Oakville	\$17.94	\$299.00	\$14.95	\$24.42	\$183.18	\$76.45	\$1,832,000	\$1,190,000	1.5
Hamilton	\$12.12	\$202.00	\$10.10	\$19.90	\$179.88	-\$7.88	-\$189,000	\$498,000	-0.4
OUTSIDE GTHA									
City of Waterloo	\$15.60	\$263.40	\$13.17	\$20.17	\$169.98	\$60	\$1,440,000	\$400,000	3.6

Source: Watson & Associates Economists Ltd.

Notes:

1. Rents derived from market data provided by Cushman & Wakefield except for Hamilton market rents from Colliers Oakville-Burlington-Hamilton Market Report. Actual rent levels will depend on a number of factors including type of building and available facilities.



The Regional Municipality of Durham Report

To: Planning and Economic Development Committee
From: Commissioner of Planning and Economic Development
Report: [#2019-EDT-2](#)
Date: January 8, 2019

Subject:

Durham Region Idea Summit and D-Hive Tech Hub

Recommendation:

That the Planning and Economic Development Committee recommends:

That this report be received for information.

Report:

1. Purpose

1.1 The purpose of this report is to provide Committee with background information regarding the collaborative effort currently underway to establish a co-location space in Durham for small and medium-sized technology companies, to be named the D-Hive Tech Hub, (formerly referred to as the Durham Innovation Hub).

2. Background

2.1 In 2016, a group of eight private sector CEOs in Durham Region, (known as the Idea Summit Cabinet), met to discuss the future of Durham's technology sector with the mandate to improve technology innovation, development, and productivity in the Region.

2.2 The main organizer of the Idea Summit was Don Lovisa, President of Durham College, supported by senior representatives from the University of Ontario Institute of Technology, General Motors, Spark Centre, Search Engine People, 360 Insights, AECOM, and Ontario Power Generation. The group concluded that establishing a

physical regional innovation space would drive innovation, investment, and job growth in Durham Region.

- 2.3 The proposed D-Hive Tech Hub would be a facility designed to unite industry, entrepreneurs, funding agencies and academic institutions in one collaborative space to catalyze research, development and commercialization. The D-Hive Tech Hub could become the central focal point for tech innovation within the Region and can ultimately drive increased economic growth. Similar models in Ontario which have been successful in achieving this goal include “Communitech” in Waterloo, and “Invest Ottawa”.
- 2.4 The first Idea Summit, held in May of 2016, was attended by approximately 130 private sector and academic stakeholders from across Durham.
- 2.5 Following the success of the first meeting, Idea Summit 2.0 was convened in October 2017. Approximately 120 private sector, academic, and regional stakeholders including the Region’s Economic Development team convened and the idea of establishing a physical regional co-location space in Durham Region received broad support and was confirmed by the participants.
- 2.6 The potential economic benefits of the D-Hive Tech Hub include:
 - enabling the sharing of talent and ideas across teams and industries to make young tech companies more effective and grow faster;
 - injecting innovation into Durham’s key sectors, enabling them to modernize, adapt to disruptive technologies, and become more globally competitive and expand; and
 - enabling a space where talented new Science, Technology, Engineering and Math (STEM) graduates can find work and grow their ideas close to home.

All of this activity can drastically enhance the Region’s competitiveness and value proposition for attracting innovative and sustainable jobs to Durham.

- 2.7 Following Idea Summit 2.0, the Idea Summit Cabinet retained a consulting firm, Stiletto, to undertake a feasibility and assessment exercise. The firm completed the feasibility study, confirming the viability of the proposed D-Hive Tech Hub.
- 2.8 At present, the project is being led by Spark Centre CEO Sherry Colbourne, supported by the Idea Summit Cabinet.

3. Current Status

- 3.1 The consulting firm, Stiletto, is in the process of preparing a business plan and execution strategy for the D-Hive Tech Hub. The preliminary strategy also includes the projected financial requirements for the period 2019 to 2024. To date, the Region has contributed \$20,000 toward the consulting assignment, but has not committed any funds for 2019, or beyond.

