

Although 3,000 hectares are designated, a significant portion of the land base is not yet *market-ready* for development. The City of Vaughan accounts for the largest share of non-market ready employment lands. Approximately 900 hectares of Vaughan's vacant employment land supply are encumbered by 400-series highway planning. This large area represents almost one third of the total vacant land supply in York Region.

Figure 7.1 below summarizes the supply of vacant employment lands in York Region as calculated in July 2006, and clearly illustrates how a significant proportion of the total vacant employment land in York still requires significant planning and servicing investment before they are ready to be developed by private or public sector interests.

In total, nearly 60% (or 1,770 hectares) of the vacant land supply is currently beyond the reach of the marketplace. The Town of Markham, which has the second largest supply of vacant land in the Region, also has the second largest amount of land that is not market ready. At the present time approximately 60% of Markham's vacant lands are not market ready.

FIGURE 7.1 YORK REGION VACANT EMPLOYMENT LAND INVENTORY: PLANNING STATUS, 2006

Municipality	Market Ready ¹⁾	Not Market Ready ²⁾	Total
Aurora	9	46	137
East Gwillimbury	101	239	340
Georgina	36	72	108
King	52	44	96
Markham	198	287	485
Newmarket	36	23	59
Richmond Hill	143	67	210
Vaughan	381	888	1,269
Whitchurch-Stouffville	89	107	196
Total	1,127	1,767	2,894

Source: York Region and Town of Markham

1) Market ready includes vacant lands in registered plan of subdivision that are un-built, and proposed lots in a plan of subdivision which received draft plan approval

2) Not market-ready lands include areas with approved official plan designation but do not have received draft approval

7.2 Markham Industrial Land Supply

The Town of Markham's supply of *market ready* vacant land is sufficient to accommodate the immediate employment growth (and economic development) needs of the municipality. Generally, the location of sites that are zoned and serviced, and which have draft or registered

approvals in place tend to be those located in the southern end of the Town, whereas most of the lands in North 404 area, which represent the future growth area, are still subject to zoning and land servicing.

The availability of ± 200 hectares of market ready employment land would only support about 8 to 10 years of development, on the basis of 20 - 25 net hectares of land per year. The reduced supply also impacts the range of site opportunities available, when competing to attract new companies. This is a very tight condition that will need to be immediately rectified. Servicing and pre-zoning of lands will help to ensure that Markham's competitive position is maintained

As a general rule, the Town should closely monitor the annual consumption patterns of its employment lands supply and be prepared to work closely with developers, land-owners and perspective businesses to bring additional lands into a market-ready position at a rate that is commensurate with those being taken out of the vacant inventory. The Town of Markham should monitor the annual absorption patterns year over year, and ensure that new, market ready lands are always available. As a guideline, the municipality should consider a 10 year supply of market-ready lands to be the absolute minimum need to support balanced economic growth. Falling below a 10 year supply threshold is likely to exert undue upward pressure on pricing. This would put Markham at a competitive disadvantage vis-à-vis other nearby markets. Markham is now in a position where it needs to service new lands to remain competitive

The industrial (employment) land supply is made up of both developed (*occupied*) and vacant (*greenfield*) lands.

On developed industrial land in Markham there is both "employment land employment" and "major office employment." There is also a reasonably strong presence of activities that are more truly characterized as "population related employment". Based on the existing policies of the Town, vacant industrial lands can generally develop to accommodate either industrial or office type buildings. And while other uses (such as retail and other PRE-oriented facilities) may be permitted, they are generally not provided for, "as-of-right". Such uses, if built as stand alone operations, are subject to further considerations by Council.

According to the most up-to date Town of Markham records, the municipality has a current (2008) total industrial land supply of $\pm 1,525$ net ha of industrial (employment) land, including ± 485 net ha of vacant and $\pm 1,040$ net hectares occupied.

In Markham, vacant lands situated along Highway 404 are considered to be well-located and are widely regarded by most real estate professionals and market analysts to be among the best, and indeed the most valuable industrial lands anywhere in the suburban 905 market.

Industrial land prices in Markham average about \$700,000 per acre in 2007. This was substantially higher than land values in other competitive GTA area municipalities¹⁴.

While industrial land prices are partially a function of desirability, they are also closely tied to supply, market timing, and 400-series exposure/access. With fewer than 200 hectares of vacant, *market-ready*, industrial land available, the supply of land is a major contributing factor to Markham's affordability situation. Above average pricing levels are likely to place some limitations on market access, especially for smaller, start up ventures and other independent companies wanting to do business in Markham.

Increasingly, businesses choosing to locate their operations in Markham – under a constrained land supply scenario - will be those that are less sensitive to land prices (major corporations), and/or those who intend to develop at higher densities (taller buildings). Over time it is anticipated that low intensity employment uses will become less commonplace in new development areas, and that existing companies that have low levels of employment - yet require large sites to operate - will be priced out of the market by more intensive employment uses.

From the Municipality's perspective, higher land prices (and by extension higher rents) tend to stimulate more compelling and well-conceived development concepts, including: higher density built forms, more appealing design features, less warehousing and outdoor storage, less trucking activity, and less area allocated to parking and landscaped lawns. Conversely, higher land prices may limit certain forms of investments, or it may stymie small business growth. To address these possibilities, the Town should support the retention of older, cost effective buildings, especially multi-unit buildings, that offer more flexible and affordable accommodation.

Figure 7.2 illustrates that most of Markham's remaining land supply consists of small sites.

Currently, almost 80% of all parcels in the vacant inventory are less than 3 hectares - half of which are less than 1 hectare. Conversely, only 4% of all vacant parcels are greater than 10 hectares. Based on the available range of site sizes it appears that the supply of vacant land is well-positioned to accommodate prestige, high density development, but is less capable of supporting large-scale, campus style developments (e.g. IBM), or land extensive employment uses such as large manufacturing plants or large scale warehouses and distribution facilities (eg. Honda).

¹⁴ In comparison, land value in the City of Toronto is \$400,000/acre, Burlington \$400,000/acre, Mississauga \$700,000/acre, Vaughan \$760,000/acre, Brampton \$650,000/acre and Pickering \$275,000/acre.

FIGURE 7.2 VACANT EMPLOYMENT LAND SITE SIZE PROFILE (2008)

Size Range	Number of Site in each Category	% of Total
Less than 1 ha	96	41%
1 ha to 3 ha	88	38%
3 ha to 5 ha	26	11%
5 ha to 10 ha	14	6%
10 ha to 20 ha	8	3%
20 ha +	2	1%
TOTAL SITES	234	

Source: Town of Markham

In order to attract business growth and maintain its focus on high profile employment functions, it is important that the Town of Markham continues to offer a diverse and well balanced selection of employment sites. In other words, a land inventory that caters to a wide variety of projects in terms of: size, location, exposure/profile and accessibility should be considered a priority. Such an approach generally supports the provincial and regional policies that speak directly to the importance of maintaining a healthy supply of employment land to accommodate growth.

7.2.1 Changes to the Town's Land Supply

In 2000 the Town released an *Employment Lands Strategy* (ELS) to address the supply of land needed to accommodate forecast growth 2021. The Study concluded that the Town needed more land in order to keep up with the requirements of future economic growth. At the time the study was completed, the net supply of vacant employment land in Markham was estimated at 380 hectares. This quantum of land was determined to be *insufficient* to accommodate nearly 45,000 new jobs between 2000 and 2021. At that time, it was recommended by the Town's consultant (Hemson), that an additional 600 to 1,100 gross hectares of land would be required to round out the employment land base for the period to 2021.

Since endorsing the last Employment Land Strategy, the Town has pursued all available options identified in Markham to effectively increase the supply of employment land. These include:

- 2003: Eastern Markham Strategic Review- Council recommends identification of lands adjoining Cornell for Business Park (BP) employment (45 ha)

- 2004: Box Grove, OPA 92/SP (45 ha)
- 2005: 404 North, OPA 113 (121 ha)
- 2005: N/S 14th Ave OPA 135/SP (26 ha)
- 2006: Rodick/407 OPA 112 (9 ha)
- 2007: Cornell Secondary Plan Review (78 ha, includes the 45 ha identified in 2003)

Some of these additions are still awaiting approval. These additions only partially covered the full quantum of lands that Hemson recommended over a decade ago that the Town would need to support 2021 growth. During the same timeframe the Town granted a series of approvals that collectively reassigned +/- 100 hectares of land from contributing to the business park land supply. Town of Markham staff has advised urbanMetrics that all the available additions to the industrial employment land supply within the current settlement area have now effectively been realized, and that no other lands inside the boundary can or will be designated for employment (industrial) purposes.

7.2.2 Supply by Designation

Figure 7.3 below provides a breakdown of developed (occupied), vacant (greenfield) and total employment lands by Markham’s three major industrial use designations.

Currently, the bulk of Markham’s employment lands, (approximately 47%), are concentrated in the Business Park Area (BPA) designation. Vacant BPA lands are largely concentrated in locations along Highway 404, notably within the new development areas of Highway 404 North, Cathedral and Cachet. In addition, more than 50 hectares of BPA lands are still available on undeveloped sites within the Allstate and Commerce Valley employment areas in the vicinity of Highway 404 and Highway 7. Much of this land is attributed to the privately owned/operated Buttonville Airport, which has development potential, but continues to operate as a busy airport.

FIGURE 7.3 MARKHAM INDUSTRIAL LAND SUPPLY BY DESIGNATION (NET HA)

Designation	Developed	Vacant	Total	Percentage Vacant
BPA	370	325	695	47%
GIA	325	60	385	16%
BCA	345	100	445	22%
TOTAL	1,040	485	1,525	32%

Source: Town of Markham

The Town of Markham has a vacant supply of approximately 60 ha of General Industrial Area land. More than half of these lands are situated in the Armadale employment area in the vicinity of 14th Avenue and Markham Road.

The General Industrial Areas around Steeles and Highway 404 account of the largest concentration of industrial land in Markham, and are made up of companies engaged in a broad cross-section of activities including: manufacturing, wholesaling, construction and building trades, financial services and a range of other business activities. By their nature, General Industrial Areas are expected to accommodate the vast majority of Markham's ELE job growth. With only 60 hectares of vacant land available, the existing GIA designations in Markham would only support about 3,600 ELE jobs (assuming 60 employees per net hectare). The growth forecasts however suggest that Markham will need to accommodate 32,000 new ELE jobs between now and 2031. Clearly, Markham will need additional industrial land to bridge this gap.

Even if the 50% of the 325 hectares of vacant Business Park Area lands were occupied by ELE (with the other 50% for MOE) and 30% of the Business Corridor Areas were occupied by ELE (with the other 70% utilized for MOE and PRE), Markham would still need to physically accommodate close to 17,000 additional ELE workers by 2031 on new lands. Assuming 60 hectares per employee this would translate into a *minimum* of 285 net hectares - with no land whatsoever left for vacancy.

