Hemson Growth Forecast / Planning Assumptions for Growth Scenarios Tested

The overall method for the forecast is based on the approach and models used for the preparation of the forecasts in Schedule 3 to the Growth Plan adopted as Amendment 2 in 2013. As described the *Greater Golden Horseshoe Growth Forecasts to 2041* (Hemson, 2012 http://www.hemson.com/wp-content/uploads/2016/03/HEMSON-Greater-Golden-Horseshoe-Growth-Forecasts-to-2041-Technical-Report-Nov2012.pdf), the population, households and employment are first forecast at the GTAH level and then distributed to the upper and single-tier municipalities by shares of housing growth by type and shares of employment growth by type.

By a similar share of housing and employment method, the growth in housing and employment is distributed to the area municipalities. Population is then determined by applying persons per unit (PPU) to housing and then accounting for non-household population and net under-coverage. This method, with some improvements and updates over the years has been used for most forecasts prepared for the Cities of Mississauga and Brampton over the past 20-plus years.

The distribution to SGUs within the municipalities is based on assigning unit growth to identified supply (either greenfield or intensification) first by a community or policy geography and then to the SGUs within these policy areas. The available supply in the SGUs has both a quantity of available development potential and a date that it may be available. In Mississauga these areas area Downtown, Major Nodes, Community Nodes, Neighbourhoods, etc. In Brampton, it is approached by UGC, Rest of Queen Street Corridor, Hurontario Corridor, Other Intensification, Greenfield, etc. In Caledon the major geographies are Bolton area, Mayfield West area, Caledon East area, Villages, Hamlets and other rural areas. The Town of Caledon has the unique characteristic of providing sufficient future greenfield land supply opportunities to accommodate forecast greenfield growth once existing designated supplies are exhausted in Mississauga and Brampton.

The Mississauga and Brampton methods have been documented in reports prepared for them in past updates to forecasts. The Caledon SGU model developed for this current Peel scenarios work follows the same methods as the Mississauga and Brampton forecast models.

A key underlying assumption for the forecasts (like those in Schedule 3) is that adequate infrastructure will be in place to accommodate the growth. This is being directly tested for water and sewer services in this work as well as for transportation services. There is, however, no specific starting assumption about the timing of, say, the GTA West corridor, but it is assumed that adequate road infrastructure is in place to support forecast population and employment growth in northern Brampton and southern Caledon.

A full description of all of the methods and assumptions involved in this approach would be a very lengthy and most elements have been documented elsewhere. However, there are specific areas of interest that have been raised by regional and municipal staff, municipal consultants and other stakeholders. The follow pages address the specific methods and assumptions that have been identified to date as being of special interest in this work. For brevity, the data in the table below is limited to Scenarios 1, 3 and 10.

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios
Housing and Population	
1. Housing mix by structure type at the Regional level	• Like the Schedule 3 background work, the housing mix *initially* assigned to the Region of Peel (and the other upper and single-tier municipalities) from the GTAH models is based broadly on market demand and is clearly acknowledged not to be a housing mix that would allow for compliance with *Growth Plan* policies. Through Regional implementation of the *Growth Plan* policies, it is expected that the housing mix would shift towards denser forms to meet intensification and density targets. How that is done depends on each Region's characteristics and is, indeed, the subject of some of the current scenario testing in Peel. This initial allocation is shown in the table below as the "market" housing mix. • The initial step at the Regional level is to shift units by type from demand in singles and semis to row and apartment forms. This is necessary to meet *Growth Plan* and Regional targets for intensification since most units provided through intensification are mostly apartments, a significant number of rows and very few singles and semis. Some of this shift is also necessary to achieve the minimum designated greenfield area density targets. The "shifted" housing mix for Scenarios 1, 3 and 10 are shown in comparison to the "market" mix.

