

DOCUMENT 2

Growth Projections for Ottawa: Prospects for Population, Housing, Employment and Land, 2014-2036

November 2016

**Research and Forecasting Unit
Planning, Infrastructure and Economic Development Department**

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Executive Summary

Projections of long-term change in population and associated housing and employment are fundamental to a community's ability to plan for land use, housing needs, land requirements, transportation and infrastructure, financing, recreational and social needs, and other basic services.

The City of Ottawa's long-term growth projections were last updated in 2007. Since then Ottawa's actual population, housing, and employment have tracked well against these projections and have not required revision. However, after almost a decade it is appropriate that an update be undertaken. At the same time, the projections will be extended from the current 2031 horizon to 2036.

The purpose of this report is to:

- a) Explain the methodology and assumptions used in the projections;
- b) Present the results of the scenarios developed, including the recommended Reference Projection used to develop subsequent housing and employment projections;
- c) Analyse the demand for urban and rural housing by unit type and the associated urban land requirements up to 2036; and
- d) Compare the demand for urban housing land to the supply to assess whether there is a need to add urban land for 2036.

Population

The projections of population used a cohort-survival model, the widely-accepted best methodology and the same technique used in previous projections. Cohort survival separates population change into its basic components; births are added to the population, deaths are subtracted, net migration is incorporated and the existing population is aged to arrive at future population totals.

The new projections are based on the most recent detailed Statistics Canada data for the City of Ottawa. A base year of 2014 is used; the latest year for which reliable data are available.

Three scenarios were developed, summarized below.

Low Projection: Assumes a lower than recent rate of births, higher mortality and lower rates of in-migration. The above assumptions result in a 2036 population of 1,076,600, an increase of 130,000 (14%) from 2014.

Reference Projection: Assumes a slight increase in the birth rate based on recent trends, decreasing mortality in line with projected provincial forecasts, and in- and out-migration rates per 1,000 population based on averages for the past decade. Under this scenario the result is a 2036 population of 1,214,000, an increase of 267,000 (28%) from 2014.

High Projection: Assumes a ten percent increase in birth rates, accelerated declines in mortality, and higher than average in-migration rates. These result in a 2036 population of 1,305,000, an increase of 359,000 (38%) from 2014.

The proposed Reference Projection is slightly higher than the previous projection developed in 2007. Using 2031 for comparison, the new projection is 17,700 persons (1.6%) (1,153,500 compared to 1,135,800) higher.

Greater Ottawa-Gatineau Area

Growth in areas adjacent to Ottawa in both Ontario and Québec has generally been slower than projected in 2007. The projections, prepared in 2007, used the growth forecasts adopted by local municipalities in OMATO (Ontario Municipalities Adjacent To Ottawa). These have proved to be significantly higher than actual growth to date. Consequently, new projections for expected growth in OMATO are based on recent observed rates of growth.

Projections for the City of Gatineau and adjacent areas in Québec used the latest forecasts developed by the Québec government.

Overall, population in the greater area is projected to increase by almost 430,000 (+31%), from 1,368,000 in 2011 to 1,797,000 by 2036. The City of Ottawa is projected to account for 70% of this growth.

Housing

Projected housing requirements, based on 2011 headship rates and projected demand for different unit types by age group, show a need for 130,839 additional housing units over the 2014-2036 period, an increase of 34.2% from 2014. Projected new units by type are split 33% single-detached, 3% semi-detached, 28% rowhouses and 36% apartments.

Employment

Employment is based on projected labour force participation rates by age and sex for the Ottawa population. To this is added net in-commuting from adjacent areas. Unemployment is subtracted and a factor for multiple job-holders is applied to arrive at a final job figure.

Total jobs located within the city of Ottawa in 2036 are projected to be 745,000, an increase of 188,000 or 34% from the 2011 base year used for the employment projection.

Urban Land

Analysis of the demand for and supply of urban land is complex. The methodology used for the new analysis is similar to that used by the City of Ottawa at the 2012 Ontario Municipal Board hearing on projections and the urban boundary (Official Plan (OP) Amendment 76). That analysis concluded that due to changes in demographics and the housing market that there would be a shift from lower-density single-detached housing to higher-density housing forms such as apartments. In fact, the anticipated shift has occurred considerably more quickly than had been expected.

Comparing projected demand to dwelling unit supply to 2036 shows a potential shortfall for single-detached and semi-detached units. However, concurrent with this projections update is a review of employment lands and the potential conversion of some of these lands to alternative land uses. Pending the outcome of that review there may be opportunities to include additional residential land.

Growth Projections for Ottawa; Prospects for Population, Housing, Employment and Land, 2014-2036

Projections of long-term population and associated housing and employment are fundamental to a community's ability to plan for land use, housing needs, land requirements, transportation and infrastructure, financing, recreational and social needs, and other basic services.

Projections are always a challenge but in fact much of Ottawa's demographic future has already been determined by the characteristics of its current population. Many of Ottawa's current residents will still reside here in 20 years but will have aged by 20 years thereby changing their housing demands. The well-documented phenomenon of population aging will have major effects on Ottawa's future as it will in other cities in Canada and in other countries.

The City of Ottawa's long-term growth projections were last updated in 2007. Since then Ottawa's actual population, housing, and employment have tracked well against these projections and have not required revision. However, after almost a decade it is appropriate that an update be undertaken. At the same time, the projections will be extended from the current 2031 Official Plan horizon to 2036.

The purpose of this report is to:

- a) Explain the methodology and assumptions used in the projections;
- b) Present the results of the population projection scenarios developed, including the recommended Reference Projection subsequently used to develop housing and employment projections;
- c) Analyse the demand for urban and rural housing by unit type and the associated urban land requirements up to 2036; and
- d) Compare the demand for urban housing land to the supply to assess whether there is a need to add urban land for 2036.

Part I. Population Projections

Methodology

The projections used a cohort-survival model, the widely-accepted best methodology for projections by age and gender. The same technique has been used in all previous (new) City of Ottawa and, prior to 2001, Region of Ottawa-Carleton projections since the 1980s. Cohort survival separates population change into its basic components; births are added, deaths are subtracted, and net migration (in and out migration from various sources) is added. Details for these factors are set out in the subsequent sections of the report.

The previous projections, completed in 2007, used the cohort survival component of a software program developed by Canada Mortgage and Housing Corporation (CMHC), called the Potential Housing Demand (PHD) model. For the new projections, staff of the Research and Forecasting unit of the Planning, Infrastructure and Economic Development Department constructed a new spreadsheet-based model that allows more flexibility in defining the inputs.

Base Year

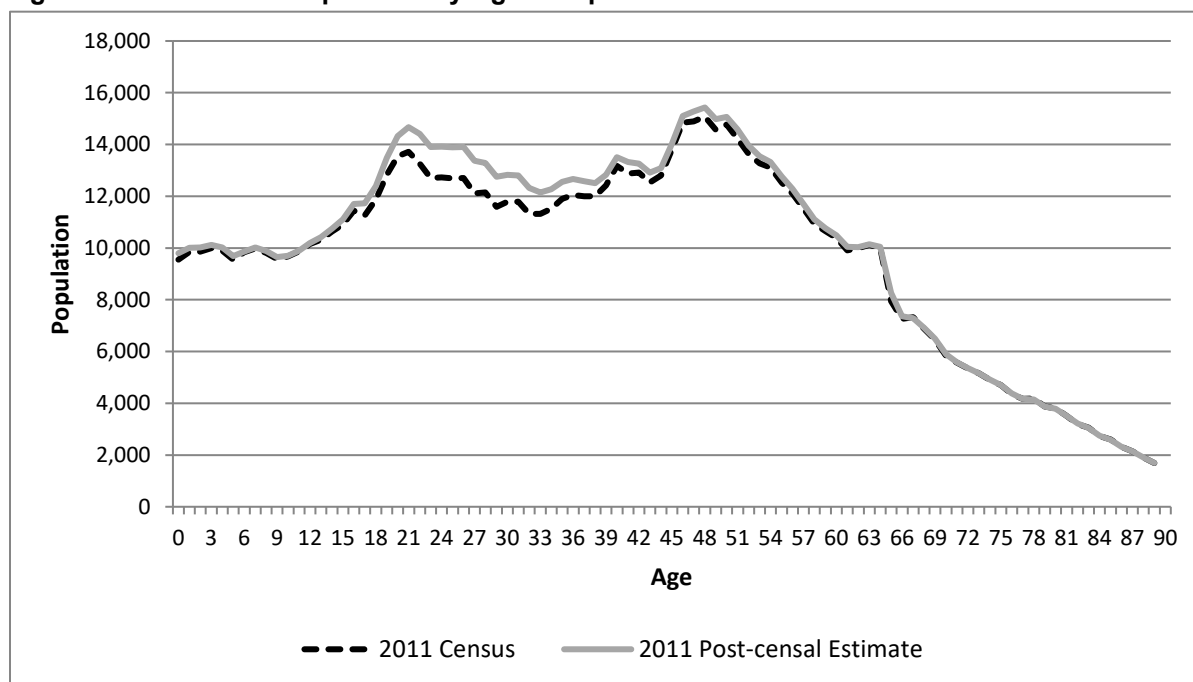
Results of the 2016 Census, undertaken in May 2016 by Statistics Canada, are currently scheduled to be released starting in February 2017. Age/sex counts of the population will be available starting in May 2017 with further details being released later in 2017.

While it may appear to be advantageous to incorporate 2016 Census counts into the updated projection, in fact the projections of population are not based directly on census data. As in past practice, base year population and age-sex data use Statistics Canada’s post-censal estimates. These are more accurate than the census in that they are designed to account for under- and over-counting in the census results.

Final post-censal counts for 2016 are not expected to be available until 2018. What is currently available are final and revised post-censal population data by age and sex for Ottawa for mid-2014. Counts for 2015 are preliminary and potentially subject to significant revision. Consequently, the updated projections presented in this report are based on Statistics Canada’s post-censal estimates for July 1, 2014¹. These are the most accurate detailed demographic data available at this time.

Figure 1 below illustrates the difference, by age, between the 2011 Census and Statistics Canada’s final post-censal estimates for 2011. Net underreporting in the census is concentrated among adults aged from approximately 18 to 40.

Figure 1 2011 Census Population by Age Compared to 2011 Post-Censal Data



Source: Statistics Canada, data for City for 2011 Census and CANSIM Table 051-0062

Residents of collective establishments, which include hospitals, certain retirement homes², shelters, prisons, etc, are separate from the “population in private households” (PIPH). Custom data on the age distribution of residents of collective dwellings were purchased from Statistics Canada for each of the past three censuses. Details are contained in Appendix 4.

¹ While Statistics Canada’s 2014 population estimates are labelled “Revised”, and therefore subject to change before being declared Final, review of previous time series shows there to be little change between Revised and Final data. The 2014 estimates are therefore used in order to base the projections on the most recent year of reliable estimates.

² Some retirement homes are classified as collective dwellings, while others are counted as private dwellings. The differentiating criterion appears to be the level of care provided on a unit basis within each building.

Fertility

The best predictor of future births is the Total Fertility Rate (TFR), the average number of children per woman over her lifetime. Rates in Ottawa have historically been lower than the national and provincial averages, and continue to be lower according to the most recent data. Rates have risen over the past decade, but only slightly. The 2007 projections used a TFR of 1.43 based on the Ottawa average for 2001. That was held constant for all scenarios, given sensitivity testing that concluded variations had no significant effect on the overall outcome.

Based on average births by age of mother for 2010 to 2013, Ottawa's calculated TFR for 2011 had risen slightly to 1.47. Following a steady rise over the past several years, the rate for the Reference projection was gradually increased to 1.50 by 2026 and held steady after that. The High scenario used a 10 percent higher TFR of 1.65, while the Low scenario incorporated a 10 percent lower TFR of 1.35. This is consistent with the approach taken by Statistics Canada to test different scenarios for their population projections.

For comparison, the Canadian TFR was 1.61 in 2011; in Ontario it was 1.55.

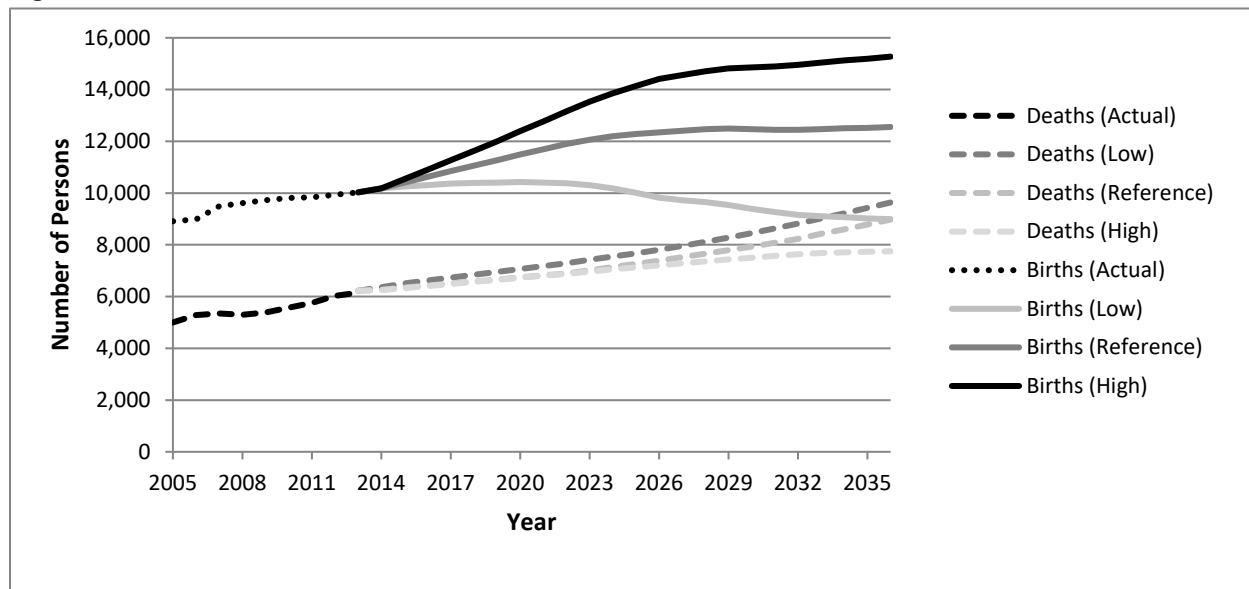
Mortality

Ottawa-specific life tables were developed for the projections. This is the first time that Ottawa life tables, which set out the annual probabilities for survival by single year of age and sex over the projection period, have been used for City projections. The tables are based on average Statistics Canada mortality by single year of age and sex over the five-year period from 2009 to 2013 for Ottawa. The base population on which mortality rates were calculated is Statistics Canada's 2011 post-censal population estimate.

Projected life expectancy by sex was based on the proportionate difference between Ottawa and Ontario for 2011. Residents of Ottawa typically exhibit a longer life expectancy than the provincial average. In 2011, newborn Ottawa males could expect to live an average of 81.5 years compared to 79.8 years for Ontario and 79.4 years for Canada. Ottawa females averaged 85.2 years at birth compared to 84.0 years for Ontario and 83.6 years for Canada. The proportional difference between Ottawa and the province was applied to the projected Ontario life expectancies (using 2015 Statistics Canada data from Catalogue no. 91-620) interpolated to 2021, 2031 and 2036. Using this technique, life expectancy under the Reference scenario for Ottawa residents born in 2036 is expected to be 86.5 years for males and 88.3 years for females.

Recent and projected births and deaths under each of the three scenarios are shown in Figure 2.

Figure 2 Births and Deaths for Three Scenarios, 2005-2036



Source: Statistics Canada, CANSIM Tables 051-0063 and 051-0064, and City projections

Migration

Migration is, and has been for many decades, the most important factor affecting changes in Ottawa's population. Net migration, the number of people moving to Ottawa minus the number moving out, is the result of many processes. For the purposes of the projections, these are categorized into three primary migration streams; intra-provincial, inter-provincial, and international migration. Intra-provincial migration is the movement of people between the rest of Ontario and Ottawa, inter-provincial migration is the movement of people between Ottawa and the remainder of Canada excluding Ontario and international migration is the movement of people between Ottawa and all countries outside of Canada. International migration is further subdivided into immigrants, emigrants, returning emigrants, temporary emigrants, and non-permanent residents. (Non-permanent residents, or NPRs, are persons who have work, student or temporary resident permits, or persons claiming refugee status.)

Details for the five categories of international migrants are from Statistics Canada data, which are available starting only in 2001. Less detailed migration data back to 1987 are also published by Statistics Canada. This information, derived from tax records, is less complete for international migrants but offers a time series that is twice as long as the newer estimates beginning in 2001. The older data were used to examine whether net immigration rates to Ottawa have been increasing or decreasing over time.

