UNDERSTANDING EMPLOYMENT LAND IN THE REGION OF PEEL

Prepared for the

REGIONAL MUNICIPALITY OF PEEL

November 2005

HEMSON

Consulting Ltd.

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November 30, 2005

Mr. Arvin Prasad
Director, Planning Policy and Research
Peel Region Planning Department
10 Peel Centre Drive
Brampton, Ontario
L6T 4B9

Dear Mr. Prasad:

Re: Understanding Employment Land in the Region of Peel

Hemson Consulting Ltd. is pleased to submit our final report on understanding employment land in the Region of Peel. The report provides an overview of the Region's employment land supply, analyses the impact of Lester B. Pearson International Airport on surrounding employment lands, projects the sufficiency of supply to meet future growth and provides major policy directions.

We trust that our analysis will assist staff and regional council in better understanding the Region's employment lands as they move forward with the *Liveable Peel* initiative. We would like to thank Regional staff for their valuable input during the preparation of this study.

Yours truly,

HEMSON CONSULTING LTD.

Russell Mathew

Russell Mathew, RPP, MCIP, PLE
Partner

The Region of Peel is one of the most competitive locations for employment land within the GTA–Hamilton. The combination of a strategic location, a well-developed transportation network and increased trade volumes has enabled the Region to accommodate significant new development and employment growth over the past 30 years.

For the Region to maintain its historically strong performance, however, it must ensure that the employment land supply remains competitive. A number of key issues need to be addressed. Based upon an analysis of the land supply, the role of the Lester B. Pearson International Airport (LBPIA) and the future growth outlook, five major policy directions are recommended:

1. A strategy to protect the vacant and occupied employment land supply needs to be developed;
2. Policies need to be developed to ensure the full economic potential of the LBPIA is realized;
3. Planning for additional employment land designations should begin soon;
4. A strategy is required to address road congestion and goods movement; and
5. Economic clusters should be promoted.

1. A Strategy to Protect the Vacant and Occupied Employment Land Supply Needs to be Developed

Even with the addition of Northwest Brampton, the Region of Peel's employment land supply will be largely depleted by 2021. To maximize the potential of the remaining employment land, Peel and local area municipalities must be vigilant in protecting the occupied and vacant supply.

As development in the Region of Peel nears its boundaries, not only will the supply of employment land tighten, so too will the supply of land for ground-related housing. Pressure to accommodate ground-related housing will drive pressure for the redesignation of employment land for residential uses. It is important for Peel to resist this pressure. There are far fewer quality locations for employment land than for residential development.

- A number of recent Ontario Municipal Board (OMB) cases highlight the importance of a clear policy context for protecting employment land. Without a clear policy context, it is difficult to resist conversion pressure.
- The Province's emerging policy context is clearly bringing greater attention to the importance of employment land and protecting the supply to achieve economic objectives.
- The Region needs to build upon the Province's emerging directions and develop an employment land retention strategy.

Generally, the Region should seek to protect employment land that is well served by 400 series highways, major arterials and other major transportation infrastructure such as the LBPIA and intermodal facilities, and is well buffered from surrounding neighbourhoods.

A sound and defensible strategy for implementing this direction will need to be developed through more detailed work in consultation with the local municipalities.

2. Policies Need to be Developed to Ensure the Full Economic Potential of the LBPIA is Realized

The ongoing health and integrity of existing employment areas is very important to continued economic development at the Regional level. Within this context, maintaining the competitiveness of the LBPIA and surrounding employment areas is a key policy consideration. Three policy directions are recommended.

- Actions should be taken to ensure that the competitiveness of the actual facility as a major international gateway is maintained.

- A Transportation Demand Management (TDM) strategy should be considered to address congestion. If the employment areas around the LBPIA become less accessible their competitive advantage will deteriorate. This is not in the Regional or Provincial interest.

  Co-ordination and partnership with area municipalities, senior levels of government and the private sector will likely be required to implement the necessary solutions.

- A plan for the surrounding employment areas should also be developed. There are unique opportunities for redevelopment and reuse around the LBPIA. Employment intensification within urban growth centres is a key objective of the Province's emerging policy context.

  A better understanding of the relationship between employment land and the type of development anticipated is required. A series of case studies should be undertaken to develop an understanding of how the land use pattern will evolve over time.

3. Planning For Additional Employment Land Designations Should Begin Soon

Without additional employment land the rate of employment growth will decline. Some new economic activity will be accommodated through redevelopment and reuse, likely focussed around the LBPIA, but this will not be enough. Additional employment land is required to accommodate long-range employment growth.

- Even with the inclusion of Northwest Brampton, the Region of Peel is likely to be largely depleted of employment land by 2021. For long range planning purposes, a time horizon of 15 years is short.

- The long-term options for employment land in Peel depend largely on planned and proposed provincial investment in the highway system, notably the east – west route through Caledon and related connections, possibly through Northwest Brampton.

- The *Greenbelt Plan* will increase pressure for residential development in southern Caledon. It is important for the Region to identify the key locations for employment land now, and protect them over the long term.

4. A Strategy is Required to Address Road Congestion and Goods Movement

Much of Peel's future competitiveness depends upon its transportation system. The Region has been able to compete well because of its large and competitive land supply. However, as road congestion worsens the Region's competitive advantage will deteriorate. This would not be in the Regional interest. A series of short and long-term steps must be taken to address the situation.

- Peel should take immediate action to alleviate congestion at the specific intersections identified in the Region's recent study on goods movement. Most of the problem areas are located around the LBPIA, where opportunities to provide additional road capacity are limited. A TDM strategy should be considered.

- The Region should then begin the development of a long-range strategy to ensure efficient goods movement across all of Peel, consistent with the policy objectives in the Province's draft growth plan: *Places to Grow*. The first step is to develop a better understanding of commercial vehicle movements and the live – work relationship. An improved information base will assist the region in implementing the next steps of a long-term strategy.

5. Economic Clusters Should be Promoted

The analysis of the Region's employment land supply revealed a number of economic concentrations in traditional industrial activities. Promoting clusters could contribute greatly to the continued competitiveness of the employment land supply. The key challenge is to determine the type of support and promotion that is required.

- In co-operation with local municipalities, the Region needs to identify the relationships between firms in the economic concentrations through more detailed analysis or field interviews.

- One or two key industry clusters should then be identified as a basis for future policy. Many communities in North America have focussed on the use of cluster working groups to determine which type of support is likely to be most effective.

- As part of the economic cluster analysis, additional work should be undertaken to better understand trends in built forms including larger and more efficient buildings, increased integration of uses and the continuing evolution of manufacturing and distribution.

One of the major challenges to understanding the implications of trends in built form for employment land is a lack of consistent data. In consultation with the local municipalities, the Region should consider an initiative to standardize the definitions of the Mississauga and Brampton employment survey as a basis for developing a comprehensive data base to serve as the foundation for future, more in-depth studies.

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I INTRODUCTION

Hemson Consulting Ltd. was retained in January 2004 to undertake an analysis of employment land for the Region of Peel. The purpose is to provide the Region with an improved understanding of employment land in order to prepare its *Liveable Peel* initiative.

From a Regional perspective, the future of employment land has implications for long-range decision making in a number of areas: transportation planning; public works and other capital budget expenditures; and long-term land needs. A comprehensive analysis of the conditions and trends in employment land is required as input to the formulation of future plans and policies.

A. FOCUS IS ON EMPLOYMENT LAND IN DESIGNATED EMPLOYMENT AREAS

This report involves an examination of employment land within the designated employment areas in the Region of Peel. The employment areas are: the Employment Districts in the *City of Mississauga Official Plan;* Industrial Districts in the *City of Brampton Official Plan;* and the various industrial designations for the communities of Bolton, Victoria and Tullamore in the *Town of Caledon Official Plan*. Employment areas in the Region of Peel are illustrated on the map on the following page, in the context of the broader Toronto Region.

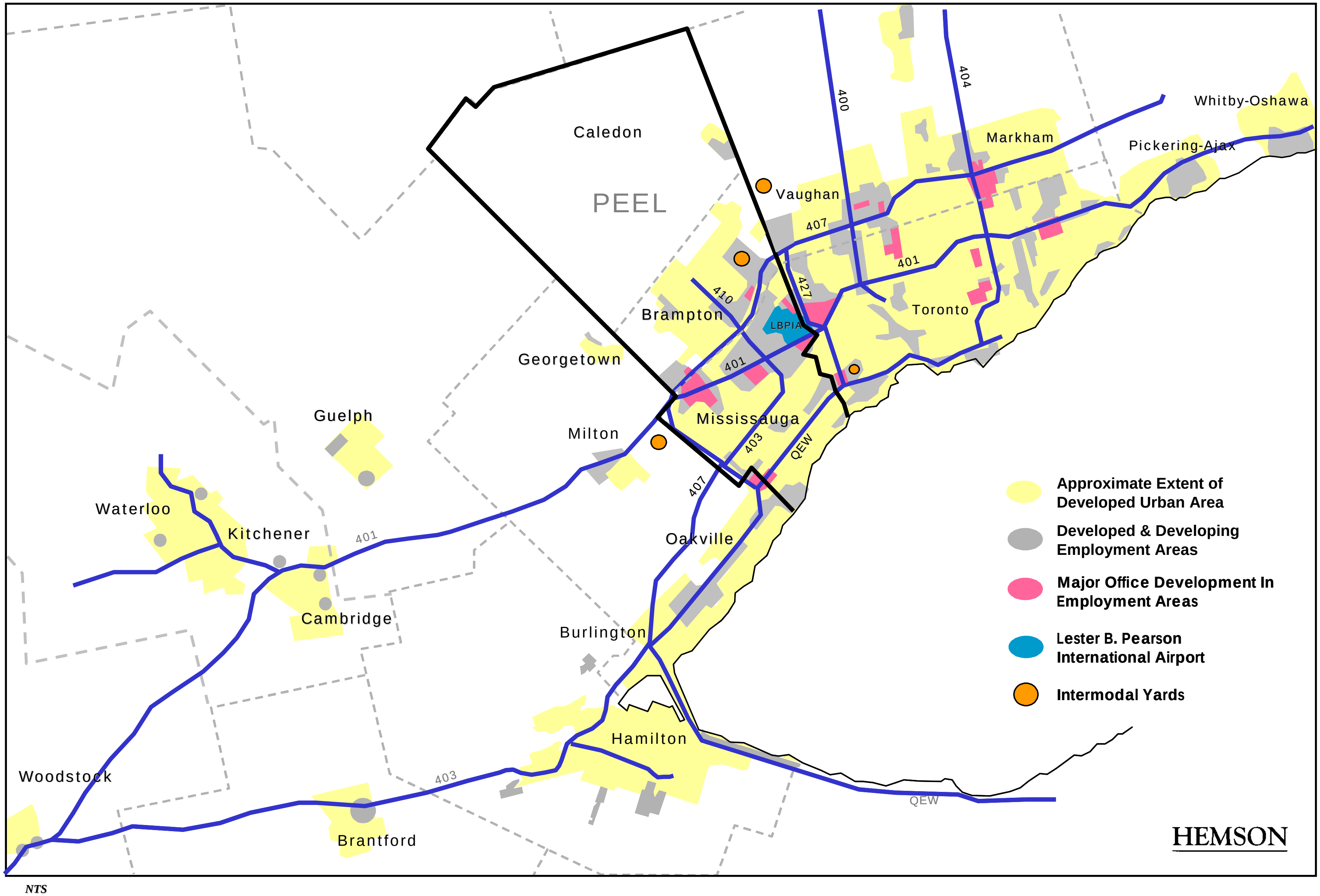
Employment land accommodates primarily low rise, industrial-type building space, including industrial multiples. This built form accommodates traditional industrial activities such as manufacturing, distribution and warehousing as well as other type of uses such as service commercial, institutional and accessory retail.

In some cases, major office development [1] is also accommodated in employment areas. For long-range planning purposes, however, major office is treated separately. Major office development occurs at very high densities, under a unique market dynamic and is concentrated in only a few locations. In this report, the land and jobs in employment areas devoted to industrial-type use are distinguished from major offices.

Likewise, major retail developments are also not considered part of employment land employment for long-range planning purposes. The focus is on the typically single story, industrial-type development that occupies the majority of employment land.

[1] *Major office development is free standing office buildings over 20,000 net square feet excluding municipal and school buildings*

GTA & SOUTHWESTERN ONTARIO EMPLOYMENT AREAS



Wherever possible, the reference geography for broader discussions of employment land is the Greater Toronto Area and City of Hamilton (GTAH). The City of Hamilton is increasingly considered part of the larger, GTA-focussed region because of the increasing integration of the economy and transportation system. In some cases information for the City of Hamilton is not available and these instances are noted.

B. PURPOSE OF REPORT IS TO RECOMMEND FUTURE POLICY DIRECTIONS

The purpose of this report is to provide the Region with recommendations on future work to be undertaken as part of the *Liveable Peel* initiative and other long range planning. It is structured around four main themes.

1. A Review of the Employment Land Supply

The first component is an examination of the employment land supply and employment profile. Major elements of this component included:

- A review of the occupied and vacant employment land supply, including employment densities;
- A review of the Census employment to establish the employment profile, by major economic sector, for Peel and the GTAH; and
- An analysis of data from the 2003 employment survey prepared by the Cities of Mississauga and Brampton, as part of a location quotient analysis to identify the major economic clusters.

2. An Examination of the Role of the LBPIA

The second component is an examination of the role of the LBPIA. The question that is explored is whether the LBPIA facility itself is serving as a locational magnet for industry, or if there are other factors driving the concentration of employment in the immediate area. Major elements of this component included:

- A review of studies and documents related generally to the economic impact of airports in major metropolitan areas, including the LBPIA;
- An analysis of the 2003 employment survey data from the City of Mississauga and the City of Toronto, to establish the relationship between the LBPIA and surrounding employment land; and
- To further our understanding of the relationship between the LBPIA and surrounding land uses, a series of discussions with 31 users of employment land in the surrounding areas. Larger firms were selected within the employment areas directly abutting the LBPIA with a view to representing a range of use and geography.

3. An Assessment of the Future Growth Outlook

In the final component of the analysis, the growth outlook for the GTA, and the Region of Peel employment land market is discussed, including;

- A review of recent trends in Ontario and the GTAH economy, including demand for employment land in the "new economy";
- An assessment of Peel's future competitive position within the GTAH; and
- The adequacy of the employment land supply in accommodating future demand.

4. The Recommendation of Policy Directions for the Next Phase of Work

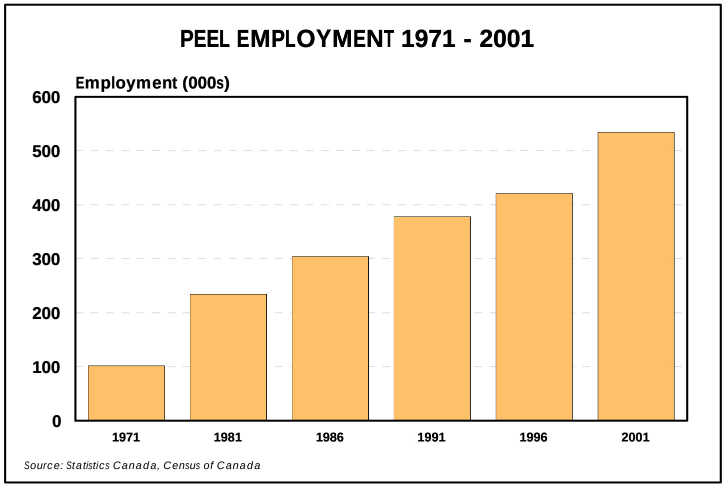
Based upon this analysis, the final component recommends policy directions for the next phase of work. The intention is not to recommend specific policies for adoption but to identify the broad issues that should be considered and further work required as Region proceeds with its *Liveable Peel* initiative and other related policies.

Our recommendations are made within the context of the continuing evolution of industry in Peel, the Region's planning objectives and the Province of Ontario's emerging growth management initiatives that are directed towards promoting economic strength and better planning for employment land.

The first chapter discusses the Region's employment land supply, including densities and economic clusters. The second chapter discusses the LBPIA, its economic impact and relationship to surrounding employment areas. The third chapter discusses the growth outlook, and the anticipated time to depletion of the Region's employment land supply. The final chapter discusses the policy implications of this analysis, and recommends further work that should be undertaken.

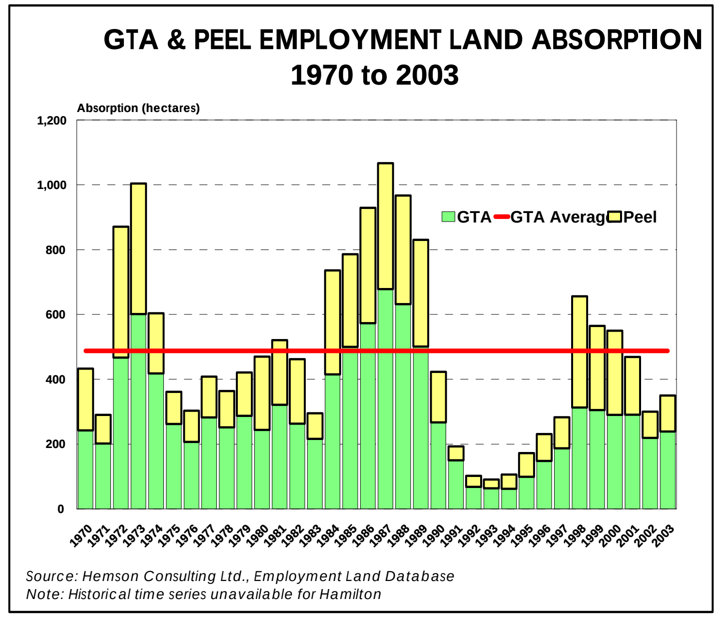
II THE REGION OF PEEL HAS A LARGE AND COMPETITIVE EMPLOYMENT LAND SUPPLY

The Region of Peel has performed very strongly in the GTAH employment market over the past decades. As shown below, employment has grown rapidly since 1971. According to the 2001 Census, there were about 530,000 jobs in the Region of Peel.

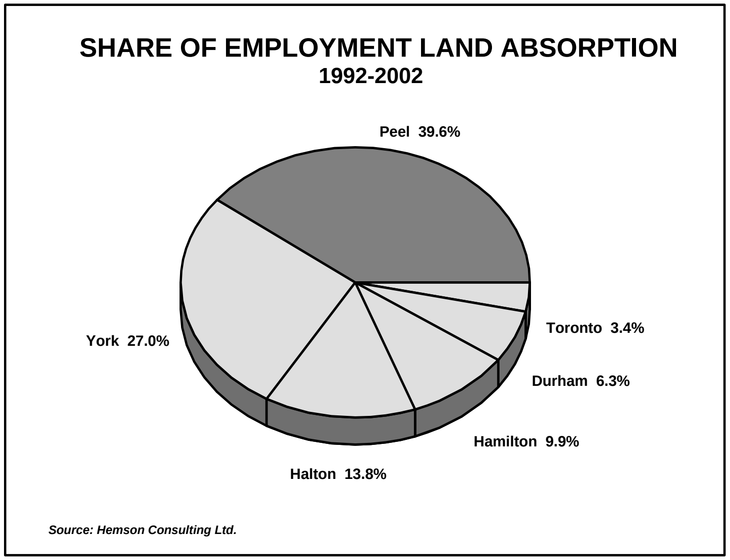


One of the major reasons for Peel's strong employment growth is its large and competitive employment land supply. Employment areas are focussed around major highway corridors and the LBPIA where a number of major highways converge. Access to major rail lines and intermodal terminals is also available in some cases.

The combination of favourable positioning with respect to major US markets, a well-developed transportation network and increased trade volumes has enabled the Region to accommodate significant amounts of new development over the past 30 years. This is illustrated below, with further detail provided in Appendix E.



As shown below, since the recession of the early 1990s Peel Region has accounted for almost 40%of the total employment land absorption in the GTAH. This disproportionate share of the market indicates how attractive Peel Region has become relative to other GTAH locations.



A. PEEL HAS A TOTAL SUPPLY OF ABOUT 11,660 NET HA

The total supply of employment land in the Region of Peel, including land occupied by major offices, is about 11,900 net ha. As shown in table 1, this is the largest supply of employment land in the GTAH.

