OUTLOOK FOR GROWTH TO 2046

City of Greater Sudbury

HEMSON Consulting Ltd.

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EXECUTIVE SUMMARY

Understanding how Greater Sudbury will grow is essential to municipal planning and budgeting. Forecasts of population, housing and employment should be reviewed regularly as economic conditions change and new data become available. Hemson Consulting has been retained to prepare new long-range growth forecasts and a development charges background study for the City of Greater Sudbury.

Since the last forecasts were prepared in 2013, considerable new data has become available with the release of the 2016 Census, additional data from the 2011 Census, and updates to fertility and mortality rates. Combined with insights from a somewhat sluggish recovery from the recession of 2009, these updates influence new forecasts that will be the basis for financial planning and growth management policy review. These forecasts also incorporate a longer planning horizon, providing population, housing and employment estimates to 2046. Greater Sudbury is the only census metropolitan area (CMA) in Northern Ontario to experience significant population growth since 2001.

The underlying conditions that were identified as key influences on growth prospects in 2013 continue to shape the results presented here:

- Economic prospects will be influenced by the variability tied to the mining sector, while relying on the stability of central place functions that anchor Greater Sudbury as a regional service centre.

- Shifting patterns in fertility and mortality rates in Ontario will affect the growth outlook.

- The age structure of the population will have a wide range of influence on how Greater Sudbury grows. Like many other Ontario municipalities, Greater Sudbury shares the characteristics of an aging population living longer, while not being replaced in the labour force by younger workers.

In accordance with the terms of reference for the project, three different growth scenarios are presented:

- The low scenario reflects the most recent Ministry of Finance projections, which are heavily influenced by a continuation of the out-migration of young adults and limited prospects for economic growth.

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- The reference scenario reflects more recent trends indicating a mitigation of the out-migration of young people, the influence of currently committed investments in the mining industry and some increase in the service / administrative functions that the City provides the broader region.

- The high scenario increases the share of the population represented by young adults, and adds to the economic outlook of the reference scenario by incorporating influences from investment in the Ring of Fire area.

From a current (2016) total population of 166,130, the City's population in 2046 could range from a low of 165,090, to a mid-range total of 172,990 under the reference scenario, or even to a high of 181,290 should economic conditions and migration to the City, notably by young adults, significantly change.

Similarly, from a total of 79,440 jobs in 2016, employment could experience modest growth to 81,230 under the low scenario, increase under the reference scenario to 85,750, or possibly as high as 90,460 under the high growth scenario. It is our view that the reference scenario should be used for financial planning and growth management policy purposes.

From the standpoint of municipal servicing, it is important to understand not only how much growth there could be, but also where that growth may take place. For this exercise, the reference scenario is provided on a geographic basis for communities (former municipalities) of Greater Sudbury. The forecasts are also presented by ward and service area as an appendix to this document. Geographically, the reference scenario population growth is forecast to be in Sudbury (49%), Valley East (18%), Walden (13%) and Nickel Centre (11%).

I   INTRODUCTION AND PURPOSE

Hemson Consulting Ltd. has been retained by the City of Greater Sudbury to prepare long-range forecasts and a development charges background study for the City. Population, housing and employment forecasts have been prepared from 2016 to a 2046 planning horizon. The forecasts update those prepared by Hemson for the City in 2013 and take into account the most currently available information regarding the demographic and economic outlook in the Greater Sudbury region, including information from the 2016 Census. The forecasts will provide a key input to the recently initiated development charges background study, updates to *The City of Greater Sudbury Official Plan* and a range of other growth planning and infrastructure initiatives. This report provides the draft city-wide population, housing and employment forecasts for review by City staff. Three forecast scenarios are presented for consideration – a low, reference and high scenario. A local distribution of growth is also presented at the community level. It is important to note the tables contained within this report may not add or match exactly due to rounding.

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## II   UPDATING THE 2013 FORECAST WITH 2016 CENSUS RESULTS

Since the previous forecasts were prepared in 2013, results from the 2016 Census have become available, yielding a clear picture of post-recession trends. This section compares the population, household and employment Census observations for 2016 with the 2016 horizon year of the earlier forecast. In general, recent residential and non-residential development has occurred at a slightly slower rate than had been expected. Factoring this in, along with the most current estimates of net undercoverage[1] from Statistics Canada has resulted in a slight downward adjustment for 2011 and 2016 as a basis for the new forecast.

In the broader geographic context, it is important to note that Sudbury stands out as the only major urban area in Northern Ontario with a growing population. Figure 1 illustrates cumulative population growth from 2001 to 2016 for census metropolitan areas (CMAs) in the north. While Sudbury's population grew during this time, North Bay was essentially stable and all other major urban areas experienced a decline in population.

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[1] *Two types of errors can occur when conducting the Census. Some people who should be enumerated might be missed (undercoverage), while some others may be counted more than once (overcoverage). The former is, by and large, the largest error, and hence the difference between these two errors is called "net undercoverage". At some point after the release of Census data, Statistics Canada will release an estimate of the rate of net undercoverage. Applying this rate to the Census Population as released yields an estimate of the Total Population.*