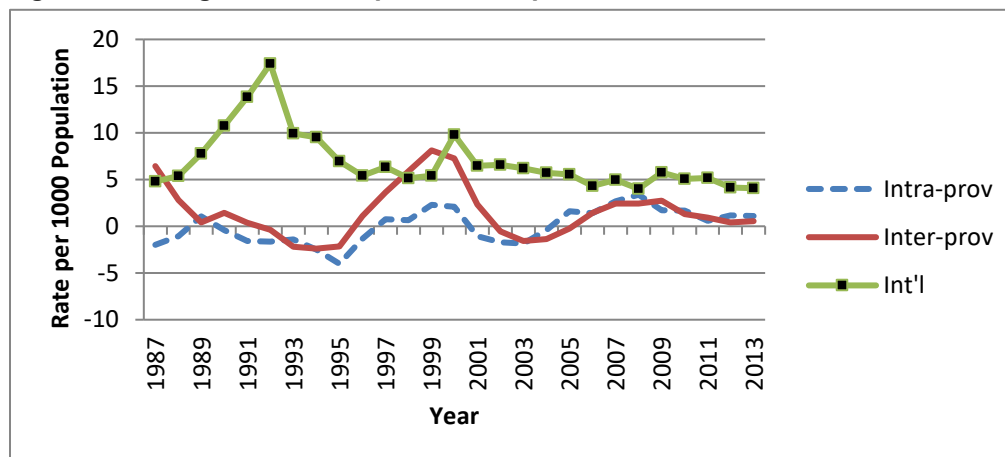
For the projections, the approach adopted by Statistics Canada in their most recent projections for Canada and the provinces³ was adopted on the basis that it represents the most up-to-date methodology. A primary method in their projections is the use of migration rates per 1,000 persons. The strength of the method is that it puts historical data into context. For example, 1,000 in-migrants to Ottawa in 1991 would be the equivalent of 1,365 in 2015. Conversely, while 1,000 arrivals in both 1991 and 2015 would appear to be equal, it would require only 700 in-migrants in 1991 to have the same demographic weight proportional to the existing population.

³ Statistics Canada, Population Projections for Canada (2013 to 2063), and Provinces and Territories (2013 to 2038), Cat. 91-520, May 26, 2015

Data available since 1987 show a declining trend in the net (arrivals minus departures) number of international movers to Ottawa per thousand population (Figure 3). Peaks occurred during 1992-93, when the national economy was in recession but the local economy was growing, and during the high-tech boom of 2000-2001. Since then the rate has dropped from 6.4 arrivals per thousand persons in the early 2000s to an average of 4.1 over the past two years.

Intra- and inter-provincial migration have tended to move together in response to the robustness of the local economy relative to the rest of the province and the country. Figure 3 shows intra- and inter-provincial migration and clearly illustrates the effects of federal job cuts in the mid-1990s, the high tech boom and subsequent bust, and the effects of the western Canada energy boom through 2010-2014.

Figure 3 Net Migration Rates per 1,000 Population, 1987-2014



Source: Statistics Canada, Migration Estimates for Census Division 3506 (Ottawa)

Projections of Future Migration

International migration rates for the four primary streams (immigrants, emigrants, returning emigrants, and temporary emigrants) for the Scenario 2 (Reference) projection were based on the average of the past 10 years of data, similar to the approach adopted by Statistics Canada for the nation for its medium projections. The same rates per thousand were applied to Scenarios 1 and 3 (Low and High respectively), except for international migration. The Low scenario applies the same proportional difference between Statistics Canada's low and medium projections to the 6.2 per thousand rate for Ottawa. That produces a Low scenario immigration rate of 4.1 per thousand. The High Scenario rate adopts the same approach for Statistics Canada's high and medium projections. That produces a rate of 7.4 for Ottawa.

For inter- and intra-provincial migration, three variations of a constant annual numeric rate were developed. Again, this is similar to Statistics Canada's approach to domestic migration. The Reference projection adopts the average levels of the past 10 years, the Low uses 27-year averages (the longest period for which there are available data) and the High projection uses rates 30 percent above the 10-year average.

The last migration component is non-permanent residents (NPRs). A non-permanent resident is a person in Canada who has a work or study permit, or who is a refugee claimant. All three scenarios assume a reduction to the 10-year average by 50 percent, from an 850 person annual average to 425 annually after 2021⁴. This reflects anticipated reductions in the growth of the NPR population nationally. For example, Statistics Canada's medium projection for Canada is that growth in the NPR population will fall to zero

⁴ The level of NPR migration has little effect on the projections because almost all in-migrants to Ottawa are student-aged. Outside of the roughly 18 to 25 population, there are net negative losses as people leave.

over the next decade. Ottawa is projected to continue to attract some NPRs due to its educational institutions.

Assumptions for seven migration components, as well as births and deaths for all three scenarios are summarized in Figure 4.

Figure 4 Summary of Projection Assumptions for Three Scenarios

Component	Scenario 1	Scenario 2	Scenario 3
	Low	Reference	High
Rates/1,000 population			
International immigrants	4.1	6.2	7.4
Emigrants	3.0	3.0	3.0
Returning emigrants	1.9	1.9	1.9
Net temporary emigration	0.9	0.9	0.9
Annual numbers			
Inter- and Intra- based on:	27-year average	10-year average	Sc. 2 plus 30%
Net interprovincial migration	1,183	1,227	1,595
Net intraprovincial migration	126	1,502	1,953
Net non-permanent residents	850 to 450	850 to 450	850 to 450
Natural Increase			
Total Fertility Rate (TFR) by 2026	1.35	1.50	1.65
Mortality	projected Ontario rates	proportionate to Ott-Ont difference	double Ott-Ont difference

Projection Results

Results for the three scenarios are summarized in Figure 5. Relative to the current OP projection to 2031, the proposed Reference projection is higher by 17,700 persons or 1.6 percent.

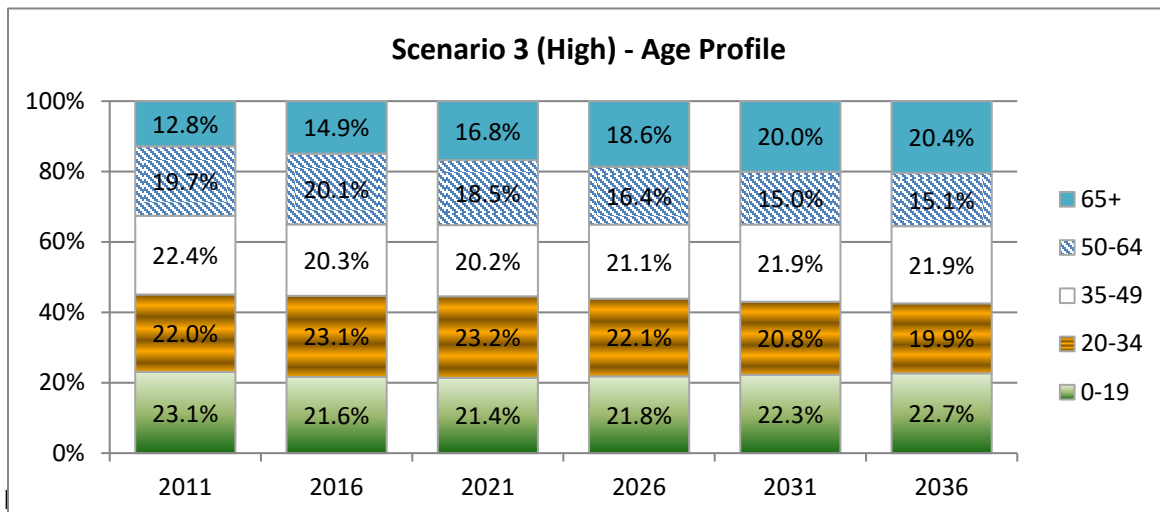
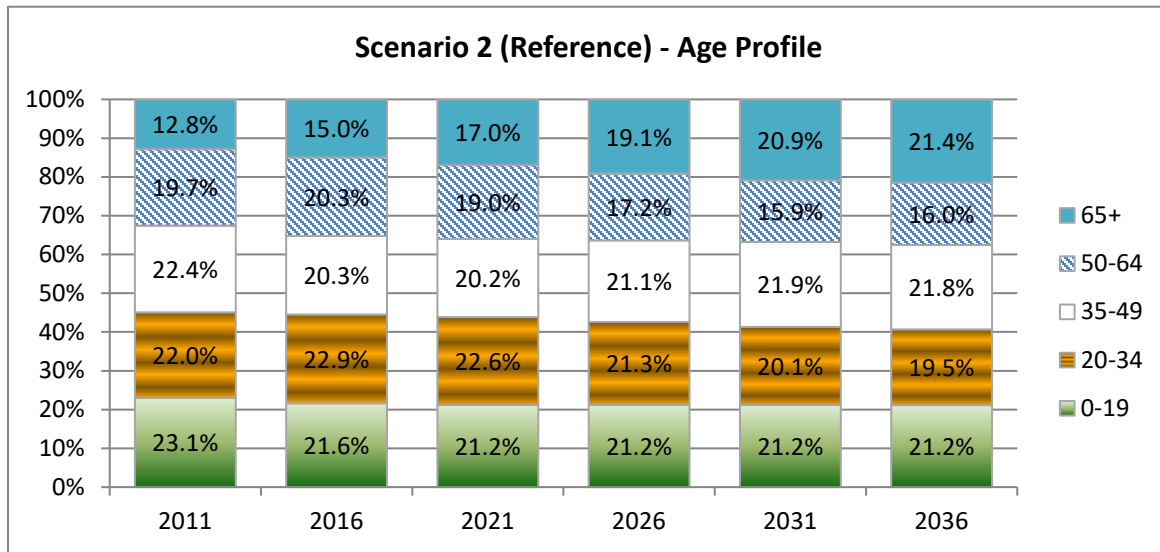
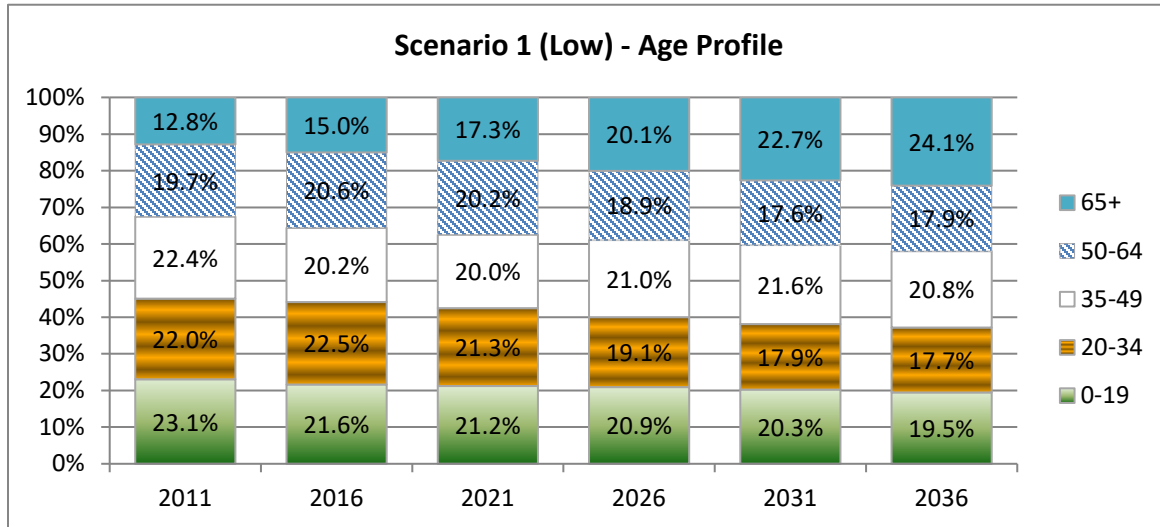
Figure 5 Results for Three Scenarios compared to Official Plan, 2014-2031-2036

Scenario	2014	2031	2036	Growth			
				2014-31		2014-36	
Low	946,344	1,057,305	1,076,621	110,961	11.7%	130,277	13.8%
Reference	946,344	1,153,535	1,213,553	207,191	21.9%	267,209	28.2%
High	946,344	1,214,771	1,305,224	268,427	28.4%	358,880	37.9%
Official Plan	946,344	1,135,840	n/a	189,496	20.0%	-	-

Note: 2014 is the current post-censal estimate for mid-2014

Figure 6 shows the age profiles of the three projections to 2036 at five-year intervals starting with the final post-censal figures for 2011. Scenario 1 (Low), with the lowest migration and births, has the highest share of population aged 65+ (24%) and the lowest share aged 19 and under (19.5%). Scenario 3 (High) is the reverse of this with 20.4% aged 65+ and almost 23 percent aged 19 and under. Scenario 2 (Reference) is between the two but slightly closer to the High scenario. Details of the projected age structure under each of the 3 scenarios can be found in Appendix 1.

Figure 6 Age Profile for the 3 Scenarios, 2011-2036



Another view of the change in age groups shares in each scenario is shown in Figure 7. This presents the changes as an index with 2011 set at 100. Values over 100 indicate increases; for example, total population in Scenario 1 is 118 at 2036, indicating an 18 percent increase. Values below 100 show declines; this occurs in only one age group, 20-34 in Scenario 1, with a 2036 population only 95 percent the size of 2011. The most striking observation from the values presented in Figure 7 is that the only age group growing at a rate faster than the total population is the 65+ cohort.

Figure 7 Index of Population by Age Group, Three Scenarios (2011 = 100)

Scenario 1						
Age groups	2011	2016	2021	2026	2031	2036
0-19	100	99	101	103	102	100
20-34	100	108	106	98	94	95
35-49	100	95	98	106	112	110
50-64	100	110	112	108	104	107
65+	100	123	147	177	205	221
TOTAL	100	105	109	113	116	118

Scenario 2						
Age groups	2011	2016	2021	2026	2031	2036
0-19	100	100	104	110	116	122
20-34	100	110	116	116	116	118
35-49	100	96	102	113	124	130
50-64	100	109	109	105	102	108
65+	100	124	149	178	206	222
TOTAL	100	106	113	120	126	133

Scenario 3						
Age groups	2011	2016	2021	2026	2031	2036
0-19	100	100	106	117	128	141
20-34	100	112	121	124	126	129
35-49	100	97	104	116	131	140
50-64	100	109	107	103	101	110
65+	100	124	150	179	208	228
TOTAL	100	107	115	124	133	143

Dependency Ratio

The Dependency Ratio measures the ratio between the combined population aged 15 and under and over 64 to the population aged 15 to 64, traditionally the “working age” population. Under the Reference scenario, the ratio for Ottawa is projected to increase from 43.3 in 2014 to 59.4 in 2036. Almost 90 percent of the increase is due to growth in the older population. Although the Reference Projection has the working-age population continuing to increase to 2036, its growth rate is only about one quarter the rate of growth of the dependent population (15% compared to 58% respectively over 2014-36). However, Ottawa is far better placed than many countries; for example, as of 2015 the absolute size of the working-age population was declining in the European Union, Japan and China.⁵

Despite the projected hike in the dependency ratio, the Ottawa ratio will still be lower than the country overall; Statistics Canada projects a ratio of 65.0 nationally by 2036. An important reason for Ottawa’s lower dependency ratio is the rejuvenating effect of domestic and international migration.

⁵ Source: United Nations Population Division, 2015.

Statistics Canada Projections for Canada

Statistics Canada published their latest projections for Canada and the provinces in May 2015⁶. The medium (M1) scenario shows the Canadian population increasing by almost 24 percent over the 2013 to 2038 projection period from 35.2 million to 43.5 million. Ontario is projected to grow at a slightly lower rate, by 22 percent over the 25 years, from 13.5 to 16.5 million.

One way to assess the reasonableness of the Reference projection for Ottawa is to put it into a national and provincial context. Relative to Canada, Ottawa has steadily grown at a faster rate since 1951 except for the recession of the late 1970s. In 1988, 25 years prior to Statistics Canada's base year of 2013, Ottawa accounted for 2.44 percent of the Canadian population and 6.67 percent of the province of Ontario. In 2013, the city had increased to 2.66 percent of Canada and 6.91 percent of Ontario. By 2038, using an extrapolation of the 2036 Reference figure, Ottawa would represent 2.85 percent of the nation and 7.48 percent of the province. Nationally that is a slight reduction from the historic rate, but is more than double the rate of increase relative to Ontario. This is explained by Ottawa being comparatively unaffected by any future declines in southern Ontario's manufacturing sector.

Comparison to Ontario Ministry of Finance Projections

The provincial Ministry of Finance (MoF) produces projections annually for the province and each of the upper-tier municipalities, including Ottawa. The City of Ottawa has never used the MoF projections for a number of reasons. First, the projections change each year and can be subject to significant revision. Hence, depending upon which year's projections are adopted there can be significantly different results. Secondly, the projections are strongly influenced by short term trends, approximately the preceding five years. Since the most important factor in projections, net migration, experiences upward and downward cycles, the projections may change significantly from year-to-year and a projection based on a 5 year picture can lead to significant fluctuation in the projected population.