Peel Housing Mix - "Market" Mix for Initial Regional Demand

	Single/Semi	Row	Apt	Total
1986-01	66.5%	15.8%	17.7%	100.0%
2001-16	66.7%	15.2%	18.1%	100.0%
2016-31	58.2%	17.8%	23.9%	100.0%
2031-41	54.4%	16.1%	29.5%	100.0%

Peel Housing Mix - Scenario 3 (Greenfield Policy) Mix

	Single/Semi	Row	Apt	Total
1986-01	66.5%	15.8%	17.7%	100.0%
2001-16	66.7%	15.2%	18.1%	100.0%
2016-31	44.7%	18.3%	37.0%	100.0%
2031-41	45.0%	17.5%	37.6%	100.0%

Peel Housing Mix - Scenario 1 (Revised Base) Mix

	Single/Semi	Row	Apt	Total
1986-01	66.5%	15.8%	17.7%	100.0%
2001-16	66.7%	15.2%	18.1%	100.0%
2016-31	47.2%	17.8%	34.9%	100.0%
2031-41	18.6%	16.1%	65.3%	100.0%

Peel Housing Mix - Provisional Scenario 10 Mix

	Single/Semi	Row	Apt	Total
1986-01	66.5%	15.8%	17.7%	100.0%
2001-16	66.7%	15.2%	18.1%	100.0%
2016-31	46.4%	19.8%	33.7%	100.0%
2031-41	14.8%	21.7%	63.4%	100.0%

2. Growth Allocation Methodologies	• Growth is allocated by shares of housing type for each five-year Census period to the municipalities accounting for the development potential and intensification targets. • Growth is allocated initially to assure all designated greenfield lands in the Region are fully developed within the planning period.

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios
	• Intensification is allocated the municipalities on the basis established potential and targets for intensification develop. These targets and potentials vary by scenario since the scenarios are defined, in part, by the intensification level. • Greenfield development — the vast majority of singles and semis and a substantial portion of rows — that does not fit into the existing designated greenfield area is assigned to the future DGA. Beyond the relatively small amount of future greenfield development in the Ninth Line lands in Mississauga, all potential new future DGA is in Caledon.

Housing Unit Growth 2016-2041 by Policy Area

Scenario 1: 2016 Base Scenario

Policy Area	Brampton		Caledon		Mississauga		Peel	
	Units	Share	Units	Share	Units	Share	Units	Share
Built-Up Area	40,200	44.4%	4,100	16.1%	54,500	93.3%	98,800	**56.7%**
Existing Greenfield (DGA, including BRES)	50,300	55.6%	10,600	41.6%	400	0.7%	61,300	35.2%
Future Greenfield (FDGA)	0	0.0%	9,600	37.6%	3,500	6.0%	13,000	7.5%
Rural	0	0.0%	1,200	4.7%	0	0.0%	1,200	0.7%
Total	90,500	100.0%	25,500	100.0%	58,400	100.0%	174,300	100.0%

Housing Unit Growth 2016-2041 by Policy Area

Scenario 3: Greenfield Policy Scenario

Policy Area	Brampton		Caledon		Mississauga		Peel	
	Units	Share	Units	Share	Units	Share	Units	Share
Built-Up Area	33,300	40.9%	4,500	10.6%	48,600	96.8%	86,300	**49.6%**
Existing Greenfield (DGA, including BRES)	48,200	59.1%	7,100	16.7%	400	0.8%	55,700	32.0%
Future Greenfield (FDGA)	0	0.0%	29,700	70.0%	1,200	2.4%	30,900	17.8%
Rural	0	0.0%	1,100	2.6%	0	0.0%	1,100	0.6%
Total	81,500	100.0%	42,400	100.0%	50,200	100.0%	174,000	100.0%

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios

Housing Unit Growth 2016-2041 by Policy Area

Scenario 10: Provisional Scenario

Policy Area	Brampton		Caledon		Mississauga		Peel	
	Units	Share	Units	Share	Units	Share	Units	Share
Built-Up Area	32,700	40.8%	4,400	17.2%	65,000	94.3%	102,000	**58.5%**
Existing Greenfield (DGA, including BRES)	47,400	59.2%	10,500	41.0%	400	0.6%	58,300	33.4%
Future Greenfield (FDGA)	0	0.0%	9,600	37.5%	3,500	5.1%	13,100	7.5%
Rural	0	0.0%	1,100	4.3%	0	0.0%	1,100	0.6%
Total	80,100	100.0%	25,600	100.0%	68,900	100.0%	174,500	100.0%

3. Housing mix by structure type at the local level

- Having assigned the shares for intensification and greenfield by unit type to each municipality, the local municipal housing mix by type is a result of this process. Mississauga will be mostly apartments in accordance with its supply and shares of growth and Brampton will be a mix of the development of its remaining greenfield areas and the significant amount of intensification assigned in most scenarios.
- Because Caledon is the only location for future greenfield development (beyond Ninth Line lands), the assignment by structure type is somewhat "open ended." As these are unplanned areas, the housing assignments in these scenarios are for testing regional servicing options and not intended to be direction for the specifics of housing mix or density that would be determined through a municipal comprehensive review or subsequent secondary planning.