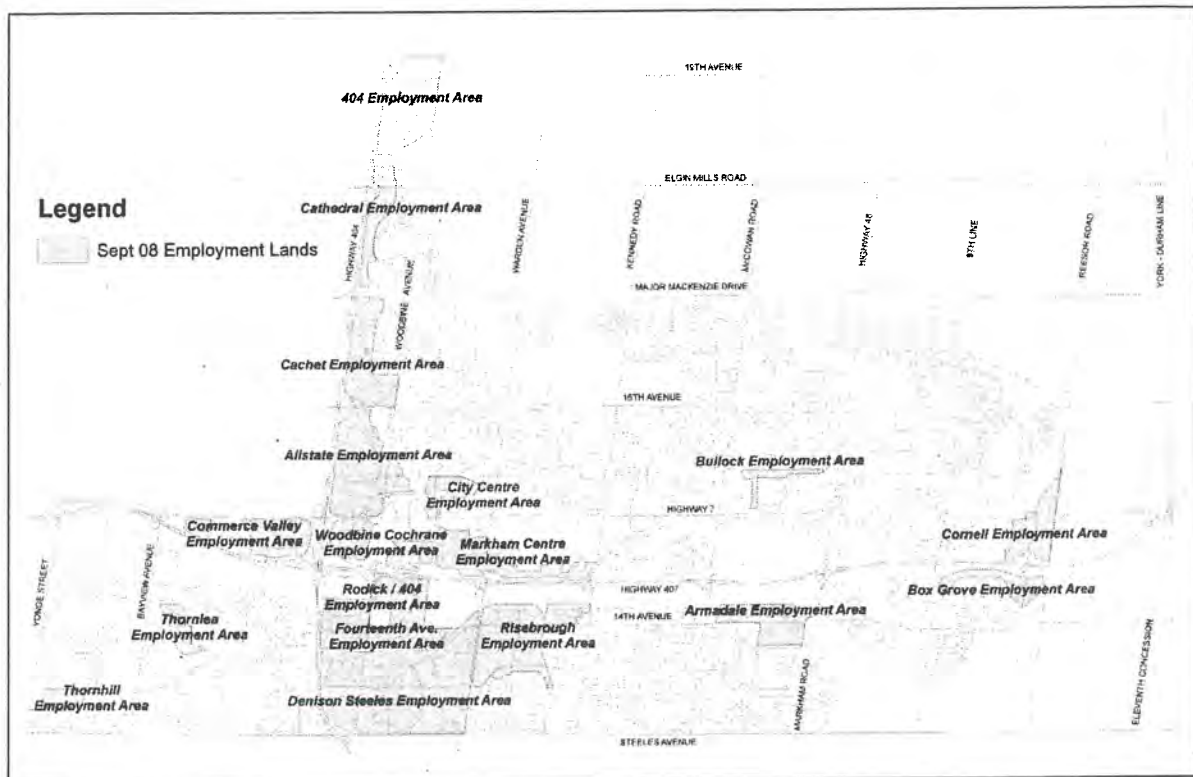
Business Corridor Areas have developed incrementally with a wide assortment of industrial and commercial activities. By and large, the BCA generally provides a high degree of flexibility in terms of permitted uses, but the form of development has generally involved lower density buildings that do not as readily support high levels of transit ridership or pedestrian activities along the main arterial road ways on which they are located (such as Woodbine Avenue, 14th Avenue and Denison Avenue).

While the BCA's planned function is to accommodate a mix of high quality business activities, increasingly the designation has been moving toward more retail and service commercial businesses, including those that serve both a local and regional customer base. For example, the BCA applies to properties along Doncaster (east of Yonge) which are now occupied by retail-based businesses. It also applies to lands at the corner of Highway 7 and Woodbine which are now occupied by a supermarket-anchored shopping centre. Most recently, Business Corridor lands in Box Grove have been utilized for retail interests serving local and regional markets.

7.2.3 Land Supply by Employment Nodes

Markham has 17 different employment nodes. These are illustrated in Figure 7.4 and summarized in Figure 7.5, respectively.

FIGURE 7.4 MAKHAM EMPLOYMENT AREAS



The Denison-Steeles Employment Area is Markham’s largest industrial area. At 375 net developed hectares it represents more than one-third of the Town’s occupied industrial land. This area is also fully built out and is comprised of all three categories of industrial land.

The Allstate Employment Area is Markham’s largest industrial business park. In total, it comprises about 176 net hectares. While much of this area is built out with office towers and low-rise office campuses, it is also home to the Buttonville Airport. For analytical purposes we have assumed these lands to be *vacant*, since re-development of these lands as business park is expected sometime in the future. While there are some vacant parcels left, the vast majority of these vacant 65 hectares are actually utilized for airport purposes.

In terms of vacant land development opportunities, most of Markham’s industrial areas contain sites or pockets that will support future development.

The most significant employment areas that will support new development - outside of Markham Centre - are those in the north end of Markham, namely Highway 404 North,

Cathedral and Cachet. Combined, these three areas provide approximately about 213 net developable hectares of industrial employment land. This is about 44% of the total amount of vacant land.

Investment interest in these areas is expected to be very strong reflecting the high degree of exposure offered to many of the sites. Honda Canada is now building its Canadian headquarters in this area. This move is expected to accelerate new business activity in this area in the near to medium term.

While development continues to progress northward along Highway 404 corridor, the eastern portion of Markham has seen very little in the way of any new industrial or office type activity, despite having high-quality land development characteristics.

At present, the designated industrial parcels in the east end of the Town, including those in Cornell and Box Grove, have yet to be developed for any other purpose other than PRE (retail) uses, with the exception of one medical office building in Box Grove.

Over the long term, however, it is envisioned that the take-up of office and other business activities will begin to take shape once the residential components of these areas are more firmly established. Specifically, an opportunity exists to establish a high-profile business cluster, such as an eco-focused business park, a clean energy park or an industry/government led R&D campus. Successfully developing these lands in the near to medium term, will depend - to a large extent - on the ability of major landowners in Markham East to creatively position their holdings as part of a highly unique business *enclave* in the GTA - one that is complemented and supported by:

- exceptional natural amenities (Rouge Park),
- a full service interchange at Donald Cousens Parkway and the Highway 407;
- proximity to a rapid transit terminal and a transit gateway, and
- the potential for business and research linkages with Markham-Stouffville Hospital.

FIGURE 7.5 MARKHAM EMPLOYMENT LAND SUPPLY BY EMPLOYMENT AREAS (NET HA)

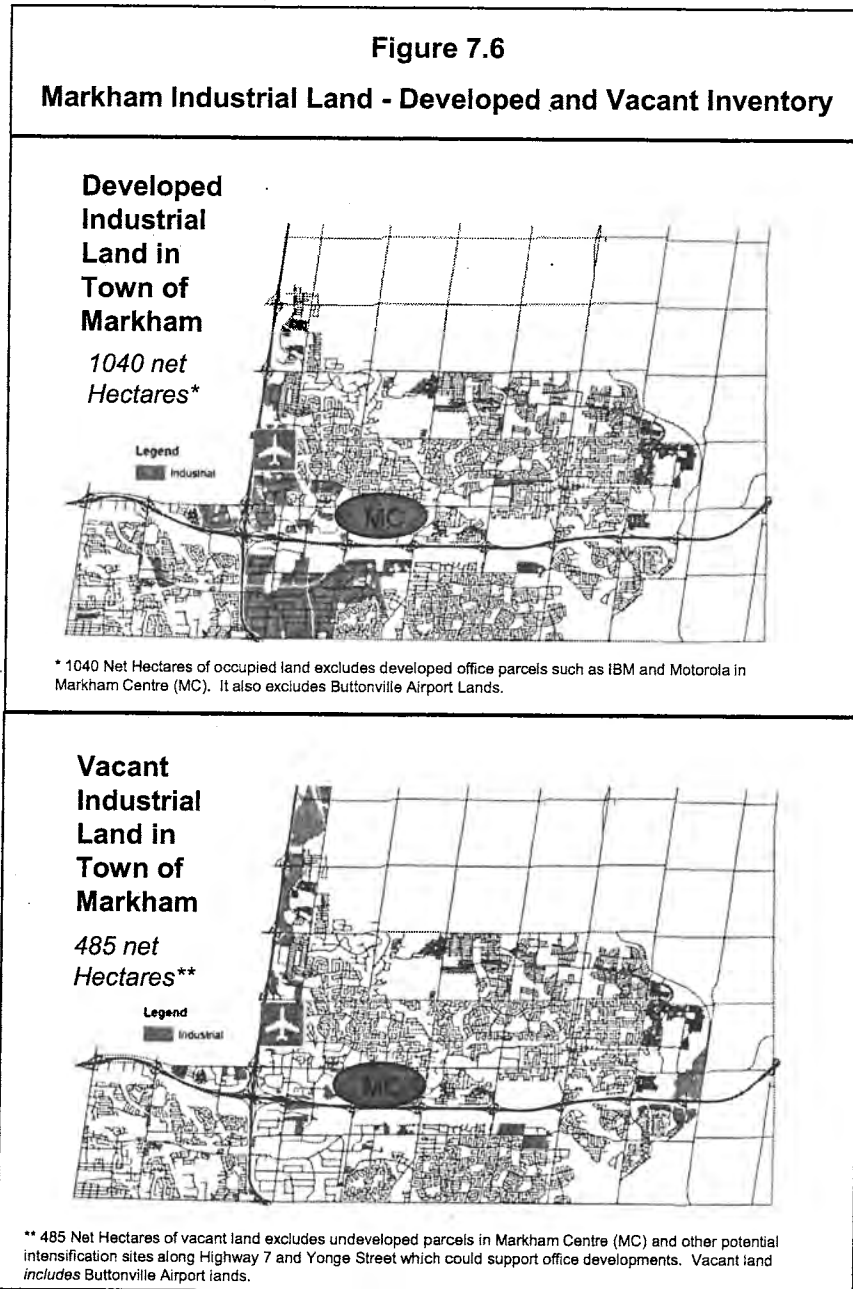
Area	Developed	Vacant	Total	Percentage Vacant
Allstate	111	65	176	37%
Armadales	22	55	77	72%
Box Grove	6	40	46	87%
Bullock	29	0	29	0%
Cachet	44	45	89	51%
Cathedral	0	68	68	100%
City Centre	24	0	24	0%
Commerce Valley	54	28	82	34%
Cornell	0	33	33	100%
Denison-Steeles	375	0	375	0%
Fourteen Avenue	54	3	57	5%
Riseborough	153	21	174	12%
Rodick/407	65	17	82	21%
Thornhill	19	0	19	0%
Thornlea	29	0	29	1%
Woodbine-Cochrane	55	10	65	15%
404 North	0	100	100	100%
Total	1,040	485	1,525	32%

Source: Town of Markham, June 2008

While East Markham and the Highway 404 North/Cathedral/Cachet employment area remain largely undeveloped at this time, the Town’s older industrial areas, such as Denison-Steeles, Fourteen Avenue, Thornhill, and Riseborough are, for all intents and purposes, *full*. Figure 7.6 illustrates the extent to which Markham’s industrial lands in the south end of the Town are built out, whereas the lands to the north (and east) sections of the town constitute the undeveloped portion.

It is important to recognize that Employment areas are considered fully built out when they achieve 85% to 90% occupancy level. Once this level is achieved, it is quite likely that certain residual parcels will likely remain “structurally” or “frictionally” vacant over the long-term as a

consequence of specific site development constraints and/or other encumbrances such as irregular lot patterns or fractious land ownership patterns.



Much of Markham’s historic economic success is due in large part to the development of two large and diverse employment nodes – Denison-Steeles, adjacent to Highway 404 and, more recently, Highway 7 and Highway 404. Combined, these two areas account for a very large share of the Town’s overall employment base, including: 88% of employment land employment, 93% of major office employment, and more than two thirds (67%) of the total employment. The area centred on Highways 404 and 407 has been identified as a potentially provincially significant employment area. The importance of these areas as key concentrations of economic and employment activity is summarized in the Figure 7.7 below.

FIGURE 7.7 EMPLOYMENT IN STEELES/404 AND HIGHWAY 7/404 NODES VERSUS OTHER AREAS

Node	Employment Land Employment 2006	Share	Major Office Employment 2006	Share	Total	Share
Denison-Steeles	34,131	68%	17,681	37%	53,686	37%
Highway 7/404	9,955	20%	26,580	56%	43,802	30%
Sub Total	44,086	88%	44,261	93%	97,488	67%
All Other Areas	5,901	12%	3,096	7%	47,340	33%
Total	49,987	100%	47,357	100%	144,828	100%

Source: Town of Markham and York Region
 Note: Each node includes several employment areas.

Based on the pattern of historical development it is clear that Highway 404 has been a dominant influence on the locational preferences of many businesses in the Town. The progression and phasing of industrial development in Markham has consistently flowed in a northerly direction – first from Steeles Avenue up to Highway 7, then from Highway 7 to Major Mackenzie, and now, from Major Mackenzie up to 19th Avenue, with Honda Canada being the first major investor.

To a large extent, the master planned business park model has proven to be the most successful element of Markham’s leadership position as a *preferred* location for business in the GGH. In general, the larger business parks have proven to be far more effective, and have tended to build-out more expeditiously than smaller, more isolated pockets. Moreover, larger industrial areas such as Denison Steeles have also proven to be far more stable and resilient over time. While there is normal business turn-over as tenants come and go, the truth remains that most of Markham’s mature employment areas continue to attract a diverse pool of businesses, ranging from small start-up enterprises all the way to major Fortune-500 companies.

7.3 Employment Land Absorption

Figure 7.8 below summarizes absorption of employment lands in Markham by area over the period 1981 to 2005.