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Figure 1

CUMULATIVE CENSUS POPULATION GROWTH
SELECTED CMAs IN NORTHERN ONTARIO, 2001 - 2016
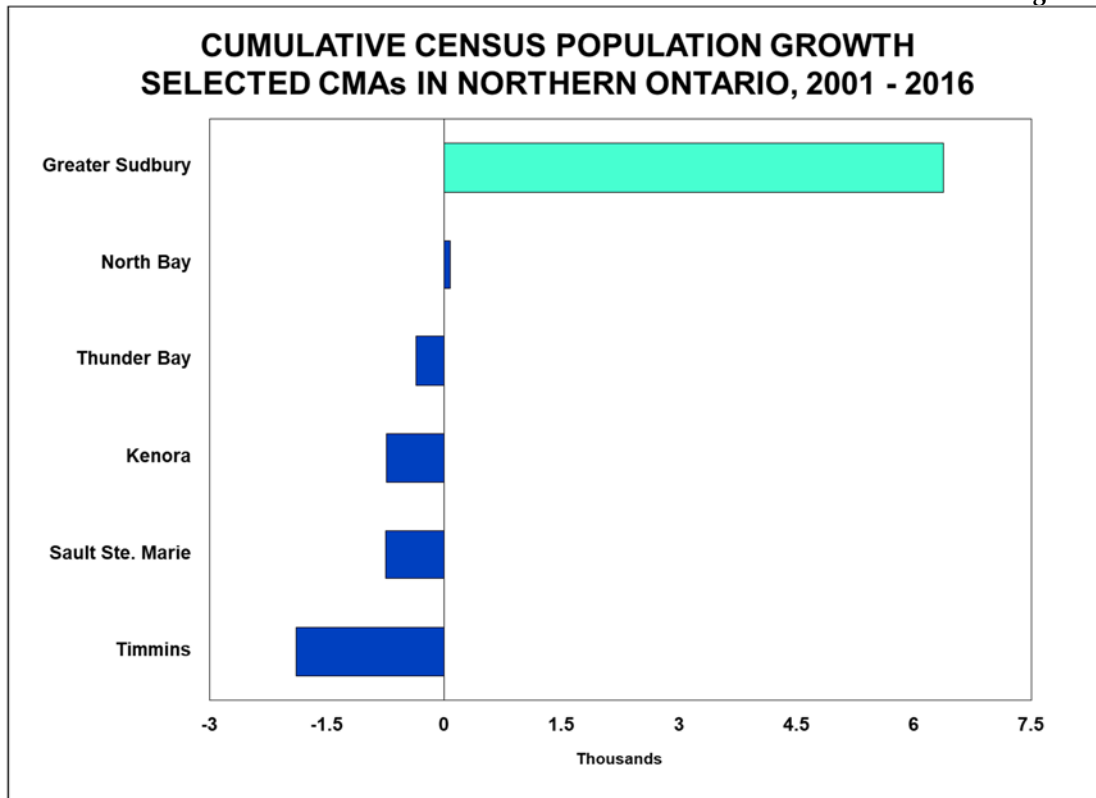
Source: Hemson Consulting Ltd. based on Statistics Canada data

As shown in Table 1, the reference forecast in 2013 estimated a Census population of 163,000 and a total population (Census population plus undercoverage) of 169,000 at 2016. The 2016 Census revealed a Census population of 161,600 and a total population of 166,130, indicating growth was a little slower than had been forecast, primarily due to net migration being lower than projected. The slight variation in total population for 2006 and 2011 between the two forecasts is attributable to the application of the most recent undercoverage estimates from Statistics Canada to the Census counts for those years.

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Table 1			
Census Population Comparison			
City of Greater Sudbury, 2001 - 2016			
	2018 Forecast	**2013 Forecast**	**Difference**
2001	155,200	155,200	0
2006	157,900	157,900	0
2011	160,300	160,300	0
2016	**161,600**	**162,900**	**(1,300)**

Total Population Comparison			
City of Greater Sudbury, 2001 - 2016			
	2018 Forecast	**2013 Forecast**	**Difference**
2001	161,100	161,100	0
2006	163,800	163,800	0
2011	164,900	166,300	(1,400)
2016	**166,130**	**169,000**	**(2,870)**

Note: 2011 Census Net Undercoverage rates are applied to the 2016 Census results as the 2016 net undercoverage will not be available until late 2018.

Occupied household growth has also been slower than was previously forecasted. Table 2 illustrates the 980 unit gap between the value for 2016 that had been forecast in 2013 and the actual 2016 Census count.

Table 2			
Occupied Households Comparison			
City of Greater Sudbury, 2001 - 2016			
	2018 Forecast	**2013 Forecast**	**Difference**
2001	63,040	63,040	0
2006	64,960	64,960	0
2011	67,640	67,640	0
2016	**69,200**	**70,180**	**(980)**

Employment data from the 2011 and 2016 Censuses were not available at the time of the 2013 forecast. Table 3 compares the estimates made in 2013 of place of work employment for 2011 and 2016 to recently released Census values. Place of work employment captures all people working within the City of Greater Sudbury irrespective of where they live, and includes those who work at home and those who have no usual place of employment.

Table 3			
Place of Work Employment Comparison			
City of Greater Sudbury, 2001 - 2016			
	2018 Forecast	**2013 Forecast**	**Difference**
2001	71,300	71,300	0
2006	76,900	76,900	0
2011	77,700	80,700	(3,000)
2016	**79,440**	**81,900**	**(2,460)**

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While employment continued to grow, approximately 3,000 fewer workers were employed in the City in 2011 than had been forecast, which is expected given the global recession that preceded that Census. Growth between 2011 and 2016 has accelerated and the gap between the forecast and Census value is smaller at 2,500 workers.

