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**CITY OF WINDSOR ANNEXED AREA
MASTER PLAN STUDY**

POPULATION PROJECTIONS

Prepared for:

Corporation of the City of Windsor
Windsor, ON

Prepared by:

Stantec Consulting Ltd.
800-171 Queens Avenue
London, ON N6A 5J7

Tel: 519-645-2007

Fax: 519-645-6575

614-01073

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2.0 Population Projections

2.1 BACKGROUND

Population projections are a fundamental component for determining future land need requirements for various uses. Population growth (or decline) is affected by a variety of factors at the local, provincial and national level. Demographic trends, economic vitality and environmental conditions can all have an impact on the rate of population increase or decrease and the resulting implications on land requirements.

The City of Windsor completed population projections in 1996 to the year 2016 for the current Official Plan that was approved by the Ministry of Municipal Affairs and Housing on March 28, 2000 and by the Ontario Municipal Board on November 1, 2002. Those projections were based on 1991 census data and 1995-1996 Regional Assessment Data. Since that time, updated census data has become available, necessitating the need for revised population projections and analysis of the baseline data to determine if previous assumptions and trends are consistent with the updated data. The annexation of lands from the Town of Tecumseh has also resulted in the addition of those residents living in the annexed area to the City of Windsor population base.

This section of the report summarizes the updated population projections and provides an overview of the assumptions utilized for those projections.

2.2 METHODOLOGY

Population projections and associated assumptions were prepared by the City of Windsor according to previously accepted methodology and provided to Stantec Consulting for review and inclusion in this report. The methodology utilized by the City of Windsor is the Cohort Survival Rate Model. This method projects 5-year age cohorts into the future taking into consideration recent birth rate, survival rate and immigration information provided by or derived from Statistics Canada data. Additional detail regarding the methodology is provided in Appendix 'A'

Population projections and underlying assumptions from a number of other sources were also reviewed for comparison and consistency purposes. These sources included:

- Draft Development Charges Study (Hemson Consulting);
- Ontario Ministry of Finance;
- Canada Mortgage and Housing Corporation;
- Statistics Canada;

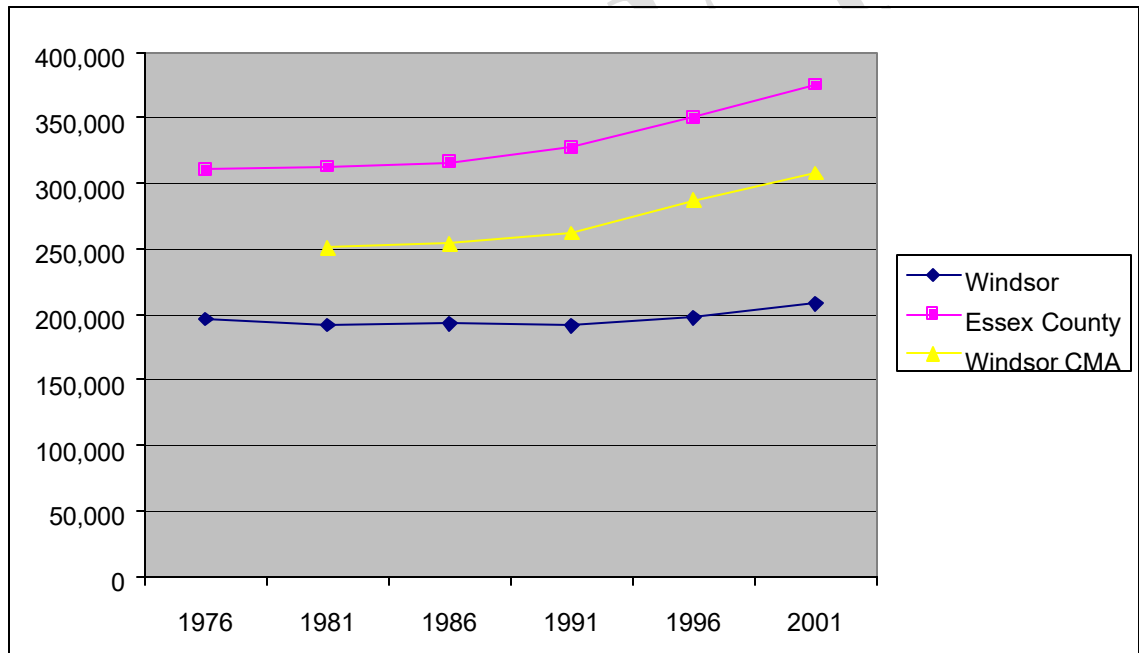
- Citizenship and Immigration Canada

2.3 POPULATION TRENDS AND ASSUMPTIONS

2.3.1 Population Growth

Over the past twenty years, Windsor's population has increased from approximately 192,000 people to its current 2001 population of 208,402, according to Statistics Canada census information (see Figure 1).