By age cohort, the MoF population projections have consistently overestimated the 0 to 24 and 65 and over age cohorts while underestimating the 35 to 64 age category. Overall, the gap between the MoF projections and the OP projections has been widening for the past three projection cycles (2021, 2026 and 2031).

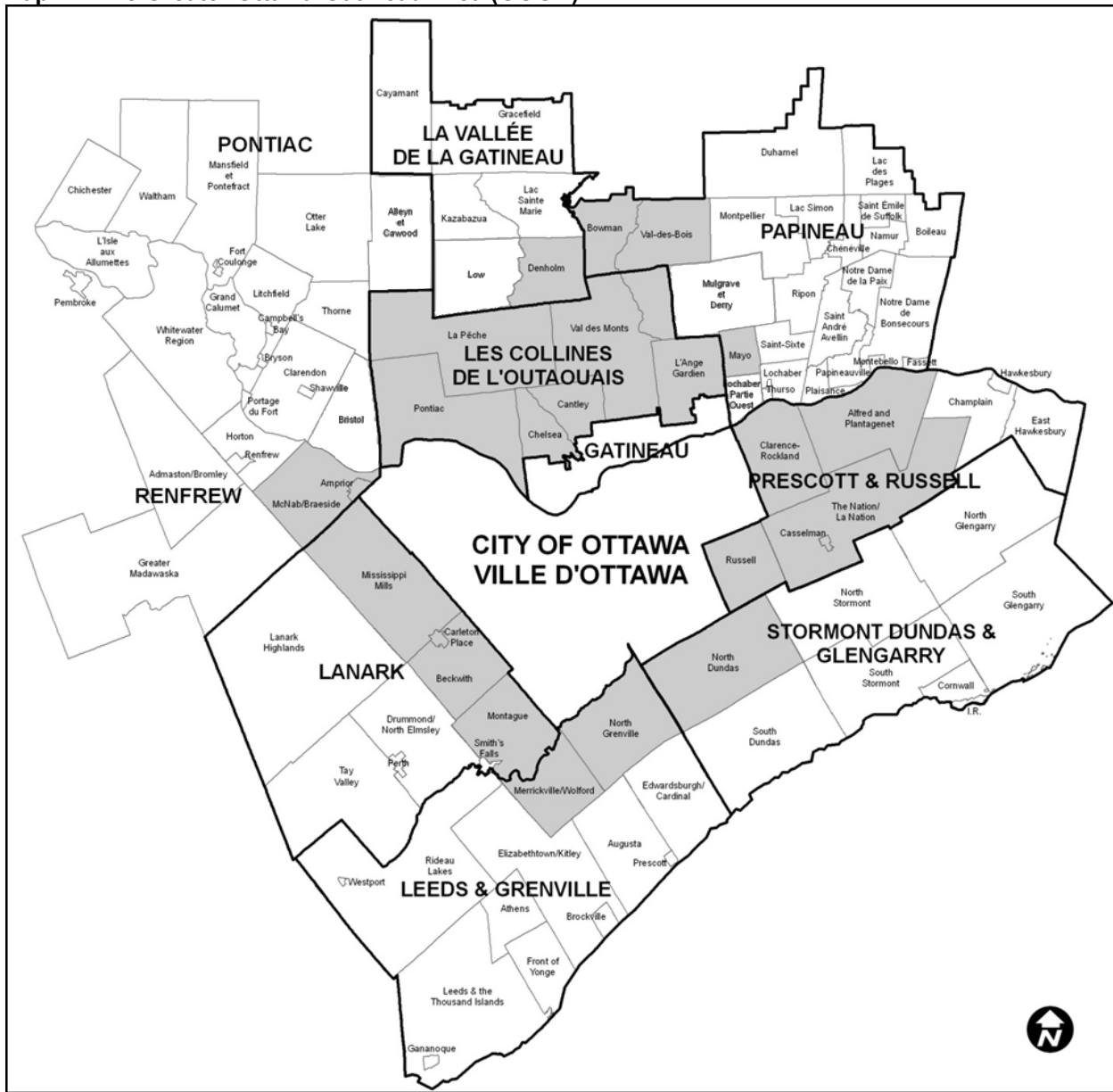
It is concluded that due to their volatility, the MoF projections are not a sound basis upon which to base long term municipal planning and subsequently are not used in this report.

Population Growth in Communities Adjacent to Ottawa

Ottawa has demographic and economic links to surrounding communities in both Ontario and Québec. Population growth in the areas adjacent to Ottawa must be examined and included in this analysis especially as it relates to future employment in Ottawa (discussed later in this report). Map 1 shows the area adjacent to Ottawa that is included in this analysis.

⁶ Statistics Canada, op. cit.

Map 1 – The Greater Ottawa-Gatineau Area (GOGA)



Population Growth in Gatineau and the Outaouais

For areas in Québec, the most recent projections developed by the Québec government were used. The same source was used for the 2007 regional projections. These are shown in Figure 8.

Figure 8 Population Projections for the City of Gatineau and Rural Outaouais (MRC)

Area	2011	2016	2021	2026	2031	2036
Gatineau	268,838	280,923	300,878	315,997	328,731	339,080
MRC	46,908	50,982	54,506	57,472	59,653	61,248
Total	315,746	331,905	355,384	373,469	388,384	400,328
Increase		16,159	23,479	18,085	14,915	11,944
% increase		5.1%	7.1%	5.1%	4.0%	3.1%

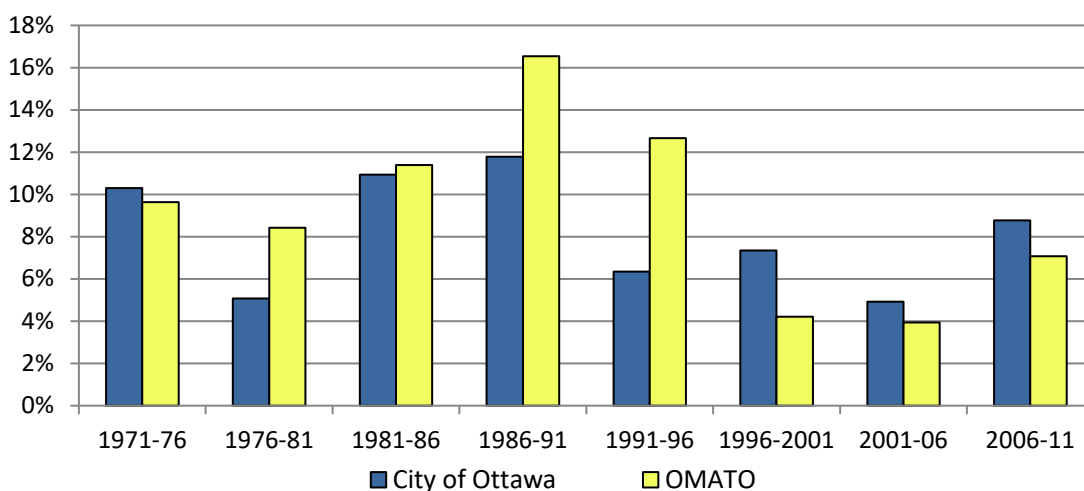
Source: Institut de la statistique du Québec, Perspectives démographiques des MRC du Québec, 2011-2036, released October 1, 2014.

Growth in Ontario Municipalities Adjacent To Ottawa (OMATO)

Population growth in the 14 Ontario Municipalities Adjacent To Ottawa (OMATO) municipalities has been the subject of ongoing monitoring for many years. Figure 9 shows percentage population growth in Ottawa and the OMATO communities for each five-year census period since 1971. Three things are especially noteworthy:

- The highest growth rates in OMATO occurred between 1986 and 1996, with growth in OMATO in the early 1990s occurring at twice the rate of Ottawa;
- Since 1996 growth in OMATO has slowed considerably, although rates in both Ottawa and OMATO increased between 2006 and 2011;
- Since 1996 Ottawa has consistently grown at a higher rate than the OMATO municipalities.

Figure 9 Population Growth in Ottawa and OMATO, 1971 to 2011



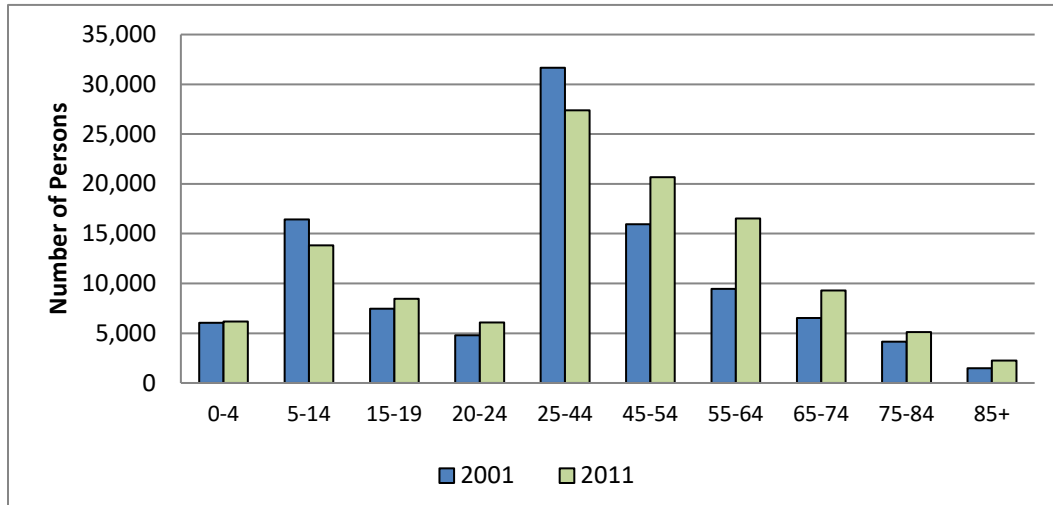
Source: Statistics Canada, Census of Canada, 1971 to 2011

Population growth in OMATO between 2001 and 2011 also displays a significant emphasis on pre-retirement and retirement age groups compared to Ottawa (Figures 10 and 11):

- The 0-4 cohort increased by only two percent in OMATO, compared to 10 percent growth in Ottawa.
- The population aged 5 to 14 and 25 to 44 declined in absolute numbers in every one of the 14 OMATO municipalities.

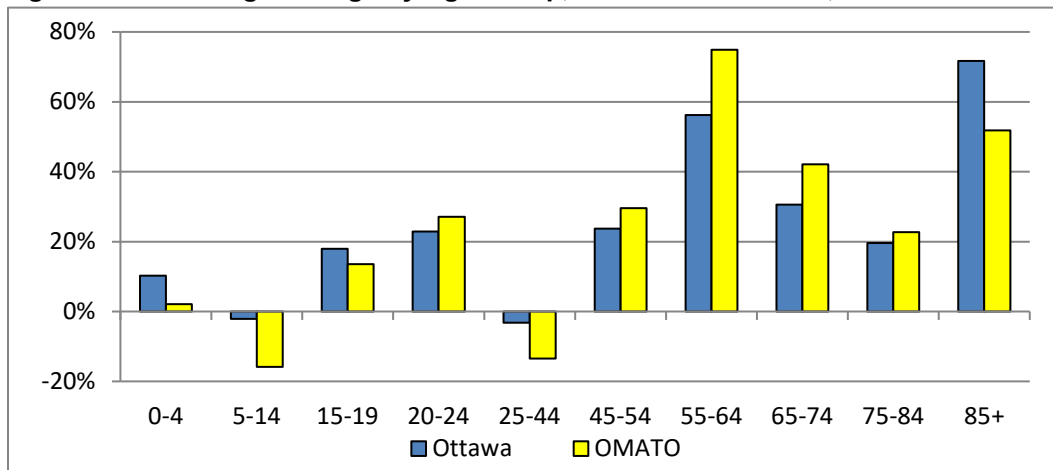
- Small increases in OMATO's student-aged population (15 to 24) may reflect post-secondary students either living at home and studying in Ottawa or attending school elsewhere and being enumerated by the census at their parents' home.
- All age cohorts 45 to 84 increased more rapidly in OMATO than in Ottawa, particularly those aged 55 to 74.
- Ages 85 and over increased more rapidly in Ottawa, likely due to the very elderly wanting to be close to advanced medical care.

Figure 10 OMATO Age Distribution, 2001 and 2011



Source: Statistics Canada, Census of Canada, 2001 and 2011

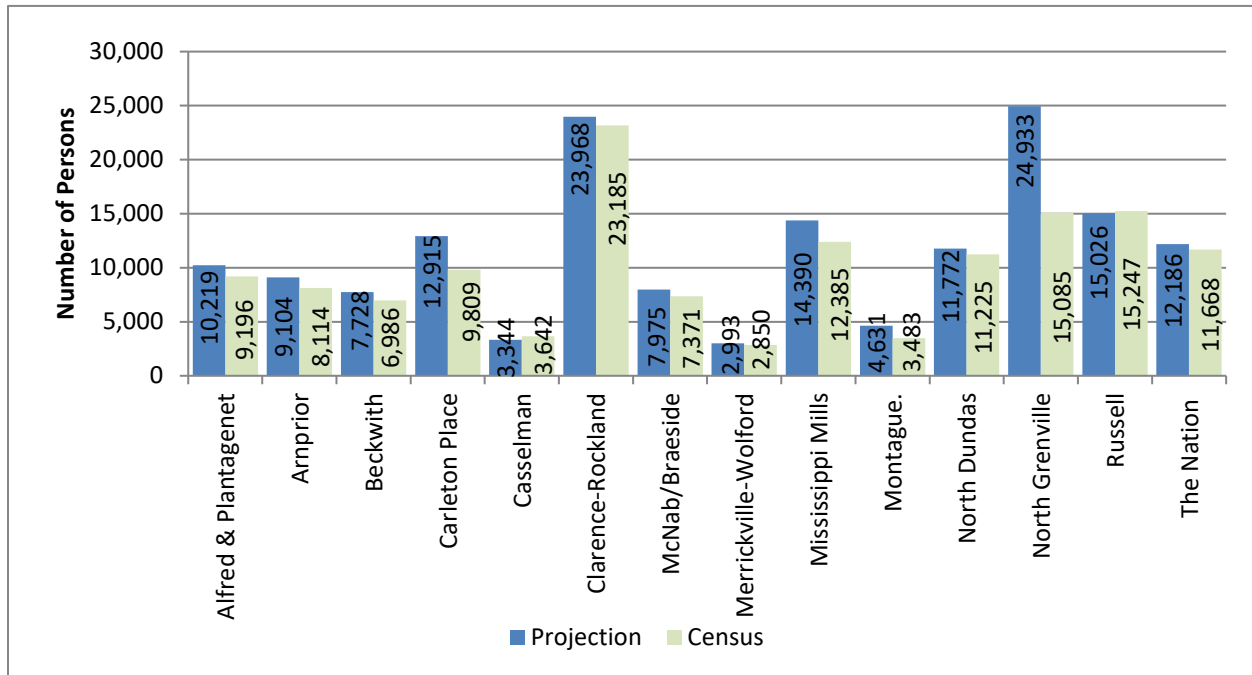
Figure 11 Percentage Change by Age Group, Ottawa and OMATO, 2001-11



Source: Statistics Canada, Census of Canada, 2001 and 2011

Projections adopted by local OMATO municipalities were used in the previous (2007) projections for the Ottawa region. These have proved to be too high in all but one of the 14 communities. Projections adopted by the Township of North Grenville, which includes Kemptville, were especially high, with a forecast 2011 population of almost 25,000, compared to a 2011 Census count of 15,085. Figure 12 shows projected OMATO population compared to 2011 Census figures.