FIGURE 7.8 - EMPLOYMENT LAND ABSORPTION (BPA, GIA, BCA) 1990-2005

Employment Land Absorption (ha)						
	MARKHAM	OTHER REGION	YORK REGION	TOTAL REGION	YORK REGION	SHARE OF TOTAL
1981-1985	277.0	533.2		810.2		34%
1986-1990	203.6	928.6		1132.2		18%
1991-1995	27.9	131.0		158.9		18%
1996-2000	140.3	490.6		630.9		22%
2001-2005	79.8	520.6		600.4		13%
Annual Average Absorption (ha)						
1981-2005	29.1	104.2		133.3		22%
1996-2005	22.0	101.1		123.1		18%

Source: York Region

The following observations have been taken from this analysis:

- Accelerated real estate development activity in the mid-late 1980s in Markham was largely fuelled by speculative office and industrial construction. This activity led to a major *bump* in the total amount of office space added to the market, especially in the Highway 404/Highway 7 area.
- The recession of the early 1990s hit the GTA's manufacturing sector extremely hard. As a direct result, the ICI real estate community suffered a severe setback. Between 1991 and 1995, employment land was virtually unmarketable, with almost no new construction taking place.
- The technology boom in the mid to late 1990s helped provide a significant lift to Markham after nearly five years of market stagnation. Much of the take-up of Markham's office and prestige industrial properties – especially by technology-related firms – was attributed to the high vacancy rates found within premium-quality buildings constructed just before the recession hit.

- Since 2001, new construction activity has been primarily concentrated in the southern part of York Region (Vaughan, Richmond Hill and Markham). The opening of Highway 407 has contributed significantly to the surge in economic activity within southern York Region.
- From a location perspective, employment land absorption has been highest in the southern parts of York Region, particularly the Town of Markham and the City of Vaughan.
- Overall, these two municipalities alone have accounted for more than 75% the total employment land development activity (in terms of land absorption) within York Region. The City of Vaughan on its own accounts for half of the total lands absorbed, due primarily to its proximity to Pearson International Airport as well as major transportation corridors such as Highway 400, Highway 407, and Highway 427. Vaughan's orientation toward industrial and large warehousing activities is a major factor for its high share of regional absorption.
- Markham has been particularly successful in the *prestige* components of the employment land market. Markham is home to some of the best business park facilities in North America.
- Over the past 25 years, on average, Markham has absorbed just under 30 hectares of employment land per year. Since the high point in early 1980s, the amount of employment land absorbed in the Town of Markham has been steadily declining. Markham's transformation as a major office node has enabled it to achieve strong employment growth, yet at the same time consume less land.
- Over the past ten years Markham's average annual land absorption rates have fallen to 22 hectares. While the reasons for this are not entirely clear, the declining supply of land, the rising cost of industrial real estate and the growing prevalence of office-type construction are likely the main reasons behind the compression.
- Over the past five years, Markham's and Vaughan's combined absorption has fallen to about 60% of all land absorbed in York Region compared to more than 80% in the 1980s. This trend reflects the more recent rates of industrial activity in Richmond Hill, Newmarket and Aurora.
- Notwithstanding the lower absorption rate, the demand for land in Markham is forecast to continue, requiring both the protection of existing lands and buildings accommodating this employment, plus the establishment/protection of a supply of additional land for new development, including those that are able to respond to market needs, helping Markham to maintain its competitive position.

7.4 Location and Built Form

7.4.1 Major Office

In York Region, major office buildings are heavily concentrated in the Highway 404 and Highway 407 area of Markham and Richmond Hill, and along Steeles Avenue and Highway 7. Although some office activity has been edging northward into Aurora and Newmarket, these concentrations of office space are still relatively small by comparison, and generally lack the scale of a true regional node.

The City of Vaughan, by contrast, has very little office development, save and except for a few smaller buildings along Highway 7 and Steeles Ave near Highway 400.

Figure 7.9 summarizes the distribution of Major Office space throughout York Region. In total, there are approximately 307 net hectares of major office sites on employment lands within York Region accommodating approximately 1.46 million square meters (15.8 million square feet) of office floor space.

FIGURE 7.9 YORK REGION'S MAJOR OFFICE DEVELOPMENT ON EMPLOYMENT LANDS

Building (sq.m)	Area HA	Employment Area	Area Municipality	Jobs*
268,587	67.80	ALLSTATE EMPLOYMENT AREA	MARKHAM	10,597
25,548	7.23	CACHET EMPLOYMENT AREA	MARKHAM	1,008
67,995	9.30	COCHRANE EMPLOYMENT AREA	MARKHAM	2,603
203,556	27.56	COMMERCE VALLEY/LEITCHCROFT EMPLOYMENT AREA	MARKHAM	8,031
268,123	49.90	DENISON STEELES EMPLOYMENT AREA	MARKHAM	10,579
25,316	4.63	FOURTEENTH AVENUE EMPLOYMENT AREA	MARKHAM	999
135,560	47.56	RISEBROUGH EMPLOYMENT AREA	MARKHAM	5,348
118,994	0.66	TOWN CENTRE EMPLOYMENT AREA	MARKHAM	4,695
2,787	0.66	THORNHILL EMPLOYMENT AREA	MARKHAM	110
1,113,679	214.64	SUMMARY	MARKHAM	44,050
151,140	30.99	BEAVER CREEK EMPLOYMENT AREA	RICHMOND HILL	5,963
4,084	2.39	EDWARD AVENUE EMPLOYMENT AREA	RICHMOND HILL	161
15,569	2.62	HEADFORD EMPLOYMENT AREA	RICHMOND HILL	614
170,792	35.99	SUMMARY	RICHMOND HILL	6,739
21,796	5.42	KEELE EMPLOYMENT AREA	VAUGHAN	860
3,159	0.60	LANGSTAFF EMPLOYMENT AREA	VAUGHAN	125
22,669	5.99	PINE VALLEY EMPLOYMENT AREA	VAUGHAN	894
24,812	6.74	STEELES CAMPUS EMPLOYMENT AREA	VAUGHAN	979
16,047	17.13	STEELES EAST EMPLOYMENT AREA	VAUGHAN	633
40,094	8.06	STEELES WEST EMPLOYMENT AREA	VAUGHAN	1,582
4,068	2.03	TUDOR EAST EMPLOYMENT AREA	VAUGHAN	161
22,337	5.76	VAUGHAN 400 EMPLOYMENT AREA	VAUGHAN	881
20,439	4.52	WESTON 400 EMPLOYMENT AREA	VAUGHAN	806
175,440	56.25	SUMMARY	VAUGHAN	6,922
28,215	4.83	WELLINGTON/404	AURORA	1,054
28,215	4.83	WELLINGTON/404	AURORA	1,054
1,459,912	307	TOTAL	YORK REGION	58,764

Source: York Region Planning and Development Services

* Estimate. Based on a 13.2% vacancy rate and a 22 sq.m./employee conversion rate.

A key factor pushing office development from Toronto into the 905 – particularly places like Markham - has been the heightened real estate focus on residential condo construction, especially in more central parts of City that are well-supported by transit. A number of areas which had traditionally been planned as major office nodes have been, and continue to be,

transformed by condo tower developments. Such areas include North York City Centre, Yonge-Eglinton Centre, Etobicoke Centre and Scarborough Town Centre. The same can be said for the Mississauga City Centre, where new condominium towers have single-handedly transformed the City's skyline. Office development has, in effect, been shut out of these areas altogether, despite strong land use policies which fully support high-rise office towers.

Another major driver for why suburban office buildings have gained such rapid market acceptance, in places like Markham has much to do with the changing scope of business activities being carried out by tenants.

Office buildings today encompass more than simply desks jobs. The technology and life sciences sector, for example utilizes office space much differently than, say, an accounting firm or a law practice. In the case of technology firms (a major source of employment in Markham), flexibility and expandability both with respect to buildings and land area, are considered key attributes. Demand has been growing for new types of space often referred to as: *flex space*, *tech space*, or *hybrid space*, which can easily accommodate varying degrees of manufacturing, laboratory R&D and conventional office functions all within the same building. The environment is easiest to implement in single or two storey buildings on large sites in suburban business parks which is a common approach in the Town, but Markham also has a growing number of examples such as IBM, AMD (formerly ATI) and Lucent Technologies, where low rise (+/- four storeys), larger floor-plate buildings are preferred, and the outward appearance of the building is that of an office building. Diversity in business operations requires diversity in accommodation, reflecting a range of building sizes and forms.

In addition, land use policies are also a major factor that cannot be overlooked. In fact, policy has been, and continues to be, a major market driver contributing to the dispersal of major office employment, particularly to areas outside of Toronto's downtown core.

Designated office nodes such as North York City Centre, Mississauga City Centre and Scarborough City Centre have long been favoured by a variety of regional planning policy measures as a preferred model to achieve compact form and to help improve transit ridership, thus minimize commuting distances.

Using a policy-driven approach, many municipalities have, with varying degrees of success, implemented measures that try to direct office development to specific sites or to desired nodes and/or corridors. A policy driven approach was used, for example, in the 1970's to encourage the development of new office buildings beyond just the downtown core of Toronto. These measures helped to encourage growth in midtown Toronto as well as more suburban locations along the subway such as Islington and Bloor, and Scarborough Town Centre. In many ways the PTGP and York Region Regional Centres and Corridors seek to emulate this policy

approach. The PTGP, for example, clearly discusses the importance of achieving major office (and major institutional uses) primarily within the various Urban Growth Centres and secondarily at locations which are proximate to major transit stations.

Figure 7.10, below illustrates the extent to which the suburbanization of office functions began to take shape and accelerate in the 1970s, 1980s and 1990s. Since 1993, suburban office parks have out-paced all other markets in the GTA. During this time, for example, nearly 12 million square feet of new space was added in suburban business (“office”) parks compared to only 1 million square feet being added in the downtown/mid town area of Toronto, which has traditionally been the main hub of business activity in Toronto.

FIGURE 7.10 COMMERCIAL OFFICE SPACE FOR THE GTA IN SQ.FT. (1954-2005)

	1954-70	1971-81	1982-92	1993-05	Commercial Space ***	Total sq. ft.
Financial District	10,312,065	10,467,484	10,862,253	555,740	274,712	32,472,254
Midtown Toronto	5,478,480	5,749,853	4,268,660	398,096	470,090	16,365,179
Toronto(outside Financial and Midtown)	10,473,415	4,618,045	11,696,388	1,884,671	1,936,142	30,608,661
Office Parks *	84,400	9,002,252	16,998,104	11,795,032	2,028,016	39,907,804
Office Commercial Subcentres **	196,513	4,116,031	11,201,945	1,118,807	213,084	16,846,380
Dispersed Locations	2,585,728	4,573,186	8,129,192	3,168,591	1,757,355	20,214,052

Note: Class G (government) buildings were not included.
 * Airport, Highway 404 and Steeles, Highway 407 and Highway 7, Consumers Road, Don Mills.
 ** Meadowvale, Highway 427, Heartland centre and Duncan Mills, North York City Centre, Scarborough Town Centre, Etobicoke Six Points and Mississauga City Centre.
 *** Additional commercial office space with unknown completion date.

Source: Canadian Urban Institute, Business Competitiveness in the GTA: Why Toronto is Losing Ground(June 2005)

Escalating land costs, increased traffic congestion and high parking rates in addition to ongoing changes in our work-force (i.e. more people engaged in knowledge intensive occupations) are expected to push demand for suburban office development higher in the future. Increasingly, office developments will be the major drivers of employment, and Markham is very well positioned to capture a higher share of this development because of its location and its firmly established-competitive position as a leading centre for business in the GTA.

7.4.2 Industrial Land Development Trends

The big structural change for industrial-based employment land in Toronto over the past decade has been the extent to which warehousing functions have emerged as the single dominant form

of new development, and how the “goods movement” sector has quickly become a critical underpinning of the economy.

In the context of Toronto - which is Canada’s largest consumer market *and* Canada’s largest industrial market - there are two factors that are driving this phenomenon:

- **The Rise of Big Box Retail** – with a greater share of store merchandise flowing in from overseas markets, major retailers have not only transformed the retail landscape, they are now having a significant impact on the size of industrial buildings being constructed throughout the larger urban region. Over the past decade a number of major warehouse buildings (larger than 1 million square feet) have been built to directly support the needs of big box retailers and other large scale retail industry interests, such as supermarkets and department store.
- **The De-coupling of manufacturing and distribution:** Changes in technology and the speed at which supply-chain relationships need to be maintained have helped stimulate a rapidly growing market for *third party logistics providers* or *fulfilment specialists*. Increasingly, many companies, especially manufacturers, and companies engaged in e-commerce are turning toward these types of companies to pick-up, store, manage and re-distribute both finished and semi-finished products to downstream customers. These companies typically rely on very sophisticated tracking and inventory control systems to manage product inventories.