III FACTORS AFFECTING GROWTH IN GREATER SUDBURY SIMILAR TO LAST FORECAST UPDATE
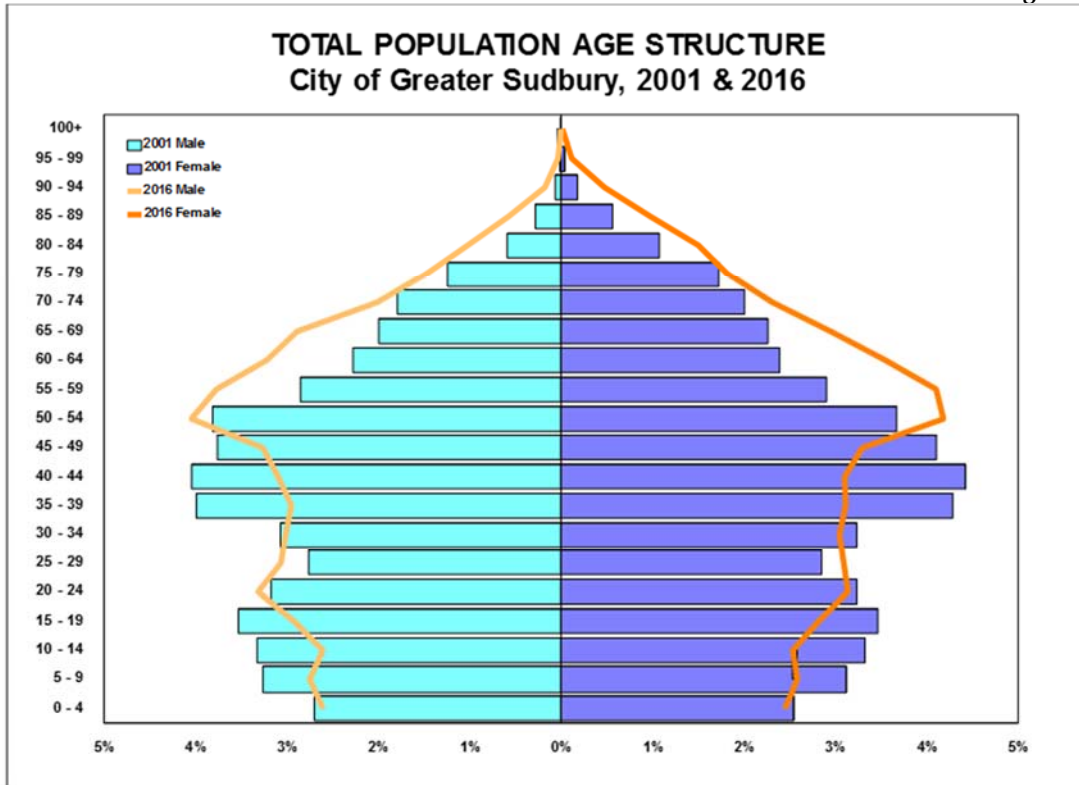
When the 2013 forecast was prepared, the diversity of social and economic factors that could influence growth were examined to develop key assumptions underlying the forecast. Three key factors were identified as shaping the growth outlook for Greater Sudbury:

1. Economic prospects will be influenced by the variability tied to the mining sector, while relying on the stability of central place functions that anchor Greater Sudbury as a regional service centre.

2. Shifting patterns in fertility and mortality rates in Ontario will affect the growth outlook.

3. The age structure of the population will have a wide range of influence on how Greater Sudbury grows.

These key drivers continue to shape forecasting efforts today. Growth continues to be tied in large part to the City's central place and regional centre function, while also being strongly influenced by the mining industry. The former adds stability to the long-term outlook while the latter creates variability with respect to the City's economic outlook, in turn creating potentially variable impacts on both employment and population growth. Demographic factors throughout the broader region suggests that the regional service functions will continue and possibly grow in importance. Over the longer term the mineral potential of the Ring of Fire west of James Bay could still influence growth prospects.

While change in the mining-related sector continues to be the most important economic factor affecting the growth outlook for Greater Sudbury, the most predominant demographic consideration continues to be the age-structure of the population. The aging population trend has resulted in an increasingly high proportion of older-aged adults in Greater Sudbury. This continued shift over the 2001 to 2016 period is illustrated in the population age structure in Figure 2.

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Figure 2

TOTAL POPULATION AGE STRUCTURE
City of Greater Sudbury, 2001 & 2016

Source: Hemson Consulting Ltd. based on Statistics Canada data.

This aging population trend was initially hastened (relative to other parts of the Province) by historically high levels of out-migration of younger-aged adults to employment and education opportunities elsewhere. While this trend is somewhat moderated by job opportunities created during growth periods in the mining sectors, the City continues to have a larger proportion of older-aged adults relative to younger-aged cohorts, and in comparison to Provincial averages. An older population has numerous effects on housing demand, labour force and residential and employment growth prospects that affect the long-term outlook for Greater Sudbury.

The significant trend in out-migration from 2006 – 2011 for 25 – 29 years as well as for those between 40 and 59 years of age abated somewhat for the 2011 – 2016 period (see Figure 3). These shifts in migration patterns are significant. The migration patterns of young adults, generally 20 – 29, are a good indicator of perceived confidence in the economic opportunity in the community. In addition, the more young adults that stay, lead to a higher number of births thus adding to growth.

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Figure 3

NET MIGRATION AGE STRUCTURE
CITY OF GREATER SUDBURY, 2006 - 2016
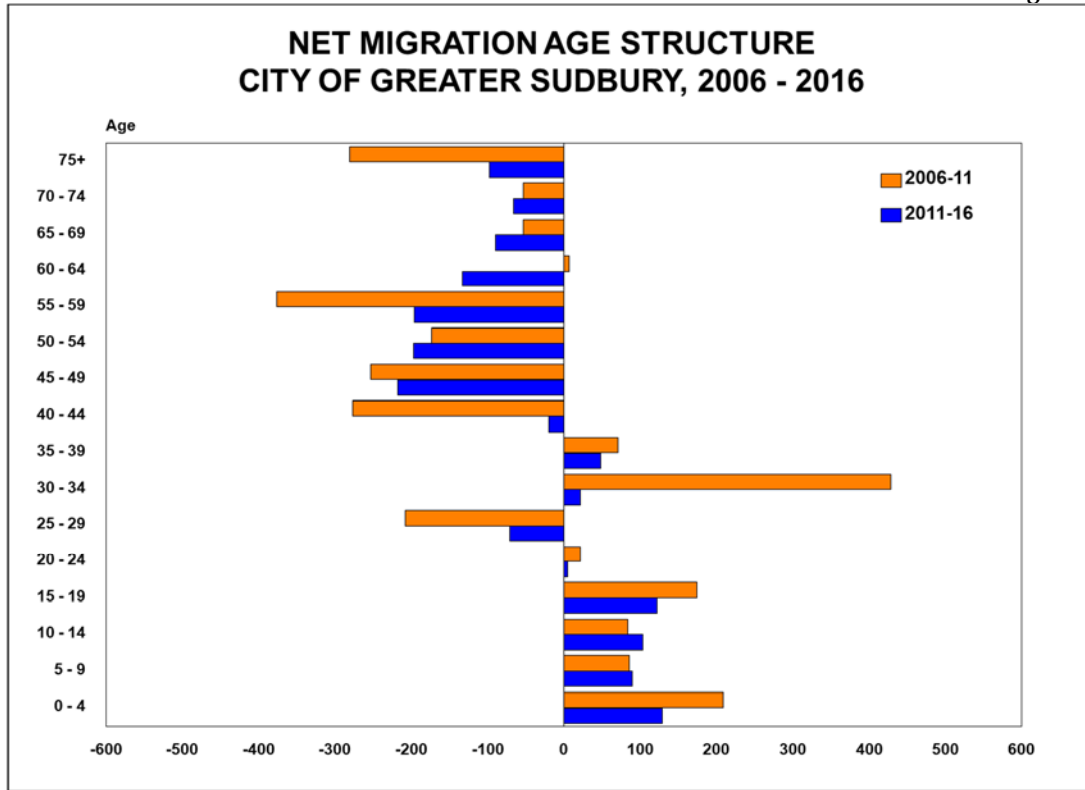
Source: Hemson Consulting Ltd. based on Statistics Canada, Annual Demographic Statistics.

