

LOOKING AHEAD

A. QUESTIONS

Where will we live? Where will we work? How many of us will there be? Thirty years from now, Toronto and the Greater Toronto Area will look very different than today. But the origins of the patterns of the future are to be found in the structures of the present and the past. To direct those patterns and have the future reflect our needs and desires, we must act now. To do that, we need to understand the patterns of urban change and of the people who live and work here, and the people who are to come.

Population and employment projections inform long-range planning and infrastructure investment by indicating the scope and scale of population change. Projections provide explainable and defensible guesses about what might happen given a set of assumptions about past events and a model of the processes that relate them. The challenge is to make reasonable projections about where people will be living and working in the City of Toronto in the future. This information assists in identifying concerns regarding urban structure, form and pattern, and in making plans to address them.

This research paper will discuss the models and methodologies used to project population and employment for the city and for smaller areas within it from 1996 to 2031. The report will cover several modelling efforts:

- Regional Population Projections to 2031
- Toronto Population and Household Projections
 - Cohort-Component Model
 - Household Projections

- Projecting Housing Supply
 - the Residential Development Pipeline
 - Opportunities for Development
 - Avenues Residential Capacity Model
 - Downtown Residential Potential
- Demand Versus Supply: Scenarios of Housing Supply to 2031
- Regional Employment Projections to 2031
- Toronto Employment Projections
 - by sector
 - by traffic zone

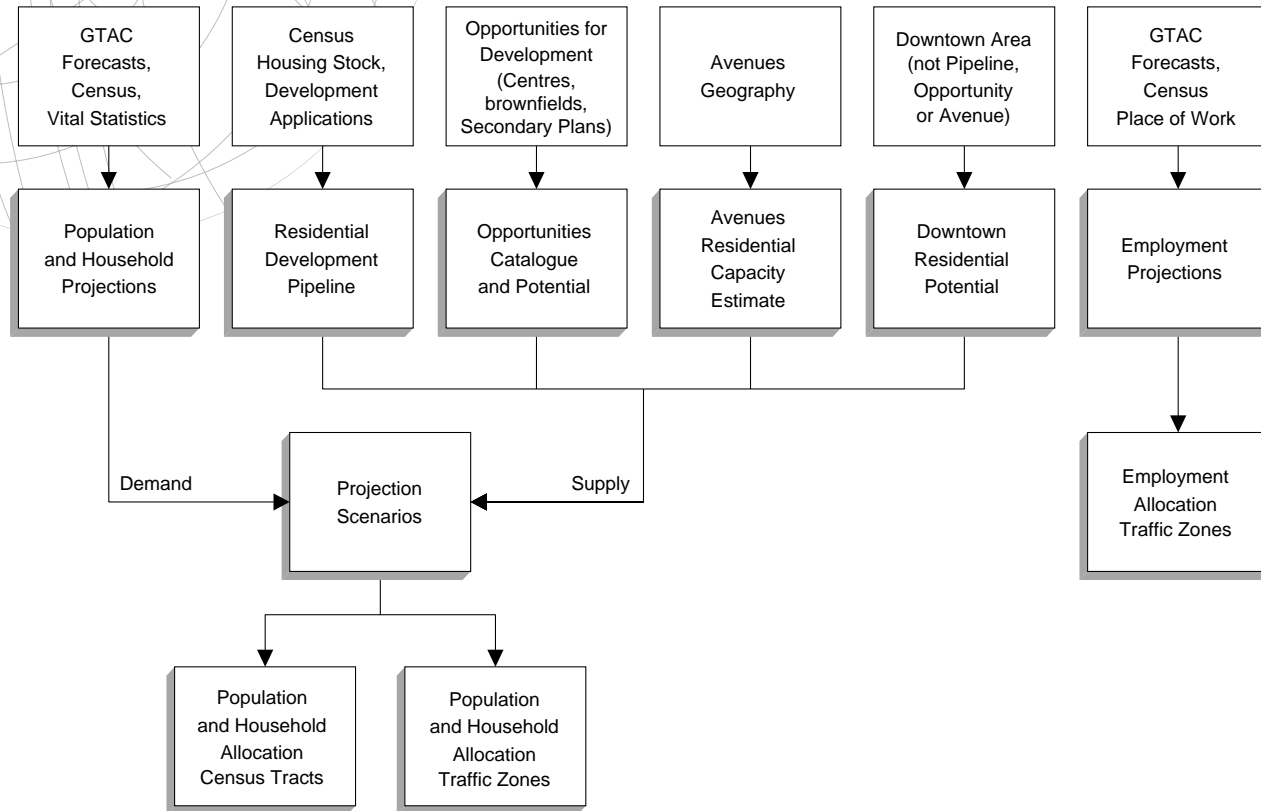
The projection methodology is outlined in Figure 1. A regional population projection is used as a set of control totals for the projection of population. The population is projected by age and sex, over 35 years. The projected population is converted into households, which represent the demand for housing in each time period. The supply of housing is assembled from a variety of sources and phased across the projection timeframe. The components of supply are combined in a number of scenarios to accommodate the projected demand.

Similarly, a regional employment projection is used as a set of control totals for the projection of employment. Trends in regional and citywide employment by sector are developed and applied to the distribution of employment by sector and Traffic Zone in 1996 to determine the future distribution of employment.

So: What does the future look like?