Housing Unit Growth by Type By Municipality 2016-2041

Scenario 1: 2016 Base Scenario

Unit Type	Brampton		Caledon		Mississauga		Peel	
	Units	Share	Units	Share	Units	Share	Units	Share
Single/Semi	41,600	46.0%	17,500	68.6%	4,900	8.4%	64,100	**36.8%**
Row	17,800	19.7%	3,900	15.3%	8,400	14.4%	30,000	17.2%
Apartment	31,100	34.4%	4,100	16.1%	45,100	77.2%	80,200	46.0%
Total	90,500	100.0%	25,500	100.0%	58,400	100.0%	174,300	100.0%

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios

Housing Unit Growth by Type By Municipality 2016-2041

Scenario 3: Greenfield Policy Scenario

Unit Type	Brampton		Caledon		Mississauga		Peel	
	Units	Share	Units	Share	Units	Share	Units	Share
Single/Semi	41,600	51.1%	32,400	76.6%	4,000	8.0%	78,000	**44.9%**
Row	16,700	20.5%	6,600	15.6%	8,000	15.9%	31,200	17.9%
Apartment	23,100	28.4%	3,300	7.8%	38,200	76.1%	64,700	37.2%
Total	81,400	100.0%	42,300	100.0%	50,200	100.0%	173,900	100.0%

Housing Unit Growth by Type By Municipality 2016-2041

Scenario 10: Provisional Scenario

Unit Type	Brampton		Caledon		Mississauga		Peel	
	Units	Share	Units	Share	Units	Share	Units	Share
Single/Semi	41,000	51.2%	15,300	59.8%	4,700	6.8%	60,900	**34.9%**
Row	17,800	22.2%	6,100	23.8%	11,900	17.3%	35,800	20.5%
Apartment	21,300	26.6%	4,200	16.4%	52,300	75.9%	77,700	44.6%
Total	80,100	100.0%	25,600	100.0%	68,900	100.0%	174,400	100.0%

4. Person per Unit (PPU)

- In general, there is a gradual decline over time in PPUs in all unit types as the population ages. In accordance with the method used in the Schedule 3 and other Hemson-prepared forecasts, the overall rate of decline is established by the population and household forecast at the GTAH level. These rates declines are then applied to each housing type through to the regional level; noting that it is a rate so that places with a high PPU like Peel and York decline gradually from that high level.
- The same method is then applied from the Regional level to the local level by unit type.
- Importantly, the shift in unit types is significant here. As noted above, the *Growth Plan* demands a shift in unit type, but is not based on changes in household type. That is, as the housing market shifts to more apartments, these apartments will be accommodating more of the types of households

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios

that would otherwise have been in medium or lower density forms; more families in apartments means a relatively higher PPU than in the past. The model accounts for this shift.

- At the sub-municipal level PPUs are also distinguished between the relatively higher PPUs expected in new housing units over the planning period and the relatively lower PPUs in the existing base. While not a direct "new units – existing units" PPU calculation that would be used in a Development Charge Background Study, it reflects the same principle.
- The newly developing areas, such as Northwest Brampton or the Mayfield West or Bolton expansion areas, will reflect a population associated with the higher PPUs expected from newly developed units.

Historical and Forecast Persons per Unit

Scenario 1: 2016 Base Scenario

Caledon	Single/Semi	Rows	Apts.	All Units
1986	3.61	3.57	2.12	3.29
1991	3.65	3.37	2.23	3.29
1996	3.60	3.38	2.48	3.29
2001	3.61	3.25	2.42	3.32
2006	3.69	3.20	2.78	3.42
2011	3.78	3.19	2.78	3.49
2016	**3.77**	**3.28**	**2.66**	**3.48**
2021	3.74	3.27	2.65	3.46
2026	3.71	3.25	2.63	3.44
2031	3.71	3.25	2.63	3.42
2036	3.73	3.26	2.64	3.41
2041	3.76	3.28	2.65	3.41