A.   FORECAST METHOD WELL ESTABLISHED

The forecasts prepared for Greater Sudbury have been developed consistent with the well-established method used in prior forecasts for the City and those prepared by Hemson for municipalities throughout and for the Province. The forecast methodology is displayed graphically in Figure 4.

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Figure 4
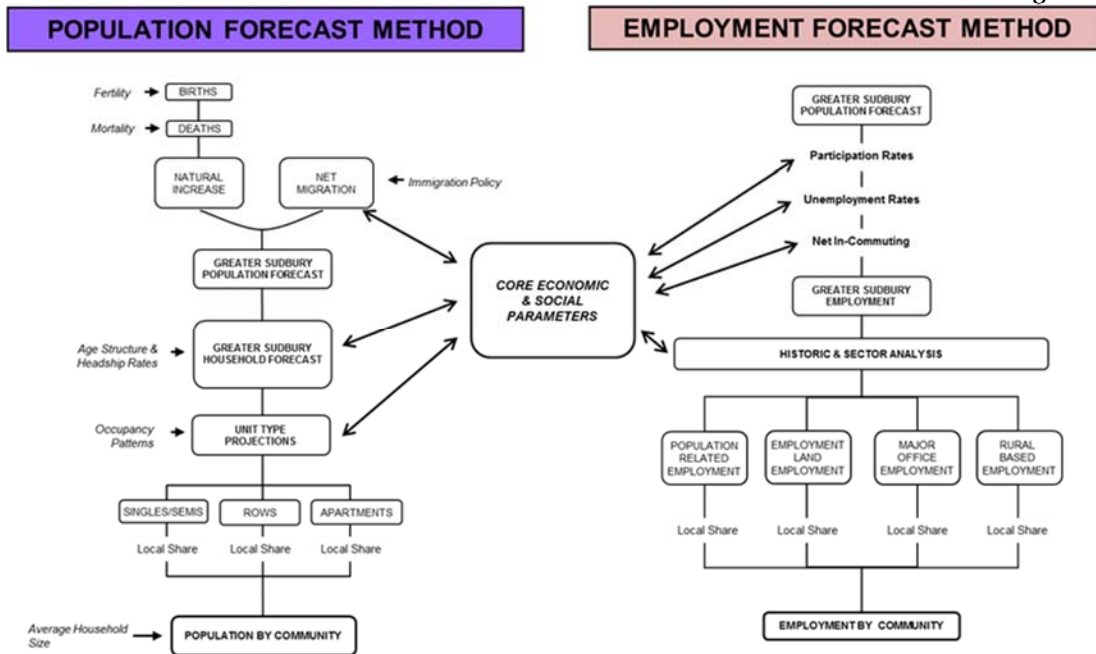
The cohort survival model, used for the City-wide forecast, operates by taking a five-year age group (e.g. 20 to 24 year olds in 2011), ages them by five years (they become 24 to 29 in 2016), deducts deaths in that age group (resulting in the "natural increase") and, finally, adds net migration for that age group. Births during the five-year period produced by this age group are then added to the 0 to 4 year age group.

The employment forecast is driven by the population forecast, by applying age-specific labour force participation rates to the population forecast and adjusting for unemployment. The core economic and social parameters, visualized in the centre of the forecast method graphic above, encapsulate a range of forecast assumptions which underpin the long-range expectations for population, household and employment growth in Greater Sudbury.

B.   FORECAST ASSUMPTIONS REMAIN SOUND

1.   Natural Increase

Natural increase is the difference between the number of births and the number of deaths in a population over a forecast period. This is projected by making assumptions about future fertility rates by age of the mother and mortality by age and sex. Applied

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to the population forecast by age, the result is a forecast of births and deaths in each cohort.

- Consistent with prior forecasts prepared for the City and provincial and national trends, a moderate increase in fertility rates over time is assumed for Greater Sudbury.

- It is also assumed that life expectancy will increase slightly over the forecast horizon to 2046. The increase in life expectancy is largely tied to improved public health and medical treatment resulting in healthier, longer-living seniors.

Given the age structure of the existing population of Greater Sudbury, if left to natural increase alone, there would be an overall decline in population (or, natural "decrease") over the forecast horizon. As a result, the migration assumptions are critical to the growth outlook for the City. Migration to Greater Sudbury not only contributes to the population base, but also to the likelihood that there may be growth through natural increase in the future, varying with the age of in-migrants.

2.   Migration

Migration is the most important contributor to the long-term growth outlook for Greater Sudbury, particularly from international immigration and intra-provincial migrants (from within Ontario). As Figure 5 illustrates for the reference scenario, the forecasts anticipate that the pattern will continue, with out-migration to other provinces being offset by net in-migration from other parts of Ontario and from outside Canada, resulting in overall population growth over the forecast horizon to 2046.