Table 1

Total Designated Employment Area Supply
Total Occupied and Vacant Supply
GTAH 2002

Municipality	Total Designated ha	Share of Total
Region of Peel	11,900	25%
Region of York	8,800	19%
City of Toronto	8,400	18%
Region of Durham	7,900	17%
Region of Halton	5,800	13%
City of Hamilton	3,800	8%
Total	46,600	100%

Source: Regional municipalities of York, Durham, Halton and the Cities of Toronto and Hamilton

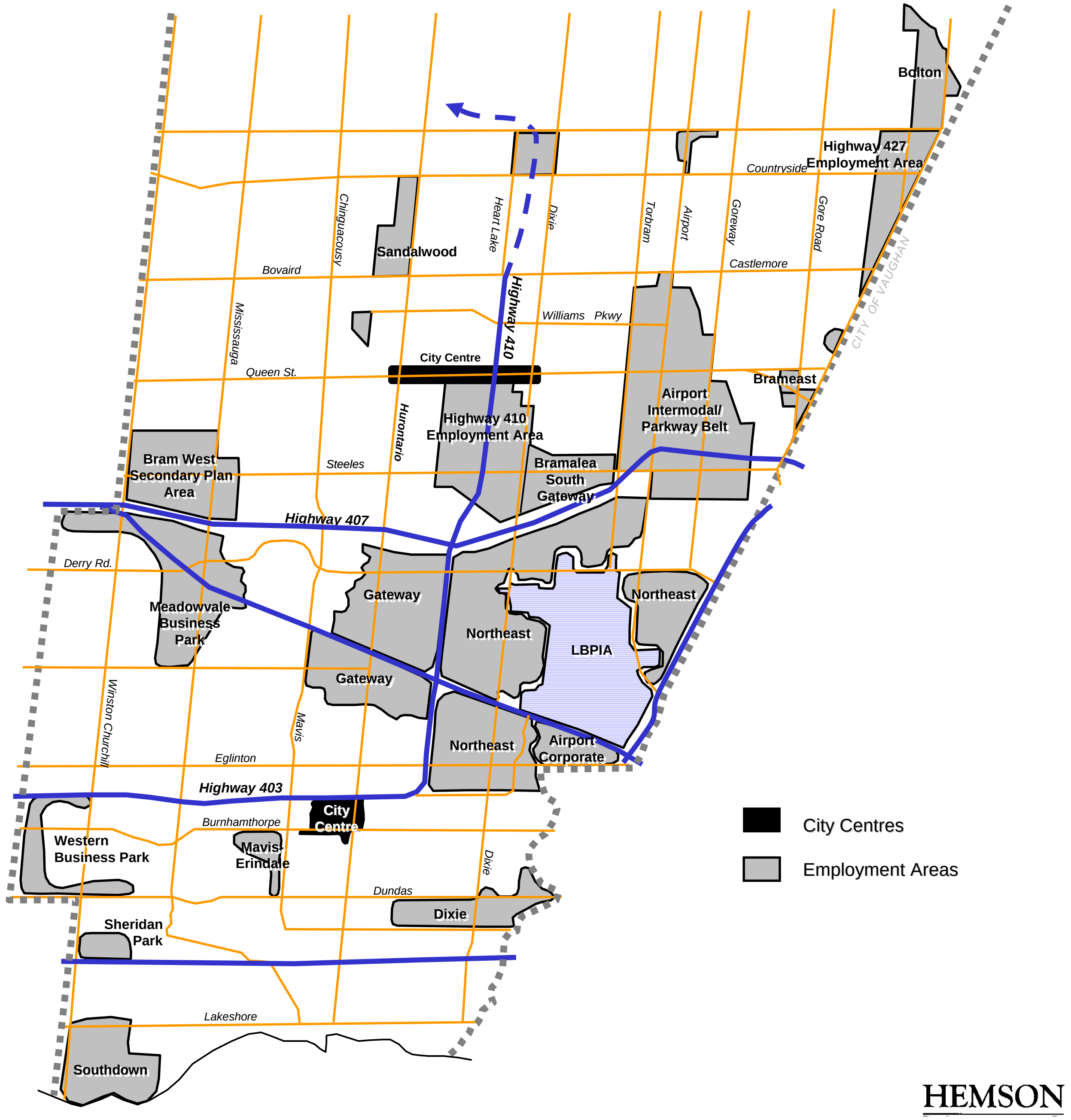
Region of Peel supply based upon work undertaken for this study

Includes land occupied by major offices, and land occupied by retail in some employment areas.

Excluding land occupied by major offices, the total employment land supply in Peel is about 11,660 net ha. This is an estimate of the total net employment land supply, adjusted for land that will be required for roads and servicing on unsubdivided parcels. The supply is located in a number of different locations concentrated primarily in southern Peel. The Region's employment land supply is illustrated on the map on the following page.

MAJOR DESIGNATED EMPLOYMENT AREAS

Region of Peel



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1. About 7,640 Net ha are Occupied and 4,010 are Vacant

Of the total employment land supply of 11,660 net ha, about 7,640 net ha or 66%, is occupied. The remaining 34%, about 4,010 net ha, are vacant.

Table 2
Region of Peel
Designated Employment Land Supply 2003 (net ha)

Municipality	Occupied	Vacant	Total
Mississauga	5,490	1,090	6,590
Brampton	1,850	2,500	4,350
Caledon	300	420	720
Total	7,640	4,010	11,660
Share of Total	66%	34%	100%

Source: Hemson Consulting Ltd. based upon municipal data.

Excludes land occupied by major offices. Brampton data based upon proposed Bramwest Plan, and excludes potential supply in Northwest Brampton.

2. Net Effective Vacant Supply is About 3,425 net ha

The vacant supply of approximately 4,010 net ha does not include an adjustment for long-term vacancy. In most municipalities, a small portion of the designated supply remains vacant over the long-term, usually about 5%of the total supply (occupied and vacant).

Long-term vacancy in the Region of Peel amounts to about 585 net ha[1]. After adjusting for long-term vacancy, the net *effective* vacant supply is about 3,425 net ha. This is shown in Table 3.

Table 3
Net Effective Vacant Employment Land Supply
Region of Peel, 2003

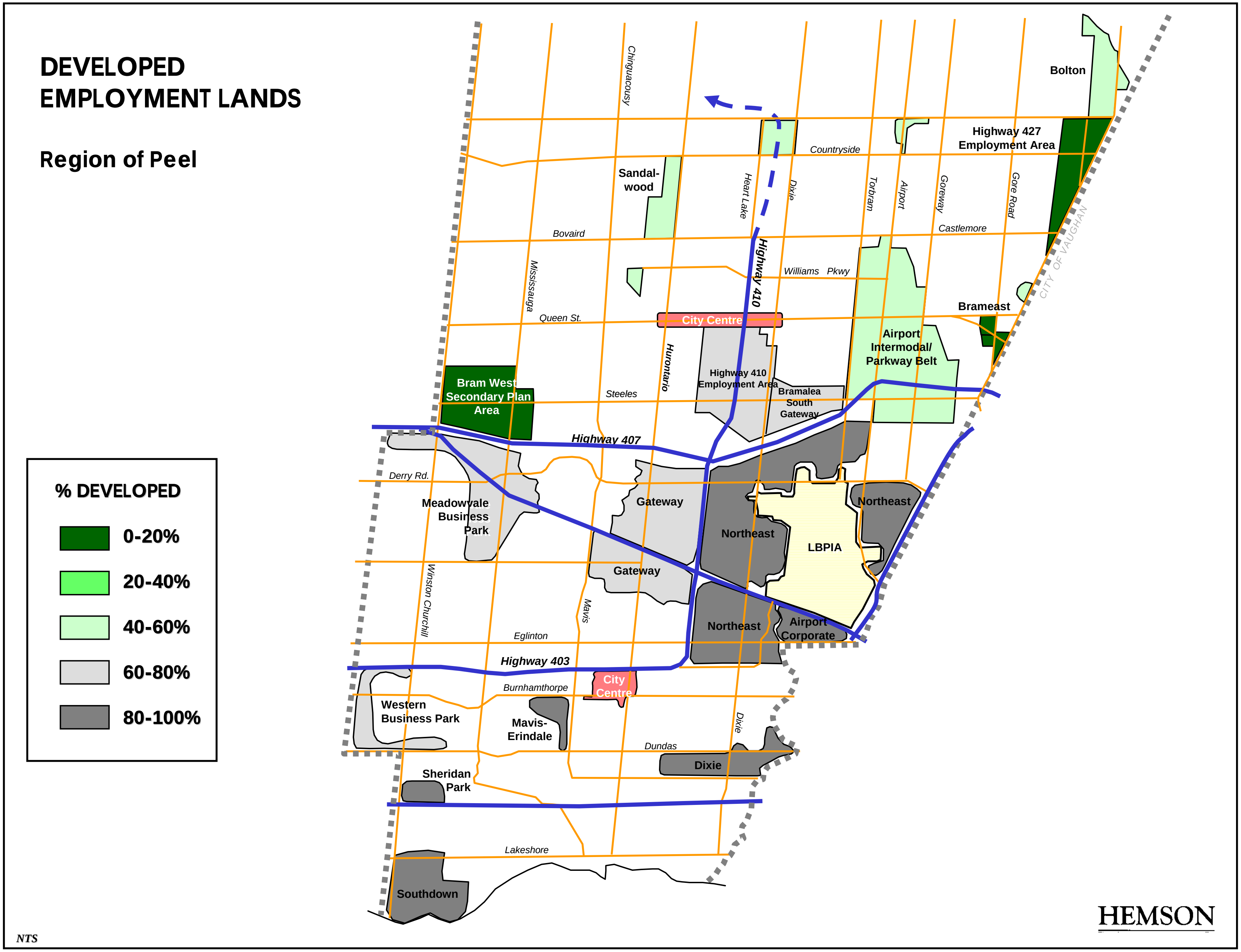
Component of Estimate	Net Ha
Net Vacant Supply Estimate	4,010
Long-Term Vacancy Adjustment (5%of the total supply of 11,660 net ha)	585
Net Effective Vacant Supply	3,425

Source: Hemson Consulting Ltd. Based on Municipal Data

This is the appropriate supply to be used for long-range planning purposes. Ignoring the effects of long-term vacancy overstates the employment capacity of the land base, with resulting implications for Regional planning and the delivery of Regional services.

The broad distribution of the occupied and vacant supply is illustrated on the following page. Details on the occupied and vacant employment land supply by area are provided in Appendix A.

[1] *"Net" is defined as the developable land area minus about 20%for roads and other services on unsubdivided parcels.*



Note: None of the employment lands in Peel are 20-40% developed

3. Employment Density Compares Favourably to Other Communities in the GTAH

Overall, the density of employment land in the Region of Peel is about 39 employees per net ha (epnh). Densities are highest in the City of Brampton, with slightly lower densities observed in the City of Mississauga and Caledon. The density is estimated by dividing employment on employment land by the occupied land area. For the purposes of making a pure estimate, three adjustments are made:

- Major office employment in employment areas, and the land occupied by these offices is excluded;
- The LBPIA and approximately 17,000 jobs accommodated on the site is excluded;
- Brampton contains roughly 4,000 employment land jobs not geographically located within any designated employment areas. These are excluded.
- Similarly, rural employment land employment in Caledon is excluded. There is a component of employment land employment — by type — that is not accommodated in designated employment areas or business parks. This includes employment in services to the agricultural and equestrian industry, quarries, and other rural employment land uses not in designated business parks.

The resulting density estimates are summarized in Table 4. Detailed estimates are provided in Appendix C.

Table 4

Region of Peel 2003
Employment Land Density (Employees per net ha)

Municipality	Employment Land Employment*	Occupied Land Area*	Density (epnh)
Mississauga	209,000	5,490	38
Brampton	78,000	1,850	42
Caledon	10,600	300	35
TOTAL	297,600	7,640	39

Source: Hemson Consulting Ltd. based upon municipal data and Hemson Forecast Model

*Major office jobs and associated land area excluded. LBPIA jobs and land area excluded. Rural employment land employment in Caledon excluded.

Initially, the Mississauga density estimate may appear surprisingly low compared to other areas. Employment areas such as Northeast and Gateway have the same, or higher densities as comparable areas in Brampton. However, overall, the Mississauga average is reduced by a few large areas of very low density; the Southdown employment area and other smaller areas, which contain a number of land intensive, low employment activities, such as oil refiners and power plants; and the Jannock site in Meadowvale, which is a former brick quarry. It should also be noted that Mississauga has proportionally much more office employment than Brampton, which is not included in the density estimates.

The density of employment land in Peel compares well to other communities in the GTAH and beyond, as illustrated in Table 5. Peel contains significant development in land–intensive industries, such as manufacturing and distribution. The Region also contains more intensive industries such as high-technology and other industries housed in quasi-office spaces. Municipalities that have generally lower employment densities than Peel have greater proportions of land intensive industries, while those with higher densities have more high-technology, quasi-office, industries.

Table 5

Estimated Employment Land Densities
Selected Municipalities in Ontario, 2003

Municipality	Employees Per Net Ha
Town of Richmond Hill	65
Town of Markham	60
City of Toronto	55
City of Burlington	54
City of Ottawa	48
City of Brampton	**42**
City of Oakville	40
City of Mississauga	**38**
Town of Caledon	**35**
City of Vaughan	35
Town of Whitby	30
City of Hamilton (excluding older industrial areas)	27

Source: Hemson Consulting Ltd. based on Municipal Data
Note: Toronto estimate based upon the Toronto Employment Survey & preliminary estimates of occupied employment land based on City of Toronto data

B. EMPLOYMENT LAND PLAYS A KEY ROLE IN ECONOMIC DEVELOPMENT

In discussing the role employment land plays in economic development there is an important distinction between *type* and *geography*. By type, employment land employment is jobs accommodated in the primarily low–rise, industrial-type building space and multiples. By geography, within employment areas there is employment land employment, in some cases major office employment and population-related employment scattered through the employment districts.

- By type, employment land employment accounts for almost 319,000 jobs or 56% of the total employment of 571,000. About 87,000 jobs are major office jobs, concentrated mainly in the City of Mississauga.

- The balance, 165,000 jobs, is "population-related employment". These are jobs that exist in response to the resident population. They are scattered throughout the community and include retail, education and health care and home-based employment.

- Total employment land employment by type is shown in Table 6. This includes employment at the LBPIA, employment land employment on non-designated employment land in Brampton and rural employment land employment in Caledon.

Table 6
Total Employment By Major Type
Region of Peel 2003

Local Municipality	Employment Type			
	Employment land	Major Office	Pop Related	Total
Mississauga	225,000	73,000	102,000	400,000
Brampton	82,000	14,000	55,000	151,000
Caledon	12,000	0	8,000	20,000
Total Peel	319,000	87,000	165,000	571,000

Source: Hemson Consulting Ltd. Based on Municipal Data

Mississauga employment land includes the Airport. Brampton includes employment land employment not found within designated employment areas. Caledon includes rural employment land employment.

This is similar to many other communities in the GTAH that also accommodate a significant share of jobs on employment land. As shown in Table 7, across the entire GTAH area, about 41% of the total employment is employment land employment. Excluding the Cities of Toronto and Hamilton, about 55% of the total is employment land employment.

Table 7
Estimated Percent Total Employment by Employment Category, Selected Municipalities in the GTAH, 2001

Regional Municipality	Employment Land	Major Office*	Population Related
City of Toronto	25%	38%	37%
Region of Peel	**56%**	15%*	29%
Region of York	58%	12%	29%
Region of Durham	55%	3%	42%
Region of Halton	61%	8%	34%
City of Hamilton	49%	6%	45%
GTAH Total	41%	24%	35%
Total GTA Excluding Toronto And Hamilton	55%	10%	35%

Source: Hemson Consulting Ltd. based on 1996 and 2001 Census and Statistics Canada Labour Force Information

Note: About 65% of the major office employment in Peel is located in employment areas, primarily in the City of Mississauga's Airport Corporate, and Meadowvale districts. The remainder is located in the City Centre and other non- employment areas throughout the Region.

- By geography, employment areas in Peel accommodate a much larger share of employment, about 406,000 jobs or 71% of the total. As shown in Table 8, there are about 290,000 jobs in designated employment districts in Mississauga, 97,000 jobs in the City of Brampton, and 19,000 jobs in Caledon.

- In the City of Mississauga, the City Centre and the LBPIA are excluded because they are not designated employment areas. All employment areas in Brampton and Caledon are included.

Table 8

Total Employment in Employment Areas Region of Peel 2003

Local Municipality	Employment Type			
	Employment land	Major Office	Pop Related	Total
Mississauga	209,000	53,000	28,000	290,000
Brampton	78,000	5,000	14,000	97,000
Caledon	11,000	0	8,000	19,000
Total Peel	298,000	58,000	50,000	406,000

Source: Hemson Consulting Ltd. Based on Municipal Data

Mississauga employment land does not include the Airport. Brampton does not include employment land employment found within designated employment areas. Caledon does not include rural employment land employment.

By economic sector, the profile of employment on employment land is made up of a wide range of economic activities, with an emphasis on traditional industrial sectors. As shown on the following page, more than half is in manufacturing, trade, and transportation and warehousing. While the transportation and warehousing sector may appear small in terms of its share of employment, in terms of employment land consumed it is significant.

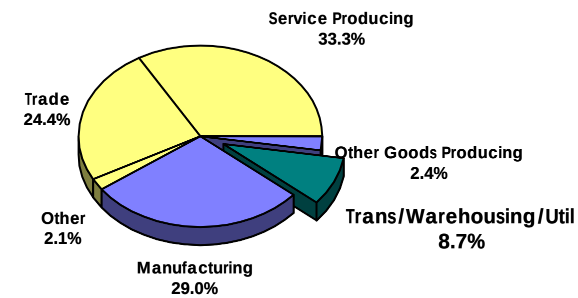
- The evolution of warehousing and distribution has led to the development of facilities are larger, growing more automated, increasingly combine storage with other functions such as offices and even assembly and take up large amounts of land relative to jobs.

- The Hopewell Logistics facility in Brampton is still one of the best examples. The building is enormous (almost 1.3 million square feet) but has only about a dozen permanent on–site employees.

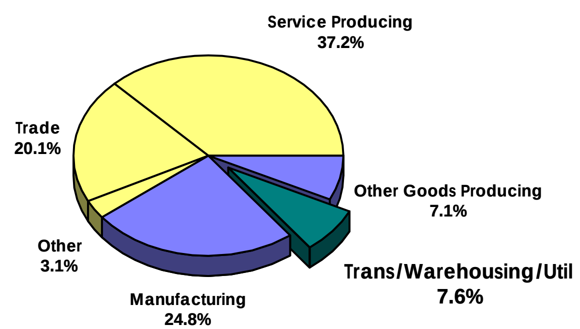
Balancing the land–extensive distribution uses are other lands being used at higher densities, due to combined office and industrial activities. For instance, a considerable number of service-producing jobs are accommodated in industrial multiples and other higher-density forms. From a planning perspective, employment is not the only measure of economic activity and land need. In a diverse economy where many different functions are integrated, a range of lower and higher density built forms exist to support each other.

The profile of employment in Peel's employment areas is shown on the following page, with further detail provided in Appendix B. The service producing sectors reflect, in part, the scattered population–related and major office employment contained in the designated business parks. A number of commercial support services such as temporary staffing, printing, janitorial services, and automotive and truck servicing are also accommodated in industrial multiples.

EMPLOYMENT BY TYPE ON EMPLOYMENT DISTRICTS
MISSISSAUGA - 2003



EMPLOYMENT BY TYPE IN INDUSTRIAL AREAS
BRAMPTON - 2003



Source: Hemson Consulting Ltd. based on Mississauga and Brampton Employment Surveys
Note: See Appendix E for definition of sector industries

C. PEEL HAS MAJOR CLUSTERS OF TRADITIONAL INDUSTRIAL ACTIVITIES

To gain a better understanding of the character of employment land in Peel, an analysis of economic clusters was undertaken. Work undertaken to date on clusters in Peel focusses on two popular concentrations, both in the City of Mississauga — bio-technology and the Finance, Insurance and Real Estate (FIRE) sector. What is required to provide a full understanding of economic clusters in Peel is a comprehensive analysis of the individual employment areas.

Undertaking this analysis confirms that there are major clusters in bio-technology and finance previously identified, but also major concentrations of traditional industrial activity throughout Mississauga and Brampton. The method used to reach this conclusion, and future work required to explore the issue of economic clusters in Peel in more detail is discussed below.