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Figure 1: Population and Employment Projections Methodology: Overview



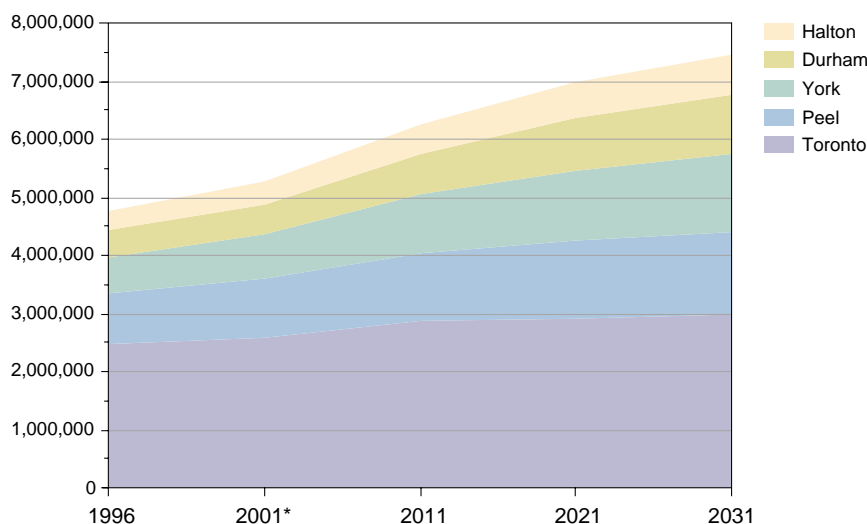
Source: Toronto City Planning Division, Policy and Research V2.0 March, 2002.

B. A VIEW OF THE FUTURE

The Population of the GTA is Growing

The GTA is projected to grow by over 2.6 million to 7.45 million people by 2031. This means that a population equivalent to today's City of Toronto is expected to be added to the GTA between 1996 and 2031. The City itself is forecasted to increase by one-fifth to 3 million by 2031 (see Figure 2). These figures are based on the forecast totals prepared by a committee of the Office of the GTA, the City of Toronto and the Regions of the GTA ("GTAC") as of March 2000 and include a derived Census undercoverage rate of 3.27% (see Table 1).

Figure 2: Forecasted GTA Population



Note: Figures for 1996 are from Statistics Canada. *Figures for 2001 are unofficial.
All figures include the Census undercount.
Source: Statistics Canada; Toronto City Planning Division, Policy and Research.

Table 1: GTA Forecasted Population

	1996	2001*	2011	2021	2031
GTA	4,781,000	5,284,000	6,260,000	6,975,000	7,450,000
Toronto	2,463,000	2,594,000	2,855,000	2,915,000	3,000,000
Durham	474,000	530,000	710,000	900,000	1,000,000
Halton	350,000	400,000	500,000	610,000	690,000
Peel	882,000	1,000,000	1,185,000	1,350,000	1,400,000
York	612,000	760,000	1,010,000	1,200,000	1,360,000

Note: Figures for 1996 are from Statistics Canada. *Figures for 2001 are unofficial.
All figures include the Census undercount.
Source: GTAC, 2000; Toronto City Planning Division, Policy and Research.

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The Regions are anticipated to grow more quickly than the City. By 2021, York will have nearly doubled in size, and Durham and Halton will have reached the same mark about 10 years later. Toronto, the “inner half” of the GTA in 1996, will be home to 4 GTA residents in 10 by 2031.

Toronto’s Population is Growing

The City of Toronto is projected to grow by 537,000 people or 21.8%, from 2,463,000 in

1996 to 3,000,000 by 2031 (see Figure 3). The population is anticipated to grow by just over 130,000 people per five-year period to 2011. The rate of growth will slow to 60,000 per five-year period in the next decade and 85,000 in the third. While Toronto’s forecasted rate of growth is much lower than the other municipalities, its growth is occurring on a population base that is one half of the GTA. Consequently, Toronto will continue to grow strongly, capturing over one-fifth of the GTA’s population increase. This growth is equivalent to adding the current population of Durham to Toronto.

Figure 3: Projected Population of Toronto (with undercoverage)

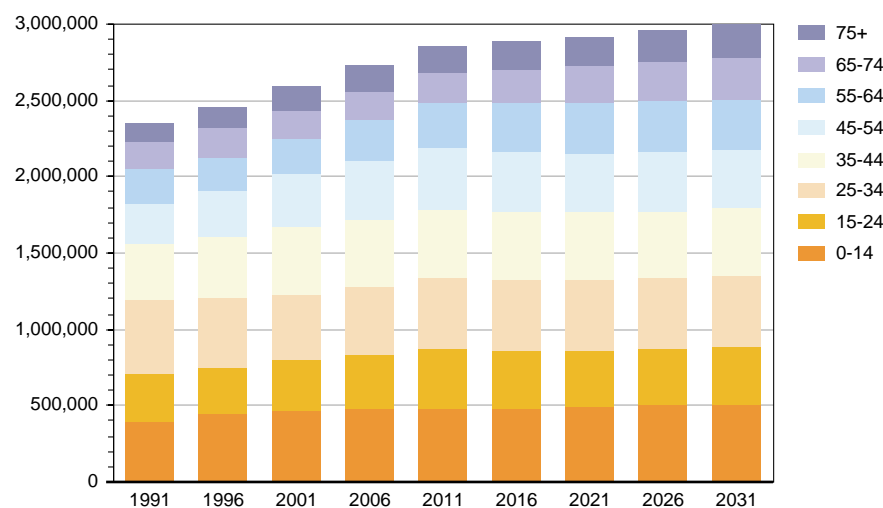


Table 2: Projected Population of Toronto (with undercoverage)

Age	1991*	1996*	2001	2006	2011	2016	2021	2026	2031
0-14	389,452	439,398	465,530	473,932	475,135	480,872	490,573	499,337	501,061
15-24	329,462	306,299	329,396	361,910	393,179	384,288	372,304	373,662	384,210
25-34	477,526	460,920	431,245	445,037	472,373	467,266	467,849	469,542	468,025
35-44	363,779	402,200	443,565	443,777	439,997	438,433	435,324	432,433	436,151
45-54	254,700	299,240	343,936	375,443	403,326	398,323	387,753	388,254	388,207
55-64	234,660	225,072	232,729	267,454	300,175	318,975	335,452	333,810	328,006
65-74	179,385	196,662	193,786	189,293	195,779	217,771	238,053	253,441	266,994
75+	121,224	133,683	154,017	167,938	175,120	179,107	187,357	206,896	227,638
Total	2,350,188	2,463,474	2,594,204	2,724,784	2,855,084	2,885,035	2,914,665	2,957,375	3,000,292
Change		4.8%	5.3%	5.0%	4.8%	1.0%	1.0%	1.5%	1.5%

*Note: 1991 and 1996 figures are from Statistics Canada.