4. Conclusion

- 4.1 Establishing a co-location space for innovative small and medium sized technology companies to share ideas, grow, innovate and commercialize, would generate many economic benefits throughout the Region. The concept has been successfully implemented in Waterloo and other regions, resulting in the retention of STEM graduates, injection of innovation into key sectors to improve global competitiveness, and creation of new and valuable tech industries.
- 4.2 The Idea Summit Cabinet has completed the first phase of planning with the feasibility study, and is in the process of sourcing funding to engage in start-up activities such as project management, communications and program development. It is understood the Region will be asked to be a funding partner. If funding is successfully procured, these activities are projected to take place during Q2, Q3 and Q4, 2019.
- 4.3 Ms. Colbourne will make a delegation before the Planning and Economic Development Committee on January 8, 2019.

Respectfully submitted,

Original signed by

Brian E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development



The Regional Municipality of Durham Report

To: Planning and Economic Development Committee
From: Commissioner of Planning and Economic Development
Report: #2019-EDT-3
Date: January 8, 2019

Subject:

Toronto Global Effectiveness Evaluation and Funding Renewal

Recommendation:

That the Planning and Economic Development Committee recommends to Regional Council:

- A) That Durham Region continue to partner with Toronto Global with respect to international investment attraction activities under a 5-year funding agreement, subject to satisfactory performance by Toronto Global and subject to funding being approved annually through the Region's annual Business Plans and Budget process;
 - B) That funding of Toronto Global for 2019, in the amount of \$206,397, be approved through the 2019 Business Plans and Budget process;
 - C) That the Regional Chair and Regional Clerk be authorized to execute the appropriate funding agreement with Toronto Global upon budget approval; and
 - D) That a copy of this report be forwarded to Toronto Global, the Area Municipalities, and all members of the Durham Economic Development Partnership for information.
-

Report:

1. Purpose

1.1 The purpose of this report is to:

- Fulfill a requirement set out in the Region's 5-Year Economic Development Strategy and Action Plan, to complete an "effectiveness evaluation" of Durham Region's investment in Toronto Global;
- Provide Committee and Council with an update on the progress of Toronto Global toward securing investment in Durham, and on recent activities to improve collaboration; and to
- Recommend that the Region enter into a funding agreement with Toronto Global. The funding agreement proposed by Toronto Global seeks a 5-year commitment. The 5-year term is to ensure consistency with other governmental funders. However each annual contribution is conditional upon budget approval on a year-to-year basis.

2. Background

2.1 Toronto Global is a pan-regional investment attraction organization representing its funding members Halton, Mississauga, Brampton, Toronto, York, and Durham (collectively, the "Toronto Region").

2.2 Toronto Global's mandate is to attract foreign direct investment ("FDI") to the Toronto Region through three key activities: internationally marketing the Toronto Regional value proposition and competitiveness; conducting research and analytics to set effective strategy; and providing business services to prospective investors to assist them in establishing a physical presence and creating jobs.

2.3 Toronto Global is funded by its municipal members proportionally by population and receives matching core funding as well as ad hoc program funding from the Provincial and Federal governments. In total the Toronto Region Municipalities contribute \$1,980,969 annually to Toronto Global.

2.4 Toronto Global replaced the Greater Toronto Marketing Alliance (GTMA) in 2017. The GTMA was widely regarded as being under-resourced; hence, not as effective as had been anticipated.

2.5 Toronto Global secured Provincial funding on June 16, 2016 and municipal member funding was finalized on December 29, 2016 along with Federal funding on December 2, 2016. With funding secured, Toronto Global formally launched on February 3, 2017, and has been operating for only 1 year and 11 months.

2.6 The initial funding term from the Federal Government, Province and municipal

funding partners was 3 years, from April 1, 2016 to March 31, 2019. For 2018, Durham Region contributed \$206,397 through the annual Business Plan and Budget process as a non-departmental item.

- 2.7 Toronto Global's proposed funding agreement seeks a 5-year commitment from April 1, 2019 to March 31, 2024. The first-year amount for 2019 would be \$206,397 (unchanged from 2018), with subsequent year values escalating annually by the Consumer Price Index. The agreement is structured such that each annual payment is conditional on budget approval. Execution of this new funding agreement commits the Region to no more than the first year of funding.
- 2.8 The governance model for Toronto Global features the following elements:
- That the Mayors' and Chairs' Strategy Council, which has the capacity to approve Toronto Global's business plan and strategic plan, call the company to account at any time and qualify members to be appointed to the organization's Board of Directors. The Mayors and Chairs from each municipal funding party have the same voting rights, notwithstanding a varying level of financial contribution;
 - That the EDO (Economic Development Officer) Management Council provide a formal consultation regime between Toronto Global and the municipal economic development offices, including a consultation regime on the development of business plans, market strategies and other operational matters; and
 - That a private sector Board of Directors oversees the management and operation of Toronto Global and has representation from each municipal funding member, including Durham.
- 2.9 Durham Region has a "made-in-Durham" strategy which is being actively implemented for Economic Development and for FDI. The Economic Development & Tourism Division is implementing the 2017-2021 Economic Development Strategy and Action Plan as well as an FDI strategy that are both yielding results. Participation in Toronto Global is an important and valuable component of Durham's Economic Development Strategy and Action Plan.