1. Location Quotient Analysis Is the Initial Tool to Identify Possible Clusters

An economic cluster is generally defined as a group of geographically concentrated and inter-related businesses. The basic approach to identifying economic clusters is made up of two steps — quantitative analysis to identify concentrations of economic activity and qualitative analysis to identify the relationships that exist between individual firms.

- A common quantitative approach to identifying clusters is a location quotient analysis, which measures relative concentrations of activity.[1] Input – output analysis can be undertaken to identify the linkages between industries within an area, but this is difficult to undertake at smaller geographic scales because of data limitations.

- There is general consensus that it is necessary to conduct qualitative analysis in addition to the quantitative analysis. The quantitative analysis can identify concentrations, but cannot determine if relationships actually exist between the firms. Surveys and interviews are required to identify relationships and other commonalities that cannot be determined through analysis of available data.

In this report, we take the first, quantitative step. A location quotient analysis is undertaken to identify relative concentrations of economic activity in employment areas. This is different than other approaches that address the cluster issue more generally, such as the widely-cited examples of Brampton for logistics, Mississauga west for pharmaceuticals and Markham for information technology. The method is described below.

- The share of employment in the various economic sectors within the employment areas in Peel is determined, and compared to the share of employment in the GTAH as a whole.

- If the result (the location quotient) is greater than one, the designated employment area has a higher concentration of employment in that particular sector than the GTAH average.

- If a particular sector shows higher than average concentrations of employment, then a cluster may exist. Further analysis is then undertaken to establish its size and sector specialization.

The analysis was undertaken for all designated employment areas in the Region of Peel, including the City Centre in Mississauga to identify potential clusters in the service industries. Detailed employment information is not available for the Brampton City Centre. In the following tables, we focus on areas for which particularly high concentrations of activity are observed. Complete results of the analysis are provided in Appendix B.

2. Analysis Reveals Many Potential Clusters

There are higher than average concentrations of different economic sectors in a range of locations throughout Peel, suggesting a very large number of potential clusters. As shown in Table 9, there are high concentrations of employment in traditional industrial sectors in the City of Mississauga, including:

- Manufacturing in Dixie, Northeast and Western Business Parks;

- Wholesale trade in Airport Corporate, Meadowvale, Gateway, Northeast and Western Business Parks;

[1] *Conference Board of Canada*, The Canada Project: Clusters of Opportunity, Clusters of Risk, *August 2004, p. 4*

- Transportation and warehousing in Northeast; and

- Finance and insurance employment in the City Centre, Airport Corporate and Meadowvale Business Park.

Table 9

Location Quotients for Employment Areas City of Mississauga, 2003

Area	Mfg	Wholesale Trade	Trans/ Whsing	Finance and Insurance
Dixie	2.3	2.2	0.9	0.2
Western BP	1.7	3.1	0.3	0.2
City Centre	0.2	0.8	0.1	2.4
Airport Corp	0.4	4.7	1.1	2.0
Northeast	2.0	3.2	2.5	0.2
Gateway	1.4	4.2	1.2	0.6
Meadowvale BP	1.3	4.7	0.4	2.0
Mississauga	1.7	3.4	1.7	0.7

Source: Hemson Consulting Ltd. based upon 2003 employment survey data from the City of Mississauga

In the City of Brampton, a similar pattern is observed with traditional industrial activity. Major concentrations of manufacturing, wholesale trade and transportation and warehousing exist in the Bramalea-South Gateway, Highway 410, Airport Intermodal–Parkway and Sandalwood employment areas.

Unlike Mississauga, however, there are no concentrations of Finance and Insurance employment, rather high concentrations of construction employment exist in all of the major business parks.

Table 10

Location Quotients for Employment Areas City of Brampton, 2003

Area	Mfg	Whole-sale Trade	Trans/ Whsing	Constr.
Bramalea – South Gateway	2.6	1.9	1.4	2.0
Hwy 410	1.8	1.0	2.8	1.4
Airport Intermodal – Parkway	2.3	2.5	1.7	1.4
Sandalwood	1.3	0.7	2.8	2.2
Brampton	1.6	1.1	1.5	1.9

Source: Hemson Consulting Ltd. based upon 2003 employment survey data from the City of Brampton.

The location quotient analysis suggests there are numerous locations throughout Peel where economic clusters may exist. But, not all areas with a high location quotient are home to an economic cluster. One large employer can produce a high result in an area. Similarly, a very small employment area with a few firms in one industry will also produce a high result. Neither of these two situations necessarily indicate an economic cluster. Further analysis was required to narrow the possibilities.

3. Largest Concentrations of Activity are in Traditional Industrial Sectors

For all of the areas with particularly high concentrations of activity, the total number of firms and businesses were counted, and the potential clusters ranked in terms of size. The top 10 largest concentrations were chosen for further analysis. More detailed analysis of employment by NAICS code was undertaken to identify the economic specialization of the concentration. The largest concentrations, ranked by total employment are described below.

1. **Northeast district, Mississauga, Manufacturing.** There is a concentration of over 42,000 jobs specialized in: metal and wood products; paper manufacturing and printing; chemical, plastics and rubber products and machinery.

2. **Northeast district, Mississauga, Wholesale Trade.** There is a concentration of over 24,000 jobs specialized in: machinery; personal and household goods; building materials and supplies and motor vehicles and parts.

3. **Northeast district, Mississauga, Transportation.** There is a concentration of almost 16,000 jobs specialized in freight forwarders and truck transportation.

4. **Airport-Intermodal – Parkway Belt district, Brampton, Manufacturing.** There is a concentration of about 14,000 manufacturing jobs specialized in transportation equipment and metal products.

5. **Gateway district, Mississauga, Wholesale Trade.** There is a concentration of 13,000 jobs specialized in: machinery, equipment and supplies; personal and household goods, and food, beverage and tobacco.

6. **Gateway district, Mississauga, Manufacturing.** There is a concentration of 12,300 jobs specialized in: machinery; chemical plastics and rubber products; and metal and wood products.

7. **Highway 410 district, Brampton, Manufacturing.** There is a concentration of 11,000 jobs specialized in: chemical, plastics and rubber; metal products and food, beverage and tobacco.

8. **Meadowvale district, Mississauga, Wholesale Trade.** There is a concentration of about 10,200 jobs in: machinery, equipment and supplies and personal and household goods related to pharmaceuticals.

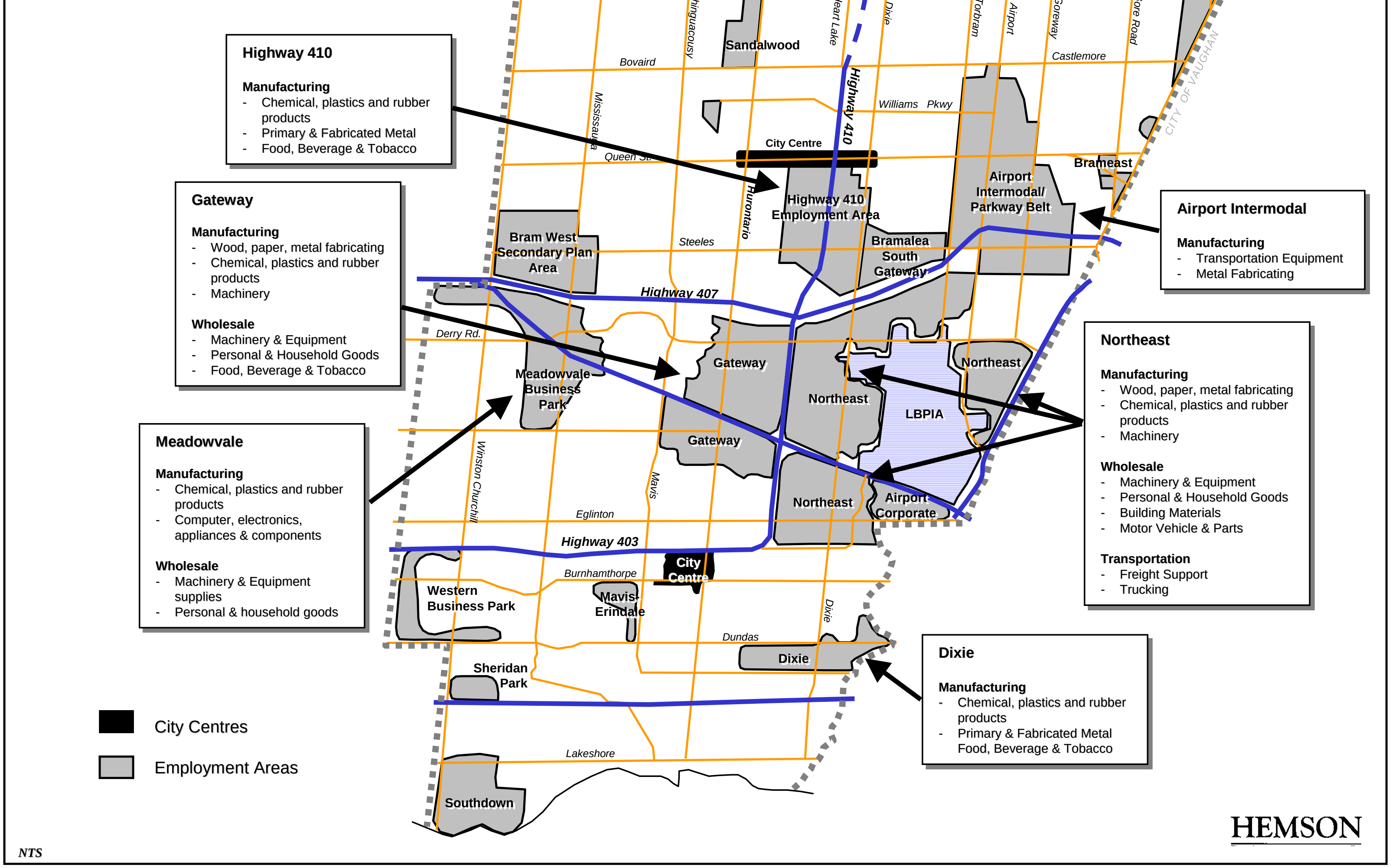
9. **Meadowvale district, Mississauga, Manufacturing.** There is a concentration of about 8,400 jobs specialized in: chemical, plastics and rubber products; computer equipment and components; and machinery also related to pharmaceuticals.

10. **Dixie district, Mississauga, Manufacturing.** There is a concentration of about 7,200 jobs specialized in chemical, plastics and rubber products; metal products; and food beverage and tobacco.

These are illustrated schematically on the following page.

Potential Industry Clusters In Employment Areas

Region of Peel



4. Further Work is Required To Establish Relationship Between the Firms

The economic clusters in Peel are not limited to the pharmaceutical and FIRE sectors. Major economic concentrations also exist in manufacturing, wholesale trade, and transportation-related sectors. What is not clear, however, is whether relationships actually exist between the firms comprising these concentrations. Economic clusters go beyond individual economic sectors to include a network of firms, services, and community institutions.

- Additional work is required to identify these relationships. Future data analysis or field interviews would help to define the specific geographic extent of the clusters as a possible basis for Regional policy.

- Additional work is also required to reveal clusters extending beyond individual employment areas, or involving other economic sectors. For instance, a cluster of manufacturing firms in one area may have linkages with firms in other clusters, or in surrounding business parks.

  This would also help to distinguish between established and emerging clusters, both of which are important to the Region but face different challenges and have different implications from a planning policy perspective. Different clusters require different supports at different stages of maturity, product and technology life cycles.

D. THE TRANSPORTATION SYSTEM IS CRITICAL TO CONTINUED ECONOMIC SUCCESS

As identified in the cluster analysis, significant components of the Region's economic base depend upon goods movement— a considerable portion of the region's job's are in manufacturing, trade, and transportation and warehousing. Maintaining the efficiency of the transportation system is critical to the continued success of these activities.

1. A Highly Integrated Transportation System Has Evolved to Serve the GTAH

Based upon the growth forecast contained in *The Growth Outlook for the Greater Golden Horseshoe* (2005), strong population and employment growth is anticipated for the GTAH over the coming decades. The economies within the GTAH are defined by many complex relationships.

- Dollars spent in one area benefit others through a complex series of direct and indirect effects. A manufacturing firm in Peel, for instance, generates jobs and tax revenue. Additional jobs and taxes are generated through demand for raw materials and legal, accounting and tax services.

- The demand for goods and services required to support the plants operations are satisfied by a variety of firms in many locations. These employees spend their wages on goods like homes and cars, which in turn gives rise to demand for gasoline and furniture and so on. This is usually referred to as the multiplier effect.

These complex relationships result in a need for commuting and goods movement across a wide geographic area. The transportation system in the GTAH has evolved to meet these needs. It is an integrated system of major highways, airports, rail systems, roads and transit for personal, labour force and goods movement.

2. Peel Region is A Key Node Within This System

According to the recent goods movement study undertaken by Peel Region, Peel is the single largest destination and origin of commercial vehicle trips in Ontario.[1] Along with 7 Provincial highways and numerous arterial roads, the Region contains Canada's largest airport, specialized lake port facilities, and access to an extensive rail network including three major intermodal terminals.

The main cross-Canada freight routes for CP and CN all pass through Peel with connections to New York State and the eastern seaboard, Michigan and the mid-west via Windsor and Sarnia, Western Canada and the Ports of Montreal and Halifax.[2] These rail freight routes are connected to the regional road system through three major intermodal terminals — the CN terminal in Brampton, and the neighbouring CP terminals in Vaughan and Milton.

[1] *Region of Peel,* Study of Goods Movement in Peel, *November 2004, page 17*

[2] *Region of Peel,* Study of Goods Movement in Peel, *November 2004, page 17*

- The CN intermodal terminal in Brampton is the busiest terminal in Canada. It employs over 200 people, covers 195 acres and operates 24 hours a day, 7 days a week serving over 6,000 trains per year.[3]

- The CP Vaughan terminal occupies a 770 acre site, making it the largest terminal in Canada . It employs close to 200 people. CP also maintains the smaller Obico terminal in Etobicoke.[4]

- The CP terminal in Milton is a smaller facility, serving the short-haul intercity market with a focus on shipping auto parts between Toronto and Detroit.[5]

- CN is also proposing a major intermodal facility just north of Oakville near Regional Road 25. The new facility is proposed to be about 100 acres, with an expansion to 450 acres when fully established.

The road and rail system and intermodal facilities provide critical service to the automotive industry, notably the large DaimlerChrysler plant in Brampton and a wide range of other industrial-type activities that dominate the economic base in Peel.

[3] *CN Brampton Intermodal Terminal, 2001*

[4] *Canadian Pacific Railway, 2004*

[5] *Ministry of Transportation of Ontario,* Goods Movement in Central Ontario: Trends and Issues, *December 2004, page 205*

Despite the major role of these intermodal facilities in goods movement, their direct impact on surrounding land use is limited. With the exception of a few firms that are located on the property and connected to the rail line, such as Sears and DaimlerChrysler, most are not close to intermodal terminals specifically for access to the facility. Rather, intermodal terminals form part of the larger goods movement infrastructure that makes employment land in Peel and the Western GTA highly attractive for development.

3. Maintaining the Efficiency of Goods Movement Benefits the Region and Ontario Economies

Any urban economic analysis will show a more efficient transportation system contributes to a healthier and more efficient economy. Maintaining the efficiency of the transportation network in Peel not only benefits the region, but also the broader Ontario economy.

- Research from the United States demonstrates that an increase in the stock of highway capital reduces the cost of producing a given level of output in almost all industries. Cost reductions are even greater for industries such as transportation, warehousing, trade and construction.[1] A more efficient transportation system reduces congestion, improves access, opens up new markets and allows costs to be reduced.[2] This, in turn, would improve the attractiveness of locations within Peel for industrial-type activities and continued economic success.

- The less money industries need to spend on transportation and logistics, the larger the market for labour and inputs they are able to access. The resulting increases in efficiency are passed on to consumers in the form of more creative, efficient, or higher quality products. This benefits all citizens and industries in Ontario.

- Additionally, the better the transportation system works, including public transit, the less time people spend in their cars and the more time doing things that benefit the broader economy. Better goods movement means less wear and tear on vehicles, less money spent on fuel, and greater attractiveness to firms whose business depends on goods movement.

Employment land has played a key role in the Region's strong economic performance over the past decades. The profile of employment land is characterized by traditional industrial activities, with major clusters of economic activity in manufacturing, wholesale trade and transportation sectors. An efficient transportation system is key to maintaining the success of the Region's and Ontario's economic base.

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[1] *US Department of Transportation, Federal Highway Administration. Frequently Asked Questions About Highways and the Economy, 2002*

[2] *Boarnet, M.G., and Haughwout, A.F.* Do Highways Matter? *The Brookings Institution, Centre on Urban and Metropolitan Policy, 2002*

III A MAJOR CONCENTRATION OF ECONOMIC ACTIVITY IS LOCATED AROUND THE LESTER B. PEARSON INTERNATIONAL AIRPORT

The Greater Toronto Airports Authority (GTAA) estimates that the LBPIA generates over 130,000 direct, indirect and induced jobs, $3.6 billion in wages, $14 million in business revenue, and $2.8 million in taxes.[1] Taken together with other Canadian airports, over 300,000 jobs, $10.1 billion in wages, and almost $4 billion in tax benefits are generated by airports across Canada.[2]

This is not unlike the experience in the USA, Europe, Japan or other world cities. Based upon a review of a wide range of economic impact analyses and case studies, it is clear that most major airports have a significant economic impact. They generate a significant amount of employment, business revenues and tax revenues. A list of documents reviewed is provided in Appendix D.

[1] *For significant additional detail, see* Economic Impact Briefing Paper, *prepared by the Greater Toronto Airports Authority (GTAA) September, 2001.*

[2] *North American Airports Council International,* The Economic Impact of Canadian Airports, 2002

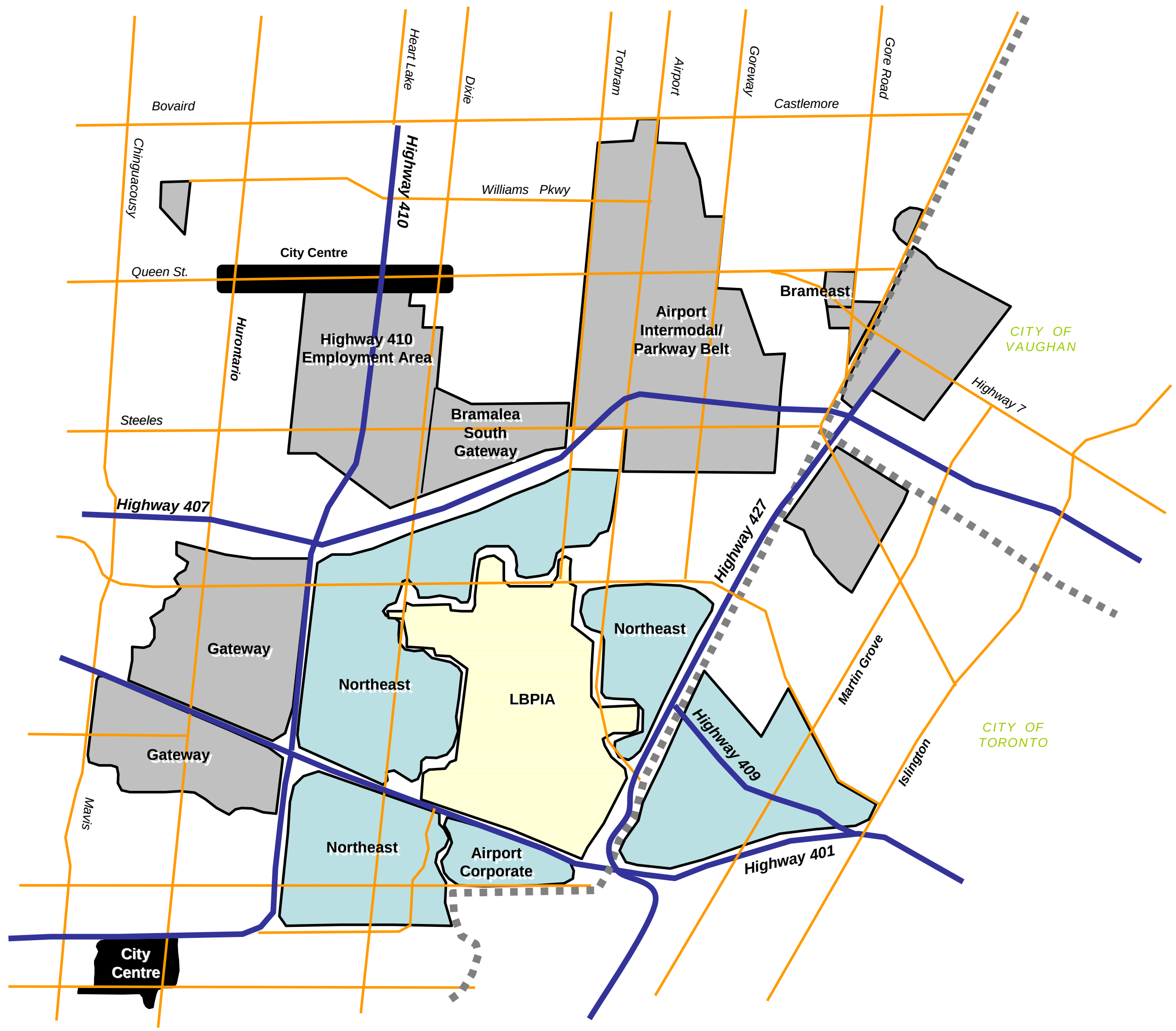
A. AIRPORT AND ABUTTING EMPLOYMENT AREAS ACCOMMODATE OVER 200,000 JOBS

In this report we have defined a study area made up of the LBPIA facility and the directly abutting employment areas — the Northeast district and Airport Corporate in the City of Mississauga, and most of the Rexdale area abutting the LBPIA in the City of Toronto. This is shown on the map on the following page.