The emergence of identifiable distribution nodes has become increasingly more commonplace across the GTA. New real estate terms such as “distribution parks” and “cargo parks” are now being applied to master-planned developments that are being marketed directly (and in some cases, exclusively) to these types of companies. In most major North American markets, these parks are commonly found in the vicinity of major international airports or in proximity to large intermodal rail terminals, such as CN’s facility in Maple. Generally speaking, the western GTA has attracted the highest concentration of new warehousing facilities over the past 20 years. And in turn, the rapid take up of these facilities have helped to accelerate the land absorption rates of certain markets, such as: Mississauga, Brampton, Vaughan, Milton and Burlington. While several warehouse structures larger than one million square feet have been completed over the past decade, the modern proto-typical warehouse facility in the GTA is considered to be somewhere in the order of 200,000 to 350,000 square feet in total size. Assuming a conservative 40 per cent building to lot coverage factor, such a facility would normally require a site ranging somewhere between 5 to 8 hectares. In many cases however, companies opt for even larger sites in order to facilitate future expansion opportunities.

Most Canadian real estate investment professionals expect distribution and wholesale activities to remain the primary drivers of industrial land absorption; and this segment of the market is considered an important source for future tenancies for existing industrial buildings – especially in the wake of a shrinking manufacturing sector in Canada.

Toronto, Montreal, Calgary have proven to be the most active markets for new warehouse development. Despite the continued growth and prevalence of this activity, the Town of Markham, by virtue of its high land value and its relatively tight land supply has not generally been considered for this type of new development activity. Moreover, such uses have and will continue to be concentrated around major transportation hubs such as airports and rail terminals. For these reasons, Markham will not likely experience the same degree of development pressure for such activities.

The majority of Markham's employment sites are occupied by single-storey industrial structures. In newer applications, industrial buildings are also accompanied with corporate/administrative office components located at the front of the buildings. Often the corporate offices attached to these buildings are two to three stories high (e.g. Honda). This type of development is commonly characterized as *prestige-industrial*, and is common-place throughout much of the Business Park Areas of the Town. This pattern of development is expected to be the prevailing format for future *industrial* type growth in Markham.

7.4.3 Major Retail

A common concern for policy and land use planners throughout the Greater Golden Horseshoe has, and continues to be the extent to which large shopping centre and big box outlets (power centres) should be permitted within areas that have been planned for more conventional employment uses, namely those that support industrial and office type functions.

In the case of Markham, most of the recent applications to convert employment land have involved industrially designated lands. These conversions have generally involved sites that are on highly trafficked arterials such as Woodbine, or on sites that are located adjacent to burgeoning residential communities.

The extent to which future conversion pressure will take place in the immediate term remains uncertain (largely because of the prevailing economic downturn), but the Town of Markham should, as a matter of policy, cease the conversion of industrial land for retail uses given the land shortfall that exists for accommodating future ELE and MOE growth. It is our view that Markham can readily accommodate the entirety of its PRE employment growth over the next 23 years on lands currently designated for commercial purposes, including vacant sites along on arterial roads and designated locations in Key Development Areas on Regional Corridors.

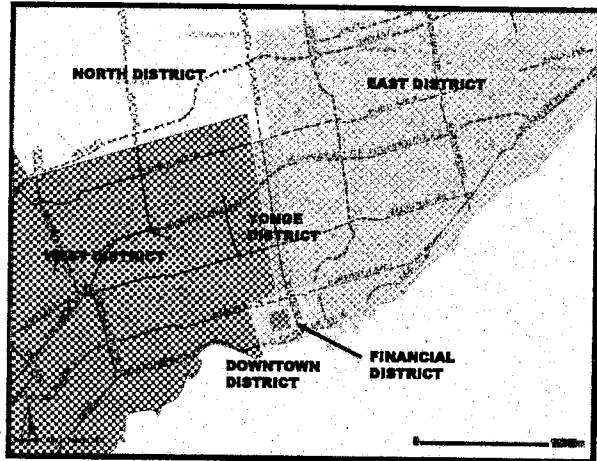
Consideration to approve large, major retail facilities should only be given once it has been determined that all commercially designated sites are exhausted, *and* that local-area market demand patterns dictate a clear and compelling need for new retail and service commercial space to support the economy of Markham. Major retail facilities do not offer the density or variety of retail development that Markham should be pursuing, nor is their primary focus on regional, rather than local markets, preferred.

8. Market Trends for Employment Lands

8.1 Suburban Offices Trends

Given the sheer size the GTA's office market, it is necessary to subdivide the GTA into smaller sub-markets to highlight area-specific trends. While there are no universal boundaries for the GTA sub-markets, most commercial analysts sub-divide the suburban GTA office landscape into three primary markets (note that these boundaries are not demised according to municipal boundaries):

- **GTA East:** Encompassing a wide area, this sub-market stretches from east of the Downtown to north of Hwy 7 in Markham. The office conditions in this sub-market vary greatly by location but are defined in large part by three main nodes: the Hwy. 404-407 node, the Hwy. 401/404 node and Scarborough City Centre. The Hwy 404-407 node (including Markham's Highway 7 corridor and Beaver Creek in Richmond Hill) has enjoyed rapid take-up of office development since the late 1980s, and now has a significant and well recognized profile. Much of the new office development in this area has been fuelled by the "design-build" corporate office segment of the marketplace, whereby a single company occupies an entire building. While the Hwy. 404-407 node has been extremely active in terms of new construction, neither the Hwy. 401-404 node, nor the Scarborough City Centre have seen any meaningful inventory expansions over the past 15 years.



- **GTA North:** Comprised of Vaughan, Aurora, Newmarket and a portion of Richmond Hill.¹⁵ This district has the lowest office space inventory of all of the GTA sub-markets. Over the past decade this market has experienced some growth with the addition of the global head office of Magna International and the national headquarters for State Farm Insurance Canada. However, this market continues to occupy a small fraction of the total

¹⁵ Richmond Hill area excludes the Hwy. 404-407 node

share of office in the GTA, with less than 6 per cent of the total market. The plan to extend the Spadina Subway into the City of Vaughan is anticipated to trigger office development that could reach a total of 3.9 million square feet by 2036¹⁶.

- **GTA West:** This geographically large sub-market incorporates the area west of Downtown. Included in this area are the former municipality of Etobicoke and the municipalities of Mississauga, Brampton, Milton, Burlington and Oakville. Office growth in this area has been led, in large part by Mississauga, which has benefited from its proximity to Lester B. Pearson Airport, an extensive network of highway infrastructure, a competitive municipal tax structure, and early comprehensive planning for the Mississauga City Centre district. Together, these factors have resonated with commercial, as well as, industrial business interests. The GTA West office market comprises approximately 33 per cent of all office space in the GTA market. Healthy vacancy and rental rates have also helped to sustain growth in new construction. There is currently 1.5 million square feet of office space under construction in the GTA West, representing approximately 28 per cent of all new space being built across all sub-markets.¹⁷

Between 1986 and 2003, the number of corporate head offices located in the City of Toronto (as measured by the *Financial Post Top-500*) fell from 171 to 136, while at the same time the number of head offices in the suburban 905-region rose from 32 to 62, many of which are in Markham or Mississauga.

The GTA's suburban office market includes well-established nodes such as the Airport Corporate Centre (11 million square feet), North York City Centre (9 million square feet), Scarborough Town Centre (5 million square feet) and growing nodes such as Burlington (3 million square feet), Brampton (2 million square feet) and the Highway 404 and 407 node (9 million square feet) located in the Town of Richmond Hill and the Town of Markham.

¹⁶ In 2006, urbanMetrics provided York Region with an analysis of the development potential adjacent to three proposed stations on the portion of the Spadina Subway that would extend into York Region. The market forecasts suggest that the subway would stimulate the formation of a regional office sub-market ranging between 3.5 and 4.0 million square feet of space by 2036. This is significantly higher than the estimated 1.4 million square feet that would be anticipated in the absence of a subway in Vaughan.

¹⁷ GTA West commercial office space construction as a percentage of total GTA commercial office space construction would have been significantly higher had the three prominent office projects in the Downtown and Financial Core sub-markets not been announced in 2006.

8.2 Markham's Office Market

Over the past two decades, Markham has become one of the most attractive locations for business in the GTA. Today, it is one of only a few high-profile locations where substantial new office construction continues to be taking place. Markham has established itself as a signature business location in Canada. The current roster of businesses operating in the Town includes a number of international companies, including IBM, AMD, Apple, Motorola and Nike. Many of Markham's companies are engaged in high-tech, product innovation and design and knowledge-intensive business activities, including financial, engineering and consulting services.

At the present time the vast majority of large office buildings in Markham are clustered around the Highways 404/7/407 interchange. Overall this node (a portion of which is actually in Richmond Hill), contains some 9 million square feet of office and technology space. Over the past year, the overall vacancy rate in this node declined from 7.9% to 6.9%. The current rate is marginally higher than the overall rate for the GTA, but is still well below the larger GTA East market of which it is an integral part.¹⁸

There are approximately 40 Class A office buildings within the Highway 404/407 node, with a cumulative square footage of 4.2 million square feet. Although office development in Markham was began at the same time as North York City Centre (in the 1980's), office growth in Markham has continued forward at a strong pace, whereas office development in North York has largely stagnated, and the centre has taken on a decidedly more residential orientation.

There are a number of designated areas in Markham that permit office uses as-of-right, including many with no limitations on building size or height. While this has obvious advantages from a land use and density perspective, there are certain downsides to such a policy framework. Most notably, these broad-based policy permissions might potentially diminish the speed at which the Town of Markham can achieve a higher concentration of office growth - particularly in strategic places such as Markham Centre. Some policies may need to be developed or refined to stimulate greater and faster office take-up in Markham Centre. In this regard, the Town of Markham is now considering reduced on-site parking standards and the possible development of publicly-accessible, shared parking structures as a means of attracting additional office construction, and the achievement of greater building densities, nearing or exceeding 1 times coverage (1.0 FAR).

¹⁸ Cushman & Wakefield LePage, 4th Quarter Toronto Office Report.

8.3 Industrial Market Trends

In a recent *Industrial Market Report*, Colliers International, one of the Canada's leading real estate brokerage firms suggested, "the industrial class of property has become increasingly connected with the movement of goods into and around the region, as opposed to the manufacturing of goods. This shift has insulated Toronto's industrial market from the severity of declines seen [elsewhere] in the manufacturing sector."¹⁹

The shift towards low density, space expansive industrial development required for logistics and warehousing operations has significant implications for the achievement of density targets in terms of the number of jobs to be expected on a per hectare basis.

Although job losses in manufacturing have been significant over the past five years, there does appear to be some bright spots within the sector, especially as they related to emerging fields. Manufacturing in Canada has seen developments in several niche technology areas such as: nanotechnology, advanced materials, micro-electrical systems, robotics, semiconductors, and energy and environment. In the future, growth in the manufacturing sector is expected to be more closely focused on four broad types of activities²⁰:

- Design and engineering work;
- Fabrication of higher value-added, knowledge-intensive goods;
- Fabrication of goods that are not easily/economically shipped long distances; and
- Fabrication of semi-processed, resource-based goods exported for further processing in low-cost jurisdictions such as China.

Markham's industrial base is in fact very well positioned to meet these changes in the manufacturing sector.

¹⁹ Colliers International, Greater Toronto Area Industrial Market Report & Forecast, Fall 2008

²⁰ BMO Industry Update: Manufacturing in Canada - Longer-Term Prospects in a Challenging Environment, February 2007

9. Markham Employment Forecasts

In this section we briefly review the long term employment projections for the Town of Markham prepared by York Region in late 2008 and early 2009. These projections form the basis of our analysis of future employment land needs in Markham. The long term forecasts prepared by York Region are intended to be the policy forecasts that Markham must adopt for its own planning purposes. Markham is moving forward with its own Official Plan update. This update must conform to York Region's new Official Plan.

The forecasts contained in this section are based on 5-year increments and consider the 2031 time frame mandated by the Provincial Growth Plan. Our analysis also takes into consideration a longer-term, 2051 time horizon, in order to ensure that all land-use decisions reflect the need to achieve balanced and complete communities for generations to come. The decisions that we make today, will influence the way we provide services in the future. As such, it is critically important that Markham establishes a coherent foundation for sustained economic growth, and that its employment areas are not threatened, weakened or compromised by other important uses which will also need to be accommodated.