Source: GTAC, 2000; Toronto City Planning Division, Policy and Research.

(For the projections in five-year age and sex cohorts, see “Projections” in the Appendix.)

Toronto's Population is Aging

The number of children is projected to increase by just 61,663 from 439,398 to 501,061 by 2031. Their share of the total population is relatively stable: from 16.6% in 1996 to 16.7% in 2031. Meanwhile, those over 65 years of age represent an increasing share of the total population, up from 12.8% in 1996 to 16.5% by 2031 (see Figure 4). The number of people age 65 and over is expected to increase from 330,345 to 494,632 by 2031.

The proportion of those of working age (between 15 and 65 years of age) is projected to decline from 70.6% to 66.8%, primarily due to out-migration and people aging out of the labour force. Consequently, the dependency ratio i.e. the proportion of those age 15 and under and those age 65 and over versus the total population will rise from 24.2% in 1996 to 33.2% by 2031.

Figure 4: Toronto Population by Age Group Shares

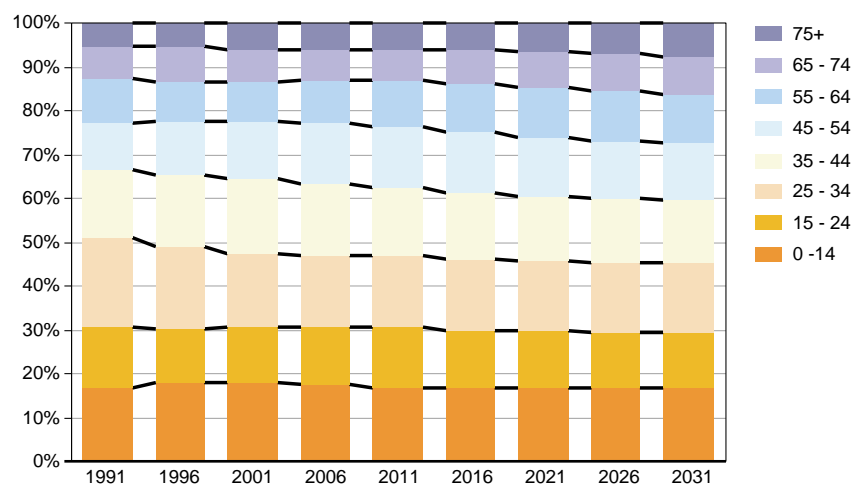


Table 3: Projected Population Shares of Toronto by Age Group

Age	1991*	1996*	2001	2006	2011	2016	2021	2026	2031
0-14	16.6%	17.8%	17.9%	17.4%	16.6%	16.7%	16.8%	16.9%	16.7%
15-24	14.0%	12.4%	12.7%	13.3%	13.8%	13.3%	12.8%	12.6%	12.8%
25-34	20.3%	18.7%	16.6%	16.3%	16.5%	16.2%	16.1%	15.9%	15.6%
35-44	15.5%	16.3%	17.1%	16.3%	15.4%	15.2%	14.9%	14.6%	14.5%
45-54	10.8%	12.1%	13.3%	13.8%	14.1%	13.8%	13.3%	13.1%	12.9%
55-64	10.0%	9.1%	9.0%	9.8%	10.5%	11.1%	11.5%	11.3%	10.9%
65-74	7.6%	8.0%	7.5%	6.9%	6.9%	7.5%	8.2%	8.6%	8.9%
75+	5.2%	5.4%	5.9%	6.2%	6.1%	6.2%	6.4%	7.0%	7.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*Note: 1991 and 1996 figures are from Statistics Canada.

Source: Toronto City Planning Division, Policy and Research.

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The aging of the population is very pronounced for those aged 45 years of age and over, and generally corresponds to the Baby Boom generation (see Figure 5). The impact of this aging on consumer demands and public services will continue well beyond the projection timeframe.

The proportion of those 75 and over is expected to increase 40% relative to the growth of the population as a whole. At the same time, the proportion of those 25 to 44 years of age can be expected to increase, but more slowly than will the total population. This share of the total will decrease to less than 90% of what it was in 1996 (see Table 4). A major factor is that people in this age group are migrating out of the City at a much higher rate than are others.