The study area is defined narrowly to enable an assessment of the direct relationship between the LBPIA and abutting employment lands. There is, of course, a larger area of *indirect* relationship. The LBPIA provided the impetus for the development of an extraordinary transportation system, comprised of multiple 400 series highways and major arterial roads. This combined with certainty in land use led to the development of many prestigious employment areas. However, to examine the direct relationship between the LBPIA and surrounding employment land a more strictly defined study area is required.

AIRPORT & SURROUNDING EMPLOYMENT AREAS

Direct Study Area



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In total, there are 187,700 jobs in the study area. Adding the 17,200 jobs that are accommodated at the actual LBPIA facility, there is a total employment of 204,900 jobs. This is a significant amount of employment. For comparison, in 2003 total employment in Toronto's financial core was only about 120,000 jobs.[1] This is shown in Table 11.

Table 11

Estimate of Total Employment
Airport Study area , Mid 2003

Location	Jobs	Share
Employment areas		
Northeast District	126,100	62%
Toronto Airport Industrial Area	41,300	20%
Airport Corporate	20,300	10%
Sub Total	187,700	92%
Airport Site	17,200	8%
Grand Total Employment	204,900	100%

Source: Hemson Consulting Ltd. Based on 2003 Employment Survey Data from the Cities of Mississauga and Toronto

[1] 2003 City of Toronto Employment Survey : *unpublished estimate for the area bounded generally by Queen Street to the North, generally Victoria Street to the East, the Gardiner Expressway to the South, and Simcoe Street to the West.*

It is clear that the LBPIA has a major economic impact, both in terms of employment and other types of economic activity. What is not as clear, however, is the role that the LBPIA plays in attracting this employment. Do firms locate around the LBPIA for access to the facility? Or are there other reasons?

B. ONLY A SMALL NUMBER OF JOBS ARE DIRECTLY RELATED TO THE LBPIA FACILITY

To explore this question, an analysis was undertaken to identify what share of employment in the study area was airport-related — that is, how many jobs are located near the LBPIA *specifically for access to the facility*. Measuring these jobs gives a good indication of the role that the actual facility plays in attracting development.

We have defined airport-related jobs as jobs that are either linked to the principal function of the facility (such as air passenger and freight transport) or are in sectors providing related services, such as hotels and conference facilities, travel agencies, and airline reservations. Interestingly, only a small share of the large concentration of employment in areas directly abutting the LBPIA are in these economic sectors.

1. Less Than 10% of Jobs in Abutting Employment Areas are Directly Related to the Facility

There are total of 14,400 jobs in airport-related sectors in the study area. In total, this accounts for only 8%of the total 187,700 jobs in the study area. Again, most of these jobs are located in the very large Northeast district in the City of Mississauga, followed by the Airport area in the City of Toronto, and Airport Corporate.

Table 12
Employment in Sectors *Directly* Related to LBPIA in Abutting Employment Areas

Abutting Employment Areas	Employment	Share of Total
Northeast	11,400	80%
Toronto Airport Area	2,200	15%
Airport Corporate	800	5%
Total	14,400	100%
Total Employment in Abutting Employment Areas	187,700	
Employment in Directly Related Sectors	14,400	8%

Source: Hemson Consulting Ltd. Based upon Mississauga 2003 Employment Survey and 2001 Census

2. Most of This Employment is in Air Cargo, Hotels and Accommodation

The profile of airport-related employment is made up mostly of three main categories. As shown in Table 13, almost 70% is found in air cargo customs, hotels and accommodation and aircraft assembly.

Table 13
Sectoral Composition of Airport-Related Employment Employment Areas Abutting theLBPIA

Employment Areas	Employment	Share of Total
Air Cargo Customs,	4,700	33%
Hotels and Accommodation*	3,300	23%
Aircraft Assemblies	1,900	13%
Sub Total	9,900	69%
Other Sectors	4,400	31%
Total	14,400	100%

Source: Hemson Consulting Ltd. based upon Employment Survey Data for Cities of Mississauga, Brampton and the City of Toronto.

Note: The City of Toronto data is measured by land use activity codes, which are different from the NAICS codes used in the Mississauga employment survey. Most of the Airport-related activity in the City of Toronto, however, is in the hotels, which are a similar use to those counted as accommodation and food services in the Mississauga employment survey.

The other sectors that account for the balance of airport-related employment include:

- Aircraft engine instruments, Aircraft ferrying service, and aircraft janitorial services;
- Aircraft and aeronautical equipment, aircraft loading hoists; and
- Air cargo carriers, which actually account for only a very small amount of employment, about 300 jobs.

Details on the LBPIA economic sector analysis are provided in Appendix D.

C. THE MAJOR ATTRACTION IS LOCATIONAL ADVANTAGE

The employment data suggests that the LBPIA, in and of itself, is not acting as a locational magnet for new development. There must be other factors contributing to the large concentration of employment observed around the facility. To explore this, a number of discussions were undertaken with users around the Airport.

A total of 31 users were consulted, primarily in Mississauga. Larger firms were selected within the employment areas directly abutting the LBPIA with a view to representing a range of use and geography. The results of the consultation are summarized below. Details are provided in Appendix D.

- The interviews confirmed a relatively weak link between the LBPIA facility and surrounding development — the major attraction was highway access, and other related locational advantages.
- The most common reasons for locating near the LBPIA included: a central location in the GTA; access to major highways; and access to other firms, employees, and a large customer base.
- All businesses noted "proximity to the Airport" as a determining factor in their locational choice, but only 6 identified it as being very important.
- When asked where they would relocate if forced, virtually all businesses noted they would stay in Mississauga and preferably the same employment area. Most indicated proximity to the facility was not a concern. Only three indicated they would have to stay in the exact same location.
- Business travel and infrequent shipping and receiving were the most frequently used airport services. All firms indicated using the LBPIA for business travel, but also that in recent years the amount has declined.
- Only 6 firms indicated a reliance on shipping and receiving, and only 4 firms indicated a reliance on other airport services, such as customs and maintenance.
- All firms indicated growing traffic congestion, and lack of public transit, as a major concern. All firms indicated that over 90%of their employees drive to work, and half

of the firms indicated that road access was also important for shipping and receiving.

- This last comment is consistent with the Region's recently completed study of goods movementAccording to this report, increased stress on the transportation network (notably road congestion) is a major threat to Peel's economic vitality.[1]

The LBPIA does not appear to be acting as a locational magnet for new development. The analysis of employment shows that only about 10% of the jobs in areas directly abutting the LBPIA are there specifically for access to the facility. The interviews suggest that the major attraction is locational advantage: a central location in the GTAH; access to major highways; access to other firms and employees; and a large customer base. In our discussions, road congestion was repeatedly identified as a major concern.

D. UNIQUE OPPORTUNITIES EXIST FOR REUSE AND REDEVELOPMENT

Experience throughout older areas in the GTAH, such as the City of Toronto, show that older employment areas are often "recycled" to new economic activities, but usually with a mix of residential and commercial uses. Redevelopment for continued employment use is rare. This has been the experience in the City of Mississauga over the past decade.

- In a report prepared in 2001, the City of Mississauga identified and described a series of brownfield sites that have undergone redevelopment. Brownfields are defined as older industrial areas that are either vacant, under-utilised, or have uses that may no longer be appropriate.[2]

- A total of 14 brownfield redevelopment sites were examined throughout the City. Of the total, none were redeveloped for industrial uses: 8 sites were developed for either residential or a mix of residential and commercial; three sites with retail commercial; two sites with golf courses; and one site with a local school.

The situation around the LBPIA, however, is unique. In the Airport Operating Area there is little speculative value for changing uses. Absolute rules and regulations are in place to prevent residential development in the surrounding area. This long-term certainty in land use, combined with the highly desirable nature of sites around the LBPIA suggest that these employment areas are one of the few locations in the GTAH where new building and employment growth is possible. Additional work is required to develop a plan to take advantage of these opportunities.

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[1] *Region of Peel,* Study of Goods Movement in Peel: Strategic Overview, *2004, Page 1-2.*

[2] *Mississauga Planning and Building,* Mississauga Brownfield Redevelopment Successes, *October 2001.*

- Anecdotal evidence suggests that employment areas around airports do evolve to accommodate new types of activities. There is evidence that some areas around older Airports in the United States are changing and evolving as they age. Many facilities that have reached the end of their functional life are being renovated, or redeveloped for modern cargo, warehousing and transportation facilities.[1]

- There is good potential for redevelopment and reuse to occur around the LBPIA, but how and when this will unfold is not clear. Will higher order uses develop? Will demand for certain types of regional services and infrastructure change? Will property values increase?

- Currently, there is very little information available on the issue of the evolution of land uses around major international airports and how that evolution differs from non-airport areas.

- Case studies of other international Airports are a good way to gather the information required. This work could be co-ordinated with the ongoing research initiatives of the Greater Toronto Airports Authority (GTAA) and area municipalities.

The LBPIA plays an important role in the Region of Peel's employment land market, but a more indirect one than commonly perceived. The major attraction of being near the LBPIA does not appear to be access to the facility itself, but rather the advantages of being in the immediate environment— access to multiple 400-series highways, other firms, employees and a large customer base.

This conclusion highlights the importance of maintaining the efficiency of the goods movement network to the Region's continued economic prosperity. Based upon its strong locational advantages, the long-term certainty in land use and the experience of older Airports in the United States, there is good potential for redevelopment and reuse to occur in areas surrounding the LBPIA, provided that the area remains a competitive location for new investment.

What is not clear is the type of development that can be expected through redevelopment and how and when this would occur. Additional work is required to understand how the land use pattern will evolve over time, including case studies of other international airports.

[1] *Bergsman, S., "Transport Advantage: A number of investors are betting on airport-related facilities"* Urban Land, *June 2004*.

IV THE EMPLOYMENT LAND SUPPLY IS NOT SUFFICIENT TO ACCOMMODATE GROWTH

A community's ability to accommodate employment depends on land use and built form. Nearly all employment land employment growth is accommodated in new suburban employment areas and business parks. The location of employment land employment growth is driven by the availability of well-located land. Since the Region of Peel has a large and highly competitive supply of employment land growth in this type of employment has been significant.

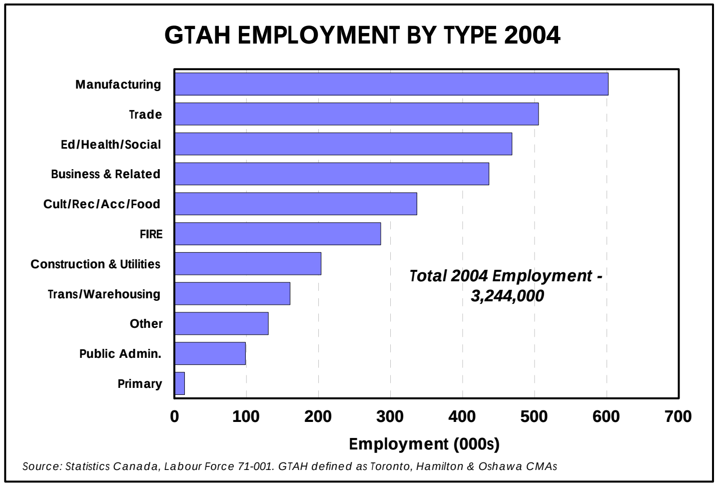
As growth continues, however, the land supply will become constrained and the Region's capacity for employment growth will be reduced. This will begin by about 2015. The redevelopment and reuse of older employment areas can accommodate some new economic activity, particularly through opportunities around the LBPIA, but this will not be enough to sustain employment growth. In order for employment to continue growing, additional employment land will need to be designated.

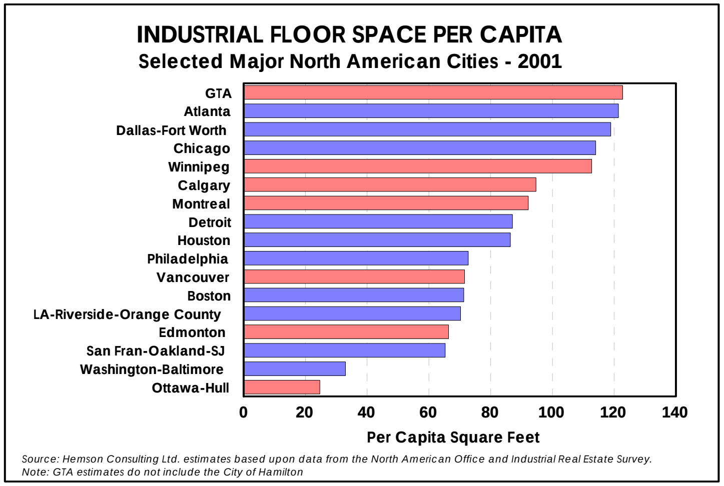
A. DEMAND FOR EMPLOYMENT LAND WILL REMAIN STRONG

The growth forecast contained in *The Growth Outlook for the Greater Golden Horseshoe* (2005), prepared as background to the Province's draft growth plan, *Places to Grow*, anticipates an additional 1.8 million jobs will be added in the Greater Golden Horseshoe by 2031. This will continue to drive demand for industrial-type space, and employment land to accommodate it. There is no evidence that the basic economic structure of GTAH is changing, nor is demand for employment land being reduced in the "new economy".

1. GTAH Remains an Industrial Economy

The basic orientation of the GTAH economy remains in traditional industrial sectors. As shown on the next page, the largest components of employment are in manufacturing, trade and related sectors.





The GTA is in fact one the most heavily industrialized metropolitan economies in North America. The GTA is the most heavily industrialized urban area in Canada, and ranks ahead of many large US Cities, including Atlanta, Dallas Fort Worth, and Chicago.[1]

2. The Evolution of Manufacturing Has Not Reduced The Importance of Employment Land

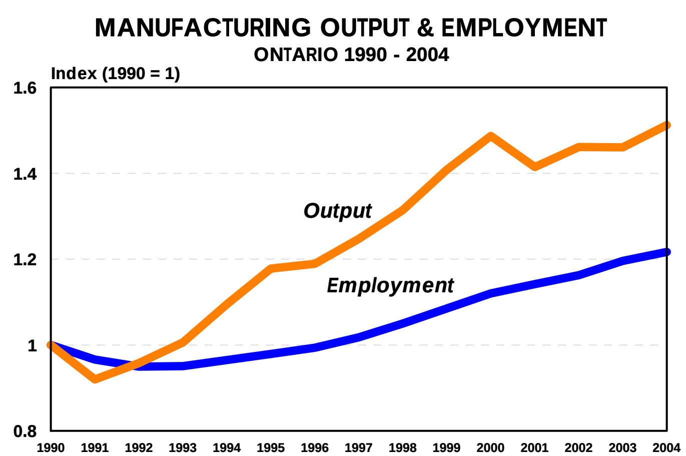
Much has been written over the past decade about the evolution of manufacturing. The general focus is on observed rapid growth in service employment combined with relative declines in manufacturing in developed countries.

- The major reason for the shift in employment has been the emergence of a global structure for manufacturing. Labour-intensive industrial production is moving to developing countries where less expensive labour is a competitive advantage.

[1] *The chart of industrial floor space per capita includes the 7 largest urban areas in Canada and 10 of the 11 largest in the United States. Data is not available to provide a proper metropolitan comparison for the roughly 20 million people in 4 states, comprising New York City.*

- Today, the high-value work is being undertaken in developed countries by a skilled labour force and the less specialized work undertaken elsewhere in the global supply chain.[1]

- However, while the balance of employment may have shifted from manufacturing to service provision the economic contribution of manufacturing in terms of output has grown.



Source: Hemson Consulting Ltd. based upon data from Statistics Canada, Labour Force Statistics and Ontario Ministry of Finance, Ontario Economic Accounts
Note: Output defined as Manufacturing GDP in 1997 dollars

The nature of manufacturing has also changed. The traditional system of heavy industrial manufacturing that relied upon maintaining extensive inventories has shifted to a more customized system relying upon timely transportation of inventories to match supply and demand.[2]

In many cases goods manufacturing and distribution have become increasingly separate, but they remain part of a complex arrangement of economic activity that continues to take place in primarily in single story, industrial-type buildings on employment land. Technological innovations such as the internet, cellular communication and the expansion of e-business have all increased the efficiency of operations, but do not seem to be reducing demand for employment land

3. Tight Market Conditions in the GTAH Are Pushing Demand to Other Locations

In the GTA, since mid-1980s, industrial vacancy rates have declined and employment densities have risen. This is shown on the two graphs following and suggests that the current employment land market is either at, or very near a cyclical capacity peak.

These types of tight market conditions are often followed by increased levels of new construction. As options within the GTAH become more limited, demand is being pushed to other locations.

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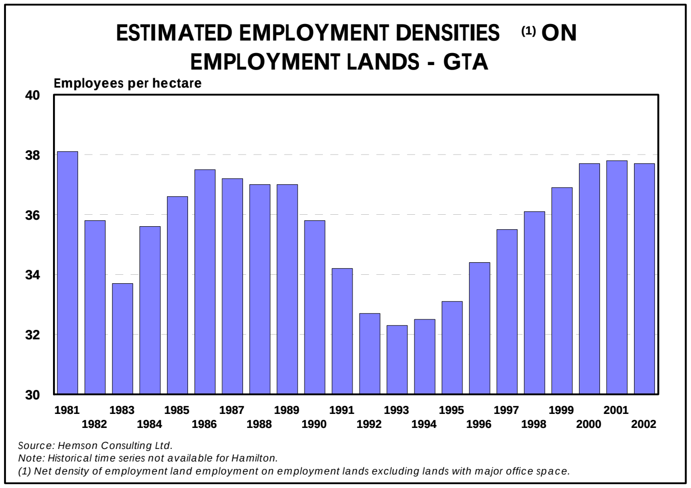
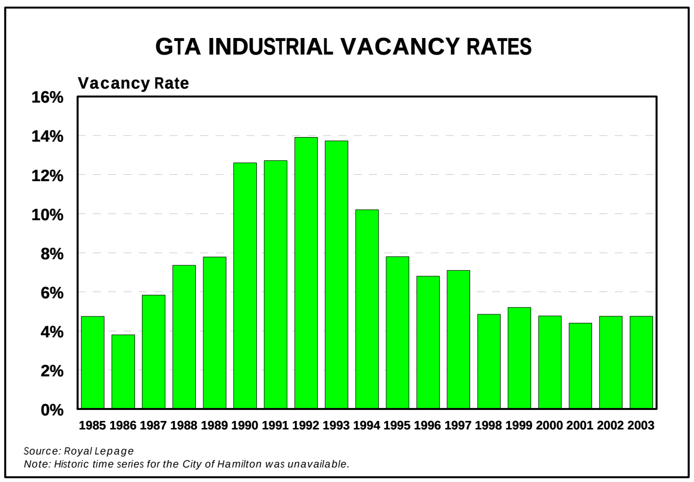
[1] *The Economist*, 'Manufacturing Survey — The World as a Single Machine', *June 1998*.

[2] *Region of Peel,* Study of Goods Movement in Peel: Strategic Overview, *2004*, *Page 11*.





As the supply of employment land in the GTA becomes increasingly constrained, demand is being pushed to nearby locations. Waterloo Region, Guelph, Milton and the Brantford area have all begun to accommodate increased levels of investment over the past decade.