Brampton	Single/Semi	Rows	Apts.	All Units
1986	3.34	n/a	2.12	3.28
1991	3.28	2.33	2.10	3.22
1996	3.21	2.69	2.02	3.13
2001	3.19	2.66	2.02	3.12
2006	3.19	2.59	2.19	3.12
2011	3.16	2.64	2.18	3.09
2016	**3.14**	**2.72**	**2.08**	**3.07**
2021	3.12	2.70	2.07	3.04
2026	3.10	2.69	2.06	3.00
2031	3.10	2.69	2.06	2.98
2036	3.12	2.71	2.07	2.98
2041	3.14	2.73	2.08	2.98

Mississauga	Single/Sen	Rows	Apts.	All Units
1986	3.57	3.36	2.22	3.09
1991	3.58	3.16	2.28	3.10
1996	3.54	3.21	2.47	3.14
2001	3.50	3.13	2.41	3.13
2006	3.47	3.08	2.50	3.09
2011	3.41	3.06	2.45	3.02
2016	**3.40**	**3.15**	**2.34**	**2.98**
2021	3.38	3.13	2.33	2.95
2026	3.35	3.12	2.32	2.91
2031	3.35	3.12	2.31	2.90
2036	3.37	3.13	2.32	2.89
2041	3.39	3.15	2.33	2.89

Historical and Forecast Persons per Unit

Scenario 3: Greenfield Policy Scenario

Caledon	Single/Semi	Rows	Apts.	All Units
2016	**3.77**	**3.28**	**2.66**	**3.48**
2021	3.75	3.28	2.65	3.47
2026	3.73	3.26	2.64	3.44
2031	3.72	3.26	2.63	3.43
2036	3.73	3.26	2.63	3.42
2041	3.74	3.27	2.63	3.42

Brampton	Single/Semi	Rows	Apts.	All Units
2016	**3.14**	**2.72**	**2.08**	**3.07**
2021	3.13	2.72	2.08	3.04
2026	3.11	2.71	2.07	3.00
2031	3.11	2.72	2.06	2.99
2036	3.12	2.73	2.06	3.00
2041	3.14	2.74	2.06	3.02

Mississauga	Single/Sen	Rows	Apts.	All Units
2016	**3.40**	**3.15**	**2.34**	**2.98**
2021	3.38	3.14	2.34	2.95
2026	3.37	3.13	2.32	2.92
2031	3.36	3.13	2.32	2.90
2036	3.37	3.13	2.32	2.89
2041	3.38	3.14	2.32	2.89

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios

Historical and Forecast Persons per Unit

Scenario 10: Provisional Scenario

Caledon					**Brampton**					**Mississauga**				
	Single/Semi	Rows	Apts.	All Units		Single/Semi	Rows	Apts.	All Units		Single/Sen	Rows	Apts.	All Units
2016	**3.77**	**3.28**	**2.66**	**3.48**	**2016**	**3.14**	**2.72**	**2.08**	**3.07**	**2016**	**3.40**	**3.15**	**2.34**	**2.98**
2021	3.74	3.27	2.65	3.46	2021	3.12	2.70	2.07	3.04	2021	3.38	3.13	2.33	2.95
2026	3.72	3.25	2.64	3.44	2026	3.10	2.69	2.06	3.00	2026	3.36	3.12	2.32	2.91
2031	3.71	3.25	2.63	3.43	2031	3.10	2.70	2.06	2.98	2031	3.35	3.12	2.32	2.90
2036	3.73	3.27	2.65	3.43	2036	3.12	2.72	2.07	2.97	2036	3.37	3.14	2.33	2.89
2041	3.75	3.29	2.66	3.44	2041	3.14	2.75	2.09	2.96	2041	3.39	3.16	2.34	2.88