Figure 5: Toronto Population by Age

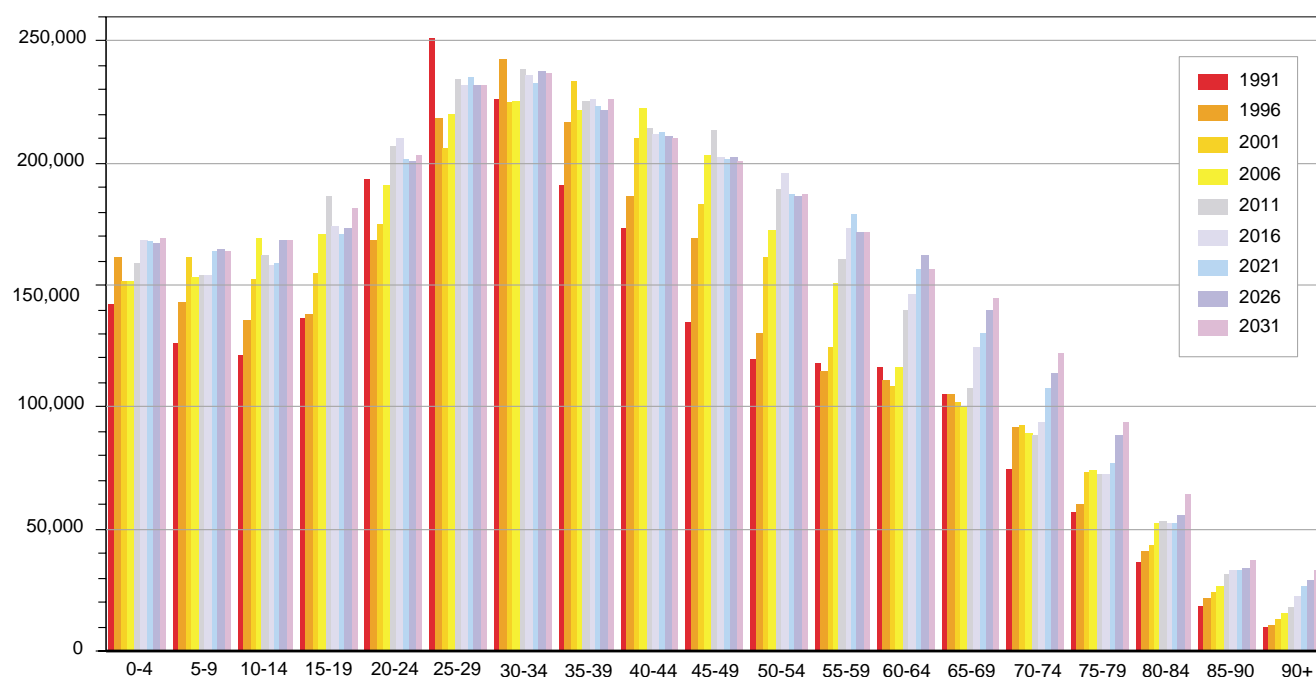


Table 4: Projected Population of Toronto versus 1996

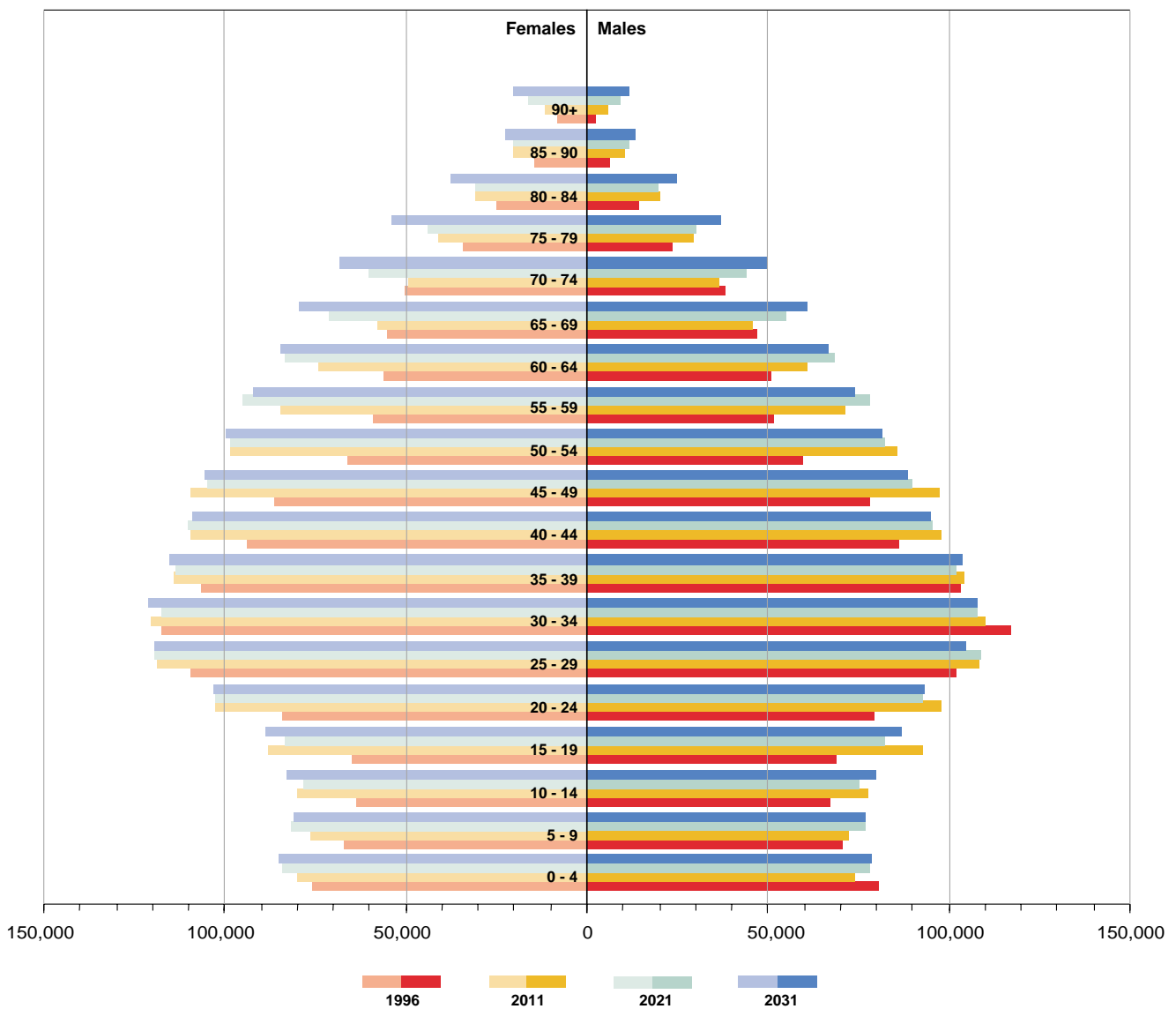
Age									Index versus Total		
	1996	2001	2006	2011	2016	2021	2026	2031	2011	2021	2031
0-14	100.0%	105.9%	107.9%	108.1%	109.4%	111.6%	113.6%	114.0%	0.93	0.94	0.94
15-24	100.0%	107.5%	118.2%	128.4%	125.5%	121.5%	122.0%	125.4%	1.11	1.03	1.03
25-34	100.0%	93.6%	96.6%	102.5%	101.4%	101.5%	101.9%	101.5%	0.88	0.86	0.83
35-44	100.0%	110.3%	110.3%	109.4%	109.0%	108.2%	107.5%	108.4%	0.94	0.91	0.89
45-54	100.0%	114.9%	125.5%	134.8%	133.1%	129.6%	129.7%	129.7%	1.16	1.10	1.07
55-64	100.0%	103.4%	118.8%	133.4%	141.7%	149.0%	148.3%	145.7%	1.15	1.26	1.20
65-74	100.0%	98.5%	96.3%	99.6%	110.7%	121.0%	128.9%	135.8%	0.86	1.02	1.11
75+	100.0%	115.2%	125.6%	131.0%	134.0%	140.2%	154.8%	170.3%	1.13	1.18	1.40
Total	100.0%	105.3%	110.6%	115.9%	117.1%	118.3%	120.0%	121.8%	1.00	1.00	1.00

Source: Toronto City Planning Division, Policy and Research.