- The University of Waterloo Research and Technology Park continues to grow in popularity with technology firms. In 2005, construction will be completed on the 100,000 sq.ft. head office for Open Text Corporation, as well as a new 100,000 square foot speculative building by the Cora Group. Also, Research in Motion will complete construction on a new 60,000 sq.ft. facility.[1]

- The two City-owned business parks in Guelph — the York-Watson and Hanlon Business Parks — are sold out. The City is currently engaged in bringing the approximately 400 acre Hanlon Creek Business Park to market and is considering other options to increase the supply. Most of the recent developments are for large industrial users, including Wellington Laboratories, and Warner Custom Coatings. Tim Hortons is completing a 400,000 square foot distribution facility.

- Milton continues to post strong gains in the value of construction and square footage of industrial development. Since 1999, the Town has added an average of 600,000 sq.ft and $30 million in new investment annu-

[1] *Colliers International, Colliers Canadian Real Estate Review, 2004-2005, page 53*

ally. In 2004, Milton issued permits for a record 1 million sq.ft. of industrial development.[1]

One of the main reasons for Milton's success appears to be a lack of available sites closer to the GTA. Milton's location on Highway 401 provides excellent transportation access, and the Town is able to offer more competitive pricing than land currently available in Mississauga and Peel.[2]

- Similarly, significant increases in industrial land sales have occurred in the Brantford area, particularly by firms involved in manufacturing industries, recently focussed on food products manufacturing. Following the opening of Highway 403 in 1997 a total of 172 new manufacturing companies have located in the area.

  Recent major investments include: the Ferrero Group, a manufacturing facility on a 160 acre site, opening phase one in 2006 and Proctor and Gamble, planning to open an 800,000 sq.ft. distribution facility in the summer of 2005.[3]

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[1] *Town of Milton*, Industrial Development Progress Report *1999-2004*

[2] *Based upon developer commentary provided in Milton.Ca News, Town of Milton, Fall 2004*

[3] *Economic Development*, Brantford Brant Development Activity Report, *2005*

4. Trends in Built Form are Not as Well Understood

Locations outside the GTA will remain highly attractive to users that require large sites and lower land costs. The Region of Peel will remain highly competitive for less price sensitive users that require a central GTAH location and immediate access to a large base of existing firms and customers. Demand for competitive employment land will remain strong. Communities will still need to provide employment land in the appropriate locations.

What is not as well understood are the trends in built form in the Region of Peel. Generally, the new system of manufacturing has led to the development of extraordinary goods movement networks, focussed around highways and employment land in major metropolitan areas.

- A completely new breed of building has emerged. The facilities are larger, more automated, and often combine storage with other functions such as office, assembly and sometimes manufacturing.

- The growing integration of office employment in the new generation facilities may actually have the effect of reducing— not increasing — the need for traditional office concentrations. This is a very different pattern of future land use than is typically envisioned for the "new economy." These new facilities are still industrial- type buildings very much orientated to employment areas, unlike free standing office buildings which are well suited for centres and corridors.

- Anecdotal evidence suggests that new buildings in the GTA are occurring at much higher lot coverages. Lot coverages appear to have increased for typical buildings from about 35% to around 40% and in some cases even 50%.

- Productive interior volumes also seem to be increasing. Ceiling heights have increased from as low as 12 feet to 20 feet or more in the GTA. [1] In the United States, ceiling heights can be as high as 80 feet in certain rack-supported buildings.[2] These types of very large buildings are more prevalent in Europe and Asia, where high land prices justify their construction costs.

Additional work is required to confirm if these trends are underway in Peel and identify the long term implications for employment land. Will the apparent trend towards higher lot coverages and larger buildings lead to "mega" structures or freight villages? What are the implications of the continued evolution of warehousing and distribution activities for the logistics sector and employment land in the Region?

[1] *Hemson Consulting Ltd*, Growth Outlook for the Greater Golden Horseshoe, *January 2005, page 43*

[2] *Urban Land Institute*, Guide to Classifying Industrial Property *page 15, 36*

B. DESIGNATED EMPLOYMENT LAND SUPPLY WILL BE BUILT OUT BY ABOUT 2021

The Region's designated employment land supply will be fully built out by 2021. The employment land supply will be built out in the City of Mississauga by about 2012, followed by Brampton and Caledon. The land supply will go through three distinct stages as it approaches full development:

- Reaching 80% development. At this point, land absorption begins to slow and the supply begins to lose its competitiveness. Prime sites start to become in short supply and a full range of site sizes and locations becomes more difficult to provide.

- Reaching 90% development. The choice of sites is limited, and the rate of absorption is very slow. At this point, in most communities the employment land supply is nearing full build out.

- At 95% development, the employment land supply is considered totally built. This level of development is often never achieved, since there are always sites that are constrained by poor access, servicing, or other physical site-specific problems.

1. City of Mississauga's Employment Land Supply Will be Built Out by About 2012

The City of Mississauga's employment land supply is already 80% developed and is expected to reach 90% development by about 2012. As a result, Mississauga is rapidly nearing the point of depleting supply where prime sites are becoming scarce and the community becomes less competitive for new development. Since there are no options for additional employment land the importance of infilling and re-use will increase over time.

2. Brampton and Caledon's Employment Land Supply Will be Built out by About 2021

Currently the City of Brampton's employment land supply is about 45% developed. With the addition of the urban boundary expansion in Northwest Brampton, the employment land supply would be expected to reach 80% development by about 2019 and would be fully built out by 2021 because of strong demand and high quality of Brampton's existing and future supply.

Similar to Brampton, about 40%of Caledon's employment land is developed. It is expected to reach 80%development by 2016, and roughly 90% by 2021. Unlike Mississauga and Brampton, there is a greater level of uncertainty in Caledon. About one-third of Caledon's employment land supply is in rural locations and is likely to develop more slowly.

C. ADDITIONAL DESIGNATIONS ARE REQUIRED TO ACCOMMODATE LONG TERM GROWTH

As the employment land supply becomes constrained, two things will happen. In the short term, growth will be redirected to areas that are able to accommodate it. Over the long term, the overall rate of employment growth will gradually slow if new land is not designated.

The City of Brampton, which has a relatively abundant supply of competitive greenfield land, will be the immediate beneficiary of land supply shortages in Mississauga. The City of Brampton can accommodate increased growth, but there is not enough employment land designated to accommodate both its historic share, and Mississauga's share. The potential for Caledon to accommodate future demand is more uncertain based upon the rural nature of large parts of the supply. Additional employment land designations are required to accommodate Regional employment growth beyond 2021.

1. It is Difficult to Change the Pattern of New Development With Planning Policy

Notwithstanding the increased density of employment land development over the past 20 years, it is increasingly suggested that planning policy should explore options to increase the density of employment land development further. The issue is popularly referred to as "job sprawl." Exactly how this would be accomplished, however, is not clear.

- The nature of the economic base in the GTA and the Region of Peel is such that a significant share of employment is accommodated in the traditional sectors, primarily in land-extensive, single storey industrial-type buildings on employment land. Densities are much higher than in the past but there are serious limitations within this built form.

- Changing the current pattern to achieve higher densities on employment land would involve changing the structure of the local economy to be more oriented towards office. Even if desirable, this would be a difficult goal for land use planning to achieve.

- Given the wide range of densities and complex arrangement of activities on employment land it is not clear if a planning objective relating to density is even helpful. How would density be measured? In terms of jobs, or building coverage? Goods movement, for instance, is low density but that does not reduce its significant contribution to the Region's economic vitality.

2. Redevelopment and Reuse Can Accommodate Some New Economic Activity

As the Region matures, some employment growth will be accommodated through redevelopment and reuse, most likely concentrated around Airport. The strong locational advantages of the area, combined with a certainty in land use in the operating area suggest a rare opportunity for new buildings and employment growth.

While redevelopment and reuse will provide for some new economic activity, this will not be enough to sustain the rate of employment growth. Additional employment land designations are required.

3. Additional Employment Land Designations Will be Required Before 2021

The Region of Peel recently adopted Regional Official Plan Amendment No. 15 (ROPA 15). The purpose of ROPA 15 is to expand the 2021 Regional Urban Boundary to include Northwest Brampton and amend the planning horizon for the Urban System in the Regional Official Plan from 2021 to 2031.

As part of ROPA 15, a new set of employment targets have been adopted. These are higher than the forecasts approved by Peel Regional Council in March of 2003. Based upon the ROPA 15 forecasts, the need to accommodate employment growth in unallocated areas, even with the designation of Northwest Brampton, will begin just prior to 2021. To accommodate a normal progression of employment growth in the Region, additional employment land will likely be needed earlier than 2021.[1]

[1] *Hemson Consulting Ltd*,Northwest Brampton Urban Boundary Study, June 7,2005 *page 16-20*

Based upon the current pattern the Region of Peel's employment land supply will be built out before 2021, beginning with Mississauga and followed by Brampton and Caledon. It is difficult to change this pattern through land use planning policy. Some new economic activity will be accommodated through redevelopment and reuse, likely around the Airport, but not enough to accommodate long range demand. Additional designations will be required to accommodate employment growth before 2021.

V PEEL SHOULD FOCUS ON FIVE MAJOR POLICY DIRECTIONS

A number of policy issues arise from the conclusion that there is not enough employment land to accommodate long-range growth and other matters related to employment land discussed in previous chapters. This final chapter discusses these issues and the broad policy directions that should be taken to address them.

Our recommendations are made within the context of the emerging Provincial policies and Region's planning objectives. The emerging Provincial Policy context is made up of three major elements: the proposed growth plan, *Places to Grow*; the new *Provincial Policy Statement (PPS)* and the proposed *Greenbelt Plan*. Taken together, these documents will have a strong influence on long-range planning in southern Ontario, particularly with respect to employment land:

- The Province's draft growth plan,*Places to Grow*, places a strong emphasis on promoting the economic strength of communities, and on the importance of providing municipalities with the tools necessary to maintain an adequate supply of employment land;

- The new PPS brings greater attention to the importance of maintaining a diversified economic base, a range of choice of employment land and the need to preserve planned employment areas for current and future use.

  Unlike the old PPS, the new PPS provides clear direction on employment land. Prescriptive policies are set out for the redesignation of employment land to other urban uses, including a set of specific criteria that must be met in order to remove land from planned employment areas.

- The proposed *Greenbelt Plan* brings greater certainty to the specific location of land for long-range urbanization. The *Greenbelt Plan* will not have a major effect the time to depletion of the currently designated employment land supply. It will, however, have a major effect on potential future designations in southern Caledon, where the potential future urban area is concentrated.

  There will be significant pressure for residential designations and choices will need to be made about the appropriate mix of employment and residential land in any new urban designations.

Like the Province's initiatives, the *Region of Peel Official Plan (2001)* also highlights the importance of economic considerations in the health of its communities. The policies and objectives in the plan seek to establish the foundation for a strong economic base, primarily through supporting the efforts of each area municipality to encourage a diversity of economic activity and employment opportunities (Section 7.8). An employment forecast has been approved, the objective of which is to provide a planning framework for the future growth in Peel Region (Section 4.2.1), including the determination of Regional services and establishing land requirements to 2021 (section 4.2.21).

Specifically, the overall goals of Regional Council are:

> *Section 1.3.6.1* — To create a healthy regional community of communities for those living and working in Peel which is characterized by physical, mental economic and social well being;
>
> *Section 1.3.6.3* — To recognize the importance of a vital and diverse economy and a sound tax base, and manage and stage growth and development in accordance with the financial goals and overall fiscal sustainability of the Region; and
>
> *Section 1.3.6.4* — to support growth and development which takes place in an effective and efficient manner, and which balances the environmental, social and economic responsibilities of the Region and the Province.

Based upon these objectives, the emerging Provincial policy context and the conclusions or our analysis, five major policy directions are recommended.

1. A strategy to protect the vacant and occupied employment land supply is required. The Region needs to develop an approach and specific policies to address pressure to convert employment land to other uses.

2. Policies are required to ensure the full economic potential of the LBPIA is realized. Policies need to be developed to ensure the LBPIA facility remains competitive, maintain efficient goods movement and capitalize on opportunities for redevelopment and intensification in surrounding employment areas.

3. Planning for additional employment land designations should begin soon. The currently designated supply will be largely built out by 2021. This is a very short time horizon for long range planning purposes.

4. A strategy is required to address road congestion and goods movement. As road congestion worsens, the Region's competitive advantage in attracting and retaining users in the goods movement industry and other economic sectors will deteriorate.

5. Economic clusters should be promoted. Further work is required to identify the relationship between firms within the major economic concentrations and better understand trends in built form.

These are discussed in more detail on the following pages.

A. A STRATEGY TO PROTECT THE VACANT AND OCCUPIED SUPPLY NEEDS TO BE DEVELOPED

As development in the Region nears its urban boundaries not only will the employment land supply tighten, so too will the supply of land for ground-related housing. In many areas the supply of land for ground-related housing will be consumed significantly prior to the supply of employment land. The high demand and high value of residential land will produce a strong incentive for landowners to seek conversions of employment land to residential use. Residential land is worth more money to the private landowner. The return on investment is faster, and it can be developed more intensely.

In Peel, pressure to accommodate ground-related housing forms will drive pressure for the redesignation of employment land for residential uses. The 40% target for intensification as contained in *Places to Grow* will put even more pressure on employment land, both vacant and occupied employment land. As planning policy directions continue to promote higher residential densities, the price differential between employment and residential land may continue to widen resulting in increased pressure for conversion.

It is important for Peel to resist this pressure. In the near-term, the Region's supply of employment land is fixed. Mississauga is planned to fully develop to its boundary, so there is little opportunity to increase the supply of employment land. With the designation of Northwest Brampton, Brampton's is in a similar situation a decade earlier in the development process. Some additional lands may be available in the Mayfield west area of Caledon.

To maximize the potential of the remaining employment land, Peel and local area municipalities must be vigilant in protecting the existing employment land supply, both vacant and occupied. There are far fewer locations for quality employment land than for residential development. Without a strong policy context for employment land, it is very difficult to resist pressure for redesignation.

1. A Strong Policy Context is Critical to Protecting the Employment Land Supply

A number of recent OMB cases suggest that the clarity of the policy context for employment land plays a very important role in the outcome of appeals to redesignate employment land. In general, communities with strong and clear policies on employment land seem to have been more successful in resisting conversion pressure.

- Two recent examples of failed applications within a clear policy context for employment land are: the former Steetsville Quarry site in the City of Mississauga (Feb. 19, 2004, Decision No. 0363); and the Bronte Creek Meadow site in the City of Burlington (July 20, 2004, Decision No. 1212).

- Two recent examples of successful applications within a less clear policy context for employment land are: the Campus 2000 site within the Town of Richmond Hill (Feb. 25, 2005, DecisionNo. 0411); and the Toronto Sufferance Truck Terminal (TSTT) site in the City of Toronto (Apr. 14, 2004, Decision No. 0752).

2. New PPS Requires Comprehensive Review as Part of Employment Land Conversion

Recognizing the growing pressure to convert employment land and the importance of the policy context, the new PPS contains much stronger policies on employment land. There are specific policies guiding a municipality's treatment of applications to redesignate employment land to other urban uses. Specific criteria must be met in order to remove land from planned employment areas. The policies are set out in Section 1.3 *Employment Areas*. Section 1.3.1 indicates that

> planning authorities shall promote economic development and competitiveness by:
>
> a) providing for an appropriate mix and range of employment (including industrial, commercial and institutional uses) to meet long-term needs;
>
> b) providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses;
>
> c) planning for, protecting and preserving employment areas for current and future uses; and
>
> d) ensuring the necessary infrastructure is provided to support current and projected needs; and

Section 1.3.2 indicates that

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

The Province has taken an important step forward in addressing the issue of employment land conversion, but the details are not yet clear. It will be up to Region of Peel and local municipalities to develop the implementing strategies to ensure an appropriate supply of employment land is in place and address the pressure for redesignation.

3. An Employment Land Retention Strategy Needs to be Developed

The Region needs to build upon the Province's emerging directions and develop an employment land retention strategy. Both the vacant and occupied employment land supply needs to be protected. The ongoing health and integrity of existing employment areas is important to continued economic development at the Regional level.

A number of other communities in the GTAH have developed guidelines for the redesignation of employment land, including: the Cities of Mississauga, Oakville, Burlington and Ajax. The most comprehensive effort to date has been undertaken by the Town of Aurora.[1]

The Region needs to establish its interest in employment land and develop a set of policies to address applications for conversion. The key challenge will be to identify areas where redesignation may be appropriate from those that should be protected.

- This issue is already addressed in the LBPIA Operating Area where strict rules and regulations prohibit residential development.

- There may be a small number of other scattered parcels throughout the community where redesignation to other urban uses may be considered good planning.

- However, for the remainder and vast majority of the vacant and occupied employment land supply the Region should consider the development of an approach and specific policies to be put in place regarding applications for redesignation.

[1] *For more detail see Hemson Consulting Ltd.*, Town of Aurora Employment Land Strategy, *May 2004*

Generally, the Region should seek to protect employment land that is well served by 400 series highways, major arterials and other major transportation infrastructure such as the LBPIA and intermodal facilities, and is well buffered from surrounding neighbourhoods.

A sound and defensible strategy for implementing this direction will need to be developed through more detailed work in consultation with the local municipalities.

B. POLICIES ARE REQUIRED TO ENSURE THAT THE FULL ECONOMIC POTENTIAL OF THE LBPIA IS REALIZED

The LBPIA is a major piece of economic infrastructure, and the employment areas surrounding it are home to a major concentration of economic activity. In order to ensure the economic potential of the LBPIA is fully realized, three new policy directions are required.

1. Competitiveness of the Facility Needs to Be Maintained

It is relatively well understood that the LBPIA has a major economic impact, both in terms of employment and other types of economic activity. This is the case with most major airports in Canada and the United States.

Given the significant role the LBPIA plays in the Regional economy, actions should be undertaken to ensure the competitiveness of the facility as a major international gateway is maintained. This could include a broad range of policies related to transportation, approvals for runway and building expansions and other factors.

As a first step in developing a strategy for the LBPIA facility, a more detailed review of the economic aspects of other major airports, particularly Pearson's competitors should be undertaken. The objective is to determine how other airports are changing and evolving to meet future needs and draw conclusions on the role Regional policy could play in helping the LBPIA to remain competitive.

2. A Transportation Demand Management Strategy (TDM) Should be Considered

The economic activity around the LBPIA depends heavily upon goods movement. Over time, growth in truck traffic in the Region is expected to exceed growth in automotive traffic, especially along key freight corridors. [1] If employment areas around the LBPIA become less accessible their competitive advantage will deteriorate.

To ensure the full economic potential of the LBPIA is realized actions need to be taken ensure that the transportation network remains efficient. Because the potential for additional road capacity is limited, a policy to develop and implement a TDM[2] strategy should be considered.

The Region's recently completed TDM study (June 2004) recommends a number of broad policies and strategies to manage demand but does not contain specific direction for addressing congestion around the LBPIA. Some of the initiatives that other communities have proposed to address congestion include:

- Providing transit service to connect employers in airport areas with local communities;

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[1] *Region of Peel,* Study of Goods Movement in Peel, *Page 26.*

[2] *The goal of TDM is to try to reduce the amount of single occupant vehicles traveling during peak congestion periods using various programs to encourage other travel modes (transit, walking, cycling), travelling outside peak hours or travelling less.*

- Promoting and facilitating car pooling through better located and reduced cost parking;
- Building dedicated expressway links and high speed rail to connect airports to other urban centres;
- Adding special truck-only lanes to airport expressways to assist goods movement; and
- Imposing restrictions that limit business in the area surrounding the airport to higher order uses, in the expectation that land prices will rise, and more intense development will be justified.[1]

The next step is to develop a set of TDM initiatives that are appropriate for the Region of Peel. Given potential scale of some of the solutions, co-ordination and partnership with area municipalities, senior levels of government and the private sector will be required to successfully implement the TDM polices and measures.

3. A Plan For the Surrounding Employment Areas Should be Developed

In addition to strategies to ensure the LBPIA remains competitive, a strategy to take advantage of future redevelopment and intensification opportunities is also required. The key challenge will be to develop an understanding of how the land use pattern will evolve over time.