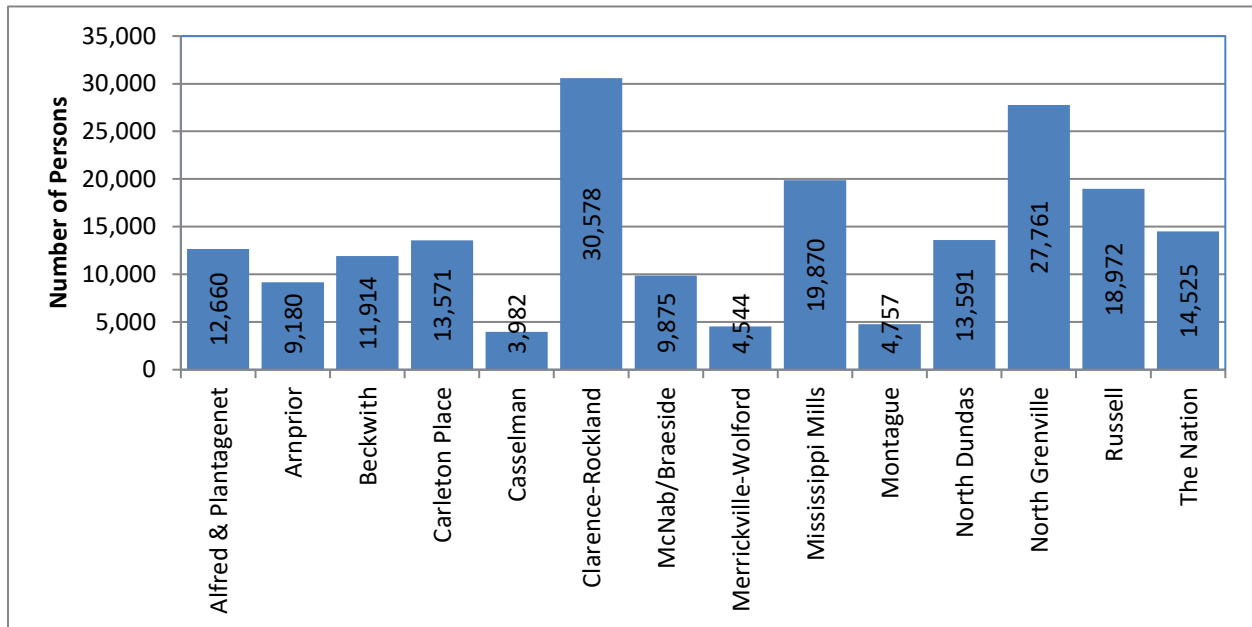
Figure 12 Projected Versus Census Population in OMATO, 2011



Source: Statistics Canada, Census of Canada, 2011 and OMATO Official Plans

New projections prepared by OMATO municipalities are presented in Figure 13. Based on past patterns these again appear to be too high in many cases, averaging almost double the observed rate of growth between 2001 and 2011.

Figure 13 Projected Population for OMATO, 2031



Source: OMATO Official Plans

In order to better reflect the recent growth trends in the OMATO municipalities, the projections for OMATO used in this report are based on the 2001-2011 rate of growth. The average five year rate of growth by municipality was modified to reflect a slowing rate of growth over the projection period. This was then applied to the 2011 census population to derive future census year (2016, 2021, 2026, 2031 and 2036) municipal population totals. Because the projected rate of growth for Ottawa declines over the projection period, a declining rate of growth was also assumed for OMATO municipalities. The projected population figures for the OMATO municipalities are shown in Appendix 3.

Projections for the Greater Ottawa-Gatineau Area (GOGA) are shown in Figure 14. The region is projected to grow from 1.45 million in 2016 to almost 1.8 million by 2036, an addition of 350,000 people or a 24 percent increase.

Figure 14 Population Projections for the Greater Ottawa-Gatineau Area

Area	2011	2016	2021	2026	2031	2036
Ottawa	912,248	969,066	1,028,481	1,090,970	1,153,535	1,213,553
OMATO	140,246	146,374	155,041	164,180	173,602	183,498
Gatineau	268,838	280,923	300,878	315,997	328,731	339,080
QMAG	46,908	50,982	54,506	57,472	59,653	61,248
Total	1,368,240	1,447,345	1,538,906	1,628,620	1,715,521	1,797,379
Increase		79,105	91,561	89,714	86,902	81,858
% increase		5.8%	6.3%	5.8%	5.3%	4.8%

Relative shares of population over the period to 2036 are shown in Figure 15. Ottawa's population share is projected to increase slightly, up 0.8% from 2011. OMATO is projected to decline slightly in share, while the City of Gatineau is projected to drop in share by 0.7%. Québec Municipalities Adjacent to Gatineau (QMAG) are projected to maintain their small share of the area.

Figure 15 Projected Distribution of Population, 2011 to 2036

Area	2011	2016	2021	2026	2031	2036
Ottawa	66.7%	67.0%	66.8%	67.0%	67.2%	67.5%
OMATO	10.3%	10.1%	10.1%	10.1%	10.1%	10.2%
Gatineau	19.6%	19.4%	19.6%	19.4%	19.2%	18.9%
QMAG	3.4%	3.5%	3.5%	3.5%	3.5%	3.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Conclusion

By 2036, the Reference scenario projects a population of 1,213,553 for the City of Ottawa. This scenario was selected as the reference scenario because it incorporates the most reasonable set of assumptions when considering all of the information available. By 2036, Ottawa's population will be older with more than 1 in 5 persons being aged 65 or older (compared to roughly 14% in 2011). There will be a slight decline in the population aged 0-14 but this is relatively small due to the effects of migration on the age structure of the population.

Part II. Households and Housing

Housing is the single largest consumer of urban land and consequently a vital component in determining future land requirements. Once the future population has been determined, the next step is to project the housing requirement of this population.

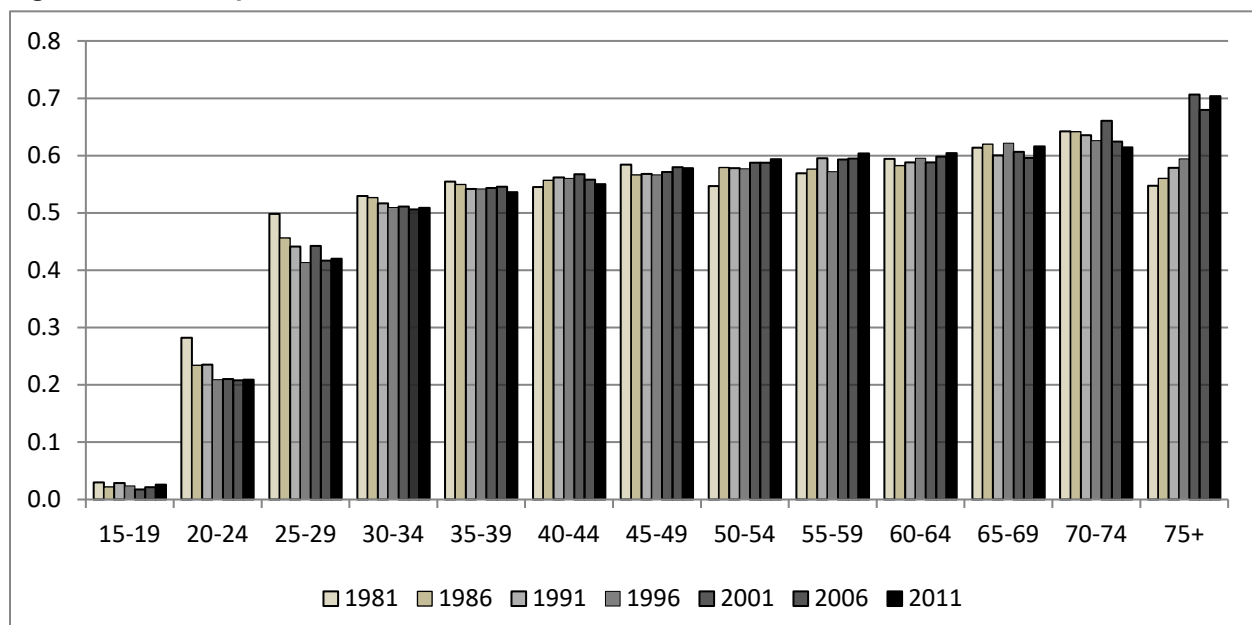
The methodology used to determine future housing demand follows standard best practices, and is similar to that used in 2007 and 2009:

1. Households are determined by applying a headship rate, the proportion of the population in each five-year age group that heads a household, to the projected population by age group.
2. Housing units by dwelling type are projected by applying the “propensity” for each household age group to choose a single-detached, semi-detached, row house or apartment. Rates for both household headship and housing propensities are based on census data.
3. A factor is added to allow for a vacancy rate in rental and ownership units and to replace demolished units.

Number of Households

Headship rates have been changing over time but are difficult to forecast accurately as changes revealed by census data are often inconsistent from census to census (Figure 16). Testing of projected headship rates resulted in relatively little change to the overall results while adding an extra degree of complexity⁷. Therefore, 2011 Census headship rates were applied to all future years. The same approach was used in the 2007 projections.

Figure 16 Headship Rates, 1981-2011, Ottawa



Source: Statistics Canada, Census of Canada custom tabulations

Before applying headship rates to population by age to determine the future number of households, an additional step is required to remove the population that does not live in private households from the projected population. Although that population is small, it has been growing and will continue to grow as

⁷ The 1995 projections prepared by the former Regional Municipality of Ottawa-Carleton used projected headship rates. Subsequent census data showed their accuracy to vary by age group with no overall increase in accuracy.

the size of the older adult population increases. The population not in private households has increased from 1.0% in 1996, to 1.67% in 2001, 1.83% in 2006 and 1.85% in 2011. For the projections, the 2011 rates by five-year age group were held constant. However, due to population aging, even unchanged rates by age group result in 3.0% of the population living in some form of collective dwelling by 2036.

The 2011 headship rates applied to the projected population in private households results in almost 506,000 households by 2036. This represents an increase of approximately 123,000 households or 32% during the 2014 to 2036 period. Adjustments for demolitions and vacancies are applied in later steps. Total households by age of the head of the household, for the reference scenario, can be found in Appendix 2.

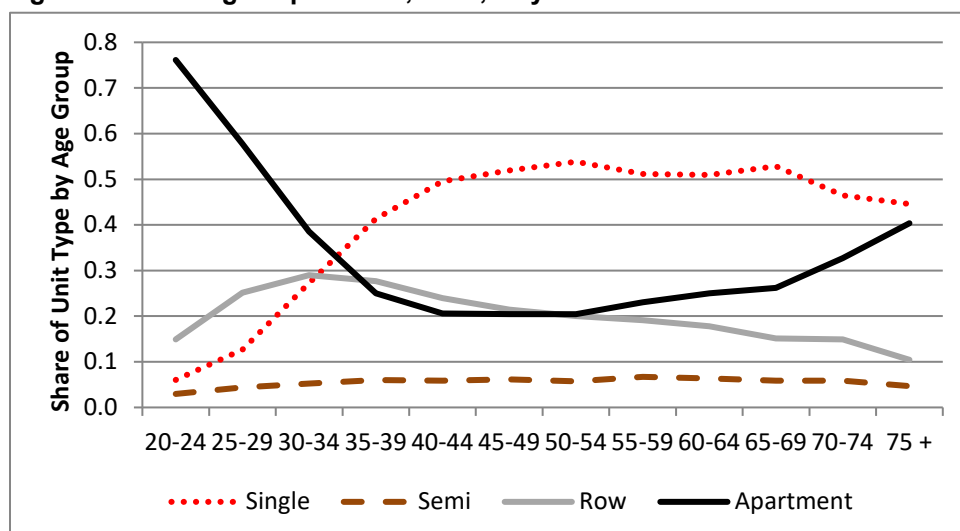
Households By Dwelling Type

Housing Propensities

The proportion of each household age group occupying a given housing type is termed their “propensity” for that housing form. For example, according to the 2011 Census, 52 percent of households whose heads were aged 45 to 49 occupied single-detached units, 6 percent were in semi-detached, 21 percent chose row units and 20 percent lived in apartments.

Figure 17 shows housing propensities from the 2011 Census.

Figure 17 Housing Propensities, 2011, City of Ottawa



Source: Statistics Canada, 2011 Census custom tabulation

Before determining the future number of units by dwelling types, using housing propensities, it is necessary to look at factors that might impact housing choice in the future and how these will result in changes to historical propensities.

There are several factors to be considered in developing a projection of future housing choices by age group. They include:

- Trends over the past decade showing declining demand for single-detached housing
- Census underreporting of population and the impact on housing propensities
- Aging of the baby-boom and overall increases in older age groups
- Declining household size

- Housing choices of the growing immigrant population
- The popularity of the urban lifestyle
- Household debt

As noted in the report “Residential Land Supply and Demand to 2031: 2012 Update”⁸, the housing market over the 2006-2012 period showed significant declines in the share of single-detached units and large increases in apartments. Since then, changes in the market have continued. As shown in Figure 18, in the five years 2011 to 2015 only 27% of new units in Ottawa have been single-detached, compared to a 42% apartment share.

Figure 18 Housing Starts plus Additions and Conversions, 2006-2016

	Single	Semi	Row	Apt.	Total
2006*	41.1%	6.1%	25.2%	27.6%	100.0%
2007	41.4%	4.6%	30.1%	23.9%	100.0%
2008	40.1%	3.1%	31.8%	25.0%	100.0%
2009	39.2%	5.2%	33.6%	22.1%	100.0%
2010	31.9%	5.5%	30.0%	32.7%	100.0%
2011	34.2%	6.0%	32.3%	27.4%	100.0%
2012	23.0%	4.5%	22.9%	49.6%	100.0%
2013	22.7%	5.5%	23.9%	48.0%	100.0%
2014	24.9%	4.2%	27.7%	43.2%	100.0%
2015	30.7%	2.7%	23.6%	43.1%	100.0%
2016*	37.5%	3.7%	37.0%	21.8%	100.0%
Total	32.8%	4.6%	28.5%	34.1%	100.0%

2006-12	35.9%	4.8%	29.7%	29.6%	100.0%
2011-15	26.9%	4.6%	26.0%	42.5%	100.0%
2011-16*	27.5%	4.5%	26.7%	41.2%	100.0%

Source: CMHC housing starts plus additions and conversions from City of Ottawa building permits
 * Indicates last six months of 2006 and first six months of 2016.

Recent data have shown an even larger gap between the housing projection presented in the 2012 report and actual construction. The 2012 document foresaw a singles share over the 2006-2031 time period of 35.9%; since 2011 it has been 27.5%. The 2012 update projected a 31.2% apartment share; since 2011 it has been 41.2%.

Census data for housing propensities are available for each census back to 1981. While very useful, the census data have the limitation that they do not cover all of the population because, on average, between three and four percent of the population are not included in the census. In 2011, net underreporting amounted to almost 29,000 people, or 3.3 percent of Ottawa’s census population.

As noted on page 5 of the 2012 report, net underreporting in the 2011 Census was concentrated among adults aged approximately 18 to 40. Much of this group has relatively high propensities for apartments.

Comparing new occupied units added between 2006 and 2011 based on census data to estimated actual new units from housing starts and building permits shows a significant shortfall in apartment units and an overstatement in all other unit types (Figure 19a). Some of this difference is due to units that have been built but are vacant. However, the size of the difference, (1,159 fewer singles and semis, 1,274 fewer row units and 1,738 more apartments than the census), cannot be explained by lags in occupancy or changes in vacancy rates (as reported in CMHC vacancy surveys). Although it is not possible to be precise, this suggests that:

⁸ Report dated November 2012. Presented to Planning Committee, November 27, 2012; to Council December 19, 2012.

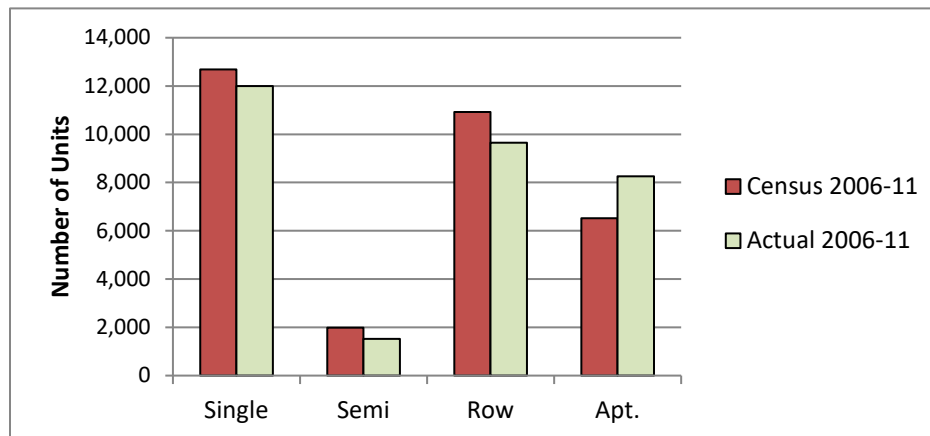
1. Census data may overstate the actual number of occupied single- and semi-detached units, and
2. Undercount the number of apartment units

The end result would then be that the census overstates single-detached propensity and understates apartment propensity.

Figure 19a New Housing Units, 2006-2011, Comparing Census and Estimated Actual

	Single	Semi	Row	Apt.	Total
2006 Census	139,730	17,950	61,520	101,900	321,100
2011 Census	152,410	19,940	72,445	108,425	353,220
Increase 2006-2011:					
Census	12,680	1,990	10,925	6,525	32,120
Estimated actual	11,992	1,519	9,651	8,263	31,425
Difference	-688	-471	-1,274	1,738	-696

Figure 19b New Housing Units, 2006-2011, Comparing Census and Estimated Actual



Source: Statistics Canada, Census of Canada for 2006 and 2011, and CMHC housing starts plus additions and conversions from City of Ottawa building permits

As a further attempt to understand the gap between observed and census new housing units in the period of 2006-2011, 2011 Census population by age group and Statistics Canada's final 2011 post censal population by age group were compared in order to derive an age profile of the population not enumerated in the census (Figure 1). It was then theoretically assumed that the entire non-enumerated population lived in apartments and that they had the same headship rate as the census population. This resulted in an increase in the number of new apartments from 2006-2011 but this increase still fell short of accounting for the gap between the observed new apartments and the number reported in the census, as shown in Figure 19b.