As many other projections have demonstrated, there is a larger number of senior women than men, and the proportion increases with age. This reflects their higher life expectancy. In 1996, there were 172 women per 100 males for those 75 years of age and over. This will decline to 155 women per 100 males by 2031. This occurs because female and male life expectancies are anticipated to become more similar.

There is also a resurgence of children and teenagers, the trailing edge of the "echo of the Baby Boom" (see Figure 6). Soon to follow will be their children, as well.

Figure 6: Toronto Population by Age and Sex



Source: Toronto City Planning Division, Policy and Research.

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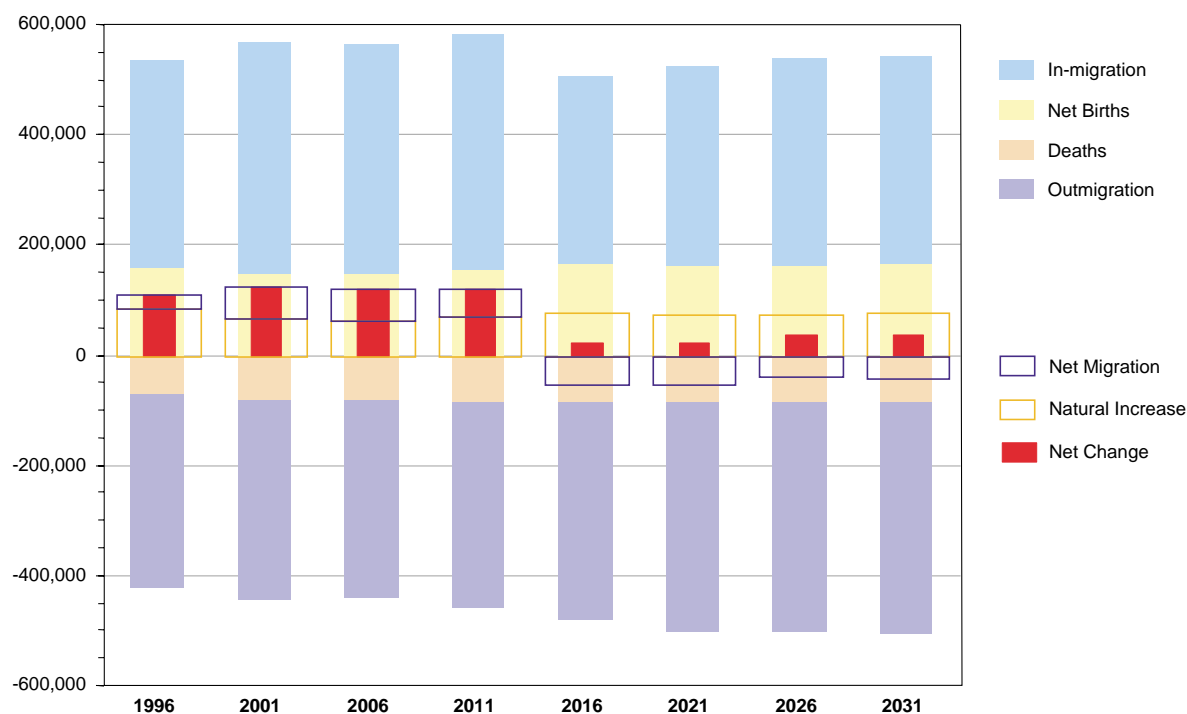
The Composition of the Population is Continually Changing

In any given projection period, net births and deaths are on the order of 6% and 3% of Toronto's population, respectively. By comparison, in- and outmigration are on the order of 15% of Toronto's population, outweighing net natural increase by 3 to 1. However, in- and outmigration tend to cancel each other out (see Figure 7). Under the GTAC Recommended Scenario, net migration declines from a high of 2.4% by 2001 to -1.4% by 2031 due to the forecasted slowing of the GTA economy. Thus, while migration is by far the

largest factor in population change, the rate of natural increase contributes more to net population growth. Yet, given the modest rate of natural increase and its stability versus the dramatic migration flows, migration remains the major driver of Toronto's diversity and economy.

Migration rates vary by age. Between 1991 and 1996, outmigration rates were above 20% of the population for those 22 to 32 years of age, in part representing young households with children in search of affordable ground-related housing (see also Table 13 and Table 14, later in this report). This increases the degree to which Toronto's population is aging.