A series of case studies of other international airports should be undertaken. Case studies are excellent way to gather land-use-based information, and are highly effective in presenting it in way that all stakeholders can understand. By examining the experience of other airports, conclusions may be drawn on major policy considerations such as:

- Long term trends in land use;
- Impacts of strategic infrastructure investment;
- Changes in property values; and
- Changes in demands for Regional service.

Of course, many of the major decisions regarding the future of the LBPIA are not in the Region's jurisdiction. Nevertheless, the consideration of Regional policy approaches to foster redevelopment and intensification is still recommended. The opportunity for redevelopment and intensification in employment areas around the LBPIA is unique and should not be missed. This would be consistent with many of the Province's emerging policy goals.

- Planning to take advantage of opportunities around the LBPIA would be consistent with policy directions in the Province's growth plan *Places to Grow*, including: the identification of employment areas around international airports a unique hubs (Section 2.5.1), and the identification of transit as the first priority for investment to reduce congestion and provide alternative transportation choices (Section 3.2.3 (2)).

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[1] *Urban Land Institute*, Just in Time Real Estate – How Trends in Logistics are Driving Industrial Development, *pages 81 to 102*

- It is also consistent with the more general objectives to promote residential and employment intensification, and the new PPS which recognizes the role of major facilities (such as airports) in supporting long-term economic prosperity (Section 1.7)

C. PLANNING FOR ADDITIONAL EMPLOYMENT LAND DESIGNATIONS SHOULD BEGIN SOON

Without additional employment land, the rate of employment growth in Peel will decline significantly towards the end of the next decade. Should the Region determine that reduced employment growth is not in the Regional interest, then the process of planning for additional employment land designations would need to begin.

1. Decisions Need to be Made Soon

Even with the inclusion of Northwest Brampton, the Region of Peel is likely to be largely depleted of employment land by 2021. For long range planning purposes, a time horizon of 15 years is short. It very commonly takes 10 years, and sometimes longer, to bring new urban land from recommendation to approval and through the secondary planning process.

Because of the time that is required, planning for additional employment land designations in the Region of Peel should begin significantly prior to the build out of the currently designated supply.

2. Key Locations Must be Identified Early and Protected For the Long Term

Long-term options for employment land in Peel Region depend primarily on planned and proposed provincial investment in the highway system. A major east–west route through southern Caledon, and related connections possibly though Northwest Brampton have been identified in the Province's draft growth plan, *Places to Grow*.

Given market demand and based upon *Places to Grow* there is likely to be significant pressure for residential development in the Town of Caledon. Given the opportunities for employment land presented by the Province's planned transportation investment it will be important to identify the key locations for employment land now and protect them over the long-term. Caledon has begun to address this issue in its employment land needs study, which is being undertaken as part of the *South Albion–Bolton Community Plan Review*.

D. A STRATEGY IS REQUIRED TO ADDRESS ROAD CONGESTION AND GOODS MOVEMENT

Peel's future competitiveness depends in part upon the transportation system. The Region of Peel has been able to compete well in the GTAH employment land market because of its large competitive employment land supply. The employment profile is dominated by traditional industrial-type uses. The ongoing health and integrity of existing employment areas is important to continued economic prosperity in Peel.

To accomplish this, the Region must ensure the employment land supply remains competitive for these uses.

Maintaining an efficient transportation system is key to competitiveness and to the continued economic success in the Region of Peel. Road congestion has been identified as a major threat to economic viability in the Region's recent goods movement study and was also identified as a concern in our discussion with users around the LBPIA.

As road congestion worsens, in Peel and the rest of the GTAH, the Region's competitive advantage in attracting and retaining users in the goods movement industry and other traditional economic sectors will deteriorate. Over time, this may lead to an erosion in significant components of the employment base. This erosion clearly would not be in the Regional interest. A strategy to address congestion and goods movement is required. We recommend a series of short-term and longer-term actions:

- The Region should take immediate action to alleviate congestion at the specific intersections identified through the survey of stakeholders carried out as part of the goods movement study.

  These areas are shown on Exhibit 12 of the Region's study, and are generally focussed around the intersection of major arterial roads and major highways in the vicinity of the LBPIA. Considering that opportunities for additional capacity are limited, the implementation of a TDM strategy is necessary to address this issue.

- The Region should then begin the development of a long-range strategy to ensure efficient goods movement, consistent with specific objectives and policy directions in the Province's growth plan *Places to Grow*, including the following policies:

  - municipalities will establish policies that develop and implement transportation demand management strategies [Section 3.2.2];

  - the first priority of highway investment is to facilitate goods movement by linking intermodal facilities, international gateways and communities within the Greater Golden Horseshoe [Section 3.2.4 (1)] and

  - municipalities will provide for the establishment of priority truck routes where feasible, to facilitate the movement of goods into and out of areas of significant employment, industrial and commercial activity and that provide alternative routes connecting to the provincial network [Section 3.2.4 (3)].

The first step towards a longer-term strategy for goods movement is a better understanding of goods movement issues in Peel. The Region's study and a recent Provincial study on goods movement both identified the need for a better understanding and better data on goods movement. An improved information base would assist the Region in undertaking and implementing the next steps of a longer-term strategy for goods movement.

- An understanding of current commercial vehicle movements is required with respect to factors such as: the types of vehicles; commodities carried; origins and destination; routes taken; and timing issues (including delays and just-in-time delivery schedules).[1]

- Understanding opportunities to improve the live– work relationship would also be helpful. Since the majority of vehicles on the road are single occupant cars travelling to work, workers living close to their place of employment can reduce stress on the transportation network.

  Overall, the Region of Peel is a slight net exporter of labour, based upon a comparison of place of work employment to the resident employed labour force. Within Peel, Mississauga is a net importer and Brampton and Caledon are both net exporters of labour.

  Within this complex system of commuting, it is difficult to know who is actually coming and going. Understanding this live–work relationship and the "fit" between labour force and employment opportunities needs is important. The Region recognizes the importance of understanding the relationship between education, income, households and jobs as they move forward with their *Liveable Peel* initiative.

[1] *A recent study undertaken at the University of Calgary gathered this type of information through a series of roadside interviews. Data was combined with information from a commodity flow survey and used to model future vehicle movements. The work was a collaboration between the City of Calgary, Edmonton, and Alberta Transportation. A similar approach may be suitable for Peel.*

E. ECONOMIC CLUSTERS SHOULD BE PROMOTED

The analysis of the occupied employment land supply revealed a number of major economic concentrations in industrial-type activities. Promoting clusters could contribute greatly to the competitiveness of the business parks. The literature shows that while some clusters have developed without the presence of any dedicated effort, others have developed much faster because of local and regional policy initiatives. There are many benefits to promoting clusters.

- Businesses benefit from being involved in clusters through access to large and skilled labour pools, more and larger markets, better infrastructure, networking and technology, and lower transaction costs.

- In communities where they are accommodated, clusters generate wealth through the export of goods and services, result in increased employment and higher wages, and can assist in diversifying the local economy and improving quality of life.

1. Relationship Between Firms in the Potential Clusters Needs to be Identified

In cooperation with local municipalities, the Region needs to identify the relationships between firms in the economic concentrations identified in this report. This will require more detailed data analysis or field interviews and could include input–output analysis to determine buyer – seller relationships, an analysis of wage groupings to identify high wage industries or an analysis of historic location quotients to distinguish between established and emerging clusters.

Once the key clusters have been identified, policy options can be considered. Selecting the policy options depends upon many factors including the clusters size, state of development and preferences. One potential approach to promoting clusters could involve:

- Establishing the current arrangement between firms, including the degree of cooperation and links in the production and distribution process;
- Identifying gaps in the production process, or other challenges to cooperation such as lack of access to academic institutions or research; and
- Targeting specific industries to fill the gap, investing in infrastructure, education, human resources or proving other resources to strengthen networking opportunities. Many communities in North America have focussed on the use of cluster working groups to determine which type of support is likely to be most effective.[1]

[1] *Waits, M.J., "The Added Value of the Industry Cluster Based Approach to Economic Analysis, Strategy, Development and Service Delivery"*Economic Development Quarterly, *2000, 14, page 35-50.*

2. Additional Work Should Be Undertaken to Understand Trends in Built Form

As part of the economic cluster analysis, additional work should be undertaken to better understand built forms. Over the past 20 years, new development in employment areas in large urban regions appear to have been characterized by larger and more efficient facilities, a growing integration of office with other uses in single buildings and continually evolving warehousing and distribution activities in the logistics industry.

More detailed study is required to confirm these trends are also occurring in Peel, and identify the implications for employment land. One of the major difficulties in addressing this issue is a lack of consistent data.

- Building space data is available but not well-suited for research. It is collected for marketing purposes by the Realtors.
- Land-based information is ideal, but rare. It is often collected for different purposes and definitions vary.
- The Mississauga and Brampton employment surveys are an excellent source of information, but focus on jobs and are undertaken according to different methods and definitions so are not directly comparable. The City of Toronto employment survey, which may be involved in the consideration of a broader LBPIA area for transportation planning purposes, is also undertaken according to a different set of definitions.

In consultation with the local municipalities, the Region should consider an initiative to standardize the definitions of the Mississauga and Brampton employment survey, and build upon this work to develop a comprehensive data base to serve as the foundation for future, more in-depth studies.

For the Region of Peel to maintain its historically strong economic position, a number of issues related to employment land need to be addressed. A strategy to protect the employment land supply is required. New policies are required to ensure the full economic potential of the LBPIA is realized. Planning for additional employment land should begin soon. A strategy is required to address road congestion and goods movement, and economic clusters should be promoted.

These initiatives form a comprehensive set of actions that are required to ensure the continued competitiveness of employment land in Peel Region. We trust that the policy approaches recommended in this report are of assistance to staff and Council as they proceed with their *Liveable Peel* initiative and other plans for the future.

APPENDIX A

Detailed Land Supply

Total Land Supply in Designated Employment Areas in Peel

	LAND SUPPLY (ha)			
MISSISSAUGA	Occupied	Vacant	**Total**	% of Total
Sheridan Park	100	30	**120**	1.7%
Mavis-Erindale	170	10	**180**	2.6%
Western Business Park	160	110	**270**	3.9%
Airport Corporate	230	50	**270**	3.9%
Dixie	360	30	**390**	5.7%
Southdown	510	70	**580**	8.5%
Meadowvale Business Park	710	200	**910**	13.3%
Gateway	910	360	**1,270**	18.5%
Northeast	2,360	230	**2,590**	37.8%
Other - Minor Employment Areas	280	0	**280**	4.1%
Total	**5,790**	**1,090**	**6,860**	**100%**

Source: Mississauga Economic Development Office

Note: City Centre and LBPIA not Designated Business Parks.

	LAND SUPPLY (ha)			
BRAMPTON	Occupied	Vacant	**Total**	% of Total
Brameast	30	180	**210**	4.8%
Sandalwood	120	160	**280**	6.4%
Bramalea South - Gateway	220	130	**350**	8.0%
HWY 427 Industrial	20	390	**400**	9.2%
HWY 410 Industrial	520	230	**750**	17.2%
Bramwest	50	480	**530**	12.2%
Airport Intermodal - Parkway Belt	760	750	**1,510**	34.7%
Other - Minor Employment Areas	150	180	**320**	7.4%
Total	**1,870**	**2,500**	**4,350**	**100.0%**

Source: Brampton Economic Development Office

CALEDON	Occupied	Vacant	**Total**	% of Total
Tullamore - Prestige Industrial	0	20	20	2.8%
Tullamore - General Industrial	10	70	80	11.1%
Bolton - Dry Industrial	50	20	70	9.7%
Bolton - General Industrial	120	20	140	19.4%
Bolton - Prestige Industrial	120	250	370	51.3%
Victoria - Industrial Policy Area	0	40	40	5.5%
Total	**300**	**420**	**720**	**100.0%**

Source: Municipality of Caledon

	LAND SUPPLY (ha)		
	Occupied	Vacant	**Total**
Peel Total	**7,960**	**4,010**	**11,930**

Total Employment Land Supply Within Designated Employment Areas in Peel

MISSISSAUGA	LAND SUPPLY (ha) Occupied	Vacant	Total	% of Total
Sheridan Park	80	30	110	1.7%
Mavis-Erindale	160	10	170	2.6%
Western Business Park	150	110	270	4.1%
Airport Corporate	140	50	190	2.9%
Dixie	350	30	390	5.9%
Southdown	510	70	580	8.8%
Meadowvale Business Park	650	200	850	12.9%
Gateway	860	360	1,220	18.5%
Northeast	2,310	230	2,530	38.4%
Other - Minor Employment Areas	280	0	280	4.2%
Total	**5,490**	**1,090**	**6,590**	**100%**

Source: Mississauga Economic Development Office
Note: City Centre and LBPIA not Designated Business Parks.

BRAMPTON	LAND SUPPLY (ha) Occupied	Vacant	Total	% of Total
Brameast	30	180	210	4.8%
Sandalwood	120	160	280	6.4%
Bramalea South - Gateway	220	130	350	8.0%
HWY 427 Industrial	20	390	400	9.2%
HWY 410 Industrial	510	230	750	17.2%
Bramwest	50	480	530	12.2%
Airport Intermodal - Parkway Belt	760	750	1,510	34.7%
Other - Minor Employment Areas	140	180	320	7.4%
Total	**1,850**	**2,500**	**4,350**	**100.0%**

* Office space data by land area was not available. Office floor space by sq. metre was used to estimate major office land area
Source: Brampton Economic Development Office

CALEDON	LAND SUPPLY (ha) Occupied	Vacant	Total	% of Total
Tullamore - Prestige Industrial	0	20	20	2.8%
Tullamore - General Industrial	10	70	80	11.1%
Bolton - Dry Industrial	50	20	70	9.7%
Bolton - General Industrial	120	20	140	19.4%
Bolton - Prestige Industrial	120	250	370	51.3%
Victoria - Industrial Policy Area	0	40	40	5.5%
Total	**300**	**420**	**720**	**100.0%**

*Presently there is no major office development in Caledon
Source: Municipality of Caledon

	LAND SUPPLY (ha) Occupied	Vacant	Total
Peel Total	**7,640**	**4,010**	**11,660**

APPENDIX B

ECONOMIC SECTOR PROFILES

2001 Census
2003 Employment Survey
Location Quotient and Cluster Analysis

Peel Region Total Employment By Type, 2001 Census

NAICS Industry Codes	GTA-Hamilton	% of Total	Region of Peel	% of Total	Mississauga	% of Total	Brampton	% of Total	Caledon	% of Total
11 Agriculture, forestry, fishing and hunting	14,060	0%	2,110	0%	570	0%	690	1%	850	5%
21 Mining and oil and gas extraction	3,250	0%	560	0%	420	0%	70	0%	60	0%
22 Utilities	23,760	1%	1,980	0%	1,540	0%	390	0%	50	0%
23 Construction	149,520	5%	27,730	5%	17,270	5%	8,520	6%	1,940	11%
31-33 Manufacturing	481,250	16%	110,900	21%	71,800	19%	34,840	26%	4,260	23%
41 Wholesale trade	175,730	6%	55,060	10%	45,080	12%	8,940	7%	1,050	6%
44-45 Retail trade	317,810	11%	57,220	11%	37,070	10%	18,500	14%	1,650	9%
48-49 Transportation and warehousing	146,640	5%	60,260	11%	48,840	13%	10,070	8%	1,360	7%
51 Information and cultural industries	108,980	4%	10,690	2%	8,540	2%	1,990	1%	160	1%
52 Finance and insurance	195,940	7%	19,850	4%	16,590	4%	2,980	2%	280	2%
53 Real estate and rental and leasing	64,570	2%	10,610	2%	8,210	2%	2,140	2%	260	1%
54 Professional, scientific and technical services	262,350	9%	37,120	7%	30,360	8%	5,810	4%	940	5%
55 Management of companies and enterprises	5,290	0%	500	0%	390	0%	100	0%	10	0%
56 Administrative and support, waste management and remediation services	133,380	5%	23,830	4%	17,950	5%	4,990	4%	880	5%
61 Educational services	171,920	6%	25,510	5%	16,790	4%	7,520	6%	1,200	7%
62 Health care and social assistance	235,660	8%	28,300	5%	18,280	5%	9,160	7%	860	5%
71 Arts, entertainment and recreation	53,050	2%	4,900	1%	3,000	1%	1,310	1%	590	3%
72 Accommodation and food services	158,660	5%	23,920	4%	17,180	4%	5,850	4%	890	5%
81 Other services (except public administration)	130,490	4%	19,360	4%	14,080	4%	4,660	3%	620	3%
91 Public administration	105,590	4%	13,890	3%	8,270	2%	5,110	4%	510	3%
Total	**2,937,900**	**100%**	**534,300**	**100%**	**382,230**	**100%**	**133,640**	**100%**	**18,420**	**100%**

Source: 2001 Census

Detailed Employment Composition of Major Employment Areas in Mississauga, 2003 Estimates.

Mississauga	Sheridan Park	Mavis-Erindale	Western Business Park	Airport Corporate	Dixie	Southdown	Meadowvale	Gateway	Northeast	Pearson Airport	City Centre	Non-Emp. Lands	Total
11 Agriculture, forestry, fishing and hunting	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**10**
21 Mining and oil and gas extraction	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
22 Utilities	**0**	**450**	**20**	**0**	**0**	**0**	**30**	**0**	**20**	**0**	**0**	**250**	**770**
23 Construction	**0**	**360**	**450**	**200**	**560**	**140**	**360**	**590**	**4,060**	**0**	**70**	**880**	**7,660**
31-33 Manufacturing	**1,950**	**1,830**	**3,300**	**1,560**	**7,230**	**3,680**	**8,440**	**12,310**	**42,290**	**130**	**780**	**3,160**	**86,660**
311/312 Food, Beverage and Tabacco	10	110	150	410	970	230	240	1,460	2,660	20	320	860	7,420
313-316 Textile, Clothing and Apparel	0	110	60	20	300	10	80	170	580	0	0	160	1,480
321-323 Wood, Pulp and Paper	60	400	200	90	420	20	380	1,860	5,870	0	30	150	9,480
324/325 Petroleum, Coal and Chemicals	260	170	210	40	1,750	1,060	3,090	800	2,280	0	50	110	9,800
326 Plastics, Rubber,	0	130	40	10	1,390	110	110	1,180	3,350	0	260	120	6,690
327-332 Nonmetallic, Metal, Fabricated Metal	1,420	290	270	80	1,170	600	340	1,890	8,120	0	60	620	14,860
333-335 Machinery, Computer, Electronic, Applicance and Component	200	370	830	860	630	250	2,920	3,440	9,280	0	60	610	19,460
336 Transportation	0	210	1,130	0	30	1,370	410	700	4,790	120	0	40	8,800
337 Furniture and related	0	30	50	0	300	50	170	450	3,070	0	0	140	4,250
339 Miscellaneous	0	10	350	60	270	10	710	370	2,280	0	0	360	4,420
41 Wholesale trade	**100**	**280**	**2,160**	**5,760**	**2,380**	**370**	**10,270**	**12,940**	**24,160**	**330**	**1,040**	**1,060**	**60,850**
44-45 Retail trade	**0**	**470**	**1,820**	**280**	**1,720**	**70**	**1,680**	**2,330**	**2,760**	**350**	**3,140**	**11,740**	**26,350**
441Motor Vehicle and Parts	0	0	760	0	350	10	240	0	910	0	0	580	2,850
442 Furniture and Home Furnishings	0	20	320	0	410	0	100	380	150	0	120	300	1,780
443 Electronics and Appliances	0	10	10	20	220	0	30	160	50	0	100	440	1,040
444 Building, Garden and Supplies	0	10	20	0	90	30	140	120	110	0	0	460	970
445 Food and Beverage	0	210	160	120	100	10	40	600	690	50	50	4,440	6,470
446 Health and Personal Care	0	20	20	100	20	0	0	210	10	10	120	1,510	2,020
447 Gas Stations	0	20	20	0	20	0	50	50	140	0	10	380	690
448 Clothing and Accessories	0	10	40	30	90	10	20	490	490	20	1,360	1,460	4,020
451 Sporting Goods, Hobby, Book and Music	0	20	180	0	130	0	40	10	30	150	200	440	1,200
452 General Merchandise	0	110	240	0	180	0	950	210	0	0	1,050	1,160	3,900
453/454 Miscellaneous	0	50	50	0	100	0	90	120	180	120	130	590	1,440
48-49 Transportation and warehousing	**20**	**1,810**	**200**	**1,190**	**810**	**490**	**770**	**3,060**	**15,980**	**13,010**	**90**	**580**	**38,000**
481 Air	0	0	0	10	0	0	0	0	270	10,080	70	0	10,430
482 Rail	0	0	0	0	0	0	0	0	0	0	0	0	0
483 Water	0	0	0	60	60	0	0	10	50	0	0	0	180
484 Truck	20	220	70	80	320	420	220	170	5,030	100	0	70	6,730
485/487 Scenic,Transit and Ground Passenger	0	1,260	0	10	20	20	0	0	890	0	0	200	2,400
486 Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0
488 Support Activities	0	40	60	480	40	20	70	1,360	5,250	2,060	10	50	9,430
491/492 Postal and Courier	0	290	30	540	160	0	300	770	3,720	770	10	220	6,800
493 Warehousing and Storage	0	10	40	0	210	30	180	760	780	0	0	40	2,050
51 Information and cultural industries	**150**	**700**	**150**	**1,370**	**200**	**0**	**380**	**1,230**	**2,790**	**0**	**660**	**290**	**7,910**
52 Finance and insurance	**10**	**370**	**140**	**2,710**	**290**	**40**	**5,090**	**2,140**	**1,930**	**50**	**3,450**	**2,730**	**18,940**
53 Real estate and rental and leasing	**140**	**360**	**170**	**320**	**280**	**40**	**440**	**370**	**1,350**	**160**	**650**	**1,560**	**5,840**
54 Professional, scientific and technical services	**1,220**	**160**	**485**	**2,740**	**526**	**111**	**2,535**	**4,078**	**3,932**	**13**	**2,238**	**1,573**	**19,611**
55 Management of companies and enterprises	**40**	**0**	**10**	**250**	**0**	**20**	**610**	**100**	**170**	**0**	**30**	**100**	**1,310**
56 Administrative and support, waste management	**190**	**70**	**410**	**1,630**	**570**	**150**	**560**	**2,400**	**4,110**	**710**	**2,800**	**2,250**	**15,850**
61 Educational services	**20**	**80**	**180**	**60**	**370**	**30**	**190**	**730**	**420**	**0**	**480**	**11,920**	**14,460**
62 Health care and social assistance	**30**	**140**	**210**	**70**	**170**	**10**	**560**	**900**	**700**	**10**	**610**	**10,970**	**14,390**
71 Arts, entertainment and recreation	**0**	**60**	**100**	**20**	**230**	**90**	**130**	**50**	**180**	**0**	**190**	**1,360**	**2,400**
72 Accommodation and food services	**70**	**400**	**520**	**420**	**830**	**110**	**1,650**	**1,570**	**3,200**	**780**	**1,000**	**5,410**	**15,960**
81 Other services (except public administration)	**60**	**520**	**340**	**420**	**490**	**80**	**1,090**	**470**	**2,640**	**60**	**330**	**3,400**	**9,910**
91 Public administration	**0**	**1,320**	**150**	**90**	**130**	**10**	**20**	**2,250**	**380**	**240**	**1,740**	**1,360**	**7,690**
99 Unclassed Data	**160**	**600**	**870**	**1,240**	**1,680**	**540**	**2,070**	**3,700**	**15,010**	**1,380**	**1,530**	**640**	**29,410**
Total	**4,160**	**9,980**	**11,660**	**20,310**	**18,470**	**5,980**	**36,860**	**51,220**	**126,070**	**17,230**	**20,810**	**61,220**	**383,970**
												Work at Home	**16,000**
												Total 2003	**399,970**