The above, indicating that census data overstate the propensity for single-detached and understate apartments, was one consideration in developing projections of future housing propensities.

The aging of the baby boom (those born from 1946 to 1965), and the overall aging of the population, will change the demand for single-detached units. As can be seen in Figure 17, the propensity for singles peaks at the 50-54 age group and then declines. The baby boom is currently aged 50 to 70; the youngest will have aged out of the peak single demand age group by 2021.

The overall aging of the population will change the demand for dwellings by type. In 2011 almost 13% of the population was aged 65+, this is projected to increase to approximately 21% by 2036 (see Figure 6). As we live longer, there will be increasing incidences of disability and mobility restrictions which will make moving to smaller, single floor accommodation a logical choice for an increasing number of seniors.

Housing in newer suburbs offers challenges to “aging in place”. Property maintenance can become an issue, transportation is more difficult and medical and other services are not as readily available as in more central locations. These considerations will result in some people making the decision to re-locate.

Smaller households do not require large houses and as the number of persons per unit continues to decline this will result in a decrease in the demand for single-detached units. In 2001, 58.8% of all Ottawa households were occupied by 1 or 2 persons, this share rose to 61.2% by 2011. While some of these smaller households will remain in their existing single-detached homes, some will downsize with the result being an increase in demand for non-single unit types.

Immigration will assume a growing share of Ottawa’s population. From 2001 to 2011, the immigrant share of Ottawa’s population rose from 21.8% to 23 % (from 2001 and 2011 census data). Immigrant households are more likely to rent and occupy apartments and as they take on a larger share of the population this will impact housing propensities.

As stated above, it is expected that seniors will move to more central locations where the services they need or want are more readily available. In addition to this attraction, people of all ages will also be attracted to these more central locations by the appeal of the “urban lifestyle”. This will result in an increased demand for apartments.

Household debt loads are at an all time high in Canada. In September 2016 Statistics Canada reported that household liabilities rose to 100.5% of GDP, the first time it had exceeded the size of its economy. The financial pressure resulting from this, along with increasing pressure on pensions, will lead some to sell their singles and buy or rent smaller, less-expensive units.

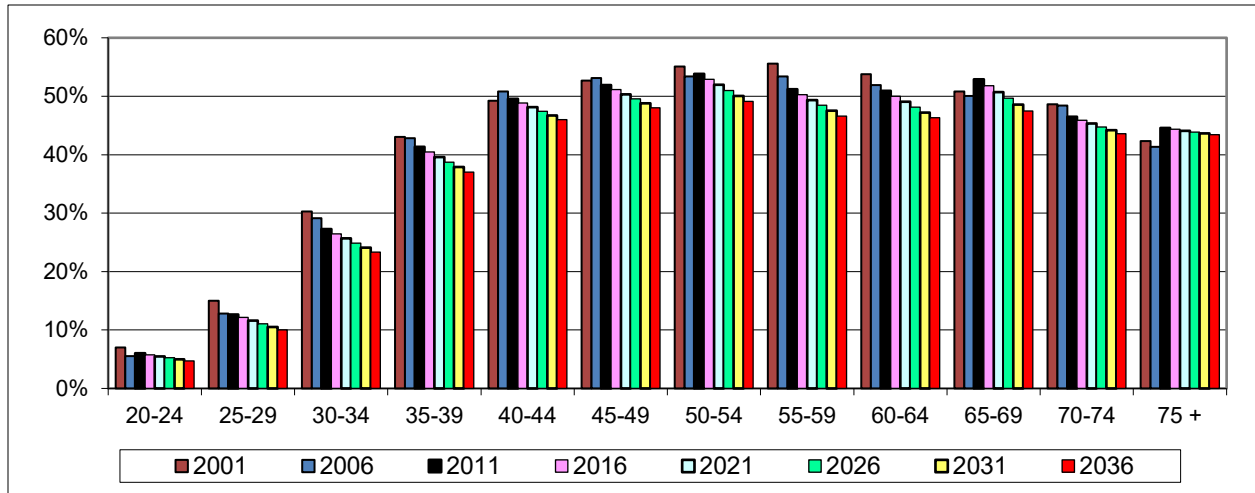
Taken as a whole, all of the above factors, from recent trends to social and economic considerations, suggest that the future demand for single-detached units will decline and will result in an increased demand for non-single units. While much of this will be off-set by an increased demand for apartments, it is expected that there will also be a greater demand for row units. Row units are seen as a more affordable option to first time home buyers. At the same time they provide more living space for young families than apartments. According to the 2011 Census, only about 10% of apartments in Ottawa have more than 2 bedrooms and this share has been declining over time as fewer large apartments are being built. Of the apartments built from 1991 to 2006 only 7% had more than 2 bedrooms; this fell to about 4.5% for apartments built from 2006-2011. In addition, row units are seen as a means to fulfill the space requirements of those downsizing while being more affordable than single-detached units and offering a transition or option for those downsizing from their single –detached home but who are not quite ready to make the move to an apartment.

Housing Projections to 2036

Projected housing propensities were used to determine the number of households by dwelling type for the projection period. Headship rates were applied to the projected population by age to determine the number of households by age group; propensities were then used to determine the number of households by dwelling type by age group. The sum of these across all age groups then yielded the total housing demand for the projected population.

The following describes past (2001-2011) and projected housing propensities (2016-2036) by age group.

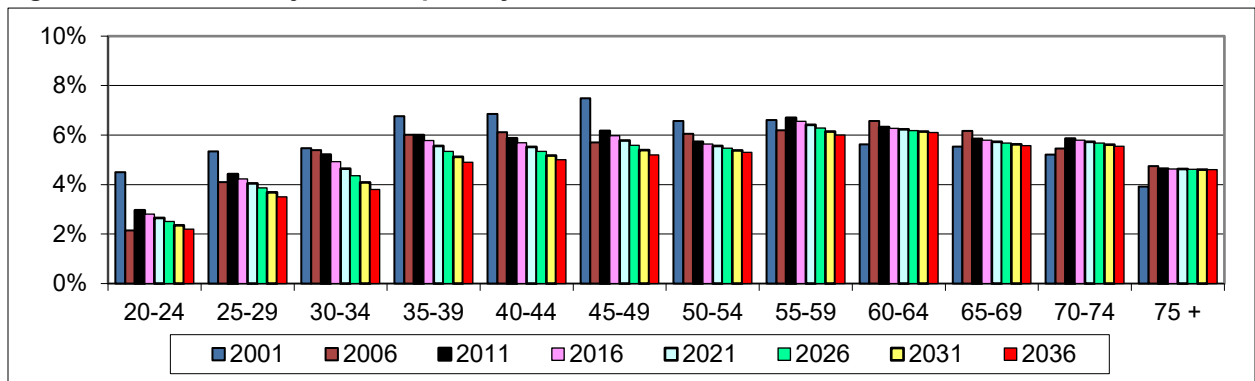
Figure 20 Past and Projected Propensity for Single-detached Units, 2001-2036



Source: Statistics Canada, Census of Canada 2001, 2006, 2011 custom tabulations, and City projections

Census data for the 2001-2011 decade shows a general decline in the propensity for single-detached among many household age groups even without taking into account the possible over-reporting of singles propensity as shown in the previous section (Figure 20). Taking the above housing propensity factors into consideration, the propensity for single-detached units is projected to decline for all age groups over the projection period.

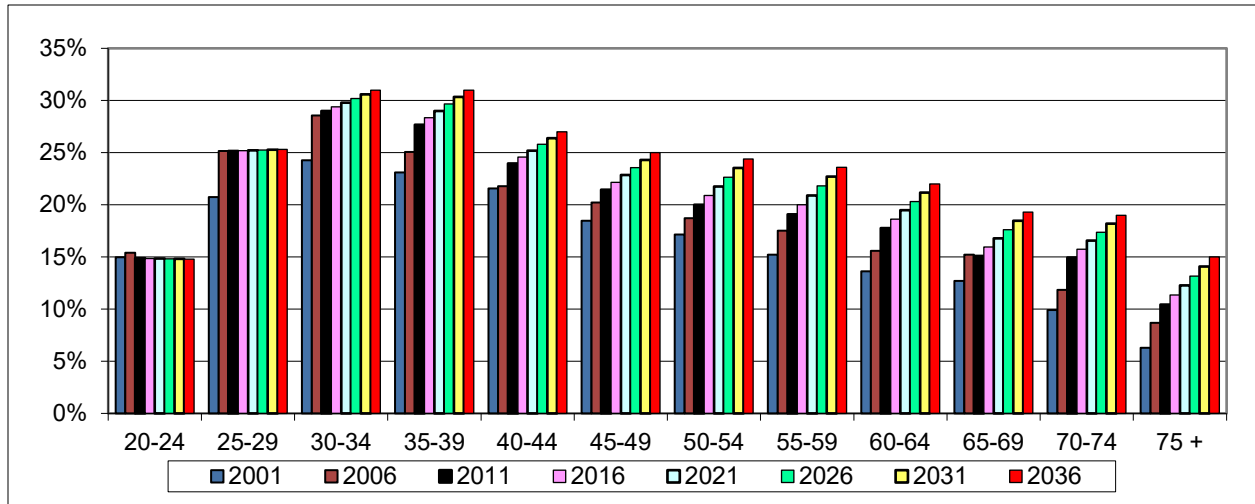
Figure 21 Past and Projected Propensity for Semi-detached Units, 2001-2036



Source: Statistics Canada, Census of Canada 2001, 2006, 2011 custom tabulations, and City projections

Semi-detached units represent a small fraction of the Ottawa housing market and this is not expected to change in the future. As such, semi-detached units are not expected to have a significant effect on overall housing demand. Generally, propensities for semis have been in decline since 2001 and are projected to continue losing share at a gradual rate (Figure 21).

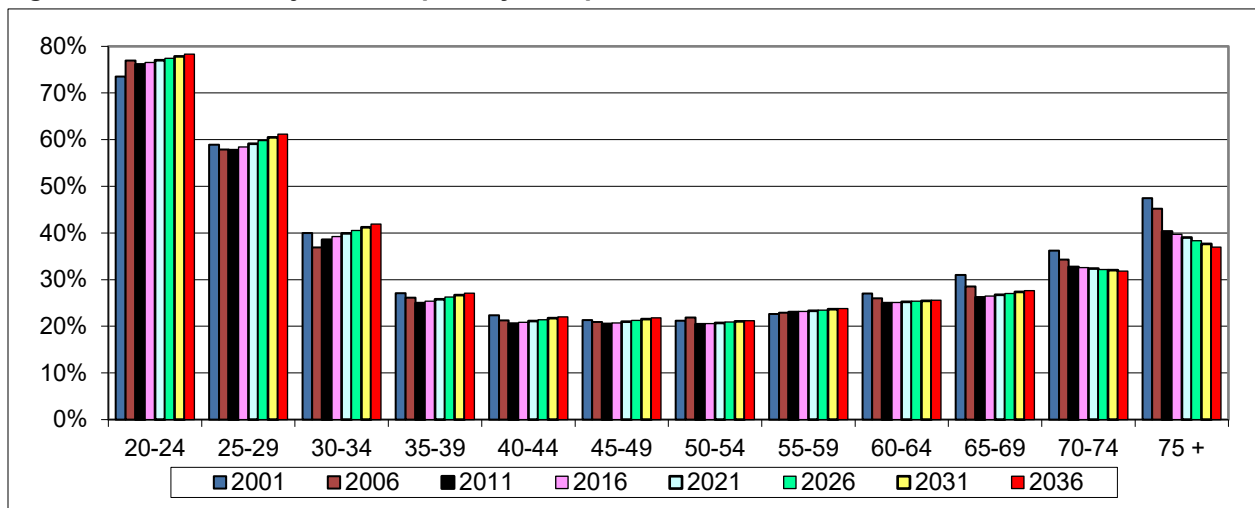
Figure 22 Past and Projected Propensity for Row Units, 2001-2036



Source: Statistics Canada, Census of Canada 2001, 2006, 2011 custom tabulations, and City projections

Propensities for row units have seen significant gains over the 2001-11 decade among several age groups. However, significant increases for households under 35 stopped after 2006 and dropped slightly for the 65-69 cohort. Row units are projected to continue gaining in share as a more affordable substitute to new single-detached housing but at a somewhat reduced rate of increase (Figure 22). This reflects the observed decline in the rate of increase in the second half of the 10 year period from 2001-2011 in many of the age groups.

Figure 23 Past and Projected Propensity for Apartment Units, 2001-2036



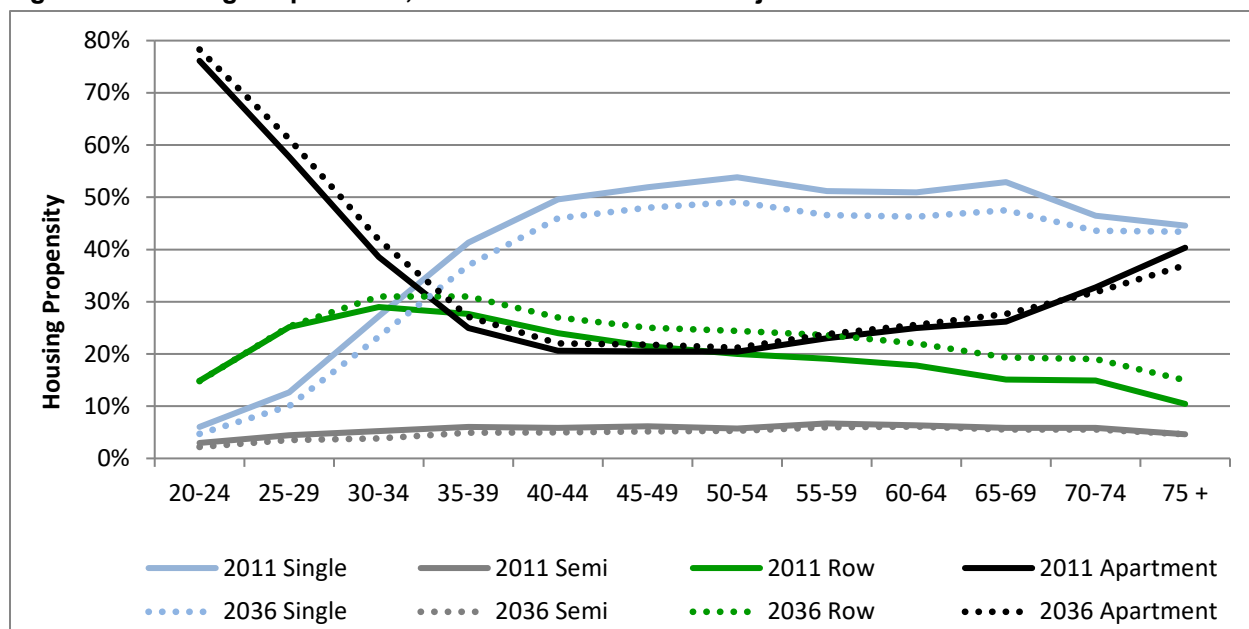
Source: Statistics Canada, Census of Canada 2001, 2006, 2011 custom tabulations, and City projections

Apartment propensities have been in decline for many years but census data and housing market activity since 2001 indicate that a degree of turnaround is occurring. The apartment share of new construction in Ottawa since 2011 (see Figure 18) suggests a change in apartment propensity post-2011 Census that has not yet appeared in census results. In addition, as discussed above, the census under-states apartment propensity. The projections anticipate increases among younger adults, moderate or little increase for

middle-aged households to reflect the observed trend. Small declines in the apartment propensity among the population over 70 (Figure 23) are expected as seniors remain in the workforce longer and at increasing rates (discussed in Part III Employment), take advantage of services that allow them to remain in their current unit type and remain healthier as they age.

Figure 24 shows the overall effect of the above changes and assumptions. Projected declines in single-detached propensity are expected to be largely offset by higher propensities for row units. Apartment propensity increases among younger adults and declines slightly among the elderly.

Figure 24 Housing Propensities, 2011 Census and 2036 Projected



Source: Statistics Canada, Census of Canada 2001, 2006, 2011 custom tabulations, and City projections

Demolitions and Vacancies

Housing demand was adjusted by allowing for the replacement of 300 demolished units annually based on the number of demolitions over the past five years (from City of Ottawa issued building permits). The projected split by unit type was 70 percent singles, 4 percent semis, 4 percent row units and 22 percent apartments and is consistent with past projections.

A further adjustment was made to allow for a vacancy rate in new units. Ownership units were assumed to have a 0.5 percent vacancy, the same assumption as was used in the 2007 projections. Rental units were assumed to have a 3.0 percent vacancy, again as was used in the 2007 projections. This figure represents what is often referred to as a balanced rental market.