9.1 Markham Employment Forecast (York Region)

Based on the most up-to-date planning forecasts provided by the Region, the Town of Markham will need to accommodate an additional 103,700 jobs between 2006 and 2031, plus an additional 64,200 jobs by 2051. This corresponds to an average annual growth rate of 2.6%.

Figure 9.1 Markham Employment Forecast (York Region forecast)

	Activity Rate	Employment	Share of Growth Region	
2006	53%	144,800	31%	21,900
2011	61%	178,200	31%	33,400
2016	64%	206,300	31%	28,100
2021	64%	226,800	31%	20,500
2026	62%	238,000	31%	11,200
2031	61%	248,500	31%	10,500
2036	59%	268,500	31%	20,000
2041	60%	288,400	32%	19,900
2046	61%	301,500	32%	13,100
2051	61%	312,700	32%	11,200

Source: York Region, June 2008

Land use planning now relies on three broad employment categories for planning purposes.

York Region's has established the following employment forecasts for PRE, MOE and ELE jobs. These are summarized in Figure 9.2 below.

TABLE 9.2 EMPLOYMENT FORECAST IN MARKHAM 2006-2051

	Population-Related Employment (PRE)		Major Employment (MOE)		Office Employment (ELE)		Land Employment Total
	Employees	% share	Employees	% share	Employees	% share	
2006	47,500	33%	47,400	33%	49,900	34%	144,800
2011	54,600	31%	61,550	35%	62,050	35%	178,200
2016	61,600	30%	73,000	35%	71,700	35%	206,300
2021	67,500	30%	80,600	36%	78,700	35%	226,800
2026	70,500	30%	84,700	36%	82,800	35%	238,000
2031	73,300	29%	88,700	36%	86,500	35%	248,500
2036	78,300	29%	95,700	36%	94,500	35%	268,500
2041	83,700	29%	103,600	36%	101,100	35%	288,400
2046	87,300	29%	110,000	36%	104,200	35%	301,500
2051	89,700	29%	115,600	37%	107,400	34%	312,700

Source: York Region, June 2008

10. Industrial Land Forecasts (ELE, MOE, PRE)

Given the long-range time frames used for employment land forecasting (i.e. 20+ years), the risk of a critical shortage of employment land in most municipalities is relatively low since municipalities are required to undertake five year OP reviews which normally require a thorough review of land supply conditions. These reviews provide municipalities with appropriate opportunities to make systematic corrections or adjustments to the land supply in order to avoid land deficits which may materialize in future years.

The analysis prepared in this section utilizes the employment growth forecasts now adopted by York Region as part of its own Official Plan update. These forecasts are applied to the designated industrial land supply within the Town, as a means to determine whether the municipality's existing lands are capable of supporting the full scale of job growth anticipated over the long term.

This section deals specifically with Markham's industrial land base, and its physical capacity to accommodate the allocated employment growth over the planning horizon, including:

- all of the regionally allocated ELE jobs (100%),
- a moderate-to-significant amount of regionally allocated MOE jobs (50% to 90%) , and
- a small but stable share of the regionally allocated PRE jobs (15% excluding work at home).

10.1 Methodology

The current Provincially-accepted approach to forecasting industrial land needs was developed nearly 15 years ago. In 1995, as part of the Planning Act review, the Province published a document entitled, *Projection Methodology Guideline: A Guide to Projecting Population, Housing Need, Employment and Related Land Requirements*. This document was intended to be used as a guideline to assist in the preparation of municipal level population and employment forecasts for land use planning purposes.

It is our perspective that there is no one 'best' methodology that can be applied universally in each and every municipality. Pending further guidance on forecasting methodologies from the Province, however, the current starting point for the approach remains the 1995 Guideline. The employment categories set out in that document have been employed as the basis for the

forecasts developed in this section and include: ELE, MOE and PRE. These are the same categories of employment identified in the Growth Plan, and have been discussed at length elsewhere in this report.

The Regional Planning Commissioners of Ontario (RPCO) have recommended that planning land requirements for employment land should be based on a long term horizon, and that addressing only the 2031 time frame could potentially preclude opportunities for managing lands wisely and efficiently beyond this horizon. As a result, 2051 has been cited as a longer term horizon and the Region's forecasts have been prepared to reflect this commitment toward a longer term perspective. We understand that York Region will be moving toward the protection of employment land for the period from 2031 to 2051. Accordingly, the analysis prepared in this section also includes assumptions to determine the scale of industrial land requirements in Markham out to that end date.

10.2 Employment Land Needs Analysis

Our analysis of land need (or demand) is predicated on the employment forecasts prepared by York Region and the designated industrial land supply which are now available within the current settlement area of Markham. The land supply includes all lands that are designated for industrial purposes (covering BPA, BCA and GIA designations).

The following subheadings explain the underlying rationale and assumptions used to drive our long range forecasts of industrial land need for the Town of Markham.

10.2.1 Work at Home

For forecasting purposes, work at home employment is embedded within the PRE category. These jobs are entirely directed to residential areas of Markham. For industrial and commercial forecasting purposes, the work at home segment of the labour market is projected outwards on the basis of a stabilized 7% of total employment. These employees (jobs) are subsequently *excluded* from future land need calculations.

10.2.2 Job Density

While employment areas may intensify over time, recent evidence in suburban markets across the province suggest that overall employment densities on industrial lands are actually dropping. In fact, the supporting background work relating to employment lands analysis prepared by the Province, entitled, *Planning for Employment in the Greater Golden Horseshoe*, suggests that employment densities in manufacturing are expected to decline as automation practices and outsourcing of certain business functions become more prevalent. In Markham, manufacturing

employment accounts for roughly one third of the total ELE. The rapid expansion of large warehouse and distribution facilities across the province is also having a significant impact on employment densities.

The Growth Plan has established a density target for future greenfield development. These are set at 50 employees per gross hectare gross - or 58 employees per net hectare - assuming a conversion of gross to net of 85%.

The employment densities laid out in the Growth Plan are entirely consistent with those already being achieved in Markham.

Markham's ELE density as of 2006 is 58 jobs per net hectare compared to 50 jobs net per hectare for the Region as a whole. The 2008 estimate has been calculated at closer to 65 employees per net hectare. For forecasting purpose, however, we have utilized what we believe to be a "best in class" estimate of **60 jobs per net hectare**, recognizing that: (a) Markham has become, and will remain a strong business environment, and (b) above average land prices will continue to dictate that land users will maximize their operations in Markham to the fullest extent possible.

In terms of major office space, we support the notion that Markham can and will continue to achieve greater efficiencies over time. On this basis, we suggest that Markham will yield significantly higher employment densities on lands that are built out with major office buildings. In this regard we have established a density target at **285 employees per net hectare by 2031**. In developing our forecast targets we have assumed that office buildings would generally achieve a coverage factor in the order of 0.8 FAR (e.g. a 1 hectare site at 0.8 FAR, would support, on average, 8,000 square metres of GFA), and that there would be 1 employee for every 28 square metres of GFA (e.g. 8,000 square metres GFA / 28 square metres per employee = 285 employees per net hectare).

In recognition that PRE occupies an important economic function within Markham's industrial areas, we have assumed that PRE within such areas will achieve a density level that supports, on average about **90 jobs per net hectare**. This density assumes built forms between 0.35 and 0.40 FAR, and that there would be 1 employee for every 42 square metres of GFA.

On a combined ELE/MOE/PRE, Markham's industrial areas are expected to sustain total density levels in the order of 90 to 95 employees per net hectare.

10.2.3 Share of Major Office Employment on Industrial Land

The present time, virtually all of Markham's MOE jobs are actually located on industrial designated lands, principally within the *business park* area designation. Current land uses policies

at the provincial and the regional level seek to direct MOE to nodes served by high order transit stations such as those in the newly defined Urban Growth Centres (UGC) (e.g. Markham Centre, Langstaff Gateway) or along key transit corridors such as Highway 7 and Yonge Street, commonly referred to as Key Development Areas (KDAs).

Markham is ambitiously moving forward with its growth management strategy to integrate and maximize the amount of Major Office development to be achieved within these areas.

For forecasting purposes, we recognize that Markham's ability to redirect all of the MOE growth to the UGCs and KDAs such as those along Highway 7 and Yonge Street is somewhat unrealistic, and in fact, would not be in the best interests of the Town's economic base.

Today, about 90% of the 53,060 MOE jobs in Markham are situated on industrially designated lands (principally in the Allstate and Commerce Valley areas). This represents 47,750 jobs. The remaining 10% of MOE jobs are largely attributed to three large enterprises (IBM, Hopewell and Motorola) - all of which are located on lands within Markham Centre (or Downtown Markham), which are broadly designated as Community Amenity Area.

Between 2008 and 2031, the total number of MOE jobs in Markham is forecast to grow by 35,640 new office jobs, representing the single largest category of growth. On a go forward basis, we fully recognize that Markham's efforts to intensify and concentrate office development within Markham Centre -- in addition to key sites along major transit corridors, such as Highway 7 and Yonge Street, can and will be achieved -- albeit with varying degrees of success.

To this end, we have modeled *three* different development scenarios which all recognize that Markham's MOE job growth will stimulate the need for nearly 1.0 million square metres (10.7 million square feet) of new office space over the next 23 years.

- **Scenario 1:** Assumes that 85% of all new MOE jobs between 2008 and 2031 will be located in MC and other KDAs. At this rate, Markham's industrial business park areas (BPAs) would support 60% of the total office jobs in 2031;
- **Scenario 2:** Assumes that nearly half (or 47%) of all new MOE jobs between 2008 and 2031 are located in MC and other KDAs. At this rate, Markham's BPAs would still support 75% of the total office jobs in 2031; and
- **Scenario 3:** Assumes that 10% of all new MOE jobs between 2008 and 2031 are located in MC and other KDAs. At this rate the *status quo* will prevail with Markham's BPAs continuing to support 90% of all MOE jobs in 2031.

The results of our MOE share analysis are summarized in the Figure 11.0 below:

TABLE 11.0 – GROWTH SCENARIOS OPTIONS FOR MAJOR OFFICE EMPLOYMENT AND SPACE IN MARKHAM, 2008-2031

TOTAL MOE JOBS IN MARKHAM	2008		2031		GROWTH		ADDITIONAL GFA REQUIRED	
	53,060 jobs		88,700 jobs		35,640 jobs		SM /job @ 28	SF/job @ 300
Scenario 1: Markham Centre/KDAs becomes a Major Success								
MOE Jobs							Square Metres	Square Feet
Inside MC/KDA	5,306	10%	35,480	40%	30,174	85%	845,000	9,052,000
INDUSTRIAL LANDS (Outside MC/KDA)	47,754	90%	53,220	60%	5,466	15%	153,000	1,640,000
Total	53,060	100%	88,700	100%	35,640	100%	998,000	10,692,000
Scenario 2: Markham Centre /KDAs Successfully Achieves a Balanced amount of MOE Job Growth								
MOE Jobs								
Inside MC/KDA	5,306	10%	22,175	25%	16,869	47%	472,000	5,061,000
INDUSTRIAL LANDS (Outside MC/KDA)	47,754	90%	66,525	75%	18,771	53%	526,000	5,631,000
Total	53,060	100%	88,700	100%	35,640	100%	998,000	10,692,000
Scenario 3: Markham Centre/ KDAs Build out as a Predominately Residential Nodes								
MOE Jobs								
Inside MC/KDA	5,306	10%	8,870	10%	3,564	10%	100,000	1,069,000
INDUSTRIAL LANDS (Outside MC/KDA)	47,754	90%	79,830	90%	32,076	90%	898,000	9,623,000
Total	53,060	100%	88,700	100%	35,640	100%	998,000	10,692,000

Source: urbanMetrics

10.2.4 Share of Population Related Employment on Industrial Lands

Recognizing that certain PRE businesses have specific land, building and/or economic requirements that can't be realized in more conventional commercial or institutional areas; and that the day-to-day needs of workers within industrial areas also need to be met with convenient PRE uses (such as restaurants, banks, etc.), we have conservatively allocated 15% of Markham's PRE job base (net of work at home) to the Town's industrial employment lands.