3. Engagement and Collaboration

- 3.1 During the first 3 months of operation (February to April 2017), Toronto Global

was engaged in organizational development and staffing. The Investment Attraction (“IA”) team started with 4 members, growing to 13 members by 2018.

3.2 Initially, there were concerns that Durham Region was underrepresented in Toronto Global’s IA efforts throughout 2017. As of December 31, 2017, there had been successful digital technology investments in the City of Toronto, and imminent investments were reported in all funding member municipalities except Durham and Halton.

3.3 Beginning in December 2017, Durham Region Economic Development began to engage very actively with the entire Toronto Global team to provide a deeper and more clear understanding of the Region’s competitiveness, assets, value proposition, and key priority sectors for FDI. Toronto Global reciprocated with enthusiasm and strong engagement and collaboration. This activity has included:

- A detailed presentation to the IA team by Durham Economic Development, showcasing our priority sectors, private sector leaders and value proposition. Attendance included the entire 11-member IA team, the Executive VP of IA, VP of Business Strategy, and the 2-member Research team;
- The planning and delivery of a full-day familiarization (FAM) tour of Durham Region for the Toronto Global team (along with the Ontario Investment Office, FedDev, and Ontario Centres of Excellence). Attendance included 7 Toronto Global attendees for the full-day (representing the IA, marketing, and research teams). This FAM tour showcased some of the Region’s best assets including: Dynacare, 360 Insights, Spark Centre, ACE, Durham Live, the new GFS investment location, LHEARN Centre, the GO Transit expansion, culinary excellence, industrial and commercial development areas, and the affordability of commercial real estate; and
- Invitation to various Regional Economic Development events, tours, and meetings.

3.4 Durham Economic Development staff has also attended every EDO management committee meeting and provided direction and recommendations intended to improve the geographic distribution of investment projects. Primarily, this direction was to refocus lead generation efforts toward sectors that were better aligned with Durham Region’s priority sectors, so that prospective investors would have a stronger propensity toward landing in Durham. As a result, IA team prospecting efforts in Advanced Manufacturing, Life Sciences, Food & Beverage, and Energy & Environment has significantly increased their representation in the Toronto Global sales funnel. The Toronto Global sales funnel statistics are attached as

Appendix 1.

- 3.5 Since December 2017, Toronto Global has involved Durham in supporting 14 prospective investments, 10 of which remain active projects. A list of Toronto Global leads where Toronto Global has engaged Durham to collaborate are attached as Appendix 2.
- 3.6 Durham has initiated two pilot projects with Toronto Global, to work collaboratively in two specific areas to attract investment to Durham:
- The German/Dutch IA group at Toronto Global has been and will continue to work with Durham Region on specific targeting in Durham's priority market of southern Germany. The teams meet regularly, jointly develop target companies for pursuit exclusively for Durham, and collaboratively develop value propositions for target companies, including active project involvement and support; and
 - Leveraging Durham's strong cannabis primary production industry cluster to capture new investment in the upcoming 'Green Rush', via co-targeting 20 to 30 major US manufacturers of edibles and drinkables, collaboratively developing a value proposition, and Toronto Global will market and showcase specifically Durham's cluster and value proposition to attract these companies.
- 3.7 Toronto Global continues to be active and engaged in Durham. In this regard, they:
- Arranged for the University of Ontario Institute of Technology (UOIT) to present to a major prospective investment lead from the US;
 - Met with Durham in March 2018 to discuss collaboration on digital marketing campaigns through social platforms;
 - The IA team attended Pickering's 'Let's Do Lunch' event in April 2018;
 - The IA team attended Durham Research Day – Advancing Innovation and Entrepreneurship in May 2018;
 - Arranged for Michael Sparling of the Durham College AI Hub to participate in Global Affairs Canada AI Media Tour in May 2018 and in the Automotive Technology Roundtable, Detroit Michigan, June 2018;
 - Visited Durham to collect photography and video of the rural townships of Durham for upcoming marketing campaigns; and
 - The IA team participated in Clarington's FAM tour in June 2018 and in Durham Region's Energy Cluster Tour in October 2018.