Overall, demolition replacements and vacancy allowances are estimated to add 8,000 units to housing needs between 2014 and 2036 (Figure 25). Vacancies in row units appear low because the number of vacant rental units in 2014 exceeded the three percent target and therefore fewer vacant row units are needed in the future to reach the vacancy target.

Figure 25 Demolition Replacements and Vacancies in New Units, 2014-2036

	Single	Semi	Row	Apt	Total
Demolitions	4,620	264	264	1,452	6,600
Vacancies	215	19	15	945	1,195
Total	4,835	283	279	2,397	7,795

Conclusion

Over the 2014 to 2036 period there is a projected demand for 130,839 new housing units. Demand by unit type, including demolitions and vacancies, is shown in Figure 26. More detailed dwelling by unit type for the reference scenario can be found in Appendix 2.

Figure 26 Projected Housing Demand by Unit Type, 2014-2036

	Single	Semi	Row	Apt	Total
2014-36	43,211	3,900	36,738	46,989	130,839
Shares	33.0%	3.0%	28.1%	35.9%	100.0%

Figure 27 offers a comparison of the unit type shares over the projection period to the new unit type shares from 2011 to the middle of 2016 and to the existing housing stock in 2011. The projected new units by type will continue the shift of the housing stock toward a lower share of single-detached units and a subsequent greater share of non-single unit types when compared to the 2011 census shares, but this rate of change will be at a slower rate than has been observed between 2011 and 2016.

Figure 27 Projected and Actual Housing Shares res

Percentages	Single	Semi	Row	Apt.	Total
Actual 2011-16*	27.5%	4.5%	26.7%	41.2%	100.0%
Projected 2014-2036	33.0%	3.0%	28.1%	35.9%	100.0%
2011 Census	43.3%	5.6%	20.5%	30.6%	100.0%
2036 Projection	39.7%	4.9%	22.6%	32.8%	100.0%

*Source: CMHC housing starts plus additions and conversions from City of Ottawa building permits

Part III. Employment

Employment projections are based on the projected population characteristics of Ottawa and the surrounding areas. The economic zone of Ottawa is the entire Ottawa-Gatineau Census Metropolitan Area (CMA) plus adjacent municipalities in Ontario that are not included in the CMA. Map 1 shows the Greater Ottawa-Gatineau area.

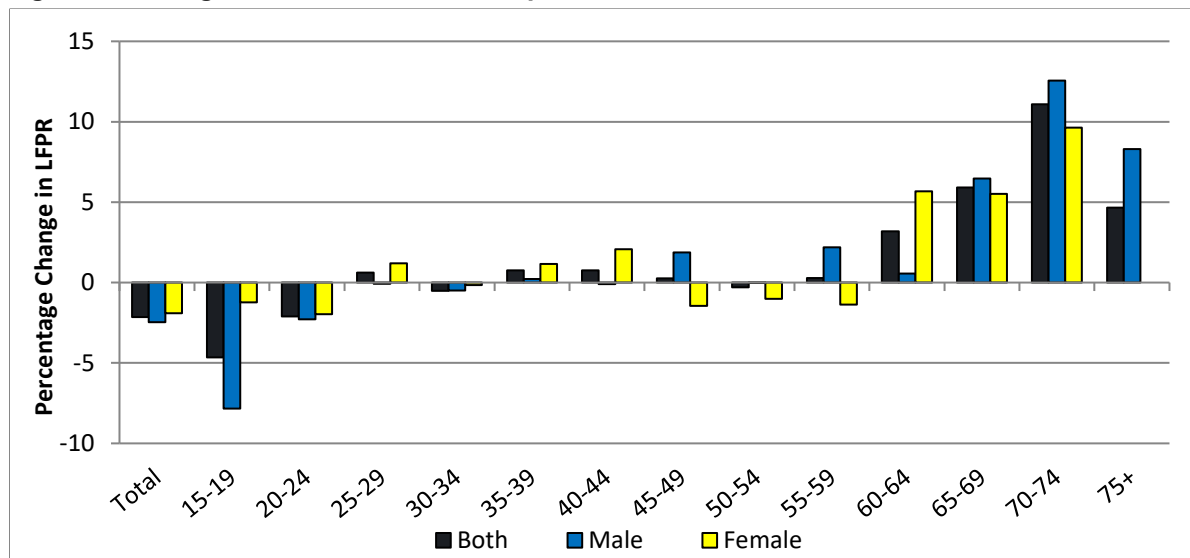
Labour force participation rates by age and sex were applied to the age-sex structure of the projected population to produce an estimate of the resident labour force. This number is adjusted by assumed unemployment rates to produce the number of employed residents. The number of net in-commuters from adjacent municipalities, the difference between the number of Ottawa residents who hold jobs outside of the City and the number of people who reside outside of Ottawa but hold jobs in Ottawa, is added to the projected resident labour force to project the total number of jobs located in Ottawa. A multiple job holder rate is applied to account for people holding more than one job.

Participation Rates

The labour force participation rate (LFPR) is the percentage of the population 15 and over that is in the labour force, either working or seeking work. Two primary factors influence the total LFPR; the health of the overall economy and the age/sex structure of the population. Higher economic growth attracts more people into the labour force, raising the rate. The effect of demographic change is more complex. Generally, rates among young adults are lower than for “working age” adults (25-54) due to school attendance and lack of experience. Rates among the older population 55 and over have historically also been lower due to retirements and health limitations.

Recently, however, there have been changes in these patterns. The LFPR has fallen among people under 25 over the past eight years (see Figure 28) and has increased significantly for women 60 to 74 and for men 65 to 75+.

Figure 28 Change in Labour Force Participation Rate, 2006-07 to 2014-15



Source: Statistics Canada, Labour Force Survey for Ottawa CMA, custom tabulation

Looking forward, the 2014-15 decline among young adults, attributed to the recent slowdown in the local economy, is not expected to last into the long term. The increase in rates among older adults, however, is expected to continue to grow due to longer and healthier life-spans, impending labour force shortages

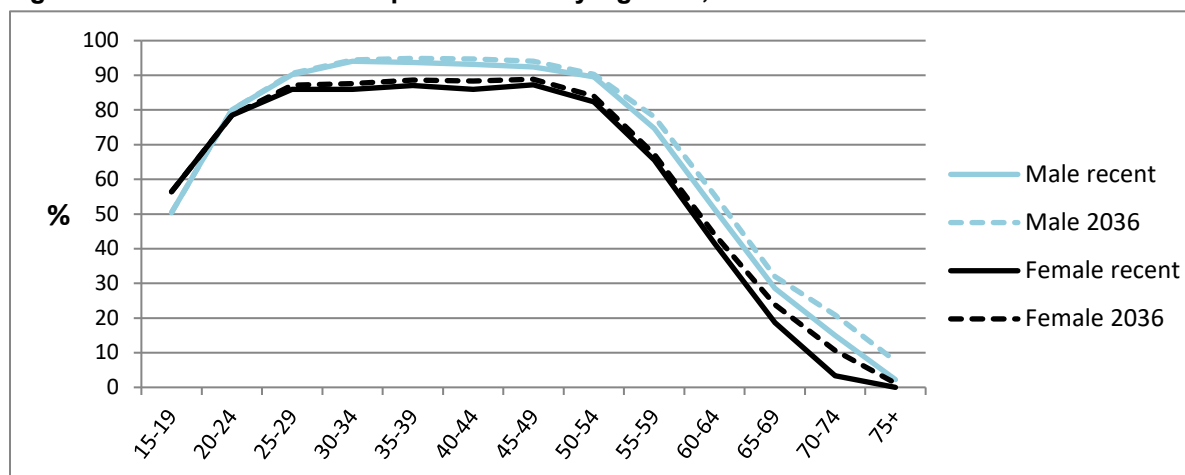
(see the discussion of the dependency ratio on Page 11 of this report) and pressure on pension systems, both stemming from projected large increases in the older adult population.

As a result, rates for 2016 were based on the average for 2006 to 2015 for age groups under 55 (men) and 60 (women) and on the average of the past four years (2012-15) for ages 55 and over (men) and 60 and over (women). This was done because the increase in older adult participation rates are more evident over the past four years and are expected to continue into the future.

Labour force participation by 2036 is projected to increase for all age groups, with the highest increases being among the population 55 and over, consistent with recent patterns. However, due to aging of the population, the overall participation rate is projected to decline, from an average rate of 67.7 percent in 2016 to 63.8 percent in 2036.

Applying projected participation rates to the projected Ottawa population by age and sex to 2036 produces labour force by age and sex (Figure 29).

Figure 29 Labour Force Participation Rates by Age/Sex, 2016 and 2036

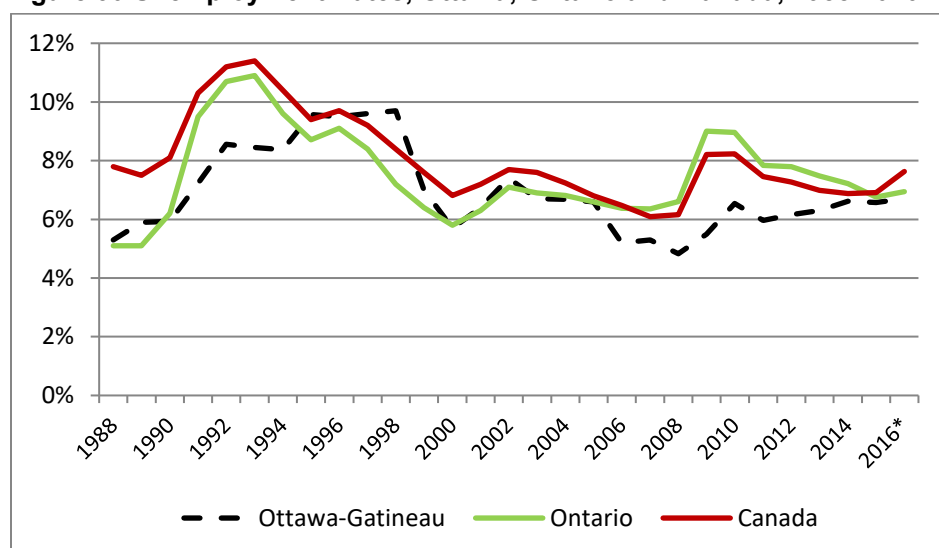


Source: Statistics Canada, Labour Force Survey for Ottawa CMA, custom tabulation, and projections

Unemployment Rates

In most years, Ottawa has a lower unemployment rate than either Ontario or Canada (Figure 30). Since 1988, exceptions have occurred, briefly in 1989, through the period of federal cuts 1995-1999, and in 2001-2002 following the end of the high-tech boom. On average since 1988, the local unemployment rate has been 0.6% below Ontario and 1.1% below the nation.

Figure 30 Unemployment Rates, Ottawa, Ontario and Canada, 1988-2016



* Year-to-date April

Source: Statistics Canada, Labour Force Survey

It is expected that unemployment rates will decline over time as the supply of labour becomes constrained by a significant portion of the population aging out of the workforce. For the projection, an unemployment rate of 6.7 percent for 2016 was used based on current data for the year. For 2021 and 2026 a rate of 6.0% and 5.5% was adopted, dropping to 5.0% for 2031 and 2036 based on an expected tightening of the labour supply. This produces an Ottawa projected employed labour force as shown in Figure 31.

Figure 31 Employed Labour Force Projections, Ottawa, 2016-2036

	2016	2021	2026	2031	2036
Unemployment Rate	6.7%	6.0%	5.5%	5.0%	5.0%
Employed Labour Force	514,787	539,938	564,331	591,204	618,915

Net In-Commuting

A feature of the Ottawa labour market is that the city attracts a large number of workers from surrounding municipalities. The largest net in-commuting is from Gatineau and adjacent Outaouais communities. Data from the 2011 National Household Survey shows that 18,100 Ottawa residents worked in Québec, while 57,200 Québec residents worked in Ottawa (Figure 32). The net inflow to Ottawa of 39,100 represents 7.4 percent of total jobs located in Ottawa⁹. Commuting from adjacent Ontario (OMATO) communities is also very significant, with 3,100 out-bound workers from Ottawa compared to 31,600 in-bound to the City. The net 28,500 in-commuters represent 5.4 percent of total Ottawa jobs. Minimal changes to the commuting relationships are expected to 2036.

Place of Work

Statistics Canada separates employed residents by their place of work. For the purpose of this report, Ottawa's employed labour force includes all workers with usual place of work, no fixed place of work, and

⁹ Calculated before provision for multiple jobholders is made since there are no data on their location.

those who work at home. It is assumed that the majority of workers with no fixed place of work (such as landscape contractors and salespersons) conduct most of their business within Ottawa and therefore they should be counted as part of the employed labour force. For net in-commuting calculation, only those with usual place of work are included.

Multiple Jobholders

To project the total number of jobs located in Ottawa, people with multiple jobs must be taken into account. This is calculated using a multiple jobholder rate. In 2015, the Ontario multiple job holder rate was 5.4 percent. This projection exercise adopts the Ontario rate as the 2016 baseline rate for Ottawa and is projected to increase to 5.8 percent by 2036 as part of the growing trend of decreasing full-time employment and increasing part-time and non-permanent employment in Ontario (Figure 32).

Figure 32 Commuters to Ottawa, 2011-2036

	Census 2011	Proj 2021	Proj 2031	Proj 2036
1. Employed Labour Force, Ottawa ¹⁰	463,625	539,938	591,204	618,915
2. Out-commutes to Gatineau	-17,700	-20,613	-22,452	-23,504
3. In-commutes from Gatineau	49,380	57,503	62,632	65,568
4. Out-commutes to OMATO	-3,120	-3,634	-3,958	-4,143
5. In-commutes from OMATO	31,575	36,772	40,052	41,929
6. Out-commutes to QMAG	-390	-454	-495	-518
7. In-commutes from QMAG	7,770	9,071	9,880	10,343
Total number of jobs in Ottawa	531,140	618,583	676,863	708,589
Multiple Jobholders in Ottawa ¹¹	26,146	29,697	33,699	35,921
Including Multiple Jobs	557,286	648,280	710,562	744,510

Source: 2011 National Household Survey, Labour Force Survey for multiple jobs, and projections

Conclusion

Employment opportunities remain a key indicator of a healthy community. From 2011 to 2036, the total number of jobs in Ottawa is expected to increase by 34 percent to 744,500, faster than the population growth rate of 32 percent. The unemployment rate for Ottawa is projected to remain below provincial and national averages and will decrease to a low of 5 percent by 2036. However, employment growth will continue to be constrained by the aging population and the number of people reaching retirement. Even with an increase in participation rates by the older adult population, the overall labour force participation rate is expected to decrease from 68 percent in 2016 to 64 percent in 2036, due to the aging of the population and the increased proportion of seniors in the labour force.

¹⁰ Ottawa's employed labour force includes employed Ottawa residents that work from home and residents with no fixed workplace address.

¹¹ Calculated as a percentage of Ottawa's employed labour force, From Statistics Canada Cansim-282-0148

Part IV. Demand for and Supply of Urban Residential Land to 2036

The number of households was determined by applying the age-specific headship and dwelling unit type propensities to the projected population by age. After accounting for demolition replacements and vacant units, the result was the projected housing demand for the period from 2014 to 2036 for the City of Ottawa. These unit totals are shown in Figure 33.

Figure 33 Projected City-Wide Housing Demand by Unit Type, 2014-2036

	Single	Semi	Row	Apt	Total
2014-36	43,211	3,900	36,738	46,989	130,839
Shares	33.0%	3.0%	28.1%	35.9%	100.0%

The next step is to assess the demand for urban residential land and compare this to the supply of urban residential land. Before this can be done, growth in rural areas and units added through intensification must be removed from future demand so that the supply can be measured against the units that will be built on greenfields.

Rural Demand

Growth in rural units was maintained at a nine percent share of total units for the projection period, consistent with historical trends. Projected unit types were revised to indicate a larger share of row and apartment units recognizing recent development trends and the assumption that older residents looking to age-in-place will lead to higher row and apartment starts in villages (Figure 34).

Figure 34 New Rural Units by Unit Type, City of Ottawa, 2006-2015

	Single	Semi	Row	Apt	Total
2006	95%	1%	4%	0%	100%
2007	97%	2%	1%	0%	100%
2008	90%	2%	9%	0%	100%
2009	95%	3%	2%	0%	100%
2010	99%	0%	1%	0%	100%
2011	74%	1%	25%	0%	100%
2012	86%	3%	0%	11%	100%
2013	97%	3%	0%	0%	100%
2014	90%	10%	0%	0%	100%
2015	96%	1%	3%	0%	100%
2006-2015	92%	2%	5%	1%	100%
2011-2015	86%	3%	8%	2%	100%

Source: CMHC Housing Starts, 2006-2015

Rural Supply

In Section 2.2.1 of the Ottawa OP, policy 9 requires that sufficient residential land is provided within village boundaries to provide for a 10-year supply. Appendix 7 provides the details of the analysis that was undertaken to ensure that this requirement was met when examining the rural residential demand and supply to 2036.