Figure 1
WINDSOR – ESSEX HISTORICAL POPULATION GROWTH



Source: Statistics Canada

Over that time span, Windsor's population growth has generally paralleled that of the CMA and County, although its share of the overall region's population has gradually declined. This trend continued from 1996 - 2001 as Windsor's share of the CMA and provincial population base decreased slightly, as shown in Table 2.1. However, the rate of decrease slowed as compared to the previous five year period.

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Table 2.1
WINDSOR'S SHARE OF POPULATION

	1991		1996		2001	
	Population	Windsor Share (%)	Population	Windsor Share (%)	Population	Windsor Share (%)
Windsor	191,535		197,694		208,402	
CMA	262,075	73.05	286,811	68.93	307,877	67.69
County	327,365	53.01	350,333	56.43	374,975	55.58
Province	10,084,885	1.90	10,753,573	1.84	11,410,046	1.83

Source: Statistics Canada, City of Windsor

Since 1996, over 10,000 people have been added to the City of Windsor. This represents an increase of 5.42%, or an annual average increase of approximately 1.1% over the 1996-2001 time span. Windsor's growth rate, while slightly below that of the Windsor CMA, Essex County and Province over the past five years, was over 2% higher than the growth rate that occurred between 1991 and 1996. This is in contrast to the Windsor CMA which saw a lower rate of increase between 1996 – 2001 than during the previous 5 year period.

Table 2.2
WINDSOR POPULATION GROWTH TRENDS – 1991 TO 2001

	1991	1996	% Increase	2001	% Increase
Windsor City	191,435	197,694	3.27	208,402	5.42
Windsor CMA	262,075	286,811	9.44	307,877	7.34
Essex County	327,365	350,333	7.02	374,975	7.04
Ontario	10,084,885	10,753,573	6.63	11,410,046	6.10

Source: Statistics Canada, City of Windsor

Population projections prepared in 1996 for the current City of Windsor Official Plan anticipated a population of approximately 203,490 for 2001. However, Windsor's actual population of 208,402 exceeded those projections by nearly 5,000 people. In fact, the 2001 population is slightly above the previous projection for 2006.

Contributing factors to this increase may be a result of one or more of the following:



- Better than anticipated economic conditions which attracted new residents to the City and region;
- Affordable housing and lifestyle factors;

- Higher rates of immigration and/or internal migration.

2.3.2 Fertility (Birth) Rates

Between 1996 and 2001, fertility rates in the City of Windsor generally declined slightly for women under 30, but there was a corresponding increase for women over 30, as shown in Table 2.3. Total fertility rates, in terms of the average number of children born to a woman, have remained relatively stable in recent years (see Appendix 'B' for 15 year summary) and were approximately 1.6 over the 1996 – 2001 timeframe as compared to approximately 1.7 for the previous five year period. These rates are generally consistent with national and provincial trends.

Total fertility rate assumptions for various population projection studies typically range from approximately 1.48 to 1.7. Windsor's 1996-2001 average total fertility rate of 1.56 is within that range. As a result, current fertility rates by age group, as derived from 2001 Statistics Canada data, were assumed by the City of Windsor and Stantec Consulting to continue and remain constant for the projection period.

Table 2.3
AVERAGE FERTILITY RATES PER 1,000 WOMEN

Age Cohort	1991 –1996	1996 - 2001
10 – 14	Not provided	0.10
15 – 19	30.66	17.94
20 – 24	74.44	55.92
25 – 29	130.47	103.69
30 – 34	74.82	93.74
35 – 39	22.04	32.74
40 – 44	3.18	6.97
45 – 49	Not provided	0.37
Total Births / 1,000 Women	335.61	311.48
Average Fertility / Birth Rate	1.68	1.56

Source: Statistics Canada, City of Windsor

2.3.3 Survival Rates

Survival rates are determined from annual data provided by the Windsor- Essex County Health Unit and reflect real data regarding births and deaths in the Windsor CMA. For the purposes of population projections, it is assumed that the City of Windsor has the same birth and death rate as the CMA. A comparison of 1996, 2001

and 1996-2001 average survival rates is provided in Appendix 'C.' This data shows that survival rates have remained generally consistent with previous rates, with men over the age of 80 showing a slight increase.