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios
5. Key Specific Residential Development Assumptions – Mississauga	• Ninth Line is included in all scenarios as a new greenfield area. • Significant growth is accommodated in the Downtown area including the recently announced Rogers development. • Lakeview redevelopment is included in all scenarios; the amount developed by 2041 varies by scenario. • Imperial Oil lands redevelopment is included in all scenarios. Scenario 10 tests a higher overall development potential on these lands. • Significant development in the Dundas Street corridor is incorporated into all scenarios.
6. Key Specific Residential Development Assumptions – Brampton	• Greenfield development occurs in accordance with current secondary plans in all scenarios, with the one exception of the Provincial Growth Plan Scenario, which was tested on the basis of reconsidering undeveloped plans in an attempt to meet proposed policies. • Heritage Heights, the only unplanned area in Brampton, is assumed to develop with a minimum of 300 net ha of employment in all scenarios. Some scenarios test larger amounts of employment land up to 600 net ha. The remaining lands area assumed to develop for residential uses within the period of the plan. • Supply capacity in all other areas remains the same in all scenarios; the amount of the capacity potential actually built by 2041 does vary by scenario.
7. Key Specific Residential Development Assumptions – Caledon	• Existing DGA is assumed to be built out within the forecast period. • The full Mayfield West Phase 2 area is assumed to be designated and developed (though only the ¾ is currently designated). • The Bolton expansion is initially assumed to occur in accordance with BRES Option 6, lands directly to the west of the existing Bolton urban area. • Further expansions in Bolton and Mayfield West are shown conceptually for testing purposes recognizing that actual settlement expansion boundaries will be subject to a full Municipal Comprehensive Review. Bolton expansions are generally initiated on lands south of King Road and extend north of King Road into water pressure zone 7 where more greenfield land would be required.

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios
	• New greenfield residential in Mayfield West is initially added to the northeast and north of existing Mayfield West before expansion into a different water pressure zone to the west of Phase 2. • Development in rural areas, including Palgrave Estates, has been set in consultation with Caledon and does not vary between scenarios.
Employment	
8. Employment by Category	• All scenarios use the GTHA 2041 total employment in Schedule 3 to the *Growth Plan* of 4,820,000. With one exception, the Peel Region total employment is also the 970,000 in 2041 in accordance with Schedule 3. The exception is Scenario 4, which specifically tests the implications of Peel Region achieving a lower total employment in 2041 of 890,000. • Employment by category is initially set at the GTHA level, as noted above, and then attributed to the upper and single-tier municipalities in the GTAH by shares of each category. Working within the Schedule 3 totals, the forecast by category has been updated, noting that Schedule 3 had been based largely on 2006 Census data. The forecast by category now shows a more rapid shift from the Employment Land employment (employment in industrial-type buildings) to Major Office employment (freestanding office buildings of 1,929 m^2 [20,000 sq.ft.] or more)sector and to Population-Related employment. Rural-based employment is small and expected to remain stable. • Population-Related Employment is forecast to grow in accordance with population growth, including a factor for increased levels of employment in the categories serving a GTAH wide market such as universities, major hospitals or specialized retail. • Employment Land Employment is expected to remain important in Peel, but with shares of growth declining as Halton Region attracts more development in the Highway 401 corridor and Hamilton and Durham's shares rise from the historically low levels of recent times (in short, Peel is unlikely to maintain the market dominance it had during the development of lands near the airport in Mississauga and Brampton and those directly along the Highways 401 and 407 corridors). It is important to understand what is specifically meant by Employment Land Employment. While it is employment occurring in industrial-type buildings and within employment areas, the employment category specifically excludes major office employment even where those office buildings are physically located within an industrial-type employment area. Similarly, larger retail uses that are located within or on the edges of employment areas are also excluded from the Employment Land Employment category. At the same time, small office or retail functions that are located in a small industrial building or industrial multiple would be counted within Employment Land Employment. • Peel Region's 2006 estimated employment land employment total of 325,000 was made up of about 80% industrial and warehousing employment by NAICS codes (primary industries, manufacturing, utilities, construction, wholesale trade and transportation and warehousing). The 80% was down

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios
	from 82% in 2001. By 2011, recession-affected employment declined to 320,000 of which 76% were in the more typical industrial and warehousing sectors. In both periods, the sectors more usually described as Population-Related Employment (retail, education, health care, arts and recreation) stayed at about 7% of Employment Land Employment. • These trends are expected to continue in Peel's employment base. In 2011, Employment Land Employment represented about 50% of all jobs in the Region. In the forecast, less than 40% of the growth from 2011 to 2041 is Employment Land Employment. Major Office and Population-Related are both becoming larger shares of the employment total. The declining share of jobs in Employment Land Employment growth is likely to be combined with a declining share of industrial-type activities (measured by jobs) within the Employment Land Employment category. That is, within the employment areas a smaller share of jobs would be in the more traditional industrial activities and a greater share is likely to be in professional and technical, finance and insurance and information and cultural industries. • The changes in the employment base will not be as apparent on the ground since many of the non-industrial sectors in employment areas re-use existing building stock formerly occupied by industrial firms. More visibly, however, the newer development in Brampton and Caledon is dominated by large distribution centres, often with low employment densities (as described in more detail below). • The Major Office market is addressed below. • GTAH employment growth by type is the same in all scenarios. Peel employment by type is the same in Scenarios 1, 3 and 10. It does vary in other scenarios that test higher employment in Brampton or more employment land development in the GTA corridor in Caledon.