Urban Demand

After removing rural potential, urban units total 119,063 over the projection period. The detailed urban units by dwelling type are shown in Figure 35.

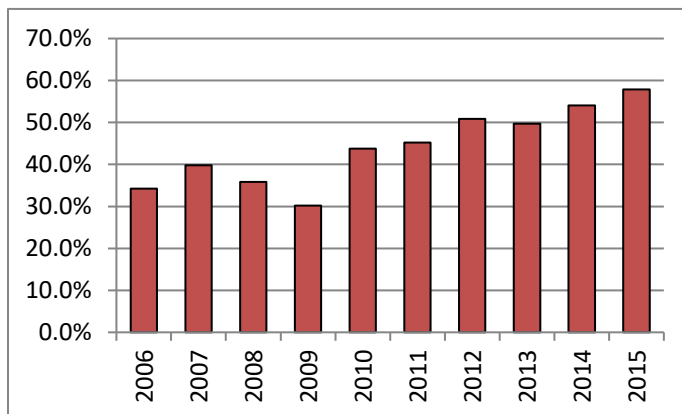
Figure 35 Projected Urban and Rural Housing Demand by Unit Type, 2014-2036

	Single	Semi	Row	Apt	Total
Total Units	43,211	3,900	36,738	46,989	130,839
Minus Rural Units	9,844	82	1,260	589	11,775
Urban Units	33,367	3,817	35,478	46,401	119,063

Intensification Target

Intensification targets in Section 2.2.2 policy 3 of the OP extend only to 2031. A rate for 2031 to 2036 was developed by adding to the 44 percent target for 2027-2031 the same two percent rate of increase as in previous five-year periods. That produced a 2031-2036 target of 46 percent. Over the entire 2014 to 2036 period, the intensification target averages 42.4 percent. This number is considered conservative when compared to the recent intensification figures observed in the City. From 2011 to 2015, the average rate of intensification was 51.3 percent of total urban units (Figure 36).

Figure 36 Percentage of Urban Intensification, City of Ottawa, 2006-2015



Source: City of Ottawa, Building Permits

Between 2006 and 2015, apartment units as a total share of intensification units increased from 65.8 percent to 85.4 percent, with a five-year average of 82.3 percent between 2011 and 2015 (Figure 37). Similar to city-wide housing propensity, there is a shifting preference from single and semi-detached units to row units. The changing unit composition can be observed in several large scale redevelopment projects such as the Former Canadian Forces Base Rockcliffe redevelopment and the Oblates redevelopment project.

Figure 37 Intensification Units by Unit Type, City of Ottawa, 2006-2015

	Single	Semi	Row	Apt	Total
2006	12.9%	6.1%	15.2%	65.8%	100.0%
2007	7.9%	3.8%	14.9%	73.4%	100.0%
2008	7.4%	3.4%	17.0%	72.1%	100.0%
2009	9.1%	5.3%	23.7%	61.9%	100.0%
2010	5.5%	3.1%	9.5%	82.0%	100.0%
2011	6.3%	3.1%	10.7%	80.0%	100.0%
2012	3.1%	4.4%	7.6%	84.8%	100.0%
2013	6.9%	6.0%	7.3%	79.8%	100.0%
2014	4.9%	2.7%	10.6%	81.7%	100.0%
2015	7.4%	2.5%	4.7%	85.4%	100.0%
2006-2015	6.7%	3.8%	11.3%	78.1%	100.0%
2011-2015	5.6%	3.6%	8.4%	82.3%	100.0%

Source: City of Ottawa, Building Permits

Shares by unit type were revised to show a higher proportion of apartments for the 2014-36 period than previous projections up to 2031 given that higher shares of apartments can be expected in the future as opportunities for lower density units decline. Figure 38 shows the intensification units, based on the 42.4% share of new units and the dwelling unit shares by type (also shown in Figure 38).

Figure 38 Intensification 2014-2036, Unit Type Shares and Total Units by Type

	Single	Semi	Row	Apt	Total
Share	5.5%	3.0%	10.5%	81%	100%
Units	2,774	1,513	5,296	40,856	50,440

Greenfield Demand

Removing intensification units from total urban units produces a demand for 68,624 units on greenfield suburban land over the projection period. Figure 39 shows this greenfield demand by unit type.

Figure 39 Greenfield Demand 2014-2036, Units by Type

	Single	Semi	Row	Apt	Total
Urban Units	33,367	3,817	35,478	46,401	119,063
Minus Intensification Units	2,774	1,513	5,296	40,856	50,440
Greenfield Units	30,593	2,304	30,182	5,545	68,624

Greenfield Supply

Since 1982, the Vacant Urban Residential Land Survey (VURLS) has monitored the supply of vacant residential land in Ottawa's suburban areas. Development potential on the vacant residential parcels is determined based on their development status or status in approved planning documents. From the most specific to the most general, these documents and approvals include site plan, plan of subdivision and condominium, the zoning by-law, Community Design Plans (CDP's), and the Ottawa Official Plan. The VURLS 2015 update includes all amendments approved by Council up to December 2015, which includes lands within the urban boundary and urban expansion areas from Official Plan Amendment 76 but excludes proposed Employment Land conversion areas as recommended in the Employment Land

Review. Any recommended Employment Land conversions for residential purposes will be added to the residential supply in a future step.

To determine the unit by type for each individual parcel, different methods are used depending upon the current status of the parcel. For VURLS parcels currently under a planning approval process (e.g. subdivision, site plan), the proposed unit by type is assigned. For vacant parcels not yet in the approval process but within the geographic area of a CDP, unit by type is calculated using CDP guidelines. For those parcels not currently in the planning approval process a development density is assigned based on observed 5-year housing start densities for the relevant suburban area (e.g. South Nepean, Orleans)¹² and on the observed unit split of current applications within CDP areas city-wide.

In order to assess greenfield housing supply against projected demand, the 2014 mid-year residential greenfield supply needs to be established. The 2015 VURLS report was used as the starting point to determine 2014 mid-year supply. This was done because the 2015 survey provides more accurate data with updated development information. A series of adjustments were made to the 2015 survey to improve data quality and to address the timing issue:

1. In order to improve accuracy, additional updates were performed on lands with new development applications or recent revisions to known plans (updated to July 2016).
2. To align with the demand projection's starting point of mid-2014, housing starts between mid-2014 to end of 2015 outside the Greenbelt were added back to the supply.
3. Furthermore, units under construction in the suburban areas at the end of 2015 were included in the supply because these units had already been removed in the survey as starts, but had yet to be occupied.

These revisions provide the total supply of vacant Greenfield residential land at mid-year 2014. The mid-2014 supply is 85,100 units comprised of 30,700 singles, 2,200 semis, 31,300 rows, and 20,900 apartments (Figure 40).

Figure 40 Vacant Greenfield Supply, Mid-Year 2014

Area	Single	Semi	Row	Apt.	Total
Kanata-Stittsville	10,797	798	11,289	4,084	26,968
South Nepean	3,187	212	3,248	8,651	15,298
Riverside South	6,162	0	5,579	3,077	14,818
Leitrim	1,921	72	2,019	635	4,648
Orleans	5,651	940	5,989	3,896	16,477
Supply (year-end 2015)	27,718	2,023	28,124	20,343	78,208
+ Housing Starts (mid-2014 to year-end 2015)	1,924	98	1,994	266	4,282
+ Under Construction	1,057	56	1,166	336	2,615
Greenfield Supply (mid-2014)	30,699	2,176	31,284	20,945	85,104

Source: City of Ottawa Vacant Urban Residential Land Survey 2015 Update, CMHC Starts and Completions Survey

Supply and Demand Analysis

The comparison of greenfield demand and supply is summarized in Step 10 of Figure 41. At mid-2036 there is projected to be a nominal surplus of 106 single-detached, a deficit of 128 semi-detached, a surplus of 1,100 rowhomes, and a surplus of 15,400 apartments. Although there is a total surplus of 16,480 units, the Provincial Policy Statement (PPS) requires that capacity be assessed by individual housing types to provide an appropriate range and mix of housing. The deficit in semi-detached units and

¹² As reported in the Vacant Urban Residential Land Survey, 2015 Update, Table 8

a marginal surplus in single-detached units points to a potential shortfall to 2036. Because single and semi-detached units are often grouped together as low-density development under CDP's and proposed concept plans, columns are included in Figure 41 to review them separately and then combined.

Figure 41 Urban Land Requirements Analysis, 2014-2036

Step		Single	Semi	Single + Semi ¹³	Row	Apt.	Total
1	New dwellings required, 2014-2036	43,211	3,900	47,111	36,738	46,989	130,839
2	% split by unit type	33.0%	3.0%	36.0%	28.1%	35.9%	100.0%
3	Rural dwellings (9% of total)	9,844	82	9,927	1,260	589	11,775
4	Rural split	83.6%	0.7%	84.3%	10.7%	5.0%	100.0%
5	Urban dwellings (1 minus 3)	33,367	3,817	37,184	35,478	46,401	119,063
6	Intensification (42.4%)	2,774	1,513	4,287	5,296	40,856	50,440
7	Intensification split	5.5%	3.0%	8.5%	10.5%	81.0%	100.0%
8	Greenfield Demand (5 minus 6)	30,593	2,304	32,897	30,182	5,545	68,624
9	Greenfield Supply	30,699	2,176	32,875	31,284	20,945	85,104
10	Greenfield Supply minus Demand	106	-128	-22	1,102	15,400	16,480

The City is currently undertaking the Building Better and Smarter Suburbs (BBSS) initiative, which seeks to improve land efficiency, liveability, and cost effectiveness in new suburban communities. This includes a review of existing design standards for roads, stormwater management, school sites and parks. Once completed, the BBSS recommendations will likely result in a series of land efficiencies leading to a higher net-to-gross ratio on the City's vacant residential lands. A higher net-to-gross ratio means that more lands within a subdivision will become available for residential development, in turn increasing the total greenfield housing supply. However, because this project has not been finalised, the calculations for greenfield supply in Figure 41, Step 9 above, did not incorporate assumptions based on BBSS.

Conclusion

In conclusion, a very small potential shortfall of land for single and semi-detached dwellings is anticipated by 2036 when taking into account the projected housing demand of the 2036 population as compared to the existing designated urban supply and the planned supply in the remaining identified Urban Expansion Study Areas. The PPS requires the designation of enough land to accommodate projected needs for up to 20 years and to utilize intensification and redevelopment opportunities to accommodate the projected needs.

Concurrent with this projections update is a review of employment lands with the potential for conversion of some vacant employment lands to alternative uses. Consistent with the PPS these conversions will increase the residential land supply that will then have the potential to provide a sufficient supply of housing for at least the next 20 years.

An addendum report will assess the additional supply from potential employment land conversions and the overall ability to accommodate the 2036 household projections based on the existing urban supply, the planned Urban Expansion Study Areas supply and the recommended employment land conversion supply for residential uses.

¹³ Single-detached and semi-detached units are often classified together as low density development in various concept plans. As a result, a separate column is produced to review their combined supply and demand.

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Appendix List

1. Ottawa Population Detail for Low, Reference and High Scenario
2. Household and Employment Detail for the Reference Scenario
3. OMATO Population Detail
4. Population by Age and Sex in Collective Dwellings
5. Dwelling Units by Type by Area for the Reference Scenario
6. Population Details for the Low, Reference and High Scenario
7. Village Residential Supply

Appendix 1 – Scenario Summaries

Scenario 1 - Low

City of Ottawa	2014	2016	2021	2026	2031	2036	Change 2014- 2036
Population (mid-year)	946,344	961,634	998,269	1,031,050	1,057,305	1,076,621	130,277
Average annual increase		7,645	7,327	6,556	5,251	3,863	5,922
Average annual percentage change		0.8%	0.8%	0.7%	0.5%	0.4%	0.6%
Population by Age Group							
0-4	50,305	50,750	52,317	51,693	48,585	46,109	-4,196
5-9	50,709	51,698	52,104	53,669	53,072	49,985	-724
10-14	50,053	50,647	53,385	53,830	55,427	54,854	4,801
15-19	58,194	55,021	54,053	56,605	57,093	58,723	529
20-24	74,080	69,371	60,294	58,725	61,319	61,842	-12,238
25-34	139,869	147,008	151,870	138,095	127,682	128,852	-11,017
35-44	129,004	129,045	135,909	151,806	156,852	143,265	14,261
45-54	141,984	138,873	128,751	128,413	135,465	151,341	9,357
55-64	117,405	124,733	136,902	131,407	122,218	122,348	4,943
65+	134,741	144,490	172,684	206,807	239,592	259,302	124,561
0-19	22.1%	21.6%	21.2%	20.9%	20.3%	19.5%	0.2%
20-34	22.6%	22.5%	21.3%	19.1%	17.9%	17.7%	-10.9%
35-54	28.6%	27.9%	26.5%	27.2%	27.6%	27.4%	8.7%
55-64	12.4%	13.0%	13.7%	12.7%	11.6%	11.4%	4.2%
65+	14.2%	15.0%	17.3%	20.1%	22.7%	24.1%	92.4%

Appendix 1 – Scenario Summaries

Scenario 2 - Reference

City of Ottawa	2014	2016	2021	2026	2031	2036	Change 2014- 2036
Population (mid-year)	946,344	969,066	1,028,481	1,090,970	1,153,535	1,213,553	267,209
Average annual increase		11,361	11,883	12,498	12,513	12,004	12,146
Average annual percentage change		1.2%	1.2%	1.2%	1.1%	1.0%	1.3%
Population by Age Group							
0-4	50,305	50,660	55,173	60,023	62,150	62,421	12,116
5-9	50,709	52,018	52,533	57,115	62,067	64,295	13,586
10-14	50,053	51,002	54,650	55,282	59,982	65,050	14,997
15-19	58,194	55,864	55,807	59,343	60,103	64,926	6,732
20-24	74,080	73,701	69,563	68,988	72,657	73,552	-528
25-34	139,869	148,149	163,285	163,858	159,756	163,410	23,541
35-44	129,004	130,996	141,932	160,353	176,025	177,126	48,122
45-54	141,984	138,146	128,736	132,705	143,846	162,266	20,282
55-64	117,405	123,589	132,467	124,590	116,043	120,220	2,815
65+	134,741	144,942	174,334	208,713	240,906	260,286	125,545
0-19	22.1%	21.6%	21.2%	21.2%	21.2%	21.2%	22.7%
20-34	22.6%	22.9%	22.6%	21.3%	20.1%	19.5%	10.8%
35-54	28.6%	27.8%	26.3%	26.9%	27.7%	28.0%	25.2%
55-64	12.4%	12.8%	12.9%	11.4%	10.1%	9.9%	2.4%
65+	14.2%	15.0%	17.0%	19.1%	20.9%	21.4%	93.2%

Appendix 1 – Scenario Summaries

Scenario 3 - High

City of Ottawa	2014	2016	2021	2026	2031	2036	Change 2014- 2036
Population (mid-year)	946,344	973,179	1,045,837	1,127,195	1,214,771	1,305,224	358,880
Average annual increase		13,418	14,532	16,272	17,515	18,091	16,313
Average annual percentage change		1.4%	1.5%	1.6%	1.6%	1.5%	1.7%
Population by Age Group							
0-4	50,305	50,822	58,056	67,384	73,368	75,341	25,036
5-9	50,709	52,258	53,220	60,581	70,084	76,254	25,545
10-14	50,053	51,275	55,601	56,743	64,302	74,013	23,960
15-19	58,194	56,284	56,916	61,190	62,538	70,308	12,114
20-24	74,080	75,269	73,118	73,298	77,790	79,371	5,291
25-34	139,869	149,098	169,045	175,373	174,377	180,048	40,179
35-44	129,004	131,955	145,150	165,860	186,702	193,981	64,977
45-54	141,984	137,942	129,100	135,188	148,674	169,500	27,516
55-64	117,405	123,072	130,428	121,616	113,614	119,869	2,464
65+	134,741	145,205	175,202	209,963	243,322	266,538	131,797
0-19	22.1%	21.6%	21.4%	21.8%	22.3%	22.7%	41.4%
20-34	22.6%	23.1%	23.2%	22.1%	20.8%	19.9%	21.3%
35-54	28.6%	27.7%	26.2%	26.7%	27.6%	27.8%	34.1%
55-64	12.4%	12.6%	12.5%	10.8%	9.4%	9.2%	2.1%
65+	14.2%	14.9%	16.8%	18.6%	20.0%	20.4%	97.8%