Figure 5
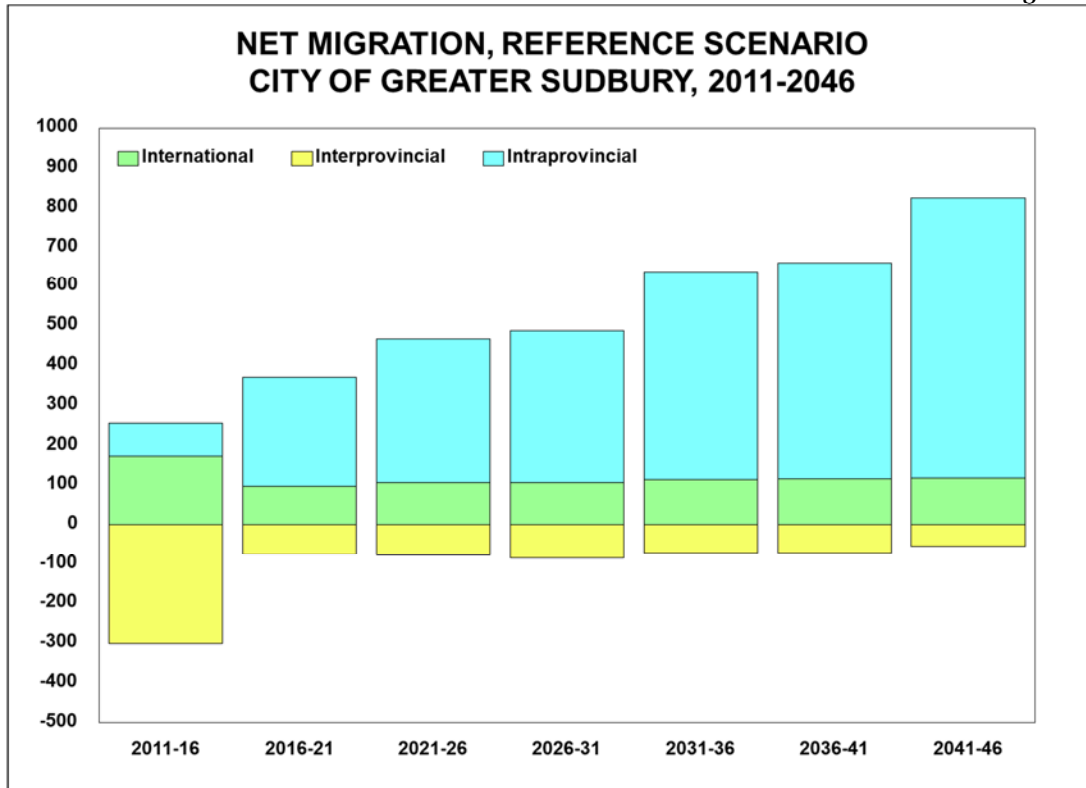
Source: Hemson Consulting Ltd. based on Statistics Canada data

3. Age Structure and Housing Demand

Another key consideration in the forecasts is the age structure of the population and effects on housing demand. Similar to the forecasts prepared for the City in 2013, the aging population trend is expected to continue in Greater Sudbury over the period to 2046 (see Figure 6). The outlook for housing continues to be strongly tied to this aging population trend. An older population results in declining household size (persons per unit) which affects housing demand as more units are required to house fewer residents over time. The result is that housing growth will out-pace growth in population over the forecast horizon, a pattern that is already occurring in Greater Sudbury and other Ontario municipalities.

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Figure 6

TOTAL POPULATION AGE STRUCTURE
City of Greater Sudbury, 2016 & 2046
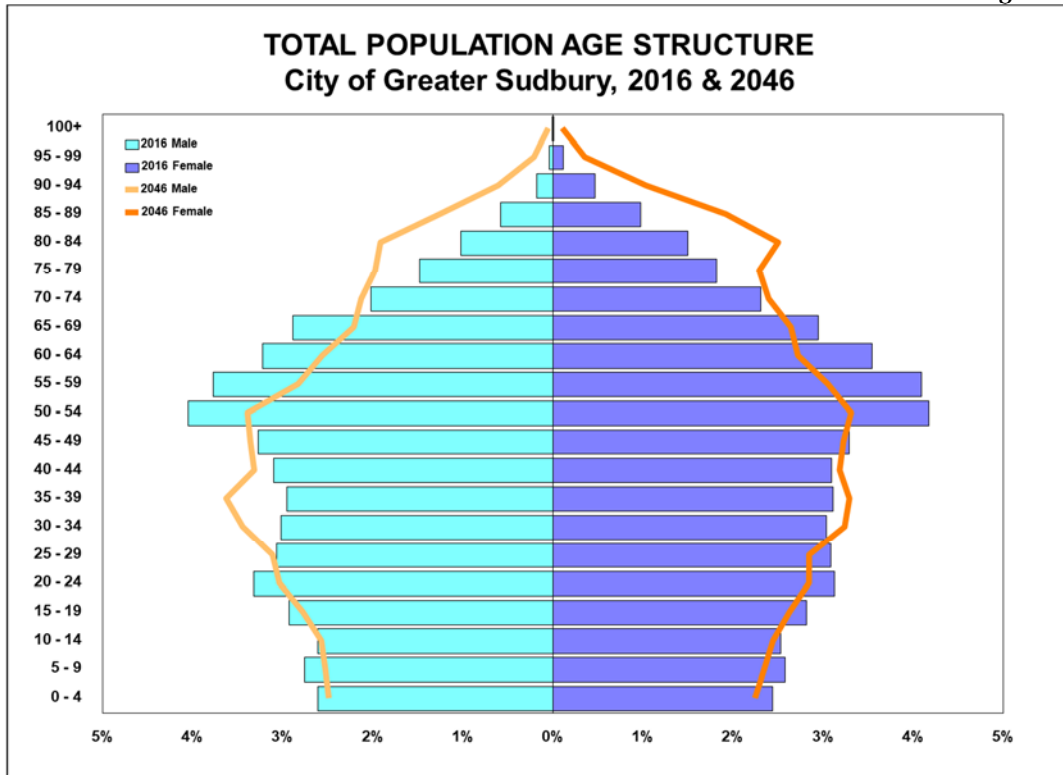
Source: Hemson Consulting Ltd. based on Statistics Canada data.