In general, survival rates in Canada and Ontario have improved over the past forty years as a result of health care advancements and other lifestyle factors. With an aging population and higher overall population figures, it is expected that although the total number of deaths will increase, survival rates in the older age cohorts will continue to increase very slightly or remain relatively stable. As small increases in the survival rate have a minor influence on overall population growth, the survival rate is assumed to remain constant at the five-year average for the projection period for purposes of these population projections.

2.3.4 Immigration

Immigration usually refers to those people who were born outside Canada and have been granted the right to permanently live in Canada by immigration authorities. As birth rates decline in the general population, international immigration is playing an increasingly large role in population growth at the local, provincial and national level. Between 1991 and 1996, immigration contributed over 50% of Canada's total population growth and it is estimated that over 90% of the total change in population between 1986 and 2036 will be a result of international immigration.¹ There has also been a generally increasing tendency for immigrants to move to larger urban areas and CMA's rather than smaller towns or rural areas, with a disproportionately large number of Canadian immigrants settling in three major cities (Toronto, Vancouver and Montreal).

Based on data obtained from Statistics Canada by the City of Windsor, there was an increase of approximately 10,529² immigrants in the City of Windsor between 1996 and 2001. The data also suggests that the City of Windsor saw its share of immigration relative to the CMA increase to 92.24%, continuing a relatively lengthy trend, as shown in Table 2.4. It is unlikely that this share will increase to any large extent in the future, given that it is at 92.24% at the present time. However, the total number of immigrants to Windsor may increase if the CMA continues to attract an increasing share of national immigration or if total immigration levels to Canada rise.

¹ Beaujot, Roderic. Immigration and Canadian Demographics: State of the Research, May 1998. Citizenship and Immigration Canada.

² The number of immigrants was calculated based on the following formula:
Total In-Migration – Total Out-Migration – Temporary Abroad People + Returning Emigrants (From July 1st to June 30th)

Table 2.4
INTERNATIONAL IMMIGRATION

Timeframe	Windsor – CMA Share	Provincial Share (%)	National Share (%)*
Before 1961	76.44	1.94	1.09
1961-1970	72.47	1.79	1.03
1971-1980	71.15	1.36	.72
1981-1990	83.50	1.54	.86
1991-1995	89.76	1.79	1.00
1996-2001	92.24	2.52	1.41

Source: Citizenship and Immigration Canada, City of Windsor

It should also be noted that national immigration levels were substantially higher in the ten year period since 1991 than in the previous ten year periods, reflecting recent immigration policy directions. Federal immigration policies are expected to remain relatively stable for the foreseeable future, with the expectation that immigration will play a large role in meeting labour force needs. While immigration targets are expected to rise slowly, proportional to the Canadian population as a whole, it is estimated that over the short to medium term, immigration will contribute approximately 225,000 to 270,000 persons per year.

For the purposes of population projections over the next 20 years, three immigration scenarios have been identified:

- **Low scenario:** Immigration (5 year) is assumed to be 8,750. This is generally equivalent to the level that occurred between 1991 and 1995. This scenario would most likely occur if economic and employment conditions were less favourable, thereby attracting fewer immigrants to Windsor or if national immigration levels declined.
- **Medium scenario:** Immigration (5 year) is assumed to be 10,530. This reflects the most recent immigration figures as derived from 2001 census data. It assumes that national immigration levels will continue to be relatively stable (i.e. – approximately 225,000 people per year) and that Windsor’s share of immigration is unlikely to increase relative to the CMA or the nation.
- **High scenario:** Immigration (5 year) is assumed to be 11,300. This is generally representative of the average immigration levels that occurred between 1991 - 2001 with a slight upward adjustment based on the potential for some increase in

future immigration levels and/or an increased share of the current immigration levels.

2.3.5 Internal Migration

Internal migration includes inter- and intra- provincial migration as well as intra-municipal migration. This component of population growth / decline is more likely to be affected by various factors, including:

- Relative state of provincial and municipal economies;
- Education and employment prospects;
- Relative cost of living;
- Environmental and social (i.e. – lifestyle) amenities

These factors can also have some influence on the type of internal migration that is likely to occur. For example, a wealth of educational opportunities, employment prospects and affordable housing may be more likely to attract younger migrants, whereas, extensive recreational and medical facilities combined with milder climatic conditions may attract a larger proportion of older migrants.