* The "Other-Minor Employment Lands" are included within Non-Employment Lands Survey

Source: Mississauga Employment Survey 2003

Detailed Employment Composition of Major Employment Areas In Brampton, 2003 Estimates

Brampton	Bramwest	Brameast	Hwy. 427 Industrial	Airport Intermodal Parkway Belt	Bramalea South Gateway	Hwy.410 Industrial	Sandalwood	Other	Non-Emp. Lands	TOTAL
11 Agriculture, forestry, fishing and hunting	**380**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**130**	**510**
21 Mining and oil and gas extraction	**0**	**0**	**0**	**60**	**0**	**0**	**0**	**0**	**10**	**70**
22 Utilities	**0**	**0**	**0**	**0**	**10**	**0**	**390**	**0**	**0**	**400**
23 Construction	**4,560**	**210**	**390**	**2,600**	**1,180**	**2,500**	**740**	**170**	**710**	**13,050**
31-33 Manufacturing	**0**	**110**	**60**	**14,010**	**5,270**	**11,000**	**1,530**	**860**	**500**	**33,350**
311/312 Food, Beverage and Tabacco	0	0	0	1,290	870	1,700	70	0	20	3,960
313-316 Textile, Clothing and Apparel	0	0	0	40	20	70	0	0	30	160
321-323 Wood, Pulp and Paper	0	10	0	1,000	930	690	110	20	130	2,890
324/325 Petroleum, Coal and Chemicals	0	0	0	310	680	1,730	130	0	20	2,870
326 Plastics, Rubber,	0	0	0	1,100	480	1,210	170	0	30	2,990
327-332 Nonmetallic, Metal, Fabricated Metal	0	90	0	2,710	610	2,750	520	540	160	7,410
333-335 Machinery, Computer, Electronic, Applicance and Component	0	0	0	1,330	430	710	290	0	80	2,850
336 Transportation	0	0	0	5,220	900	1,210	30	210	10	7,590
337 Furniture and related	0	0	0	230	110	460	170	0	10	990
339 Miscellaneous	0	0	0	780	230	480	40	0	20	1,550
41 Wholesale trade	**10**	**60**	**0**	**5,340**	**1,360**	**2,060**	**280**	**140**	**460**	**9,710**
44-45 Retail trade	**20**	**190**	**0**	**2,450**	**420**	**3,590**	**1,040**	**40**	**11,150**	**18,900**
441Motor Vehicle and Parts	0	170	0	290	30	950	270	0	160	1,880
442 Furniture and Home Furnishings	0	0	0	120	80	340	20	0	590	1,160
443 Electronics and Appliances	0	0	0	130	40	100	20	10	370	670
444 Building, Garden and Supplies	0	0	0	50	10	90	360	0	230	730
445 Food and Beverage	0	10	0	40	50	530	230	10	3,930	4,810
446 Health and Personal Care	0	0	0	60	0	100	10	0	980	1,160
447 Gas Stations	10	0	0	60	10	60	20	0	170	330
448 Clothing and Accessories	0	0	0	110	10	490	0	0	1,350	1,960
451 Sporting Goods, Hobby, Book and Music	0	0	0	100	10	290	0	0	320	720
452 General Merchandise	0	0	0	1,300	160	420	10	0	2,370	4,260
453/454 Miscellaneous	0	0	0	190	30	210	80	0	670	1,180
48-49 Transportation and warehousing	**0**	**0**	**0**	**3,110**	**870**	**5,110**	**960**	**20**	**330**	**10,400**
481 Air	0	0	0	0	0	0	0	0	0	0
482 Rail	0	0	0	0	0	0	0	0	0	0
483 Water	0	0	0	0	0	0	0	0	0	0
484 Truck	0	0	0	1,140	230	2,460	400	0	40	4,280
485/487 Scenic,Transit and Ground Passenger	0	0	0	10	10	550	420	10	190	1,190
486 Pipeline	0	0	0	0	0	0	0	0	0	0
488 Support Activities	0	0	0	670	40	500	50	0	20	1,280
491/492 Postal and Courier	0	0	0	150	200	600	0	0	70	1,020
493 Warehousing and Storage	0	0	0	1,140	390	1,000	90	10	10	2,630
51 Information and cultural industries	**0**	**0**	**10**	**430**	**370**	**430**	**20**	**0**	**600**	**1,860**
52 Finance and insurance	**10**	**0**	**0**	**30**	**150**	**440**	**10**	**0**	**2,080**	**2,720**
53 Real estate and rental and leasing	**10**	**10**	**10**	**160**	**20**	**880**	**70**	**190**	**1,170**	**2,510**
54 Professional, scientific and technical services	**30**	**140**	**0**	**1,340**	**520**	**1,770**	**500**	**20**	**1,540**	**5,850**
55 Management of companies and enterprises	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**190**	**190**
56 Administrative and support, waste management	**10**	**0**	**0**	**1,790**	**270**	**2,660**	**400**	**130**	**910**	**6,170**
61 Educational services	**0**	**0**	**10**	**1,360**	**560**	**740**	**270**	**120**	**4,550**	**7,600**
62 Health care and social assistance	**0**	**0**	**0**	**1,200**	**20**	**270**	**60**	**90**	**7,570**	**9,210**
71 Arts, entertainment and recreation	**10**	**0**	**0**	**720**	**50**	**400**	**120**	**10**	**1,710**	**3,010**
72 Accommodation and food services	**10**	**60**	**0**	**680**	**470**	**1,740**	**130**	**50**	**3,870**	**7,000**
81 Other services (except public administration)	**0**	**0**	**0**	**420**	**470**	**1,280**	**160**	**60**	**1,850**	**4,260**
91 Public administration	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**7,300**	**7,310**
99 Unclassed Brampton Data	**0**	**0**	**0**	**40**	**30**	**30**	**0**	**0**	**100**	**200**
Total	**5,040**	**770**	**480**	**35,530**	**11,820**	**34,910**	**6,660**	**1,900**	**46,710**	**143,820**
									Work at Home	**7,000**
									Total 2003	**150,820**

Source: Brampton Employment Survey 2003

Location Quotient Analysis For Mississauga Employment Lands

Mississauga	Southdown	Dixie	Sheridan Park	Mavis-Erindale	Western Business Park	City Centre	Airport Corporate	Northeast	Gateway	Meadowvale	Total Employment Land
11 Agriculture, forestry, fishing and hunting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
21 Mining and oil and gas extraction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
22 Utilities	0.0	0.0	0.0	5.3	0.2	0.0	0.0	0.0	0.0	0.1	**0.2**
23 Construction	0.5	0.6	0.0	0.7	0.8	0.1	0.2	0.6	0.2	0.2	**0.5**
31-33 Manufacturing	3.6	2.3	2.8	1.1	1.7	0.2	0.4	2.0	1.4	1.3	**1.7**
41 Wholesale trade	1.0	2.2	0.4	0.5	3.1	0.8	4.7	3.2	4.2	4.7	**3.4**
44-45 Retail trade	0.1	0.8	0.0	0.4	1.4	1.4	0.1	0.2	0.4	0.4	**0.4**
48-49 Transportation and warehousing	1.6	0.9	0.1	3.5	0.3	0.1	1.1	2.5	1.2	0.4	**1.7**
51 Information and cultural industries	0.0	0.3	1.0	1.9	0.3	0.9	1.8	0.6	0.7	0.3	**0.7**
52 Finance and insurance	0.1	0.2	0.0	0.5	0.2	2.4	2.0	0.2	0.6	2.0	**0.7**
53 Real estate and rental and leasing	0.4	0.8	1.7	1.8	0.7	1.6	0.8	0.5	0.4	0.6	**0.6**
54 Professional, scientific and technical services	0.2	0.4	3.7	0.2	0.5	1.4	1.7	0.4	1.0	0.9	**0.7**
55 Management of companies and enterprises	1.9	0.0	4.9	0.0	0.3	0.7	7.1	0.8	1.1	9.6	**2.4**
56 Administrative and support, waste management and remediation services	0.6	0.7	1.0	0.1	0.8	3.0	1.8	0.7	1.0	0.3	**0.8**
61 Educational services	0.1	0.3	0.1	0.1	0.3	0.4	0.0	0.1	0.2	0.1	**0.1**
62 Health care and social assistance	0.0	0.1	0.1	0.2	0.2	0.4	0.0	0.1	0.2	0.2	**0.1**
71 Arts, entertainment and recreation	0.9	0.8	0.0	0.4	0.5	0.6	0.1	0.1	0.1	0.2	**0.2**
72 Accommodation and food services	0.3	0.8	0.3	0.7	0.8	0.9	0.4	0.4	0.5	0.8	**0.5**
81 Other services (except public administration)	0.3	0.6	0.3	1.2	0.7	0.4	0.5	0.5	0.2	0.7	**0.5**
91 Public administration	0.0	0.2	0.0	3.5	0.3	2.2	0.1	0.1	1.2	0.0	**0.4**

* Does not included Lester B. Pearson or Other Minor Employment Districts

Location Quotient Analysis For Brampton Employment Lands

Brampton	Brameast	Hwy 427 Industrial	Bramwest	Sandalwood	Bramalea South Gateway	Hwy 410 Industrial	Airport Intermodal Parkway	Total Employment Land
11 Agriculture, forestry, fishing and hunting	0.0	0.0	24.5	0.0	0.0	0.0	0.0	**1.4**
21 Mining and oil and gas extraction	0.0	0.0	0.0	0.0	0.0	0.0	1.4	**0.6**
22 Utilities	0.0	0.0	0.0	6.9	0.1	0.0	0.0	**0.5**
23 Construction	5.3	16.0	17.9	2.2	2.0	1.4	1.4	**1.9**
31-33 Manufacturing	0.8	0.8	0.0	1.3	2.6	1.8	2.3	**2.1**
41 Wholesale trade	1.4	0.0	0.0	0.7	1.9	1.0	2.5	**1.7**
44-45 Retail trade	2.2	0.0	0.0	1.4	0.3	0.9	0.6	**0.6**
48-49 Transportation and warehousing	0.0	0.0	0.0	2.8	1.4	2.8	1.7	**2.2**
51 Information and cultural industries	0.0	0.8	0.0	0.1	0.9	0.3	0.3	**0.2**
52 Finance and insurance	0.0	0.0	0.0	0.0	0.2	0.2	0.0	**0.1**
53 Real estate and rental and leasing	0.3	0.9	0.1	0.5	0.1	1.3	0.2	**0.8**
54 Professional, scientific and technical services	2.3	0.0	0.1	1.0	0.6	0.6	0.5	**0.6**
55 Management of companies and enterprises	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
56 Administrative and support, waste management a	0.1	0.0	0.0	1.3	0.5	1.7	1.1	**1.0**
61 Educational services	0.0	0.2	0.0	0.7	0.8	0.4	0.6	**0.5**
62 Health care and social assistance	0.0	0.0	0.0	0.1	0.0	0.1	0.4	**0.2**
71 Arts, entertainment and recreation	0.0	0.0	0.1	1.1	0.3	0.7	1.2	**0.8**
72 Accommodation and food services	1.3	0.0	0.1	0.3	0.7	0.9	0.3	**0.6**
81 Other services (except public administration)	0.0	0.0	0.0	0.6	0.9	0.8	0.3	**0.6**
91 Public administration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

* Does not included Other - Minor Employment Districts

Rankings Of Major Economic Agglomerations in Peel (LQ >1)

Employment Area	Industry	# of Businesses	# of Employees	LQ
Mississauga				
Northeast	Manufacturing	1,603	42,285	2.0
Northeast	Wholesale Trade	1,497	24,160	3.2
Northeast	Transportation & Warehousing	515	15,984	2.5
Gateway	Wholesale Trade	435	12,937	4.2
Gateway	Manufacturing	298	12,306	1.4
Meadowvale	Wholesale Trade	256	10,273	4.7
Meadowvale	Manufacturing	144	8,440	1.3
Dixie	Manufacturing	233	7,232	2.2
Airport Corporate	Wholesale Trade	99	5,756	4.7
Meadowvale	FIRE	47	5,088	2.0
City Centre	FIRE	73	3,447	2.4
Western BP	Manufacturing	150	3,314	1.7
Gateway	Transportation & Warehousing	70	3,060	1.2
Airport Corporate	FIRE	32	2,714	2.0
Dixie	Wholesale Trade	198	2,384	2.2
Western BP	Wholesale Trade	207	2,158	3.1
Airport Corporate	Transportation & Warehousing	35	1,186	1.1
Brampton				
Airport Intermodal-Parkway Belt	Manufacturing	336	14,012	2.3
Hwy 410	Manufacturing	316	11,005	1.8
Airport Intermodal-Parkway Belt	Wholesale Trade	122	5,336	2.5
Bramalea-South Gateway	Manufacturing	169	5,271	2.6
Hwy 410	Transportation & Warehousing	84	5,114	2.8
Airport Intermodal-Parkway Belt	Transportation & Warehousing	61	3,110	1.0
Airport Intermodal-Parkway Belt	Construction	78	2,597	1.7
Hwy 410	Construction	68	2,503	1.4
Sandalwood	Manufacturing	78	1,525	1.3
Bramalea-South Gateway	Wholesale Trade	52	1,364	1.9
Bramalea-South Gateway	Construction	37	1,177	2.0
Sandalwood	Transportation & Warehousing	18	958	2.8
Bramalea-South Gateway	Transportation & Warehousing	23	873	1.4
Sandalwood	Construction	61	743	2.2

Top 10 Major Economic Agglomerations in Peel

Employment Area	Industry	# of Businesses	# of Employees	LQ
Northeast	Manufacturing	1,603	42,285	2.0
Northeast	Wholesale Trade	1,497	24,160	3.2
Northeast	Transportation & Warehousing	515	15,984	2.5
Airport Intermodal-Parkway Belt	Manufacturing	336	14,012	2.3
Gateway	Wholesale Trade	435	12,937	4.2
Gateway	Manufacturing	298	12,306	1.4
Hwy 410	Manufacturing	316	11,005	1.8
Meadowvale	Wholesale Trade	256	10,273	4.7
Meadowvale	Manufacturing	144	8,440	1.3
Dixie	Manufacturing	233	7,232	2.2

Potential Clusters in Peel

Northeast - Manufacturing (NAICS 31-33)	# Businesses	# Employees	% of Industry Employees
Primary and Fabricated Metal (NAICS 331-332)	388	7,747	18%
Wood Product, Paper Manufacturing and Printing (NAICS 321-323)	252	5,871	14%
Chemical, Plastics and Rubber Producs (NAICS 325-326)	180	5,544	13%
Machinery (NAICS 333)	243	5,542	13%
Sub-Total	**1,063**	**24,704**	**58%**
Other	540	17,581	42%
Total	**1,603**	**42,285**	**100%**
Northeast - Wholelsae Trade (NAICS 41)			
Machinery, Equipment and Supplies (NAICS 417)	480	7,275	30%
Personal and Household Goods (NAICS 414)	258	4,613	19%
Building Material and Supplies (NAICS 416)	242	3,873	16%
Motor Vehicle and Parts (NAICS 415)	139	2,817	12%
Sub-Total	**1,119**	**18,578**	**77%**
Other	378	5,582	23%
Total	**1,497**	**24,160**	**100%**
Northeast - Transportation (NAICS 48-49)			
Support Activities for Transportation (Freight Forwarders) (NAICS 488)	244	5,247	33%
Truck Transportation (NAICS 484)	142	5,032	31%
Sub-Total	**386**	**10,279**	**64%**
Other	129	5,705	36%
Total	**515**	**15,984**	**100%**
Airport Intermodal-Parkway Belt - Manufacturing (NAICS 31-33)			
Transportation Equipment (NAICS 336)	22	5,219	37%
Primary and Fabricated Metal (NAICS 331-332)	110	2,704	19%
Sub-Total	**132**	**7,923**	**56%**
Other	204	6,089	44%
Total	**336**	**14,012**	**100%**
Gateway - Wholesale Trade (NAICS 41)			
Machinery, Equipment and Supplies (NAICS 417)	186	4,890	38%
Personal and Household Goods (NAICS 414)	67	2,750	21%
Food, Beverage and Tobacco (NAICS 413)	28	1,678	13%
Sub-Total	**281**	**9,318**	**72%**
Other	154	3,619	28%
Total	**435**	**12,937**	**100%**