4. Evaluation of Effectiveness and Rationale

- 4.1 The Region of Durham benefits in three direct ways from membership in Toronto Global:
1. Marketing: Toronto Global actively markets the Toronto Region internationally to create awareness of collective assets, competitiveness, and value proposition. Toronto Global's five staff and additional \$1M of direct investment in marketing, communications, research and insights has generated many millions of dollars worth of value and exposure internationally;
 2. Research and Analytics: Toronto Global performs detailed research to create a pan-regional value proposition, and their two staff provide research and information in support of Durham's requests related to their own investment attraction efforts; and
 3. Attracting New Investments to Durham: Toronto Global's core function is attracting and securing greenfield investment to the Toronto Region, and although they have not yet successfully secured an investment in Durham, there are a number of advanced prospective investment projects in the sales funnel specifically interested in Durham.
- 4.2 Indirectly, Durham benefits from successful investments in neighbouring regions, by way of increased employment opportunities for Durham residents, and in some cases, a strengthening of the competitiveness of Durham's clusters and overall value proposition.
- 4.3 Toronto Global is seeking to lever the contributions of each municipal funding member to source additional matching funds from the Province and Federal Governments. Further, Durham funds Toronto Global in an amount proportional to its relative population within the Toronto Region. Provided that Durham receives their due proportional share of value and investments from Toronto Global, the matching funding extends the value of Durham's contribution. At present the funding from Durham Region leverages over \$6 million annually in funding from the other municipalities and the Provincial and Federal government.
- 4.4 Toronto Global is actively focusing on regional and sectoral diversity to ensure investments begin to occur in Durham, Halton, Brampton, and York. Key initiatives include:
- Implementation of regional value propositions for targeted prospecting;

- A strong focus on pipeline diversification across sectors and geographies;
 - Execution and development of sector strategies; and
 - A focus on stronger relationships at the regional level.
- 4.5 Key initiatives undertaken by Toronto Global specific to refocusing efforts on Durham include:
- Targeted Value Proposition Development and pipeline diversification into Durham's priority sectors: Advanced Manufacturing, Food and Beverage, Health and Life Sciences, and Agribusiness;
 - Showcasing to investors and in collateral specific Durham assets such as the ACE Wind Tunnel, UOIT, Durham College and the AI Hub;
 - Providing assistance and research to support Durham's request for assistance on investment projects; and
 - Providing value-add services including business case development, data sharing, specialized research, RFI responses, and social media collaboration.
- 4.6 The average sales cycle for an investment attraction project in sectors other than ICT/Digital Media is typically 2 to 3 years. Toronto Global has been active for less than 2 years, so it is reasonable to expect investments to begin occurring over the next 12 months in Durham's priority sectors. Since January 2018, Toronto Global's sector diversification efforts have yielded a 52% increase in new targets in sectors that are aligned with Durham's priority sectors, with a total of 1,650 targets broadly aligned with Durham's value propositions. This pool will be drawn upon by Toronto Global staff as they work to move these leads through the sales pipeline over the course of the coming months and years.
- 4.7 In addition to leads identified in Appendix 2 where Durham and Toronto Global are collaborating, Toronto Global continues to advance other leads, including a Level 1 lead (serious interest with an investment horizon of less than 3 years) in the advanced manufacturing sector with specific interest in Durham Region. This investor is seeking to construct a 1.5M square foot facility, creating 1,300 jobs with a capital expenditure of \$350-\$400M.
- 4.8 Amazon HQ2 is an example of value for Durham derived from a Toronto Regional awareness generation marketing campaign:
- Two excellent development sites (the Seaton Innovation Corridor and the Picov Employment Land on Salem Rd.) were included in the Amazon HQ2 proposal prepared by Toronto Global;

- Toronto Region's proposal, including Durham's sites, were selected as the only Canadian city on Amazon's final shortlist;
- The Toronto Region bid proposal was made public and downloaded more than 20,000 times;
- Since submitting the proposal, Toronto Global has added 259 new companies to their sales pipeline;
- It was estimated by third parties that the proposal and accompanying social media awareness generation campaign generated \$143M of total advertising value equivalency;
- Had Durham not been a funding member of Toronto Global, Durham's sites would not have been included in the short-listed proposal and Durham would not have been shown in the proposal's various mapping. Durham's inclusion in the overall regional value proposition was the reason the Region's sites were considered for this investment.