Appendix 2 – Household, Dwelling and Employment Details, Reference Scenario

City of Ottawa	2014	2016	2021	2026	2031	2036	Change 2014- 2036
Households (Total)	382,912	395,014	424,538	453,172	480,306	505,957	123,045
Households by Age Group of Head							
< 25 years	16,887	16,749	15,887	15,858	16,640	16,949	62
25-34 years	64,306	68,019	75,296	75,930	73,890	75,400	11,094
35-44 years	69,557	70,616	76,488	86,395	94,886	95,533	25,976
45-54 years	82,412	80,191	74,663	76,940	83,377	94,036	11,624
55-64 years	70,072	73,763	79,062	74,361	69,259	71,753	1,681
65+ years	79,679	85,677	103,143	123,689	142,254	152,286	72,607
Average Persons per Household	2.47	2.45	2.42	2.41	2.4	2.4	
Dwellings (Total)	383,125	396,138	427,400	457,758	486,607	513,964	130,839
Average annual new housing units		6,507	6,252	6,072	5,770	5,471	5,947
Single Detached	160,863	164,766	174,686	185,335	195,341	204,074	43,211
Semi Detached	21,216	21,687	22,781	23,693	24,463	25,116	3,900
Row	79,670	82,890	91,585	100,040	108,205	116,408	36,738
Apartment	121,375	126,794	138,348	148,690	158,598	168,365	46,990
Labour Force & Employment							
Population 15+	795,277	815,386	866,124	918,550	969,336	1,021,786	226,509
Participation Rate	67.7%	67.7%	66.3%	65.0%	64.2%	63.8%	----
Labour Force	538,124	551,754	574,402	597,175	622,320	651,489	113,365
Unemployment Rate	6.6%	6.7%	6.0%	5.5%	5.0%	5.0%	----
Unemployed Persons	35,516	36,968	34,464	32,845	31,116	32,574	-2,942
Employment	502,608	514,787	539,938	564,331	591,204	618,915	116,307
5-Year Absolute Change		12,179	25,151	24,393	26,873	27,711	----
Total Employed by Place of Work*		589,769	618,583	646,529	676,863	708,589	----
Multiple Jobholder Rate	5.4%	5.4%	5.5%	5.6%	5.7%	5.8%	----
Multiple Jobholder	27,141	27,798	29,697	31,603	33,699	35,921	8,780

*Projected in-commuting numbers for 2016 and forward (no 2014)

Appendix 3 – Population Projections for OMATO Municipalities

	2006*	2011*						% Growth 2011- 2036
County/Municipality	*Census	*Census	2016	2021	2026	2031	2036	
Renfrew County								
Arnprior, Town	7,158	8,114	8,497	9,032	9,589	10,155	10,740	32.4
McNab/Braeside, Township	7,222	7,371	7,580	7,868	8,160	8,450	8,743	18.6
	14,380	15,485	16,077	16,900	17,749	18,605	19,483	25.8
Lanark County								
Mississippi Mills, Town	11,734	12,385	12,674	13,069	13,467	13,860	14,254	15.1
Carleton Place, Town	9,453	9,809	10,097	10,494	10,898	11,299	11,705	19.3
Beckwith Township	6,387	6,986	7,386	7,950	8,545	9,156	9,796	40.2
Montague, Township	3,595	3,483	3,417	3,331	3,249	3,173	3,100	-11.0
	31,169	32,663	33,574	34,844	36,159	37,488	38,855	19.0
Leeds & Grenville United Counties								
Merrickville-Wolford, Village	2,867	2,850	2,938	3,059	3,182	3,304	3,428	20.3
North Grenville, Township	14,198	15,085	15,700	16,555	17,436	18,325	19,237	27.5
	17,065	17,935	18,638	19,614	20,618	21,629	22,665	26.4
Stormont, Dundas & Glengarry United Counties								
North Dundas, Township	11,095	11,225	11,304	11,411	11,516	11,617	11,717	4.4
Prescott and Russell United Counties								
Russell, Township	13,883	15,247	16,528	18,385	20,404	22,549	24,865	63.1
Casselman, Village	3,294	3,642	3,979	4,471	5,012	5,592	6,225	70.9
The Nation Municipality	10,643	11,668	12,101	12,701	13,317	13,935	14,567	24.8
Alfred & Plantagenet, Township	8,654	9,196	9,433	9,759	10,088	10,414	10,743	16.8
Clarence-Rockland, City	20,790	23,185	24,739	26,956	29,317	31,775	34,378	48.3
	57,264	62,938	66,780	72,272	78,138	84,265	90,778	44.2
OMATO TOTAL	130,973	140,246	146,373	155,041	164,180	173,604	183,498	30.8
Summary								
Renfrew County	14,380	15,485	16,077	16,900	17,749	18,605	19,483	25.8
Lanark County	31,169	32,663	33,574	34,844	36,159	37,488	38,855	19.0
Leeds & Grenville United Counties	17,065	17,935	18,638	19,614	20,618	21,629	22,665	26.4
Stormont, Dundas & Glengarry United Counties	11,095	11,225	11,304	11,411	11,516	11,617	11,717	4.4
Prescott and Russell United Counties	57,264	62,938	66,780	72,272	78,138	84,265	90,778	44.2
	130,973	140,246	146,373	155,041	164,180	173,604	183,498	30.8
Share								
Renfrew County	11.0%	11.0%	11.0%	10.9%	10.8%	10.7%	10.6%	
Lanark County	23.8%	23.3%	22.9%	22.5%	22.0%	21.6%	21.2%	
Leeds & Grenville United Counties	13.0%	12.8%	12.7%	12.7%	12.6%	12.5%	12.4%	
Stormont, Dundas & Glengarry United Counties	8.5%	8.0%	7.7%	7.4%	7.0%	6.7%	6.4%	
Prescott and Russell United Counties	43.7%	44.9%	45.6%	46.6%	47.6%	48.5%	49.5%	

Appendix 4 – Population in Collectives

Age Group	2001			2006			2011		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	40	35	75	25	45	70	60	55	115
5-9	35	30	65	35	35	70	40	45	85
10-14	80	70	150	75	40	115	80	45	125
15-19	260	150	410	170	120	290	280	280	560
20-24	285	175	460	250	120	370	255	190	445
25-29	330	160	490	230	135	365	220	110	330
30-34	395	130	525	375	155	530	230	120	350
35-39	455	140	595	385	145	530	290	115	405
40-44	510	170	680	465	135	600	405	125	530
45-49	460	150	610	465	165	630	460	160	620
50-54	345	190	535	430	210	640	510	205	715
55-59	230	150	380	420	200	620	465	190	655
60-64	185	170	355	290	240	530	345	255	600
65-69	170	235	405	210	265	475	255	265	520
70-74	265	425	690	245	480	725	275	410	685
75-79	355	830	1,185	380	950	1,330	410	755	1,165
80-84	470	1,385	1,855	620	1,620	2,240	620	1,655	2,275
85-89	400	1,485	1,885	595	1,925	2,520	825	2,290	3,115
90+	270	1,310	1,580	390	1,815	2,205	630	2,360	2,990
Total	5,540	7,390	12,930	6,055	8,800	14,855	6,655	9,630	16,285

Source: Statistics Canada 2001-2011 Census

Appendix 5 – Dwelling Types by Area - Reference Scenario

	Single	Semi	Row	Apt	Total	
2014-2016	Urban Units	2,924	462	3,095	5,361	11,842
	Intensification	247	135	472	3,645	4,500
	Greenfield	2,676	327	2,622	1,716	7,341
	Rural Units	979	8	125	59	1,171
	Total Units	3,903	471	3,220	5,419	13,012
2016-2021	Urban Units	7,568	1,075	8,394	11,416	28,448
	Intensification	625	341	1,194	9,208	11,368
	Greenfield	6,942	734	7,200	2,208	17,084
	Rural Units	2,352	20	301	141	2,814
	Total Units	9,920	1,095	8,695	11,556	31,266
2021-2026	Urban Units	8,365	893	8,161	10,206	27,626
	Intensification	638	348	1,217	9,390	11,592
	Greenfield	7,727	545	6,944	816	16,033
	Rural Units	2,284	19	292	137	2,732
	Total Units	10,649	912	8,454	10,342	30,357
2026-2031	Urban Units	7,835	752	7,887	9,778	26,252
	Intensification	635	346	1,212	9,348	11,541
	Greenfield	7,200	406	6,675	430	14,712
	Rural Units	2,171	18	278	130	2,596
	Total Units	10,005	771	8,165	9,908	28,849
2031-2036	Urban Units	6,675	636	7,940	9,644	24,894
	Intensification	629	343	1,201	9,266	11,440
	Greenfield	6,046	293	6,739	378	13,455
	Rural Units	2,058	17	263	123	2,462
	Total Units	8,734	653	8,203	9,767	27,357
2014-2036 Total	Urban Units	33,367	3,817	35,478	46,401	119,063
	Intensification	2,774	1,513	5,296	40,856	50,440
	Greenfield	30,593	2,304	30,182	5,545	68,624
	Rural Units	9,844	82	1,260	589	11,775
	Total Units	43,211	3,900	36,738	46,989	130,839

*Numbers may not add due to rounding

Appendix 6 – Components of Population Growth - Low Scenario

Year*	Start	Births	Deaths	Natural Increase	Net Migration	End
2015	946,344	10,177	6,503	3,674	4,041	954,021
2016	954,021	10,251	6,617	3,634	4,015	961,634
2017	961,634	10,311	6,733	3,578	3,989	969,165
2018	969,165	10,365	6,845	3,520	3,963	976,613
2019	976,613	10,391	6,955	3,436	3,937	983,950
2020	983,950	10,410	7,068	3,342	3,910	991,169
2021	991,169	10,429	7,179	3,250	3,883	998,269
2022	998,269	10,409	7,294	3,115	3,855	1,005,207
2023	1,005,207	10,377	7,419	2,958	3,870	1,012,002
2024	1,012,002	10,300	7,546	2,754	3,884	1,018,608
2025	1,018,608	10,176	7,674	2,502	3,898	1,024,976
2026	1,024,976	10,008	7,813	2,195	3,911	1,031,050
2027	1,031,050	9,825	7,960	1,865	3,924	1,036,808
2028	1,036,808	9,729	8,116	1,613	3,936	1,042,325
2029	1,042,325	9,644	8,280	1,364	3,948	1,047,605
2030	1,047,605	9,536	8,453	1,083	3,959	1,052,616
2031	1,052,616	9,387	8,635	752	3,970	1,057,305
2032	1,057,305	9,261	8,824	437	3,979	1,061,691
2033	1,061,691	9,161	9,019	142	3,989	1,065,790
2034	1,065,790	9,106	9,220	-114	3,997	1,069,642
2035	1,069,642	9,067	9,426	-359	4,005	1,073,257
2036	1,073,257	9,017	9,635	-618	4,013	1,076,621

* Population figures are mid-year

Appendix 6 – Components of Population Growth - Reference Scenario

Year*	Start	Births	Deaths	Natural Increase	Net Migration	End
2015	946,344	10,177	6,350	3,827	7,449	957,626
2016	957,626	10,406	6,426	3,980	7,454	969,066
2017	969,066	10,627	6,506	4,121	7,460	980,654
2018	980,654	10,852	6,583	4,269	7,467	992,397
2019	992,397	11,058	6,660	4,398	7,474	1,004,277
2020	1,004,277	11,270	6,737	4,533	7,482	1,016,300
2021	1,016,300	11,495	6,812	4,683	7,491	1,028,481
2022	1,028,481	11,694	6,890	4,804	7,499	1,040,792
2023	1,040,792	11,895	7,015	4,880	7,550	1,053,231
2024	1,053,231	12,064	7,139	4,925	7,603	1,065,767
2025	1,065,767	12,193	7,259	4,934	7,655	1,078,364
2026	1,078,364	12,279	7,387	4,892	7,708	1,090,970
2027	1,090,970	12,348	7,519	4,829	7,761	1,103,567
2028	1,103,567	12,408	7,656	4,752	7,814	1,116,139
2029	1,116,139	12,470	7,793	4,677	7,867	1,128,690
2030	1,128,690	12,498	7,936	4,562	7,920	1,141,176
2031	1,141,176	12,466	8,084	4,382	7,972	1,153,535
2032	1,153,535	12,447	8,232	4,215	8,024	1,165,778
2033	1,165,778	12,441	8,419	4,022	8,075	1,177,880
2034	1,177,880	12,472	8,604	3,868	8,126	1,189,877
2035	1,189,877	12,508	8,790	3,718	8,177	1,201,776
2036	1,201,776	12,522	8,974	3,548	8,227	1,213,553

* Population figures are mid-year

Appendix 6 – Components of Population Growth - High Scenario

Year*	Start	Births	Deaths	Natural Increase	Net Migration	End
2015	946,344	10,177	6,329	3,848	9,403	959,606
2016	959,606	10,535	6,406	4,129	9,433	973,179
2017	973,179	10,894	6,489	4,405	9,464	987,059
2018	987,059	11,265	6,569	4,696	9,497	1,001,263
2019	1,001,263	11,624	6,647	4,977	9,532	1,015,781
2020	1,015,781	11,998	6,727	5,271	9,568	1,030,630
2021	1,030,630	12,393	6,802	5,591	9,606	1,045,837
2022	1,045,837	12,772	6,879	5,893	9,646	1,061,384
2023	1,061,384	13,163	6,967	6,196	9,730	1,077,318
2024	1,077,318	13,528	7,050	6,478	9,816	1,093,619
2025	1,093,619	13,856	7,125	6,731	9,904	1,110,260
2026	1,110,260	14,142	7,205	6,937	9,993	1,127,195
2027	1,127,195	14,411	7,283	7,128	10,085	1,144,412
2028	1,144,412	14,562	7,362	7,200	10,178	1,161,794
2029	1,161,794	14,711	7,433	7,278	10,272	1,179,346
2030	1,179,346	14,817	7,504	7,313	10,367	1,197,027
2031	1,197,027	14,853	7,571	7,282	10,462	1,214,771
2032	1,214,771	14,897	7,630	7,267	10,558	1,232,595
2033	1,232,595	14,951	7,678	7,273	10,654	1,250,521
2034	1,250,521	15,040	7,713	7,327	10,751	1,268,597
2035	1,268,597	15,131	7,736	7,395	10,848	1,286,837
2036	1,286,837	15,193	7,749	7,444	10,947	1,305,224

* Population figures are mid-year

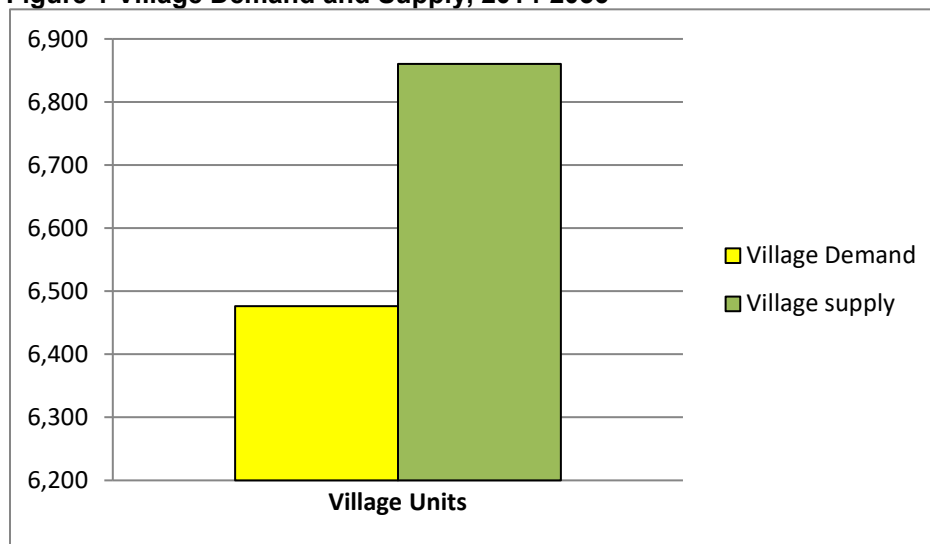
Appendix 7 – Village Residential Supply

Rural residential supply in the villages was determined based on the City's most current Rural Residential Land Survey (2013-14). The data from this report were modified to account for units in villages with private servicing that might develop on 0.4 hectare lots. Factors that might affect a villages' ability to accommodate development, such as servicing and development history, were then examined to determine if the full potential of the units anticipated in each village could be accommodated. Based on this analysis, the total unit potential for specific villages was adjusted and a revised village potential was determined. The current supply of residential potential in the villages is 6,860 units, most of which can be found in the larger villages of Manotick, Greely, Richmond and Carp.

To determine residential demand in villages to 2036, a 55% share or rural demand was assumed. This figure is based on the observed village share from 2010-2015 from CMHC housing starts. This share was 16% higher than the 39% average share in villages prior to the 2009 moratorium on country lot subdivisions.

The overall demand for rural units is projected to be 11,775 by 2036. With 55% of the rural share villages are expected to accommodate 6,476 units. Figure 1 compares the demand and supply to 2036. Over the 2014-2036 projection period, this is an average of 294 units per year. At this rate of consumption, the villages would have sufficient residential supply for 23.3 years. This supply exceeds the Official Plan target minimum of at least a 10-year supply of land for residential development in the villages.

Figure 1 Village Demand and Supply, 2014-2036



Source: City of Ottawa Rural Residential Land Survey, 2013-14 Update