Historical and Forecast Employment by Type

GTAH Employment (in 000s)

Scenarios 1, 3 and 10

	Major Office	Population Related	Employment Land	Other Rural	Total
1986	482	831	941	21	2,275
2001	713	1,012	1,192	22	2,939
2016	933	1,382	1,319	24	3,659
2031	1,167	1,646	1,511	23	4,346
2041	1,333	1,822	1,639	22	4,817
Share of Growth					
1986-2001	34.9%	27.2%	37.7%	0.3%	100.0%
2001-2016	30.6%	51.4%	17.7%	0.3%	100.0%
2016-2031	34.0%	38.3%	27.9%	-0.2%	100.0%
2031-2041	35.4%	37.5%	27.3%	-0.2%	100.0%

Historic and Forecast Employment by Type

Peel Employment (in 000s)

Caledon

	Major Office	Population Related	Employment Land	Other Rural	Total
1986	27	99	175	3	304
2001	77	157	300	3	538
2016	122	236	342	4	703
2031	168	290	399	3	860
2041	207	322	438	3	970
Share of Growth					
1986-2001	21.4%	25.1%	53.5%	0.1%	100.0%
2001-2016	26.8%	47.7%	25.4%	0.1%	100.0%
2016-2031	29.7%	34.0%	36.4%	-0.1%	100.0%
2031-2041	34.9%	29.6%	35.6%	-0.1%	100.0%

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios
9. GTAH and Peel office markets	• While the overall GTAH Major Office employment continues to grow well, there have been some major shifts in the marketplace for new development. • Firstly, the Floor Space per Worker (FSW) has declined significantly in recent years especially in new buildings. This means that a new building built now is accommodating far more employees than a building of equivalent size would have 10 or 20 years ago. This shift is also occurring in the existing built space, but at a slower pace as buildings may require retrofitting to accommodate the additional employees. Overall this has the effect of much reducing the amount of additional built space needed to accommodate the forecast office employment growth. The overall total office FSW is shown in the table below. The figures provided are for occupied net rentable space. For some purposes (such as development charges), office FSWs are described in Gross Floor Area (GFA) and include occupied and vacant space; on this basis the estimated 20.25 m^2 in 2016 of occupied net rentable would be equivalent to about 25 m^2 of total GFA. • Secondly, Peel's (and York Region's) rapid office growth of the 1990s and 2000s coincided with low shares of growth in the City of Toronto. Over the past 10 years, the downtown market has surged with no end in sight at the moment. As a result, all of 905, including Peel, have recently had much lower shares of the GTAH market. Even if the market swings back in favour of more development in 905 during the forecast period, it is very unlikely that Peel can "catch up" to previous expectations for office growth to 2041. • These office market shifts are create special challenges for the forecast of employment in Brampton, since the long-term expectation for employment growth in Brampton over the past decade have relied, in part, on Peel maintain a high share of the GTAH and Brampton attracting a rapidly increasing share of that growth.

Share of Major Office Employment Growth
Scenarios 1, 3 and 10

	Brampton	Caledon	Mississauga	Total
1986-91	5.4%	0.0%	94.6%	5.4%
1991-96	-3.9%	0.0%	103.9%	-3.9%
1996-01	7.6%	0.0%	92.4%	7.6%
2001-06	10.5%	0.0%	89.5%	10.5%
2006-11	15.9%	0.0%	84.1%	15.9%
2011-16	25.0%	0.0%	75.0%	25.0%
2016-21	30.0%	0.0%	70.0%	30.0%
2021-26	36.0%	2.0%	62.0%	38.0%
2026-31	41.0%	2.0%	57.0%	43.0%
2031-36	45.0%	5.0%	50.0%	50.0%
2036-41	45.0%	5.6%	49.4%	50.6%