5. Financial Implications

- 5.1 Durham's member contribution to Toronto Global for the period of April 1, 2019 to March 31, 2020 in the amount of \$206,397 will be included in the 2019 budget as a non-departmental item.

6. Conclusion

- 6.1 Toronto Global has been operational for 1 year and 11 months. The typical investment attraction cycle time for an investment project is 2 to 3 years for most of Durham's priority sectors for FDI.
- 6.2 Durham Region's engagement with Toronto Global throughout 2018 has been enthusiastically reciprocated by the entire Toronto Global team. Toronto Global frequently visits the Region to participate in events and tours and continues to proactively learn about Durham's priority sectors for FDI, value proposition, innovation-support assets, and industry leaders.
- 6.3 Toronto Global has engaged Durham to collaborate on attracting investment from 14 foreign investors and continues to advance other leads with specific interest in Durham Region.
- 6.4 Durham receives benefits in three direct ways from membership in Toronto Global. Durham is included in the Toronto Regional value proposition for awareness generation marketing campaigns; Durham receives valuable research and analytics support for attracting new investment; and Durham expects to begin

to receive successful investments from Toronto Global's Investment Attraction efforts within the next 12 months.

- 6.5 Durham's membership in Toronto Global is a valuable component of the Region's Economic Development Strategy, and the return on Durham's investment is expected to increase further once successful investments begin to be realized. It is recommended that Durham Region continue partner with Toronto Global with respect to international investment attraction activities for this term of Council subject to satisfactory performance by Toronto Global and subject to funding being approved through the Region's annual Business Plans and Budget process.

Respectfully submitted,

Original signed by

Brian Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

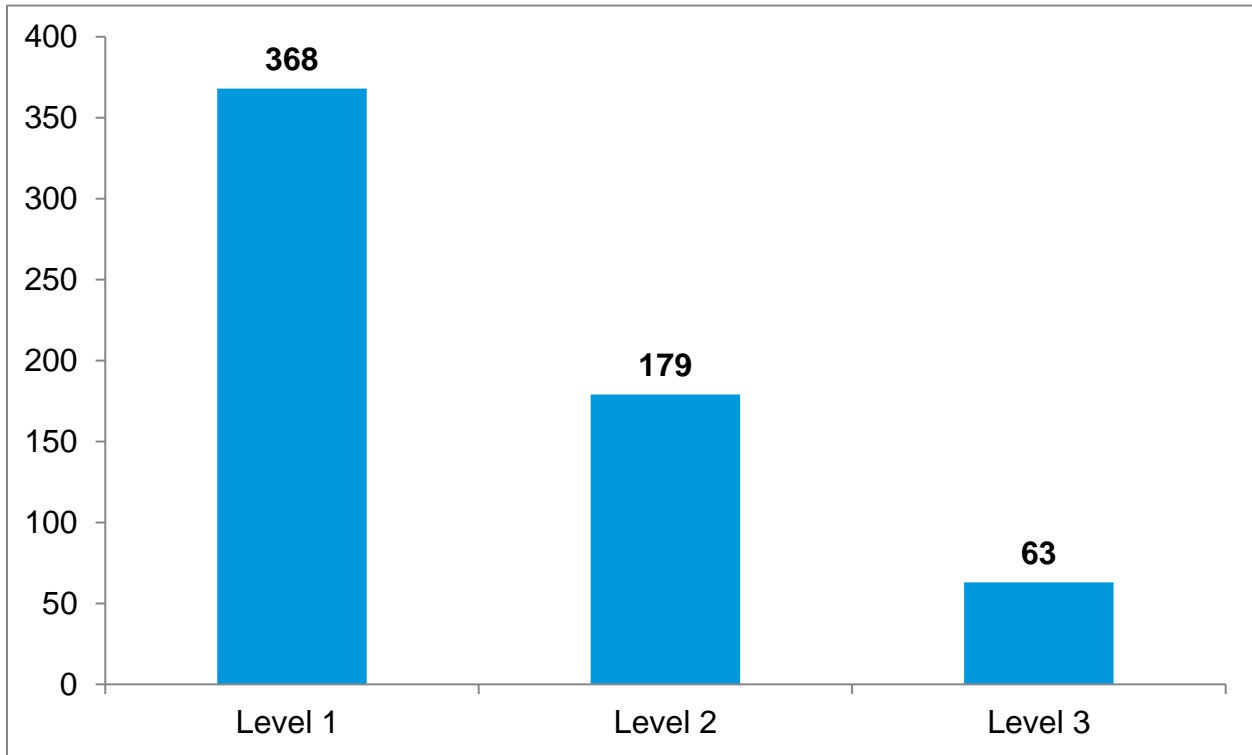
Recommended for Presentation to Committee