The link between new housing and age structure is further illustrated in Table 4. As shown in the table, dwelling units constructed between 2006 and 2016 tend to have higher occupancies than older units. In this regard, single and semi detached units constructed over the last ten year Census period average 3.06 occupants whereas dwelling units constructed before 2006 average 2.52 occupants. This reflects the fact that new ground-related housing units are constructed in response to demand stemming from young couples with children.

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Table 4

Housing Occupancy By Period of Construction City of Greater Sudbury, 2016				
Unit Type	**Period of Construction**	**Pre 2006**	**2006-2016**	**Total**
Singles/Semis	Household Population	107,550	11,555	119,105
	Households	42,720	3,780	46,500
	Household Size	2.52	3.06	2.56
Rows	Household Population	6,620	325	6,945
	Households	2,665	170	2,835
	Household Size	2.48	1.91	2.45
Apartments (excl. Duplexes)	Household Population	22,900	1,410	24,310
	Households	14,890	885	15,775
	Household Size	1.54	1.59	1.54
Duplexes	Household Population	8,040	300	8,340
	Households	3,985	120	4,105
	Household Size	2.02	2.50	2.03
All Units	**Household Population**	**137,070**	**13,290**	**150,360**
	Households	**60,275**	**4,835**	**65,110**
	Household Size	**2.27**	**2.75**	**2.31**

Source: Statistics Canada, 2016 Census Special Run

The data in Table 4 is also important for development charges purposes. The population residing in recently constructed dwelling units is used to determine the growth increase used in the denominator of the residential development charges calculation.

4.   Labour Force and Employment

Likewise, the aging population trend affects labour force participation, as an older population has relatively fewer working aged residents, which in turn affects the employment growth outlook. This is offset to some degree by increased demand for services, which creates stability in the long-term employment forecast, particularly for population-related employment.

As the national data in Figure 7 illustrates, the mining sector is becoming increasingly dominated by older employees.

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Figure 7
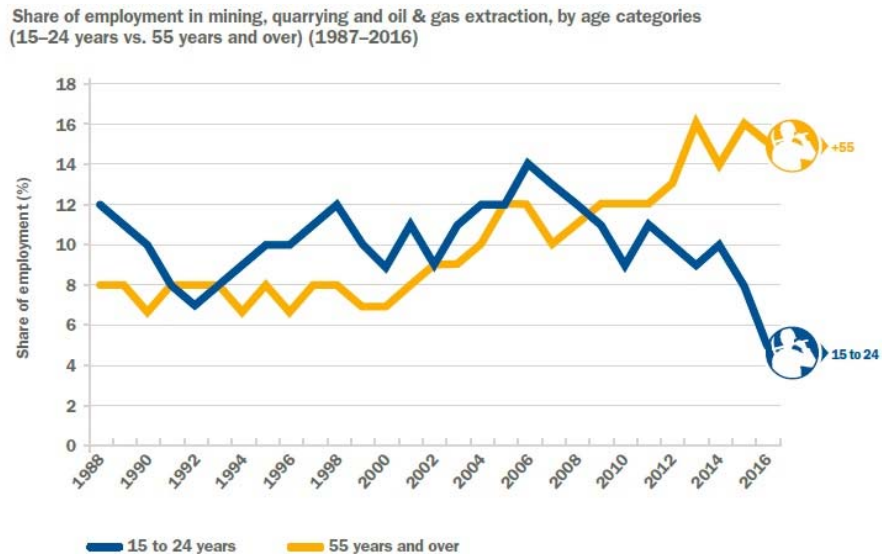
Source: Mining Industry Human Resources Council (Canadian Mining Labour Market Outlook, 2017)

Overall, the City's activity rate (employees divided by population), presently at 48 per cent, is anticipated to remain stable. Labour shortages are not expected with employment increasing at a similar rate as population growth.

It goes without saying the price of nickel has a significant impact on employment in the mining sector. As shown in Figure 8, the price of nickel has increased slightly in recent months from a low point in early 2016.

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Figure 8

Price of Nickel 2004-2018 - $USD/tonne

Source: Markets Insider

While current announcements from Glencore (Onaping Depth, $906M CAD) and Vale (Copper Cliff Deep, $760M CAD) may not result in significant new jobs, they reaffirm a commitment to maintain a strong presence in the City. While it is impossible to predict future commodity prices, most analysts are predicting stable to modest price increases in the short-term.

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IV THREE FORECAST SCENARIOS HAVE BEEN PREPARED

The updates described above establish a new base year of 2016 for the forecasts, and the forecast horizon has been extended to a 2046. The update and confirmation of the key social and economic trends underlying the forecasts helped to inform the preparation of three forecast scenarios – a low, reference and high – for consideration by City staff. The 2013 forecast contained two scenarios, a reference and a high, with the reference scenario being used for most planning and financial purposes. For this current exercise, it is our view that the new reference scenario represents the most likely outcome considering local and broader demographic and economic factors. The low and high scenarios are included here to illustrate the sensitivity of long-term growth prospects to changing economic conditions and migration trends. The modeling of these forecasts for employment results in small increases and decreases in employment by period. Given the small variations, this should be interpreted as stable employment from 2026 onwards.

A. LOW SCENARIO

The low scenario illustrates the City essentially maintaining its present population and employment levels over the forecast period. This scenario is included here as it aligns with the most recent population forecasts prepared by the Ministry of Finance.

1. Key Assumptions

- Strictly based on the Ministry of Finance forecasts of population prepared in 2016.

- Assumptions largely based on historical trends.

- Does not take into account recent building permit activity or housing completions or conversions.

- Migration levels remain flat.

- Aging population is not replaced by any young adults.