Over the 2008 to 2031 period a 15% share yields about 2,330 new PRE jobs. These uses will need to be accommodated within the BCA, GIA and BPA designations. Further analysis and discussion of these jobs is provided in the following section of this report (Section 11).

10.2.5 Market Contingency

For long range forecasting purposes, our customary approach is to assign a market contingency for industrial land in the order of 10 to 25%.

A market contingency is an adjustment factor that is applied as a planning *safeguard*, to ensure that a certain proportion of land should remain vacant – at all times - to provide the business and investment community with a healthy range of land development options at a variety of locations and price points to sustain on-going industrial development. Another practical benefit of using a market contingency adjustment is that it provides a certain degree of flexibility for a municipality, especially when confronted with unanticipated opportunities for economic development (i.e. a major new manufacturing plant or a new post-secondary educational campus that has above average land requirements). While the application of a market contingency is

FIGURE 10.1

SCENARIO 1: LOWER DEVELOPMENT PRESSURE ON EMPLOYMENT LANDS

MARKHAM CENTRE & KEY DEVELOPMENT AREAS BECOME HIGH DENSITY OFFICE NODE (9 million square feet by 2031)

LONG TERM INDUSTRIAL EMPLOYMENT LAND REQUIREMENTS - Town of Markham

	Baseline		Forecast								
	2006	2008	2011	2016	2021	2026	2031	2036	2041	2046	2051
Population (live in Markham)	272,500	284,900	303,500	337,800	370,500	399,100	423,500	453,500	479,500	496,400	508,900
Incremental Growth		12,400	18,600	34,300	32,700	28,600	24,400	30,000	26,000	16,900	12,500
Annual Growth Rate		2.3%	2.2%	2.3%	1.9%	1.5%	1.2%	1.4%	1.1%	0.7%	0.5%
Activity Rate		53%	59%	61%	61%	60%	59%	59%	60%	61%	61%
Employment (Jobs in Markham)	144,800	158,140	178,200	206,300	226,800	238,000	248,500	268,500	288,400	301,500	312,700
Employment Land Employment											
Share	34.5%	34.8%	34.8%	34.8%	34.7%	34.8%	34.8%	35.2%	35.1%	34.6%	34.3%
Major Office Employment	47,400	53,060	61,550	73,000	80,600	84,700	88,700	95,700	103,600	110,000	115,600
Share	32.7%	33.5%	34.5%	35.4%	35.5%	35.6%	35.7%	35.6%	35.9%	36.5%	37.0%
Population-Related Employment	47,500	50,340	54,600	61,600	67,500	70,500	73,300	78,300	83,700	87,300	89,700
Share	32.8%	31.8%	30.6%	29.9%	29.8%	29.6%	29.5%	29.2%	29.0%	29.0%	28.7%
Minus: Work at Home (PRE)	11,000	11,900	12,500	14,400	15,900	16,700	17,400	18,800	20,200	21,100	21,900
Share	7.6%	7.5%	7.0%	7.0%	7.0%	7.0%	7.0%	7%	7%	7%	7%
Minus: Employment in Residential Areas (PRE)	4,038	4,279	4,641	5,236	5,738	5,993	6,231	6,656	7,115	7,421	7,625
Share	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Employment Requiring Non-Residential Land	133,800	146,240	145,700	191,900	210,900	221,300	231,100	249,700	268,200	280,400	290,800
ELE	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
MOE	47,400	53,060	61,550	73,000	80,600	84,700	88,700	95,700	103,600	110,000	115,600
PRE	32,460	34,160	37,460	41,960	45,860	47,810	49,670	52,840	56,390	58,780	60,180
Employment Land Requirement											
ELE share in BPA/BCA/GIA	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ELE jobs in BPA/BCA/GIA	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
ELE Job Density (employees per net hectare)	58	65	60	60	60	60	60	65	65	65	65
Land Required (net ha) @ 58 eph, increasing to 60 eph by 2031 and 65 eph by 2051.	860	842	1,034	1,195	1,312	1,380	1,442	1,454	1,555	1,603	1,652
MOE share in BPA/BCA/GIA	90%	90%	80%	75%	70%	65%	60%	65%	65%	65%	65%
MOE jobs in BPA/BCA/GIA	42,552	47,754	49,240	54,750	56,420	55,055	53,220	62,205	67,340	71,500	75,140
MOE Job Density (employees per net hectare)	275	280	280	285	285	285	285	290	290	295	300
Land Required (net ha) @ 280 eph, increasing to 285 by 2031 and 300 by 2051	155	171	176	192	198	193	187	215	232	242	250
PRE share in BPA/BCA/GIA	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
PRE jobs in BPA/BCA/GIA	4,869	5,124	5,619	6,294	6,879	7,172	7,451	7,926	8,459	8,817	9,027
PRE Job Density (employees per net hectare)	90	90	90	90	90	90	90	90	90	90	90
Land Required (net ha) @ 90 eph	54	57	62	70	76	80	83	88	94	98	100
Total Jobs on Employment Land (ELE+MOE+PRE)	97,300	107,600	116,900	132,700	142,000	145,000	147,200	164,600	176,900	184,500	191,600
Density Yields (employees per net hectare) - calculated		103	92	91	90	88	86	94	94	95	90
Sub-Total Employment Land Required (ELE+MOE+PRE)	1,040		1,272	1,457	1,586	1,653	1,711	1,756	1,882	1,943	2,003
plus: Market Contingency (Land Vacancy Safeguard) 7.5%		78	95	109	119	124	128	176	188	194	200
TOTAL EMPLOYMENT LAND REQUIRED (net ha)		1,118	1,368	1,566	1,705	1,777	1,840	1,932	2,070	2,138	2,203
CUMULATIVE LAND REQUIRED (net ha)			250	448	587	659	722	814	952	1,020	1,085
Employment Land Supply 2008											
Occupied Employment Lands (net hectares)		1,040									
Vacant Employment Lands (net hectares)		485									
Total Employment Lands (net hectares)		1,525									
EMPLOYMENT LAND SURPLUS (SHORTFALL) - NET HECTARES			157	(41)	(180)	(252)	(315)	(407)	(545)	(613)	(678)
EMPLOYMENT LAND SURPLUS (SHORTFALL) - GROSS HECTARES (@ 1.25 NET to GROSS FACTOR)			196	(52)	(225)	(315)	(393)	(509)	(681)	(766)	(848)

Source: urbanMetrics Inc.



FIGURE 10.2
SCENARIO 2: REFERENCE FORECAST
MARKHAM CENTRE & KEY DEVELOPMENT AREAS YEILD HEALTHY/BALANCED OFFICE TAKE-UP (5 million square feet office by 2031)
LONG TERM INDUSTRIAL EMPLOYMENT LAND REQUIREMENTS - Town of Markham

	Baseline		Forecast								
	2004	2008	2011	2016	2021	2026	2031	2036	2041	2046	2051
Population (live in Markham)	272,500	284,900	303,500	337,800	370,500	399,100	423,500	453,500	479,500	496,400	508,900
Incremental Growth	12,400		18,600	34,300	32,700	28,600	24,400	30,000	26,000	16,900	12,500
Annual Growth Rate	2.3%		2.2%	2.3%	1.9%	1.5%	1.2%	1.4%	1.1%	0.7%	0.5%
Activity Rate	53%	56%	59%	61%	61%	60%	59%	59%	60%	61%	61%
Employment (Jobs in Markham)	144,800	158,160	178,200	204,300	226,800	238,000	248,500	268,500	288,400	301,500	312,700
Employment Land Employment	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
Major Office Employment	Share 34.5%	Share 34.6%	Share 34.8%	Share 34.8%	Share 34.7%	Share 34.8%	Share 34.8%	Share 35.2%	Share 35.1%	Share 34.6%	Share 34.3%
Population-Related Employment	Share 32.7%	Share 33.5%	Share 34.5%	Share 35.4%	Share 35.5%	Share 35.6%	Share 35.7%	Share 35.6%	Share 35.9%	Share 36.5%	Share 37.0%
Minus: Work at Home (PRE)	Share 32.8%	Share 31.8%	Share 30.6%	Share 29.9%	Share 29.8%	Share 29.6%	Share 29.5%	Share 29.2%	Share 29.0%	Share 29.0%	Share 28.7%
Minus: Employment in Residential Areas (PRE)	Share 11.00%	Share 11.90%	Share 12.50%	Share 14.40%	Share 15.90%	Share 16.70%	Share 17.40%	Share 18.80%	Share 20.20%	Share 21.10%	Share 21.90%
Employment Requiring Non-Residential Land	Share 7.6%	Share 7.5%	Share 7.0%	Share 7.0%	Share 7.0%	Share 7.0%	Share 7.0%	Share 7%	Share 7%	Share 7%	Share 7%
ELE	4,038	4,279	4,641	5,236	5,738	5,993	6,231	6,656	7,115	7,421	7,625
MOE	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
PRE	133,800	146,260	165,700	191,900	210,900	221,300	231,100	249,700	268,200	280,400	290,800
Employment Land Requirement	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
ELE share in BPA/BCA/GIA	47,400	53,060	61,550	73,000	80,600	84,700	88,700	95,700	103,600	110,000	115,600
ELE jobs in BPA/BCA/GIA	32,460	34,160	37,460	41,960	45,860	47,810	49,670	52,840	56,390	58,780	60,180
ELE Job Density (employees per net hectare)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Land Required (net ha)	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
MOE share in BPA/BCA/GIA	860	842	1,034	1,195	1,312	1,380	1,442	1,454	1,555	1,603	1,652
MOE jobs in BPA/BC/GI	90%	90%	90%	85%	77.5%	75%	75%	70%	70%	65%	65%
MOE Job Density (employees per net hectare)	42,552	47,754	55,395	62,050	62,465	63,525	66,525	66,990	72,520	71,500	75,140
Land Required (net ha)	260	280	280	285	285	285	285	290	290	295	300
PRE share in BPA/BCA/GIA	164	171	198	218	219	223	233	231	250	242	250
PRE jobs in BPA/BCA/GIA	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
PRE Job Density (employees per net hectare)	4,869	5,124	5,619	6,294	6,879	7,172	7,451	7,926	8,459	8,817	9,027
Land Required (net ha)	90	90	90	90	90	90	90	90	90	90	90
Total Jobs on Employment Land (ELE+MOE+PRE)	54	57	62	70	76	80	83	88	94	98	100
Density Yields (employees per net hectare) - calculated	97,300	107,600	123,100	140,000	148,000	153,500	160,500	169,400	182,100	184,500	191,600
Sub-Total Employment Land Required (ELE+MOE+PRE)	103	103	95	94	92	91	91	90	90	95	90
plus: Market Contingency (Land Vacancy Safeguard) 7.5%			1,294	1,483	1,607	1,683	1,758	1,773	1,899	1,943	2,003
TOTAL EMPLOYMENT LAND REQUIRED (net ha)		78	97	111	121	126	132	177	190	194	200
CUMULATIVE LAND REQUIRED (net ha)		1,118	1,392	1,594	1,728	1,809	1,890	1,950	2,089	2,138	2,203
Employment Land Supply 2008			274	476	610	691	772	832	971	1,020	1,085
Occupied Employment Lands (net hectares)											
Vacant Employment Lands (net hectares)		1,040									
Total Employment Lands (net hectares)		485									
EMPLOYMENT LAND SURPLUS (SHORTFALL) - NET HECTARES		1,525	133	(69)	(203)	(284)	(345)	(425)	(564)	(614)	(678)
EMPLOYMENT LAND SUPPLUS (SHORTFALL) - GROSS HECTARES (@ 1.25 NET TO GROSS FACTOR)			167	(86)	(254)	(355)	(436)	(531)	(705)	(768)	(848)

Source: urbanMetrics Inc.