Office Floor Space per Worker
All Scenarios, GTAH, Peel and Local
m^2 of occupied net rentable space

1986	21.50
1991	22.00
1996	24.00
2001	23.00
2006	21.50
2011	21.50
2016	20.25
2021	19.75
2026	19.50
2031	19.50
2036	19.50
2041	19.50

Technical Input	Hemson's Technical Assumptions and Explanation of Methodology for Growth Scenarios
10. No Usual Place of Work (NFPOW) and Work From Home (WFH)	• In accordance with forecasts in Schedule 3, total employment includes those with a usual place of work, those who work at home and those with no usual place of work. • The work at home employment is assumed to maintain a constant ratio to population in Brampton and Mississauga at the know 2011 rate of 2.75% of Census population in Mississauga and 1.84% of the Census population in Brampton. • Caledon is treated differently in the forecast because there is a much higher rate of work at home in rural areas than urban. In 2016 the estimated work at home is 4.55% of the Census population, much higher than Mississauga's or Brampton's rate. Since the vast majority of the growth in Caledon will be urban, the growth increment in work at home employment will be closer to an urban rate. It has been assumed to be 3.5% of Census population on the post-2016 growth. As a result, in Scenario 10, the work at home rate to Census population gradually declines from 4.55% in 2016 to 3.45% in 2041. • Since it is incorporated into the base employment, the Scenarios do not incorporate a specific assumption set for those with no usual place of work. However, there may be other purposes or applications, such as development charges analysis, where it is desirable to know the distinction between those with a usual place and those without. For those purposes, the employment forecast will be categorized into usual and no usual based on an assumption of a stable or gradually increasing share of employment with no usual place of work.
11. Floor Space per Worker (FSW)	• Floor space per work for offices has been addressed above. • FSWs are relatively stable for retail and institutional uses. Changes in these FSWs would have little effect on what is considered in the scenarios. • The FSW in industrial-type buildings has risen in recent years as a result of an increasing number of distribution centres which typically have a very high FSW (meaning a very low density of employment). The modelling in the scenarios does not directly address FSW. However, the lower building employment densities do mean lower employment densities by land area (though not on a one-to-one basis as building coverage can change). As a result, the scenarios are assuming new employment land development in Brampton and Caledon will average about 33 employees per ha across the entire base in 2041, a figure a little lower than in Brampton today and much lower than in Mississauga which has a much larger older employment base.
12. Key Specific Employment Development Assumptions – Mississauga	• Growth will continue in employment lands where there are vacant lands to development. • Growth in population related employment will be largely by additions to where it currently exists with the greatest increases in the areas with the most population growth.

Technical Input	Hemson’s Technical Assumptions and Explanation of Methodology for Growth Scenarios
	• The office market will continue to be concentrated in the areas where current development exist, but with an assumed shift back to the downtown and Hurontario Corridor from the business park areas, partly as a result of the Hurontario LRT.
13. Key Specific Employment Development Assumptions – Brampton	• Growth will continue in employment lands where there are vacant lands to development. The scenarios test options for between 300 and 600 net ha of employment lands in Heritage Heights. • Growth in population related employment will be largely by additions to where it currently exists and in planned locations in newly developing areas, with the greatest increases in the areas with the most population growth. • The scenarios assume that Brampton will attract a new regional institution(s) ranging from an assumed 2,000 jobs in most scenarios to 4,000 jobs in the Brampton higher employment scenarios. It is not known what the estimated employment level would be of the recently announced university campus in Brampton. • The office market will continue to be concentrated in the following areas: Bram West where significant development is occurring; Hurontario near the court house where significant development already exists; a new office centre in the vicinity of Bramalea GO Station to be supported by the RER investments; and the UGC which could also be supported by new transit investments.
14. Key Specific Employment Development Assumptions – Caledon	• Growth will continue in employment lands where there are vacant lands to development. New employment lands are assumed to be added along the GTA West corridor. Because there is a wide range of land needs being tested, several areas are considered for development: west of Bolton along the corridor; the Tullamore area; areas east of Mayfield West near Highway 410; and, if needed, lands on the GTA corridor at the far west boundary of Caledon (acting largely as an extension to the employment land areas in Heritage Heights).