Figure 7: Components of Toronto Population Change



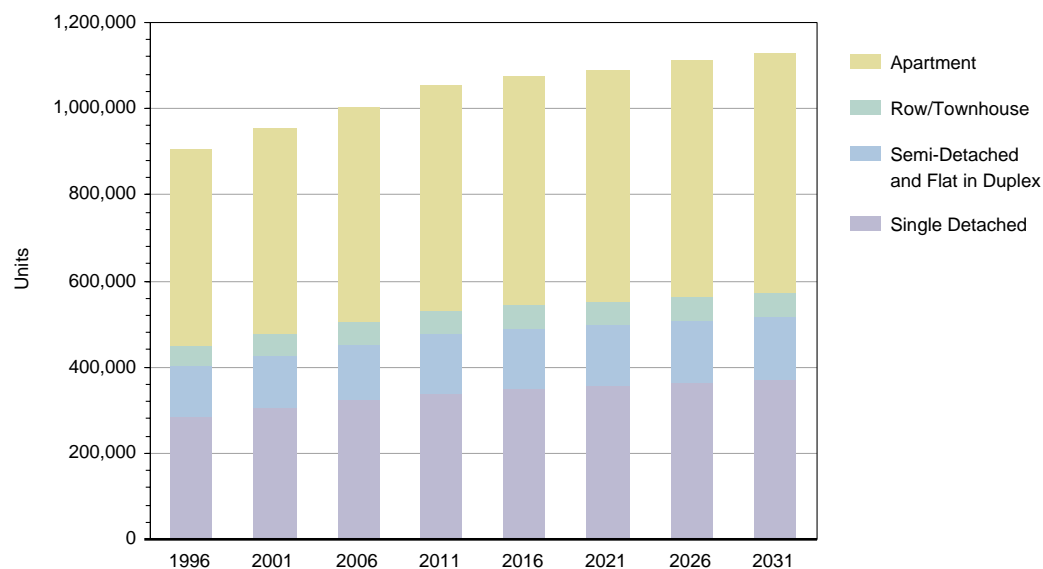
Net Migration = In-migration - Outmigration
 Natural Increase = Net Births - Deaths
 Net Change = Natural Increase + Net Migration

Source: Toronto City Planning Division, Policy and Research.

The Demand for Housing

Toronto is projected to add 224,609 households by 2031, a 25% increase over 1996. Two-thirds of these households are anticipated by 2011 (see Figure 8 and Table 5). Based on 1996 occupancy rates, 124,259 of these households or 55.3% will be seeking ground-related housing. Insofar as the number of households is projected to grow slightly faster than the population, the average number of persons per household will decline.

Figure 8: Toronto Housing Demand by Dwelling Type



Source: Toronto City Planning Division, Policy and Research.

Table 5: Toronto Housing Demand by Dwelling Type

	Single Detached	Semi-Detached & Flat in Duplex	Row/TownHouse	Apartment	Total Change	Total Housing	% Change
1996*	285,360	117,125	46,405	454,345	0	903,235	0.0%
2001	305,113	123,603	49,444	475,506	50,431	953,666	5.6%
2006	322,661	130,075	52,077	498,344	99,922	1,003,157	11.1%
2011	340,047	136,936	54,651	523,249	151,648	1,054,883	16.8%
2016	348,921	139,430	55,323	530,518	170,956	1,074,191	18.9%
2021	356,779	141,278	55,625	536,779	187,226	1,090,461	20.7%
2026	364,865	143,269	56,034	545,600	206,533	1,109,768	22.9%
2031	371,722	145,014	56,413	554,695	224,609	1,127,844	24.9%

*Note: 1996 figures are from Statistics Canada.

Source: Toronto City Planning Division, Policy and Research.

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If this growth is to occur, then housing must be built to accommodate it. The maximum average annual demand is 10,345 units, projected to occur between 2006 and 2011. This is less than the peak levels of housing completions in the 1980s of 13,686, and considerably less than the new peak of housing starts achieved in 2001 of 15,289. Therefore, the market is capable of constructing enough units to meet this demand. The question is whether there are sufficient lands and development opportunities to build these units.

Supply Exceeds Demand

Toronto's total potential housing supply over the projection timeframe is 406,925 units. Nearly 4 units in 10 are anticipated to be built by 2011 (see Table 6).

2011: The Short Term

Between 1996 and 2011, there is sufficient supply to accommodate the projected households. As of December 31, 2001, there were 1,113 active residential development applications representing 141,262 dwelling units in the development pipeline (see Map 1). Apartments outnumber ground-related units 3 to 1. An additional 14,948 units are anticipated during this time, primarily within the Railway Lands and the Central Waterfront, with apartments making up two-thirds of the units. In total, this represents 156,210 new units over fifteen years. Together, the existing stock plus the new supply, less demolitions, exceeds the

projected demand by 385 units (see the Short Term in Table 7, later in this report).

Nevertheless, this is insufficient stock to house the projected population (as opposed to households) in the short term. The mix of anticipated dwelling units have a higher proportion of apartment-style units as compared to the mix of units demanded by the projected population based on 1996 household occupancy rates. These units accommodate a lower average number of persons per household. Thus, if the occupancy rates remain unchanged, 8,932 more units would be required to house the remaining 22,335 people in this timeframe.

The timing by which the units come on stream over the fifteen years may be slightly different than projected. Dwelling units are anticipated in particular years based on the size of a given development and its current stage in the development process. Since many of the residential developments recently completed or currently under construction are condominium towers, their units become available all at once. Consequently, the supply is somewhat "lumpy" and some of the units anticipated later in the projection period may be completed before 2006.

2021 and 2031: The Medium and Long Term

Toronto has far more than sufficient potential to house the projected population over the next twenty to thirty years (see Map 2). Opportunities for (re)development on greenfields, brownfields

Table 6: Potential Toronto Housing Supply

Term	Short 1996-2011		Medium 2021		Long 2031		Total 1996-2031		Total Supply
	Ground- Related	Apart- ments	Ground- Related	Apart- ments	Ground- Related	Apart- ments	Ground- Related	Apart- ments	All Units
Pipeline Opportunities	35,845	105,417	6,424	61,453	3,042	34,541	35,845	105,417	141,262
Avenues Downtown	4,927	10,021	3,812	58,154	3,812	58,154	14,393	106,015	120,408
			919	9,728	934	9,742	7,624	116,308	123,932
Total	40,772	115,438	11,155	129,335	7,788	102,437	59,715	347,210	406,925

Source: Toronto City Planning Division, Policy and Research.