FIGURE 10.3

SCENARIO 3: HIGHER DEVELOPMENT PRESSURE ON EMPLOYMENT LANDS

MARKHAM CENTRE & KEY DEVELOPMENT AREAS BUILD OUT WITH PREDOMINATELY RESIDENTIAL USES (1 million square feet office)

LONG TERM INDUSTRIAL EMPLOYMENT LAND REQUIREMENTS - Town of Markham

	Baseline		Forecast								
	2006	2008	2011	2016	2021	2026	2031	2036	2041	2046	2051
Population (live in Markham)	272,500	284,900	303,500	337,800	370,500	399,100	423,500	453,500	479,500	496,400	508,900
Incremental Growth		12,400	18,600	34,300	32,700	28,600	24,400	30,000	26,000	16,900	12,500
Annual Growth Rate		2.3%	2.2%	2.3%	1.9%	1.5%	1.2%	1.4%	1.1%	0.7%	0.5%
Activity Rate		53%	59%	61%	61%	60%	59%	59%	60%	61%	61%
Employment (Jobs in Markham)	144,800	158,160	178,200	206,300	226,800	238,000	248,500	268,500	288,400	301,500	312,700
Employment Land Employment	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
Major Office Employment	47,400	53,060	61,550	73,000	80,600	84,700	88,700	95,700	103,600	110,000	115,600
Population-Related Employment	47,500	50,340	54,600	61,600	67,500	70,500	73,300	78,300	83,700	87,300	89,700
Minus: Work at Home (PRE)	11,000	11,900	12,500	14,400	15,900	16,700	17,400	18,800	20,200	21,100	21,900
Minus: Employment in Residential Areas (PRE)	4,038	4,279	4,641	5,236	5,738	5,993	6,231	6,656	7,115	7,421	7,625
Employment Requiring Non-Residential Land	133,800	146,260	165,700	191,900	210,900	221,300	231,100	249,700	268,200	280,400	290,800
ELE	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
MOE	47,400	53,060	61,550	73,000	80,600	84,700	88,700	95,700	103,600	110,000	115,600
PRE	32,460	34,160	37,460	41,960	45,860	47,810	49,670	52,840	56,390	58,780	60,180
Employment Land Requirement											
ELE share in BPA/BCA/GIA	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ELE jobs in BPA/BCA/GIA	49,900	54,760	62,050	71,700	78,700	82,800	86,500	94,500	101,100	104,200	107,400
ELE Job Density (employees per net hectare)	58	65	60	60	60	60	60	65	65	65	65
Land Required (net ha)	860	842	1,034	1,195	1,312	1,380	1,442	1,454	1,555	1,603	1,652
MOE share in BPA/BCA/GIA	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
MOE jobs in BPA/BC/GI	42,552	47,754	55,395	65,700	72,540	76,230	79,830	86,130	93,240	99,000	104,040
MOE Job Density (employees per net hectare)	275	280	280	285	285	285	285	290	290	295	300
Land Required (net ha)	155	171	198	231	255	267	280	297	322	336	347
PRE share in BPA/BCA/GIA	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
PRE jobs in BPA/BCA/GIA	4,869	5,124	5,619	6,294	6,879	7,172	7,451	7,926	8,459	8,817	9,027
PRE Job Density (employees per net hectare)	90	90	90	90	90	90	90	90	90	90	90
Land Required (net ha)	54	57	62	70	76	80	83	88	94	98	100
Total Jobs on Employment Land (ELE+MOE+PRE)	97,300	107,600	123,100	143,700	158,100	166,200	173,800	188,400	202,800	212,000	220,500
Density Yields (employees per net hectare) - calculated		103	95	96	96	96	96	103	103	104	105
Sub-Total Employment Land Required (ELE+MOE+PRE)		1,040	1,294	1,495	1,643	1,727	1,805	1,839	1,971	2,037	2,099
plus: Market Contingency (Land Vacancy Safeguard) 7.5%		78	97	112	123	130	135	184	197	204	210
TOTAL EMPLOYMENT LAND REQUIRED (net ha)		1,118	1,392	1,608	1,766	1,857	1,940	2,023	2,168	2,240	2,309
CUMULATIVE LAND REQUIRED (net ha)			274	490	648	739	822	905	1,050	1,122	1,191
Employment Land Supply 2008											
Occupied Employment Lands (net hectares)		1,040									
Vacant Employment Lands (net hectares)		485									
Total Employment Lands (net hectares)		1,525									
EMPLOYMENT LAND SURPLUS (SHORTFALL) - NET HECTARES			133	(83)	(241)	(332)	(415)	(498)	(643)	(715)	(784)
EMPLOYMENT LAND SUPPLUS (SHORTFALL) - GROSS HECTARES (@ 1.25 NET to GROSS FACTOR)			167	(103)	(301)	(415)	(519)	(622)	(804)	(894)	(980)

Source: urbanMetrics inc.

purely discretionary²¹, we strongly suggest that municipalities maintain their vacant industrial land inventories at levels that are at least 10% above what is projected. In the case of Markham, which hopes to maintain a strong agricultural base, and which also has exceptional opportunities for intensification, we have taken a much more conservative approach. For forecasting purposes we have assumed a market contingency of 7.5%. This is the lowest level we would ever advocate, but we have elected to do so on the basis that the Town does not want to over prescribe the amount of rural land to be redesignated for urban (and industrial) purposes.

10.3 Industrial Land Requirements – The Results

Over the forecast period, our independent analysis suggests that Markham's current base of industrial land --1,525 net hectares (including 485 hectares of vacant land), is simply not large enough to support the employment growth allocations for ELE and MOE jobs, as well as a working allocation for PRE uses.

The results of our analysis which are provided in Figures 10.1, 10.2 and 10.3 suggest that:

1. **Markham will begin to experience a competitive shortfall of land as early as 2016. This shortfall is apparent under all three scenarios. The extent of this shortfall is expected to fall somewhere between 40 to 80 net hectares (or 50 to 125 gross hectares). The Town must begin to address this shortfall now.**
2. **Over the 2008 to 2031 study period, the extent of this shortfall will continue to grow. If no additional industrial lands are provided, the Town of Markham will clearly experience a serious shortfall of industrial land over the 2031 planning horizon. Our analysis suggests that the extent of the shortfall is in the order of 315 to 415 net hectares (or 395 to 520 gross hectares).**
3. **Over the extended, 2051 longer term planning horizon, the extent of this shortfall will continue to magnify if no industrial lands are added. By 2051, Markham will require at total of 680 to 785 net hectares (or 850 to 980 gross hectares) in addition to the lands that are presently designated.**

²¹ While the MMAH&MPIR suggested in their comments for the Durham Region Growth Management exercise that "The Provincial Projection Methodology Guideline does not support the use of vacancy factors when dealing with long term planning horizons", York Region uses a combined value of 30% to which is assumed to also include market flexibility and vacancy allowances.

It is important to stress that, under all three scenarios - including a scenario whereby a significant amount of employment growth is directed toward more intensive development in Markham Centre and other Key Development Areas - Markham's ability to support its full economic potential, and to support the Regional and Provincial 2031 growth forecasts are compromised by the size of Markham's current industrial land supply. It is also important to recognize that the analysis of land need is also predicated on "best-case" assumptions regarding density and market contingency.

10.4 Forecasts are Consistent with Region's Estimate for Markham

York Region has recently prepared a Land Budget for long-term employment land needs. This study, released in January 2009, concluded that York Region as a whole does not have sufficient employment land, and that lands outside the current settlement areas would be needed for employment (industrial) development purposes before 2031. Specifically, the report recognized the need for an additional 1,066 hectares of developable land outside the current settlement areas in York Region be set aside for employment purposes. In recognition of the strategic role that Markham has as a major employment centre, and the location of certain lands outside the current settlement area in Markham (i.e. near 400 Series Highways), it was determined that **437 hectares of new employment land would be needed in the Town of Markham to accommodate both local and regional employment growth by the year 2031.**

While the forecast methodology used by urbanMetrics under the three scenarios presented in the section above is somewhat different than the approach used by the Region, **our analysis has yielded very similar results suggesting that between 395 and 520 gross hectares of new employment land** outside the current settlement area will be needed to support the allocated employment growth.

11. Commercial Land Forecasts (PRE)

In the previous section we prepared a long-range forecast of industrial land requirements for Markham, determining that the Town would need additional land to support a diversified base of employment and economic functions. As part of that analysis, it was determined that an allocation in the order of 15% of Markham's PRE jobs could be functionally situated within the Town's industrial areas. Over the 2031 forecast period, a total of 2,335 new jobs have been allocated as part of Markham's industrial land budget.

Based on York Region's forecasts, the Town of Markham is expected to grow by 138,600 residents between 2008 and 2031. By the end of the forecast period Markham's total population is expected to reach 423,500 persons. As the population of the Town grows, so too does the need for jobs that directly serve Markham residents. Population growth will drive the need for teachers, doctors, sales clerks, auto mechanics, government staff, etc. Since PRE jobs are intended to serve the needs of the population, it is in the best interest of the community that the majority of PRE jobs are actually situated close to residential areas as well as appropriate transportation routes.

11.1 PRE Job Growth

Recognizing that PRE jobs are directly linked to population growth, we have prepared forecasts that are predicated on the notion that each new PRE job in Markham is supported by approximately 6 persons. In other words, for every 6 residents there will be one corresponding job created.

Over the forecast period, Markham is expected to support a total of 22,900 new PRE jobs. This includes approximately 5,400 new home-based (work at home) PRE jobs. For planning purposes, home-based occupations are included in the PRE category since they tend to be concentrated in residential areas. For long range forecasting, however, this segment of the town's employment base needs to be separated out. On this basis, a total of 17,500 new PRE jobs are expected to serve the needs of 138,600 new residents. This translates into a ratio of a 1 new PRE job created for every 8 new residents.

11.2 PRE Employment Groupings

While PRE encompasses a wide variety of economic activity, we have established a grouping of PRE uses which we believe provides a reasonably strong basis from which to allocate and distribute PRE jobs across key areas of Markham that can fully support jobs.

For forecasting purposes these PRE employment groupings are summarized as follows:

- **Retail, Services and Restaurants:** includes employment within all stores, all personal services (salons, dry cleaners, shoe repair etc.), all bank branches, and all professional offices geared to household (real estate agents, personal insurance brokers, financial advisors, etc.), and all types of restaurants.
- **Automotive Sales and Service:** includes all automobile dealerships, vehicle repair, and fuelling stations. Note that this category does not include Canadian Tire stores.
- **Health/Education/Daycare:** includes hospitals, private clinics and other medical establishments, primary and secondary schools, post secondary schools and other vocational schools, and daycare centres.
- **Government/Public Utilities:** includes jobs in municipal, provincial and federal government, as well as jobs in public government utilities.
- **Leisure/Community/Worship:** includes jobs in public and private recreation facilities, including gyms, health centres and arenas, golf courses, theatres, museums, libraries and places of worship.

11.3 Service Ratios- PRE Jobs per Capita -

Taking guidance from employment yields on a per-capita basis at the Toronto Census Metropolitan Area level, urbanMetrics has developed typical service-level ratios for population related employment. Based on our analysis, we believe the following yields represent a reasonable allocation for Markham:

- **Retail, Service Commercial and Restaurants:** 1 job per 14 residents
- **Automotive Sales and Service:** 1 job per 70 residents
- **Health/Education/Daycare:** 1 job per 45 residents

- **Government/Public Utilities:** 1 job per 200 residents
- **Leisure/Community/Worship:** 1 job per 75 residents

Excluding persons who work at home (5,400), Markham will need to accommodate a total of 17,500 new PRE jobs between 2008 and 2031. For the most part these jobs will be directed to vacant sites and other properties throughout Markham which are designated for Commercial, Recreation, Institutional and Industrial uses.

11.4 Allocation of PRE Jobs in Markham

In carrying forward our analysis of PRE employment accommodation, we have determined that PRE uses can and should be reasonably directed toward four distinct areas of the Town where the needs of residents (and workers) are best served. These areas are summarized as follows:

- Commercially Designated Lands
- Markham Centre and Key Development Areas along Highway 7 and Yonge Street (including Langstaff Gateway)
- Industrial Designated Lands
- Residential and Institutional Lands

Figure 11.1 provides a summary of the share allocations assigned to each of these areas, which are also distributed by major PRE Employment Grouping.