- Housing construction remains stagnant.

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a. Population

			Table 5
Low Scenario - Forecast Total Population Growth			
City of Greater Sudbury, 2016 to 2046			
	Population	**Growth**	**Annual Growth Rate**
2001	161,100	-	-
2006	163,900	2,800	0.35%
2011	164,900	1,000	0.12%
2016	**166,130**	**1,200**	**0.15%**
2021	167,130	1,030	0.12%
2026	167,870	740	0.09%
2031	167,320	(550)	(0.07%)
2036	166,890	(430)	(0.05%)
2041	166,180	(710)	(0.09%)
2046	165,090	(1,090)	(0.13%)
2016-46		**(1,040)**	

b. Households

			Table 6
Low Scenario - Forecast Occupied Household Growth			
City of Greater Sudbury, 2016 to 2046			
	Households	**Growth**	**Annual Growth Rate**
2001	63,040	-	-
2006	64,960	1,920	0.60%
2011	67,640	2,680	0.81%
2016	**69,200**	**1,560**	**0.46%**
2021	70,880	1,680	0.48%
2026	71,930	1,050	0.29%
2031	72,370	440	0.12%
2036	72,660	290	0.08%
2041	72,800	140	0.04%
2046	72,890	90	0.02%
2016-46		**3,690**	

c. Employment

			Table 7
Low Scenario - Forecast Place of Work Employment Growth			
City of Greater Sudbury, 2016 to 2046			
	Employment	**Growth**	**Annual Growth Rate**
2001	71,300	-	-
2006	76,900	5,600	1.52%
2011	77,700	800	0.21%
2016	**79,440**	**1,700**	**0.45%**
2021	80,570	1,170	0.28%
2026	81,390	820	0.20%
2031	80,960	(430)	(0.11%)
2036	81,260	300	0.07%
2041	81,590	330	0.08%
2046	81,230	(360)	(0.09%)
2016-46		**1,790**	

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B.   REFERENCE SCENARIO

The reference scenario is predicated on modest growth in the residential and non-residential sectors. The reference scenario assumes anticipated investments in the mining and institutional sectors occur as planned. However, if there was a shock to commodity prices or an economic slowdown similar to the recession that occurred between 2007 and 2009, the reference forecast may be difficult to achieve.

1.   Key Assumptions

- Hemson forecast based on 2016 Census releases and current migration estimates.

- Considers recent building permit activity.

- Net migration to the City is positive and slightly higher than historical averages.

- Positive migration is driven by intra provincial migrants only; very limited number of people are assumed to arrive from other provinces or from overseas.

- Housing patterns remain consistent with recent development; most new units are single detached dwellings and low rise apartments.

- Employment forecast is based on a falling unemployment rate.

- Approximately 50 per cent of future employment growth is population-related, as such forecast employment growth is linked closely to residential growth.

- Considers known short- to mid-term retail, health, education and mining investments:

  - Retail: Kingsway Entertainment District, casino, two new car dealerships, and two new hotels. Also considers Sears closure.

  - Institutional: new HSNRI facility, HSN Learner's Centre, Metal Earth/Laurentian University program, Place des arts, Downtown Convention Centre, Library and Art Gallery, and tax centre investments.

  - Mining: Glencore Onaping Depth and Vale Copper Cliff Deep.

- The residential and employment forecast does not consider any Ring of Fire related investments.

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a. Population

			Table 8
-4: **Reference Scenario - Forecast Total Population Growth**			
-4: **City of Greater Sudbury, 2016 to 2046**			
	Population	**Growth**	**Annual Growth Rate**
2001	161,100	-	-
2006	163,900	2,800	0.35%
2011	164,900	1,000	0.12%
2016	**166,130**	**1,200**	**0.15%**
2021	167,800	1,700	0.20%
2026	169,400	1,600	0.19%
2031	170,400	1,000	0.12%
2036	171,490	1,090	0.13%
2041	172,000	510	0.06%
2046	172,990	990	0.11%
2016-46		**6,860**	

b. Households

			Table 9
-4: **Reference Scenario - Forecast Occupied Household Growth**			
-4: **City of Greater Sudbury, 2016 to 2046**			
	Households	**Growth**	**Annual Growth Rate**
2001	63,040	-	-
2006	64,960	1,920	0.60%
2011	67,640	2,680	0.81%
2016	**69,200**	**1,560**	**0.46%**
2021	71,120	1,920	0.55%
2026	72,500	1,380	0.39%
2031	73,530	1,030	0.28%
2036	74,410	880	0.24%
2041	74,910	500	0.13%
2046	75,250	340	0.09%
2016-46		**6,050**	

c. Employment

			Table 10
-4: **Reference Scenario - Forecast Place of Work Employment Growth**			
-4: **City of Greater Sudbury, 2016 to 2046**			
	Employment	**Growth**	**Annual Growth Rate**
2001	71,300	-	-
2006	76,900	5,600	1.52%
2011	77,700	800	0.21%
2016	**79,440**	**1,700**	**0.45%**
2021	80,970	1,570	0.39%
2026	82,300	1,330	0.33%
2031	82,810	510	0.12%
2036	83,990	1,180	0.28%
2041	84,970	980	0.23%
2046	85,750	780	0.18%
2016-46		**6,310**	

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C. HIGH SCENARIO

The high scenario was developed to test the effects of significant changes to in-migration that would lead to a larger share of young adults. This represents a best case outcome reflecting substantial influence from Ring of Fire investment and leads to much higher population and employment growth rates than recent trends would generate.

1. Key Assumptions

- Assumes a significant increase in net in-migration, which would include higher national immigration than has been experienced in the past.

- Young adults would occupy a larger share of Greater Sudbury's population base than under the reference scenario.