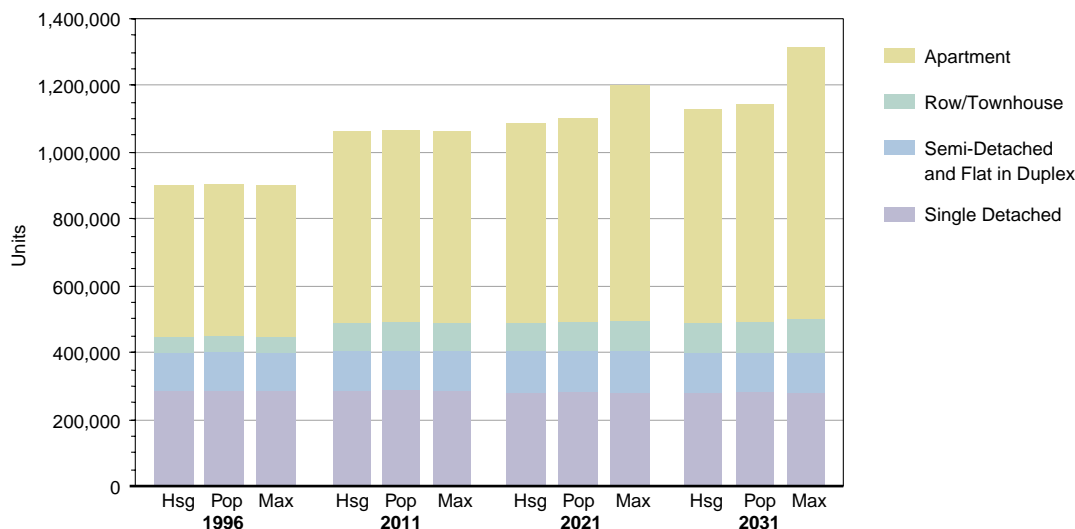
and large vacant parcels account for a potential 105,460 units after 2011. Along the Avenues, which are selected major streets with transit service, there exist significant numbers of underutilized parcels. If fully built out, 123,932 units can be accommodated there. Within the Downtown area, 21,323 units could be constructed on surface parking lots, vacant land and on other under-utilized parcels. In total, between 2011 and 2031, Toronto's supply of housing could grow by 250,715 units. Only 18,943 or 7.6% are expected to be ground-related.

If all short- and long-term potential housing is considered, there exists the potential to house an additional 892,985 people, or $1\frac{2}{3}$ times the projected growth in population after 1996. The maximum projected population of Toronto by 2031 based on housing supply is 3,276,721 people. The rate of construction required is within the historic range of starts and completions in the city. (See the Maximum

Scenario in Figure 9 and Table 7 and the corresponding geographic distribution of growth in Map 3.)

Accommodating the projected growth requires much less housing than the total potential supply. If just enough dwelling units are built to accommodate the projected **households** (the Base Housing Scenario), then between 20% and 35% of the potential units are required from each source of supply. However, this fails to house the projected **population**, due to the unit mix. To house the projected population, between 25% and 40% of the potential units are required from each source of supply. (See the Base Population Scenario in Figure 9 and Table 7. See also the distribution of population growth in Map 4, in comparison to Map 3.) Thus it is possible that over the long term, the projected growth can be accommodated in identified growth areas and its impact on stable residential areas can be managed.

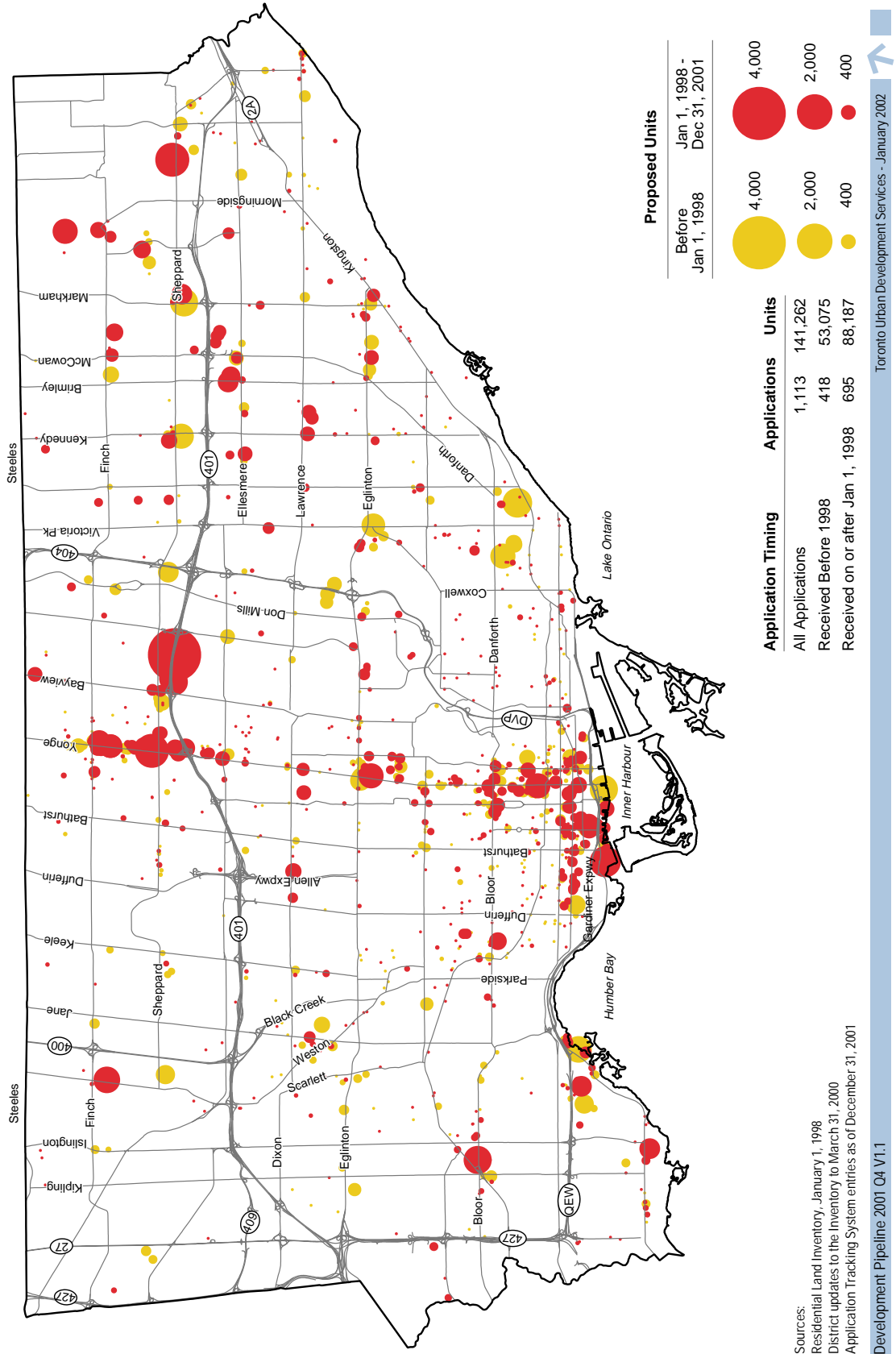
Figure 9: Potential Toronto Housing Supply Scenario by Dwelling Type