Figure 11.1
Distribution of Population Related Employment (PRE) by Key Land Category

		Population Related Employment Distribution (2008-2031 Growth)									
		Jobs Allocated to Industrial (ELE) Lands		Jobs Allocated to Residential/ Institutional Lands		Jobs Allocated to MC/KDA (UGC)		Jobs Allocated to Commercial Land			
Markham	Population Growth - 2008-2031	new residents:	138,600	Share	Job Yield	Share	Job Yield	Share	Job Yield	Share	Job Yield
PRE Employment Groupings		Service Ratios (persons per job)**									
Retail, Services and Restaurants	14 persons/job	9,900		10%	990	0%	-	25%	2,475	65%	6,435
Automotive Sales and Service	70 persons/job	2,000		55%	1,100	0%	-	0%	-	45%	900
Health/Education/Daycare	45 persons/job	3,100		5%	155	50%	1,550	30%	930	15%	465
Government/Public Utilities	200 persons/job	700		0%	0	20%	140	80%	560	0%	-
Leisure/Community/Worship **	75 persons/job	1,800		5%	90	20%	360	15%	270	15%	270
PRE Jobs Requiring Non-Residential Land					2,335		2,050		4,235		8,070
Plus:											
Home Based Occupations (Work at Home)		5,400		0%	0	95%	5,130	5%	270	0%	-
TOTAL NEW PRE JOBS IN MARKHAM		22,900		jobs:	2,335	jobs:	7,180	jobs:	4,505	jobs:	8,070
		<i>6.1 persons/ PRE job</i>		share:	10%	share:	31%	share:	20%	share:	35%

Source: urbanMetrics inc.

* urbanmetrics estimates based on guidance of 2006 Toronto Census Metropolitan Area employment and population data

**assumes that a significant portion attributed to recreation and rural lands within Markham

The new PRE jobs allocated to **Industrial** areas (2,335) corresponds to the number used in the previous section. Our analysis assumes that about 90% of the future PRE job growth accommodated in Markham's industrial area will be those related to Retail, Service Restaurants (± 990 jobs) and Automotive Sales and Service ($\pm 1,100$ jobs). The remaining 10% will be those tied to more institutional type employment such as places of worship, education, daycare, leisure and recreation facilities.

The number of new PRE jobs allocated to **Residential and Institutional** areas ($\pm 2,050$), are generally those related to local retail/service, healthcare (hospitals), education (public schools, daycares etc) and new government jobs to be located within existing facilities (such as Markham Civic Centre).

New PRE jobs allocated to intensification areas such as **Markham Centre and Key Development Areas** along Highway 7 and Yonge, including Langstaff Gateway will be fundamental to the success of these nodes and corridors as people oriented, mixed use destinations. It is estimated that these areas – on a combined basis - should support approximately one quarter of all new PRE jobs in Markham ($\pm 3,950$ jobs). By virtue of their location and accessibility, these nodes and corridors are expected to be developed as *regionally significant* areas that will attract new economic activity which in turn, will support the interests and needs of local residents and surrounding MOE workers alike. In terms of Retail, Service and Restaurant jobs, these areas are expected to accommodate about a 25% all jobs in this sector

over the next 23 years. In total we estimate that nearly 2,500 retail, service and restaurant jobs should be supported within planned commercial projects in Markham Centre along with other mixed use development in the Key Development Areas that are supported by transit. While commercial jobs will make about 60% of the new PRE jobs in these areas, it is also expected that other important PRE jobs will evolve and gravitate toward these areas over time. Based on new provincial policy directions, Markham Centre will be a preferred location for future government and institutional type development. To this end, the amount of PRE based employment growth is anticipated to account for about 1,760 jobs. These will include a wide variety of jobs typically associated with higher order urban locations. However, it is expected that a significant number of these jobs, especially those associated with government and healthcare will be located in major office buildings.

Finally, new PRE jobs allocated to **commercially designated lands** represent approximately 8,100 jobs, accounting for about 45% of the total new 17,500 PRE jobs in Markham that need to be assigned. Retail, Service and Restaurants are expected to make-up the largest segment of these jobs, representing nearly 6,440 jobs, or about 80% of the jobs assigned to commercially designated lands. In total, commercially designated lands are expected to absorb about two-thirds of all new retail-oriented PRE jobs in Markham over the duration of the 2031 period. In addition to retail-based employment, commercially designated lands in Markham are also expected to accommodate other important PRE jobs, including those related to automotive sales and service (± 900), health and education (± 465) and leisure/community/place of worship (± 270).

11.5 Commercial Space Requirements

Building on the analysis above, this section provides an assessment of the amount of commercial space that the Town of Markham will need to supply in order to support the PRE growth forecasts.

In this analysis we have *excluded* the following types of PRE employment

- 2,050 new jobs assigned to residential and institutional lands (school, hospital, etc), and
- 560 new jobs in the Major Office MOE (government and public utilities).

Figure 11.2 below summarizes the extent of commercial space that will need to be developed in Markham in order to accommodate 14,350 new PRE jobs requiring commercial-type space.



Figure 11.2
Town of Markham Commercial Space Needs to Support PRE Growth, 2008-2031

	PRE JOBS GROWTH 2008-2031	SF PER EMPLOYEE Range			SM PER EMPLOYEE Employee			Million SF Commercial Space Yield			SM Commercial Space Yield		
		ref			ref			low	ref	high	low	ref	high
PRE on Commercial Lands	8,070	350	400	450	32.5	37.2	41.8	2,824,500	3,228,000	3,631,500	262,400	299,900	337,400
PRE in MC/KDA *	3,945	375	400	425	34.8	37.2	39.5	1,479,375	1,578,000	1,676,625	137,400	146,600	155,800
PRE in Industrial Areas	2,335	400	450	500	37.2	41.8	46.5	934,000	1,050,750	1,167,500	86,800	97,600	108,500
TOTAL	14,350							5,237,875	5,856,750	6,475,625	486,600	544,100	601,700
Population Growth in Markham: 2008-2031								138,600					
Per Capita Space Service Level Yields for Future Population Growth								38 42 47			3.5 3.9 4.3		
								Square Feet Per Capita			Square Metres Per Capita		

Source: urbanMetrics inc

* excludes MOE based government/public utilities jobs

In developing our forecasts, we have utilized a “working range” to represent a typical commercial allocation of built space for each employee. Based on our experience, we have established 400 square feet of commercial space for each employee as our “reference” point. On commercial lands we have tested a range stretching from (350-450 sf/emp). For Markham Centre/KDA we have employed a narrower range (375-425 sf/emp) recognizing that higher rental rates in these areas will likely alter utilization patterns. Conversely, for industrial areas, we have employed a more generous allocation (400 to 500) recognizing that lower rental rates provide greater flexibility for businesses to assume leases on larger floor-plates.

By applying these ranges to our employment forecast, Markham will need to support an additional ±545,000 square metres (±5.9 million square feet) of new commercial space to support its full PRE employment allocation.

Industrial areas will account for the smallest share of new PRE commercial space. In order to accommodate 2,300 new PRE jobs, approximately 97,600 square metres (1.05 million square feet) of additional built space will be required. It is expected that much of this space could be absorbed by transitioning lands and buildings within the established and built-out areas of Markham where the use permissions are presently in place, especially in the BCA designation along main roads. Since we are only forecasting about, 1,000 new retail-oriented PRE jobs within industrial areas over the duration of 2031 planning horizon, it is envisioned that only 400,000 square feet (37,300 sm) of retail space is actually needed to support our projected volume of retail oriented PRE job growth at appropriate locations within industrial areas.

Markham Centre and the KDAs are expected to function as the prime locations for economic, leisure and recreational activities which are supported on a community-wide basis. Since these areas are to be supported by higher-order transit, it is expected that PRE-oriented uses will follow suit.

Current planning estimates suggest that Markham Centre alone could support 40,000 residents and 40,000 jobs. In light of this growth we have developed PRE employment estimates that suggest that MC and other KDA along Highway 7 and Yonge could support approximately 3,950 jobs (which works out to about 10% of all jobs directed to Markham Centre). On the basis of built space, 3,950 jobs would stimulate the need for about 1.6 million square feet (146,600 square metres) of new commercial space. We accept that this is a big number, and that accommodating this amount of commercial space will be a significant planning challenge given the high concentration of residential and major office uses which will also need to be integrated into these areas. However, in order for the Town to move forward with its vision of creating engaging mixed use areas, all available options and planning tools, including incentives (i.e. density bonuses) will be necessary to stimulate and support new commercial space as part of this mixed use vision.

Markham's **Commercial Lands** are expected to support nearly 8,100 new jobs over the forecast period. At 400 square feet (37.2 sm) of commercial space per employee, Markham will need to expand its commercial space inventory (on commercially designated lands) by an estimated 3.2 million square feet (300,000 sm). While some of this space could be absorbed by vacant stores and or under-developed parts of existing commercial properties, we have assumed, for planning purposes, that this quantum of space represents the total amount of new construction, which can/should be expected to develop on vacant commercial parcels within the current settlement area; and over time, in new growth areas outside the current settlement area as dictated by future residential growth patterns.

11.6 Per Capita Space

In 2004 John Winter and Associates (JWA) provided a full commercial policy review for the Town of Markham. The Commercial Policy Review determined Markham maintained a sufficient amount of vacant land to support commercial market growth to 2011, but that additional lands would be needed to support growth beyond that year.

The general conclusions were based on a Per Capita analysis that suggests that each Markham resident should support about 53 square feet (4.9 square metres) of built space. While this level is generally consistent with typical ratios used in market analysis there are clear opportunities to

achieve greater space efficiencies, especially in a market such as Markham where land prices tend to be well above average.

Notwithstanding the JWA analysis, the Town of Markham's growth momentum has changed significantly, and a heightened focus has now been placed on concentrating and containing development in a more intensive and strategic manner. As Markham moves forward with this push to intensify land and to direct growth to mixed use centres and corridors, it is fully anticipated that there will be some downward adjustments in the per-capita space requirements. Moreover, as part of our forecasting of total allocated PRE growth to Markham it has been determined that Town's future population will need be supported by $\pm 14,500$ commercial oriented PRE jobs. To this end, we have come up with an alternative, lower measure of per capita space, which we believe should serve as a more reasonable basis for using land as efficiently as possible, and to ensure that Markham aspirations of directing growth and commercial activity in locations that support more compact forms of development can gain a higher degree of market traction.

The analysis, provided at the bottom of Figure 11.2, suggests that Markham can and should be conducting its commercial space planning on the basis of 38 to 47 square feet per capita (3.5 to 3.9 square metres). The reference forecast is 42 square feet (3.9 square metres) per capita. While the methodology is somewhat different than JWA which is based on standard (or *status quo*) forms of development including big box, we believe that our approach is very well grounded in terms Markham's ability to accommodate its anticipated population and job growth requirements, as per York Region's long-range forecasts.

11.7 Warranted Commercial Land Needs in Markham

The Town of Markham currently has approximately 105 net hectares (285 net acres) of vacant land designated for commercial development. By applying a relatively standard 25-30% building coverage factor, this amount of land could realistically support approximately 262,000 to 314,000 square metres (2.8 to 3.4 million square feet) of built space.

In Figure 11.3 below we provide an analysis of how much land would be required to support the PRE commercial job growth ($\pm 8,100$ jobs) broken down by various key PRE Employment Groupings.



Figure 11.3
Accommodation of PRE Commercial Growth in Commercial Areas, 2008-2031

PRE Employment Groupings	New PRE Jobs In Commercial Areas	Jobs Per Net Commercial Hectare (Range)			Total Net Hectares Required For PRE Employment in Commercial Areas		
		ref	High	Ref	Low		
Retail, Services and Restaurants	6,435	80	85	90	80	76	72
Automotive Sales and Service	900	45	55	65	20	16	14
Health/Education/Daycare	465	70	75	85	7	6	5
Government/Public Utilities	-						
Leisure/Community/Worship	270	75	80	90	4	3	3
TOTAL	8,070				111	102	94
Net Vacant Commercial Land (Net Hectares) inside built boundary					105		
Surplus (Deficit)					(6)	3	11

Source: urbanMetrics inc.

The analysis prepared in this figure is predicated on a range of employee yields for a variety of commercial activities on standard or typical jobs per net hectare basis.

For Retail, Service and Restaurants – which is the single largest segment in terms of jobs – Markham would need to support a commercial inventory of ±75 net hectares, at a reference level of 85 jobs per hectare.

Recognizing that other PRE functions will also need to be supported on Commercial Lands we have applied a similar approach, recognizing that certain uses, such as car dealerships generally achieve lower employment yields on a per hectare basis. On a combined basis, these other uses will reasonably require about ±25 hectares of additional land over the forecast period.

Given that Markham currently has 105 hectares of vacant commercial land inside the current settlement area, our long range forecasts suggest that Markham’s vacant land supply is actually very closely aligned with its long term need. Other than retail, service and restaurants, the only other significant driver of commercial land are those related to the automotive sales and service category. Such uses are estimated to account for somewhere between 15%-18% the long-term warranted commercial land. Recognizing the massive transition that is now re-shaping the entire automotive industry, it is reasonable to suggest that long term land requirements for new car