Original signed by

Elaine C. Baxter-Trahair
Chief Administrative Officer

Appendix 1: Toronto Global Sales Funnel Statistics

Toronto Global Advanced Opportunities

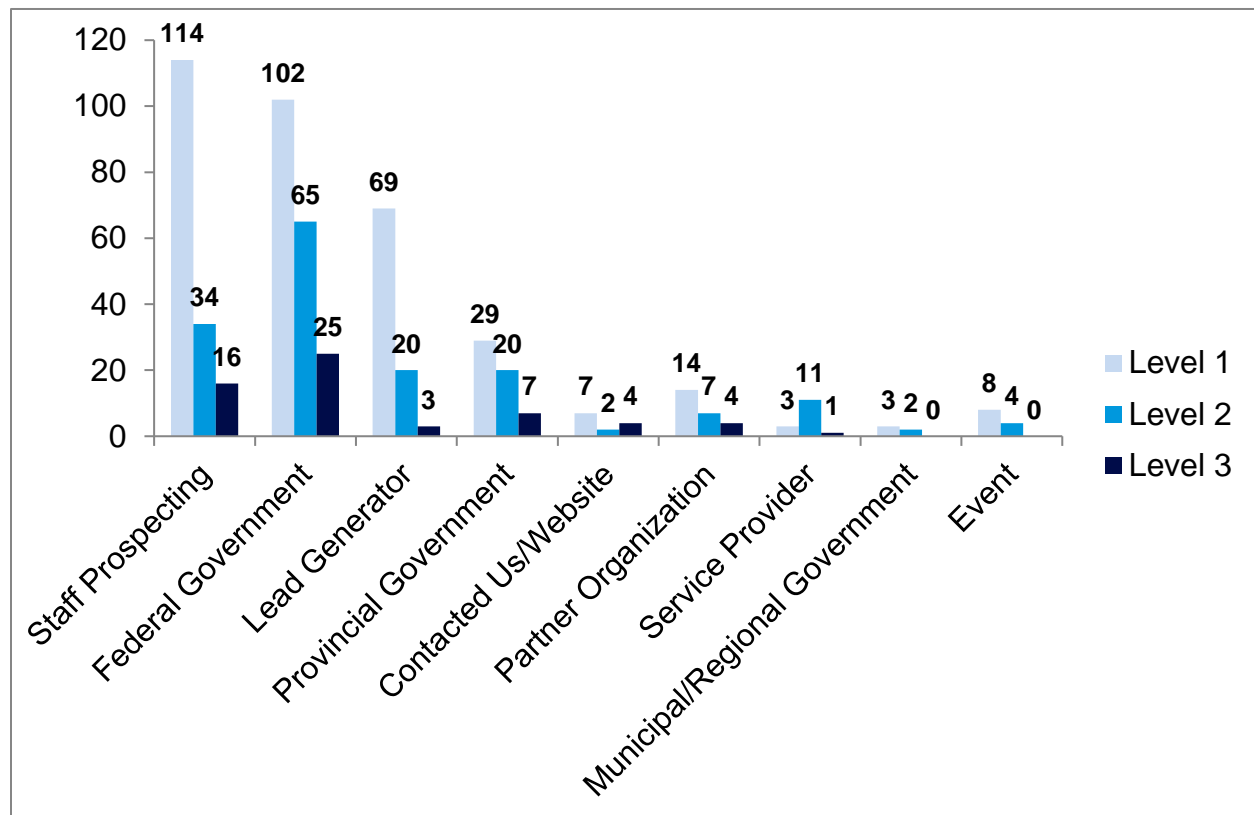


Level 1: Serious interest to expand or relocate with willingness to consider the Toronto Region. Project timeline: within 3 years

Level 2: Committing resources to expansion. Project is 90 days to 18 months from decision

Level 3: In the process of establishing a location in the Toronto Region. Investment timeline: within 90 days