Potential Clusters in Peel

Gateway - Manufacturing (NAICS 31-33)			
Machinery (NAICS 333)	42	2,201	18%
Chemical, Plastics and Rubber Producs (NAICS 325-326)	37	1,957	16%
Wood Product, Paper Manufacturing and Printing (NAICS 321-323)	64	1,862	15%
Primary and Fabricated Metal (NAICS 331-332)	46	1,859	15%
Sub-Total	**189**	**7,879**	**64%**
Other	109	4,427	36%
Total	**298**	**12,306**	**100%**
Hwy 410 - Manufacturing (NAICS 31-33)			
Chemical, Plastics and Rubber Producs (NAICS 325-326)	48	2,390	22%
Primary and Fabricated Metal (NAICS 331-332)	82	1,720	16%
Food, Beverage and Tobacco (NAICS 311-312)	19	1,703	15%
Sub-Total	**149**	**5,813**	**53%**
Other	167	5,192	47%
Total	**316**	**11,005**	**100%**
Meadowvale - Wholesale Trade (NAICS 41)			
Machinery, Equipment and Supplies (NAICS 417)	115	5,436	53%
Personal and Household Goods (NAICS 414)	42	1,435	14%
Sub-Total	**157**	**6,871**	**67%**
Other	99	3,402	33%
Total	**256**	**10,273**	**100%**
Meadowvale - Manufacturing (NAICS 31-33)			
Chemical, Plastics and Rubber Producs (NAICS 325-326)	23	3,194	38%
Computer, Electronic Equipment, Appliances, and Components (NAICS 334-335)	24	1,640	19%
Machinery (NAICS 333)	19	1,284	15%
Sub-Total	**66**	**6,118**	**72%**
Other	78	2,322	28%
Total	**144**	**8,440**	**100%**
Dixie - Manufacturing (NAICS 31-33)			
Chemical, Plastics and Rubber Producs (NAICS 325-326)	27	3,138	43%
Primary and Fabricated Metal (NAICS 331-332)	42	1,146	16%
Food, Beverage and Tobacco (NAICS 311-312)	31	971	13%
Sub-Total	**100**	**5,255**	**72%**
Other	133	1,977	28%
Total	**233**	**7,232**	**100%**

APPENDIX C

ESTIMATES OF EMPLOYMENT LAND DENSITY

Estimate of Employment Land Employment Density; Mississauga, Brampton and Caledon

Mississauga	EMPLOYMENT				LAND SUPPLY (ha)			
	Employment Land Employment	Population Related Employment	Major Office Employment	Total	Occupied (EL)	Vacant	Total	Density
Southdown	5,500	400	100	**6,000**	510	70	**580**	**10.8**
Dixie	13,000	4,300	1,200	**18,500**	350	30	**390**	**37.1**
Sheridan Park	1,700	100	2,400	**4,200**	80	30	**110**	**21.3**
Mavis-Erindale	5,600	3,000	1,400	**10,000**	160	10	**170**	**35.0**
Western Business Park	7,600	3,700	400	**11,700**	150	110	**270**	**50.7**
Airport Corporate	4,500	100	15,700	**20,300**	140	50	**190**	**32.1**
Northeast	108,300	6,900	10,900	**126,100**	2,310	230	**2,530**	**46.9**
Gateway	36,700	5,000	9,500	**51,200**	860	360	**1,220**	**42.7**
Meadowvale Business Park	21,100	4,000	11,700	**36,800**	650	200	**850**	**32.5**
Other - Minor Employment Areas	4,700	0	0	**4,700**	280.0	0.0	**280**	**16.8**
Total Employment Land	**208,700**	**27,500**	**53,300**	**289,500**	**5,490**	**1,090**	**6,590**	**38.0**
City Centre	0	6,900	13,900	**20,800**	NA	NA	**NA**	**NA**
LBP	16,200	700	300	**17,200**	NA	NA	**NA**	**NA**
Other - Non-Employment Areas	0	51,000	5,500	**56,500**	NA	NA	**NA**	**NA**
Work From Home	0	16,000	0	**16,000**	NA	NA	**NA**	**NA**
TOTAL	**224,900**	**102,100**	**73,000**	**400,000**	NA	NA	**NA**	**NA**

Source: Estimates of Employment Categories compiled by Hemson Consulting Ltd.

Estimate of Employment Land Employment Density; Mississauga, Brampton and Caledon

Brampton	EMPLOYMENT				LAND SUPPLY (ha)			
	Employment Land Employment	**Population Related Employment**	**Major Office Employment**	**Total**	Occupied	Vacant	**Total**	**Density**
Brameast	500	200	0	**700**	30.0	180.0	**210.0**	**16.7**
Sandalwood	5,200	1,200	200	**6,600**	120.0	160.0	**280.0**	**43.3**
Bramalea South - Gateway	9,600	1,900	300	**11,800**	220.0	130.0	**350.0**	**43.6**
Hwy 427 Industrial	500	0	0	**500**	20.0	390.0	**400.0**	**25.0**
Bramwest	4,600	400	0	**5,000**	50.0	480.0	**530.0**	**92.0**
Hwy 410 Industrial	25,800	5,800	3,300	**34,900**	510.0	230.0	**750.0**	**50.6**
Airport Intermodal - Parkway	30,100	3,800	1,600	**35,500**	760.0	750.0	**1,510.0**	**39.6**
Other - Minor Employment Areas	1,600	300	0	**1,900**	150.0	180.0	**320.0**	**10.7**
Total Employment Land	**77,900**	**13,600**	**5,400**	**96,900**	**1,860**	**2,500**	**4,350**	**41.9**
Other - Non-Employment Areas	3,600	34,900	8,300	**46,800**	NA	NA	**NA**	**NA**
Work From Home	0	7,000	0	**7,000**	NA	NA	**NA**	**NA**
TOTAL	**81,500**	**55,500**	**13,700**	**150,700**	NA	NA	**NA**	**NA**

Source: Estimates of Employment Categories compiled by Hemson Consulting Ltd.

Estimate of Employment Land Employment Density; Mississauga, Brampton and Caledon

Caledon	EMPLOYMENT				LAND SUPPLY (ha)			
	Employment Land Employment	Population Related Employment	Major Office Employment	Total	Occupied	Vacant	Total	Density
Tullamore - Prestige Industrial	NA	NA	NA	NA	0.0	20.0	20.0	**NA**
Tullamore - General Industrial	NA	NA	NA	NA	10.0	70.0	80.0	**NA**
Bolton - Dry Industrial	NA	NA	NA	NA	50.0	20.0	70.0	**NA**
Bolton - General Industrial	NA	NA	NA	NA	120.0	20.0	140.0	**NA**
Bolton - Prestige Industrial	NA	NA	NA	NA	120.0	250.0	370.0	**NA**
Victoria - Industrial Policy Area	NA	NA	NA	NA	0.0	40.0	40.0	**NA**
Total Employment Land	**10,600**	**7,800**	**0**	**18,400**	**300**	**420**	**720**	**35.3**
Other - Non-Employment Areas and Scattered Rural	1,400	0	0	**1,400**	NA	NA	**NA**	**NA**
TOTAL	**12,000**	**7,800**	**0**	**19,800**	NA	NA	**NA**	**NA**

Source: Estimates of Employment Categories compiled by Hemson Consulting Ltd.

APPENDIX D

AIRPORT ANALYSIS

Literature Review
Airport Related Employment
Survey of Users

Annotated Bibliography: Airport Material

Weisbrod, Glen; Reed, John & Neuwirth, Roanne. *Airport Area Economic Development Model,* PRTC International Transport Conference, Manchester England, 1993.

Provides a basic framework for understanding the economic impact of airports, and planning for development around major airports. Businesses are split into four categories: businesses at the airport; businesses adjacent to airport; businesses in the vicinity of an airport or along a corridor easily accessible to the airport; and businesses elsewhere in an urban region.

Key factors affecting land development in the airport vicinity are identified, including: airport market orientation; transportation access; and urban land development patterns.

Greater Toronto Airports Authority, *Economic Impact Briefing Paper,* GTAA, 2001.

Provides a description and estimate of the local and regional economic impacts of Toronto's Lester B. Pearson International Airport.

InterVISTAS Consulting Inc., *The Economic Impact of the Ottawa Airport Year 2000,* Ottawa Airport Authority, Summer 2000.

Provides a description and estimate of the regional economic impacts of Ottawa's Macdonald-Cartier International Airport.

Airports Council International, *The Economic Impact of Canadian Airports 2002,* ACI - North America, 2002

Provides a description of the Canadian airport system and industry, and estimates the economic impacts of all major Canadian airports.

Airports Council International, *The Economic Impact of U.S. Airports 2002,* ACI - North America, 2002

Provides a description of the U.S. airport system and industry, and estimates the economic impacts of a selection of U.S. airports.

PA Consulting Services Inc., ***The Economic Role of Nashville International Airport*****, Metropolitan Nashville Airport Authority, June 2001**

Provides a description and estimate of the economic impacts of the Nashville International Airport.

Commission 1, ***Airports and their Surrounding Zones as Catalysts of Metropolitan Development,*** **Metropolis Conference, Barcelona, 1999.**

Provides a description of the general role and impact of airports in the urban system, including Lester B. Pearson. General concepts are discussed related to: cities and airports in the global context; the role of the airport in the regional economy; and airports and long term urban planning. Detailed descriptions of numerous airports-cities in Asia, Australia, Europe and Canada are provided.

Rodrigue, Dr. Jean-Paul (ed.)***, The Geography of Transport Systems: Chapter 4 - Transportation Terminals,*** **Hofstra University, Department of Economics & Geography, 2004.**

Describes the form and function of Airport terminals, terminals as activity systems, external linkages, growth poles, and land use relationships.

Airport Related Industry Sectors in Mississauga and Toronto Employment Areas Fronting Lester B. Pearson Airport

Mississauga

NAICS	DESCRIPTION	NORTHEAST	AIRPORT CORP.	TOTAL
236220	Airport building construction	0	0	**0**
237310	Airport runway construction	0	0	**0**
238210	Airport runway lighting	0	0	**0**
326210	Aircraft tires	0	0	**0**
334511	Air Traffic Control Radar systems	0	0	**0**
481215	Aerial Advertising	0	0	**0**
488111	Air Traffic Control Services	0	0	**0**
621912	Ambulance Services, air	0	0	**0**
441220	Aircraft dealers	0	0	**0**
524129	Aircraft Insurance	0	0	**0**
481214	Air Cargo Carriers	20	0	**20**
332439	Air cargo containers	20	0	**20**
532410	Airplane rental/leasing	20	0	**20**
561590	Airline Reservation	20	10	**30**
911910	Air Transport Program	50	0	**50**
336320	Aircraft lighting fixtures	60	0	**60**
412110	Aircraft fueling services	60	0	**60**
332311	Aircraft hangers	70	0	**70**
485990	Airport Limousine Service	150	0	**150**
332910	Fluid power aircraft sub-assemblies	150	0	**150**
488119	Air Freight Handling at Airport	160	0	**160**
332510	Aircraft Hardware	180	0	**180**
481110	Air Cargo Carriers	250	10	**260**
333920	aircraft loading hoists	350	0	**350**
811210	Aircraft electrical equipment repair	350	0	**350**
417990	Aircraft and aeronautical equipment	350	0	**350**
561722	Aircraft janitorial	400	80	**480**
488190	Aircraft ferrying Service	490	0	**490**
336360	Aircraft seats	540	0	**540**
334512	Aircraft engine instruments	550	0	**550**
721000	Accomodation	990	200	**1,190**
336410	Aircraft assemblies	1,890	0	**1,890**
488519	Air Cargo Customs	4,280	460	**4,740**
TOTAL		**11,400**	**760**	**12,160**

Source: Mississauga Employment Survey 2003

Toronto

Description	Toronto
Total Employment	41,321
Trucking terminals	247
Hotels	2,161
Transportation Operations	676
Travel Agencies, Airline Reservations	52
Other Transportation	1,586
Total	**4,722**

*Employment Information for the Airport Industrial Area (2003)
(Area bounded by Hwy 401, Rexdale Blvd. And West Metro Boundary)
** For the purpose of calculating employment directly related to LBPIA only employment from Hotel, Travel Agencies and Airline Reservations were used, totalling 2,213
Source: City of Toronto Employment Survey

AIRPORT AREA INTERVIEW PARTICIPANTS

31 interviews were undertaken in Mississauga and Brampton, mostly with businesses representing the manufacturing, transportation/warehousing and high-tech industries. Provided below is a list of interview participants by firm type, business area and number of employees.

Interview Participants
Airport Study 2004

Firm Type	Business Park - Municipality	Number of Employees
Transportation/Warehousing		
Federal Express (Cdn. Head Office)	Airport Corporate - Mississauga	300-499
G E Fleet Services	Airport Corporate - Mississauga	100-299
Canada Post	Northeast - Mississauga	1000+
Livingston International	Northeast - Mississauga	300-499
Pacific Western Transportation	Northeast - Mississauga	300-499
Reimer Express Lines Ltd.	Northeast - Mississauga	100-299
UTI Canada Inc.	Northeast - Mississauga	100-299
Titan Cartage	Northeast - Mississauga	100-299
Quick-X Group of Companies	Northeast - Mississauga	100-299
Martin-Bower Canada	Airport Intermodal - Brampton	100-299
Excel Transportation	Parkway Belt - Brampton	-100
Manufacturing		
Lafarge Canada	Airport Corporate - Mississauga	100-299
Red Knee Inc.	Airport Corporate - Mississauga	100-299
Garland Commercial Ranges (Head Office)	Northeast - Mississauga	300-499
Plastcoat	Northeast - Mississauga	300-499
Kleen Flo Industries	Parkway Belt - Brampton	-100
High-Tech		
Hewlett Packard (Cdn. Head Office)	Airport Corporate - Mississauga	1000+
NexInnovations (Head Office)	Airport Corporate - Mississauga	1000+
Alcatel Canada	Airport Corporate - Mississauga	100-299
BCE Emergis	Airport Corporate - Mississauga	100-299
Orenda Aerospace Corp.	Northeast - Mississauga	500-999
Smith Detections	Northeast - Mississauga	300-499
Canon Canada (Cd. Head Office)	Northeast - Mississauga	300-499
Taro Pharmaceuticals	Airport Intermodal - Brampton	100-299
Retail		
Sobeys Ontario (Regional Head Office)	Northeast - Mississauga	500-999
Winners Merchants Inc.	Northeast - Mississauga	300-499
Indigo-Chapters	Northeast - Mississauga	100-299
Business Services & Finance		
Accenture Inc. (Cdn. Head Office)	Airport Corporate - Mississauga	500-999
Loyalty Management	Airport Corporate - Mississauga	500-999
News Marketing Canada	Airport Corporate - Mississauga	100-299
Kingsway General Insurance	Airport Corporate - Mississauga	100-299

APPENDIX E

BACKGROUND DATA FOR SELECTED CHARTS

Employment Data By Sector For The GTAH By Region (2001 Census)

EMPLOYMENT BY 1997 NAICS CODE - GTAH

	Toronto	Peel	York	Durham	Halton	GTA	Hamilton	GTAH
Agriculture, forestry, fishing and hunting	1,104	2,118	2,309	3,323	2,277	11,130	2,925	14,055
Mining and oil and gas extraction	1,506	562	318	239	429	3,054	196	3,250
Utilities	10,298	1,984	1,643	8,308	635	22,868	887	23,755
Construction	55,776	27,723	31,122	10,982	11,759	137,363	12,157	149,520
Manufacturing	177,601	110,897	79,011	35,581	39,075	442,165	39,085	481,250
Wholesale trade	58,763	55,058	35,636	6,740	12,471	168,669	7,056	175,725
Retail trade	141,631	57,231	44,693	26,502	22,962	293,019	24,791	317,810
Transportation and warehousing	49,173	60,263	13,297	7,094	7,694	137,522	9,113	146,635
Information and cultural industries	78,667	10,688	9,060	2,773	3,520	104,708	4,272	108,980
Finance and insurance	139,295	19,848	17,179	4,793	7,833	188,947	6,993	195,940
Real estate and rental and leasing	35,442	10,611	7,705	3,539	3,697	60,994	3,576	64,570
Professional, scientific and technical services	158,711	37,112	35,935	8,250	14,103	254,111	8,234	262,345
Management of companies and enterprises	4,026	496	353	102	251	5,229	61	5,290
Administrative and support, waste management and remediation services	71,770	23,834	17,004	6,697	6,621	125,927	7,453	133,380
Educational services	87,960	25,512	18,500	13,073	10,642	155,687	16,228	171,915
Health care and social assistance	127,768	28,309	20,517	18,154	13,637	208,385	27,275	235,660
Arts, entertainment and recreation	27,559	4,903	9,110	3,576	4,191	49,338	3,707	53,045
Accommodation and food services	78,469	23,923	18,507	12,724	12,580	146,204	12,451	158,655
Other services (except public administration)	67,247	19,362	15,602	8,286	9,096	119,593	10,892	130,485
Public administration	62,403	13,870	7,959	7,687	5,964	97,883	7,707	105,590
Total - Industry - 1997 North American Industry Classification System	***1,435,168***	***534,306***	***385,459***	***188,422***	***189,439***	***2,732,794***	***205,061***	***2,937,855***

Source: Hemson Consulting Ltd. Based upon the 2001 Census

Note: Employment data includes no fixed employment redistributed based on each Region's share of employment by usual place of work

Employment Data By Sector For The GTAH By Region (2001 Census)

EMPLOYMENT BY SECTOR BY MAJOR CATEGORIES	Toronto	Peel	York	Durham	Halton	GTA	Hamilton	GTAH
Wholesale trade	58,763	55,058	35,636	6,740	12,471	168,669	7,056	175,725
Retail trade	141,631	57,231	44,693	26,502	22,962	293,019	24,791	317,810
Total Trade	**200,394**	**112,289**	**80,329**	**33,242**	**35,433**	**461,687**	**31,848**	**493,535**
Manufacturing	177,601	110,897	79,011	35,581	39,075	442,165	39,085	481,250
Total Manufacturing	**177,601**	**110,897**	**79,011**	**35,581**	**39,075**	**442,165**	**39,085**	**481,250**
Transportation and warehousing	49,173	60,263	13,297	7,094	7,694	137,522	9,113	146,635
Utilities	10,298	1,984	1,643	8,308	635	22,868	887	23,755
Total Transportation, Warehousing & Utilities Industries	**59,471**	**62,247**	**14,940**	**15,403**	**8,329**	**160,390**	**10,000**	**170,390**
Construction	55,776	27,723	31,122	10,982	11,759	137,363	12,157	149,520
Agriculture, forestry, fishing and hunting	1,104	2,118	2,309	3,323	2,277	11,130	2,925	14,055
Mining and oil and gas extraction	1,506	562	318	239	429	3,054	196	3,250
Total Other Goods Producing Industries	**58,386**	**30,403**	**33,749**	**14,544**	**14,466**	**151,547**	**15,278**	**166,825**
Finance and insurance	139,295	19,848	17,179	4,793	7,833	188,947	6,993	195,940
Real estate and rental and leasing	35,442	10,611	7,705	3,539	3,697	60,994	3,576	64,570
Professional, scientific and technical services	158,711	37,112	35,935	8,250	14,103	254,111	8,234	262,345
Management of companies and enterprises	4,026	496	353	102	251	5,229	61	5,290
Administrative and support, waste management and remediation	71,770	23,834	17,004	6,697	6,621	125,927	7,453	133,380
Educational services	87,960	25,512	18,500	13,073	10,642	155,687	16,228	171,915
Health care and social assistance	127,768	28,309	20,517	18,154	13,637	208,385	27,275	235,660
Accommodation and food services	78,469	23,923	18,507	12,724	12,580	146,204	12,451	158,655
Public administration	62,403	13,870	7,959	7,687	5,964	97,883	7,707	105,590
Total Service Producing Industries	**765,845**	**183,516**	**143,658**	**75,019**	**75,329**	**1,243,366**	**89,979**	**1,333,345**
Other services (except public administration)	67,247	19,362	15,602	8,286	9,096	119,593	10,892	130,485
Information and cultural industries	78,667	10,688	9,060	2,773	3,520	104,708	4,272	108,980
Arts, entertainment and recreation	27,559	4,903	9,110	3,576	4,191	49,338	3,707	53,045
Total Other Service Industries	**173,472**	**34,953**	**33,772**	**14,635**	**16,806**	**273,639**	**18,871**	**292,510**
Total All Industries	***1,435,168***	***534,306***	***385,459***	***188,422***	***189,439***	***2,732,794***	***205,061***	***2,937,855***

Source: Hemson Consulting Ltd. Based upon the 2001 Census

Note: Employment data includes no fixed employment redistributed based on each Region's share of employment by usual place of work

Historical GTAH and Peel Employment Growth

PEEL EMPLOYMENT	
	Employment
1971	101,855
1981	234,465
1986	304,037
1991	378,025
1996	420,814
2001	534,306

Source: Statistics Canada, Census of Canada

GTAH EMPLOYMENT GROWTH	
	Employment Growth
1988	58.4
1989	69
1990	-6.7
1991	-136
1992	-32.2
1993	13
1994	9.2
1995	100.2
1996	28.1
1997	118.3
1998	90.2
1999	86.5
2000	130.1
2001	80.7
2002	52.7
2003	85.5

Source: Statistics Canada, Historical Labour Force Estimates