Scenarios: "Hsg" means Base Housing, "Pop" means Base Population, "Max" means Maximum. Source: Toronto City Planning Division, Policy and Research.

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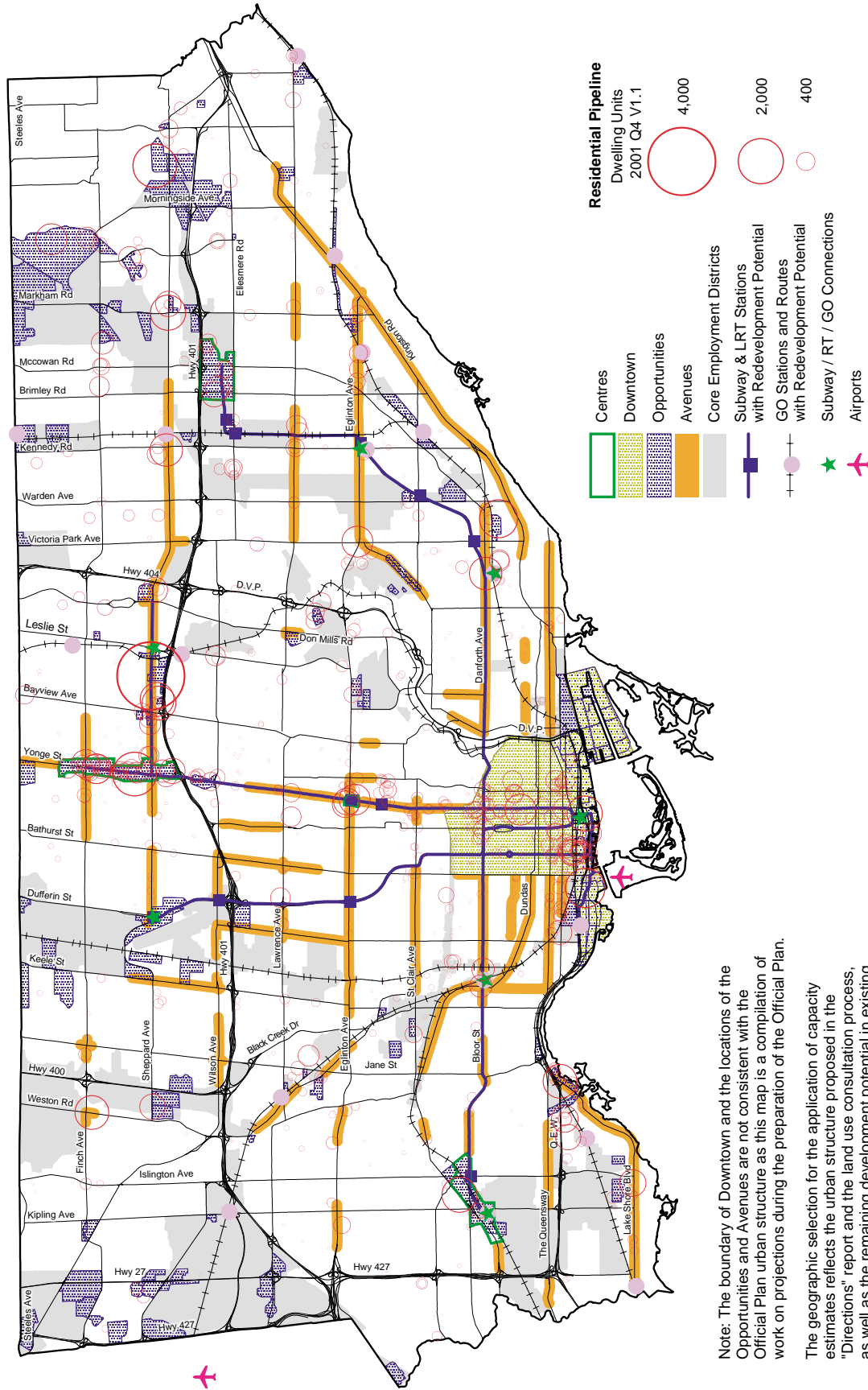
Map 1: Active Residential Development Applications



Sources:
 Residential Land Inventory, January 1, 1998
 District updates to the Inventory to March 31, 2000
 Application Tracking System entries as of December 31, 2001

Development Pipeline 2001 Q4 V1.1

Map 2: Opportunities to Concentrate Projected Growth



Residential Pipeline
Dwelling Units
2001 Q4 V1.1

- 4,000
- 2,000
- 400

Centres

- Downtown
- Opportunities
- Avenues
- Core Employment Districts
- Subway & LRT Stations with Redevelopment Potential
- GO Stations and Routes with Redevelopment Potential
- Subway / RT / GO Connections
- Airports

Note: The boundary of Downtown and the locations of the Opportunities and Avenues are not consistent with the Official Plan urban structure as this map is a compilation of work on projections during the preparation of the Official Plan.

The geographic selection for the application of capacity estimates reflects the urban structure proposed in the "Directions" report and the land use consultation process, as well as the remaining development potential in existing Secondary Plans.