Toronto Global Top Sources of Opportunities



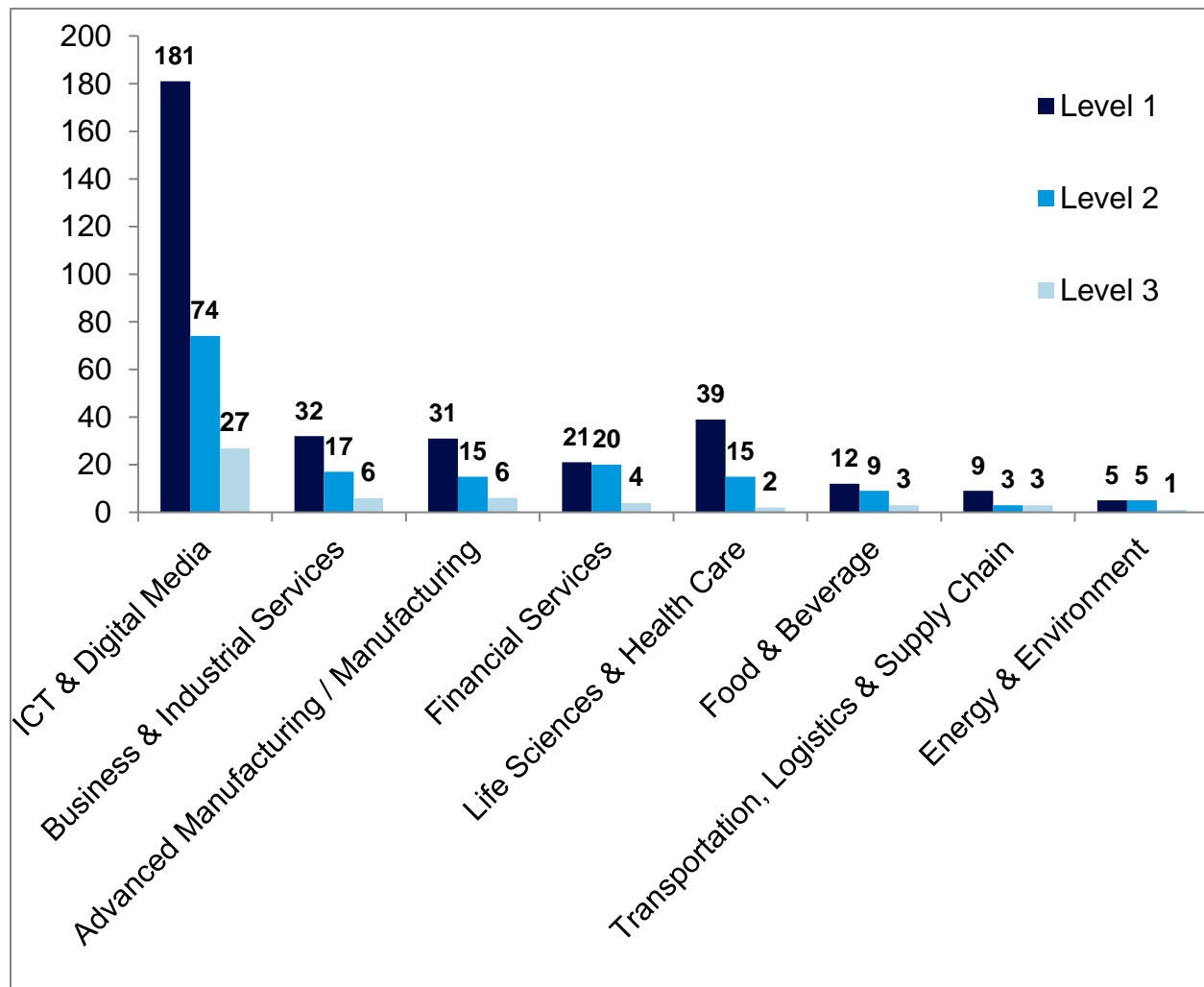
Please note that only the top 9 sources are included in this table.

Level 1: Serious interest to expand or relocate with willingness to consider the Toronto Region. Project timeline: within 3 years

Level 2: Committing resources to expansion. Project is 90 days to 18 months from decision

Level 3: In the process of establishing a location in the Toronto Region. Investment timeline: within 90 days