Internal migration figures are difficult to determine precisely as census statistics do not provide detailed information regarding this factor at the City level. While data is available regarding inter and intra-provincial migration, statistics regarding the extent of migration within the CMA are not kept. However, it is known that a significant amount of migration within the CMA itself occurs (i.e. – between City of Windsor and Towns of Tecumseh, LaSalle, Lakeshore and Amherstberg). To best estimate internal migration figures, the City of Windsor used the Cohort-Survival Model for the base year of 1996 and set the projected population for 2001 at 208,402, the known population provided by Statistics Canada. Actual 2001 census data pertaining to survival rates (i.e. – deaths), fertility rates (i.e. – births) and international migration was then applied to the 1996 census data. The resulting difference between the calculated 2001 population and the actual 2001 census population was determined to be the internal migration figure for the 1996 to 2001 time period. A simplified version of the process is shown below:

$$(1996 \text{ Population} + \text{Births} + \text{Immigration} - \text{Deaths}) \pm \text{Internal Migration} = 2001 \text{ Population}$$

Detailed information and tables regarding the methodology are provided in Appendix 'D'. Based on these calculations, it is estimated that there was a loss of 4,120 people due to internal migration between 1996 and 2001.



Previous projections from 1996 estimated an internal migration loss of 5,600 people from the Windsor CMA and that this entire loss would be attributed to the City of Windsor. However, it would appear that the actual loss that can be attributed to

internal migration from the City of Windsor was approximately 4,120, meaning that fewer people left Windsor than expected. This may be a result of a number of factors, including:

- A strong local economy that helped retain residents;
- Relatively affordable housing;
- Lifestyle reasons (e.g. – improved social / cultural / recreational amenities within the City);
- Some internal migration out of the CMA, not only from the City of Windsor.

For the purposes of population projections over the next 20 years, three internal migration scenarios have been identified:

- Low scenario: Internal migration (5 year) is assumed to be – 5,000. This is generally representative of the estimated average internal migration loss that is believed to have occurred between 1986 –2001. It should be noted that no data was provided regarding 1991-1996 internal migration assumptions, however, the lower rate of population increase combined with general economic conditions, government restructuring, etc. prevailing during the early to mid-1990's is assumed to have resulted in a higher internal migration loss during that timeframe.
- Medium scenario: Internal migration (5 year) is assumed to be -4,120. It reflects similar internal migration levels that were evident over the 1996-2001 time frame and assumes that general economic and employment conditions, lifestyle factors and housing availability / affordability will be relatively similar during the projection period as have occurred between 1996-2001.
- High scenario: Internal migration (5 year) is assumed to be -3,000. This scenario would most likely occur if economic and employment conditions in Windsor improved (e.g. – development of new manufacturing facilities, etc.) or if more residents chose to remain / move to Windsor for lifestyle reasons.

2.4 POPULATION PROJECTIONS

Population projections were developed for three scenarios by the City of Windsor Planning Services Unit, with input from Stantec Consulting, based on data acquired from Statistics Canada in 2003 and a review of general trends and related data as described in the foregoing sections. Assumptions made for the three scenarios are summarized below in Table 2.5.

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Table 2.5

SUMMARY OF ASSUMPTIONS USED FOR POPULATION PROJECTIONS

Factor	Low Case Scenario	Medium Case Scenario	High Case Scenario
Survival Rate	Constant at 1996-2001 average rate		
Fertility Rate	Constant at 1996-2001 average rate		
Immigration	8,750	10,529	11,300
Internal Migration	-5,000	-4,120	-3,000
Resulting Net Migration	3,750	6,409	8,300

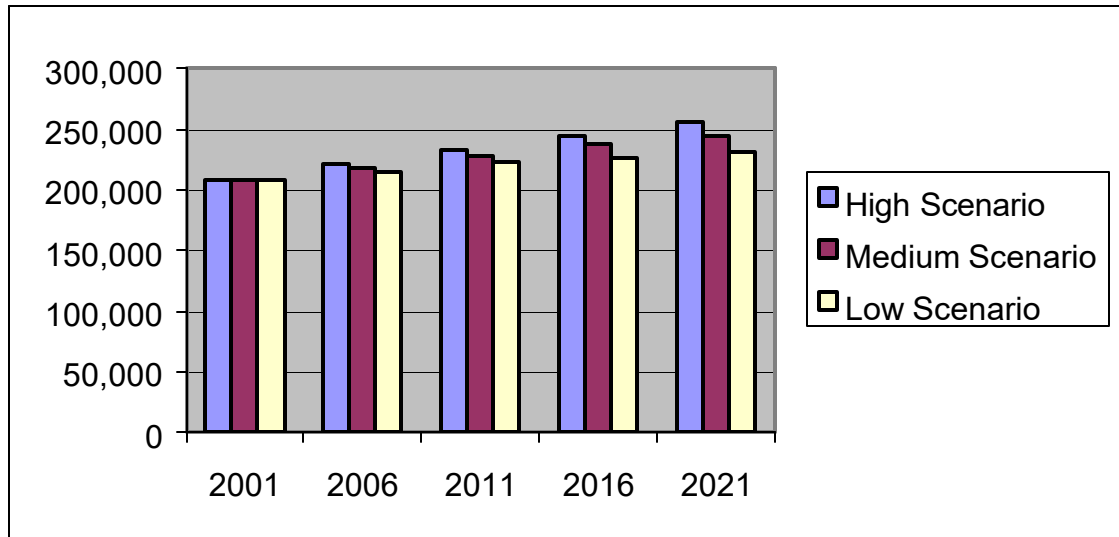
Table 2.6 and Figure 2 summarize the resulting population projections for the twenty-year timeframe from 2001 to 2021. Detailed projection data tables are provided in Appendix 'E'.