Toronto Global Top Sectors of Opportunities



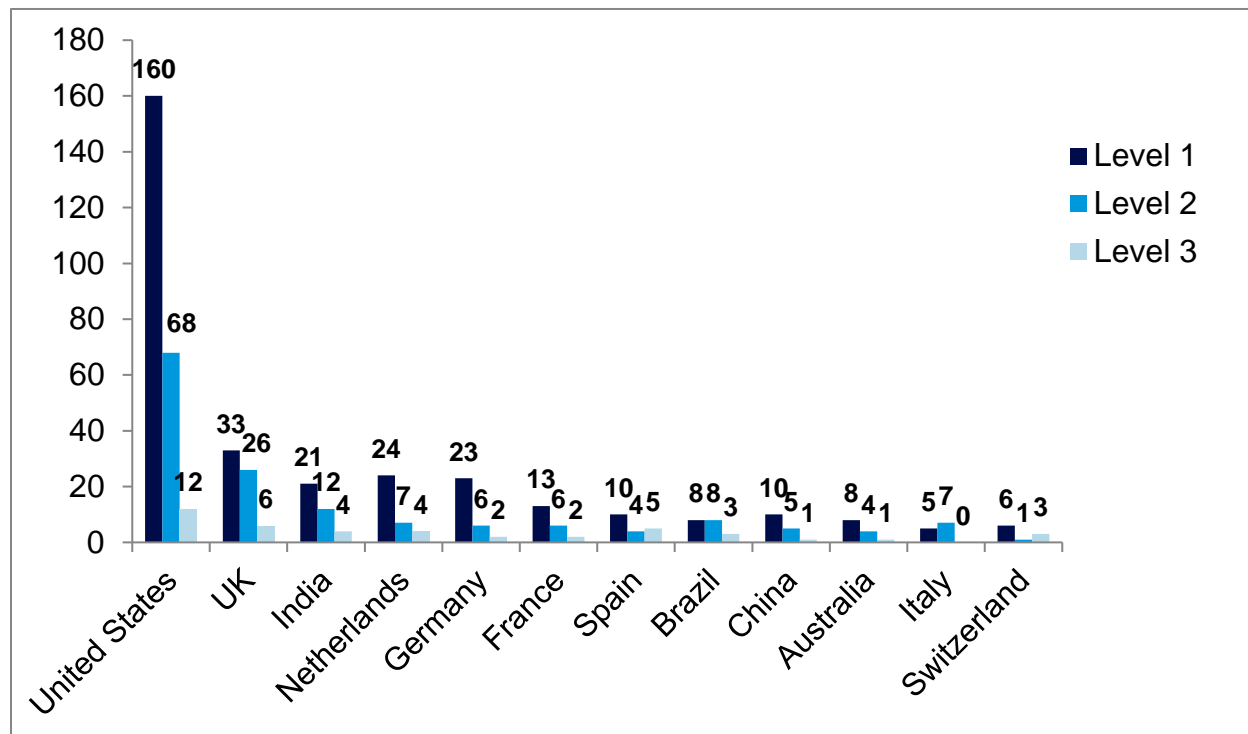
Please note that only the top 8 sources are included in this table.

Level 1: Serious interest to expand or relocate with willingness to consider the Toronto Region. Project timeline: within 3 years

Level 2: Committing resources to expansion. Project is 90 days to 18 months from decision

Level 3: In the process of establishing a location in the Toronto Region. Investment timeline: within 90 days

Toronto Global Top Source Geographies of Opportunities



Please note that only the top 12 source geographies are included in this table.

Level 1: Serious interest to expand or relocate with willingness to consider the Toronto Region. Project timeline: within 3 years

Level 2: Committing resources to expansion. Project is 90 days to 18 months from decision

Level 3: In the process of establishing a location in the Toronto Region. Investment timeline: within 90 days

Appendix 2: Toronto Global Leads in Collaboration with Durham Region

Investment Project	Projected Jobs	Status
Company markets high-value proteins sourced from plants	Not Disclosed	Closed/Lost – Investment made elsewhere
Aquaculture R&D lab, consisting of 6 ponds of water that can produce up to 1800 pounds of fish year	Not Disclosed	Closed/Lost
Virtual digital lab	Not Disclosed	Closed/Lost – Investment made elsewhere
Advanced bio-medical production facility	150	Closed/Lost – Investment made elsewhere
Innovative food production technology	50+	Active
EV part manufacturer	100	Active
Industrial product assembly facility	10-25	Active
Life Science R&D Centre	100	Active
Logistics / advanced manufacturing	Not Disclosed	Active
Energy storage solutions company	Not Disclosed	Active
Advanced food ingredient product R&D and production facility	10-20	Active
Cannabis R&D lab	Not Disclosed	Active
Cannabis Quality Assurance/Quality Control lab	Not Disclosed	Active
Cannabis product sales/distribution office	Not Disclosed	Active