Table 2.6

POPULATION PROJECTION SUMMARY

	2001	2006	2011	2016	2021	Total Increase	% Increase	Average Annual Increase
Low Scenario	208,425	215,448	221,838	226,843	230,823	22,398	10.75	0.54%
Medium Scenario	208,425	218,467	228,263	236,948	244,811	36,386	17.46	0.87%
High Scenario	208,425	220,614	232,902	244,348	255,205	46,780	22.44	1.12%

Figure 2
TWENTY YEAR POPULATION PROJECTIONS



It should be noted that the annexed lands are estimated to contain approximately 470 people based on assessment data. However, more precise data regarding actual population and age and sex distribution was not able to be determined from available Statistics Canada data. As a result, the annexed population is not included in the overall population projections prepared. It is not anticipated that the exclusion of this population will have any major impact on the twenty-year population projections as the natural increase that would result from this population would be relatively minimal.

2.5 COMPARISON PROJECTIONS

Population projections for the Windsor CMA and province have also been prepared by a number of other sources for various purposes. The following table summarizes those projections, as they relate to Windsor, for comparison purposes.

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Table 2.7
COMPARISON POPULATION PROJECTIONS

Source	Geographic Unit	Assumed Share (%)	2001	2006	2011	2016	2021
Ministry of Finance*	Ontario		*11,816,126	12,526,166	13,198,933	13,860,066	14,508,466
		Adjusted	11,410,046	12,095,642	12,745,286	13,383,696	14,009,810
	Windsor	1.83	208,804	222,823	235,260	247,545	259,718
CMHC*	Ontario		*12,021,500	12,747,400	13,462,500	14,169,700	n/a
		Adjusted	11,410,046	12,099,067	12,777,797	13,449,029	n/a
	Windsor	1.83	208,804	221,413	233,834	246,117	n/a
Hemson	Windsor	100	208,602	223,775	231,181	241,031	246,782
Current Study	Windsor	100	208,425	218,467	228,263	236,948	244,811

* It should be noted that the population projections provided by these sources were based on 1996 census data therefore 2001 figures were based on population estimates, not 2001 census data. The 2001 figures were adjusted so that they reflected current provincial census data and that proportional adjustment was carried through to future years prior to calculating Windsor's estimated population projections as derived from the Ministry of Finance and CMHC figures.

As can be seen, the population projections prepared by the City of Windsor, with input from Stantec Consulting, represent relatively conservative projections compared to most other sources. However, they are based on the most recent and accurate census data and are therefore considered to be more appropriate for the purposes of determining housing demand and land requirements.

2.6 SELECTION OF PREFERRED (REFERENCE) SCENARIO

Based on a review of the population projection scenarios, related data and discussions with the City of Windsor, the medium case scenario has been selected as the reference scenario for the following reasons:

- The continuing importance of international immigration as a means of meeting future labour force requirements, combined with stable federal immigration policies, will likely result in future immigration levels that are similar to those which have occurred over the previous five year time span.
- Net migration is also expected to remain relatively stable for the foreseeable future as a result of economic conditions, housing affordability / availability and demographic factors (e.g. - aging population).
- The average annual increase projected by the medium scenario is relatively consistent with, although slightly below, the average annual increases projected by the Ontario Ministry of Finance for Essex County and the province (see Appendix 'F').



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- The resultant population and average annual increase projected by the low scenario is considerably below that anticipated by any other sources and is unlikely to occur unless a significant and sustained economic downturn occurs.
- Expectations of sustained reductions in internal migration loss and increased international migration, as assumed in the high scenario, may not be realistic to assume over a twenty-year period given the vagaries of the economy. However, should substantial new investment / development occur in the manufacturing and employment sector, this scenario may be a more accurate projection.

DRAFT

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