- Considers all employment investments from the reference scenario plus substantial Ring of Fire investments within the forecast period.

a. Population

Table 11

	Population	Growth	Annual Growth Rate
High Scenario - Forecast Total Population Growth City of Greater Sudbury, 2016 to 2046			
2001	161,100	-	-
2006	163,900	2,800	0.35%
2011	164,900	1,000	0.12%
2016	**166,130**	**1,230**	**0.15%**
2021	168,720	2,620	0.31%
2026	171,340	2,620	0.31%
2031	174,210	2,870	0.33%
2036	176,840	2,630	0.30%
2041	179,200	2,360	0.27%
2046	181,290	2,090	0.23%
2016-46		**15,160**	

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b.   Households

<table>
<tr><td colspan="4" style="text-align:right">**Table 12**</td></tr>
<tr><td colspan="4">**High Scenario - Forecast Occupied Household Growth**
City of Greater Sudbury, 2016 to 2046</td></tr>
<tr><td></td><td>**Households**</td><td>**Growth**</td><td>**Annual Growth Rate**</td></tr>
<tr><td>2001</td><td>63,040</td><td>-</td><td>-</td></tr>
<tr><td>2006</td><td>64,960</td><td>1,920</td><td>0.60%</td></tr>
<tr><td>2011</td><td>67,640</td><td>2,680</td><td>0.81%</td></tr>
<tr><td>**2016**</td><td>**69,200**</td><td>**1,560**</td><td>**0.46%**</td></tr>
<tr><td>2021</td><td>71,450</td><td>2,250</td><td>0.64%</td></tr>
<tr><td>2026</td><td>73,220</td><td>1,770</td><td>0.49%</td></tr>
<tr><td>2031</td><td>74,730</td><td>1,510</td><td>0.41%</td></tr>
<tr><td>2036</td><td>76,000</td><td>1,270</td><td>0.34%</td></tr>
<tr><td>2041</td><td>76,920</td><td>920</td><td>0.24%</td></tr>
<tr><td>2046</td><td>77,590</td><td>670</td><td>0.17%</td></tr>
<tr><td>**2016-46**</td><td></td><td>**8,390**</td><td></td></tr>
</table>

c.   Employment

<table>
<tr><td colspan="4" style="text-align:right">**Table 13**</td></tr>
<tr><td colspan="4">**High Scenario - Forecast Place of Work Employment Growth**
City of Greater Sudbury, 2016 to 2046</td></tr>
<tr><td></td><td>**Employment**</td><td>**Growth**</td><td>**Annual Growth Rate**</td></tr>
<tr><td>2001</td><td>71,300</td><td>-</td><td>-</td></tr>
<tr><td>2006</td><td>76,900</td><td>5,600</td><td>1.52%</td></tr>
<tr><td>2011</td><td>77,700</td><td>800</td><td>0.21%</td></tr>
<tr><td>**2016**</td><td>**79,440**</td><td>**1,740**</td><td>**0.45%**</td></tr>
<tr><td>2021</td><td>81,520</td><td>2,120</td><td>0.52%</td></tr>
<tr><td>2026</td><td>83,470</td><td>1,950</td><td>0.47%</td></tr>
<tr><td>2031</td><td>85,080</td><td>1,610</td><td>0.38%</td></tr>
<tr><td>2036</td><td>87,140</td><td>2,060</td><td>0.48%</td></tr>
<tr><td>2041</td><td>89,160</td><td>2,020</td><td>0.46%</td></tr>
<tr><td>2046</td><td>90,460</td><td>1,300</td><td>0.29%</td></tr>
<tr><td>**2016-46**</td><td></td><td>**11,020**</td><td></td></tr>
</table>

V GEOGRAPHIC BASED FORECAST PREPARED FOR THE REFERENCE SCENARIO

The reference scenario has been allocated geographically by former municipality (now referred to as communities). The key assumptions underlying the draft local distribution and summary results are provided below.

A. FORECAST BY COMMUNITY

The City-wide reference forecast was allocated to the various communities across the municipality.

1. Key assumptions

- Building permits to end of 2017 are the main driver of the unit estimates for the 2018-2021 period.

- 50 per cent of the housing growth will occur in the former City of Sudbury consistent with 2013 forecast.

- Population growth is forecast to be in Sudbury (49%), Valley East (18%), Walden (13%) and Nickel Centre (11%).

- Assumes mainly single detached units in all communities.

- Limited number of low rise apartments in Valley East, Nickel Centre and Walden.

- Generally the same growth distribution as the previous report for housing, population and employment.

- Builds on 2016 base data for units and population provided by the City.

- Forecast allocations are completed generally on a share of overall City growth by unit type.

- Housing growth will be predominately in the former municipalities of Sudbury, Valley East and Nickel Centre. These share determinations are based on historical building permit data.

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a. Population Growth by Community – Reference Scenario

							Table 14
Forecast Total Population, 2016 - 2046							
City of Greater Sudbury by Former Local Municipality							
	2016	**2021**	**2026**	**2031**	**2036**	**2041**	**2046**
Sudbury	86,870	87,600	88,380	88,880	89,440	89,700	90,200
Capreol	3,010	3,080	3,080	3,080	3,080	3,080	3,090
Nickle Centre	13,540	13,680	13,880	14,000	14,130	14,190	14,290
Onaping Falls	3,970	4,000	4,000	4,000	4,000	4,000	4,020
Rayside Balfour	11,820	11,920	11,970	11,990	12,020	12,040	12,090
Walden	5,870	6,110	6,330	6,480	6,610	6,690	6,760
Valley East	21,040	21,330	21,630	21,840	22,050	22,150	22,300
Rural	20,010	20,080	20,130	20,130	20,160	20,160	20,240
City of Greater Sudbury	**166,130**	**167,800**	**169,400**	**170,400**	**171,490**	**172,010**	**172,990**

							Table 15
Forecast Total Population Growth, 2016 - 2046							
City of Greater Sudbury by Former Local Municipality							
	2016-21	**2021-26**	**2026-31**	**2031-36**	**2036-41**	**2041-46**	**2016-46**
Sudbury	730	780	500	560	260	500	3,330
Capreol	70	0	0	0	0	10	80
Nickle Centre	140	200	120	130	60	100	750
Onaping Falls	30	0	0	0	0	20	50
Rayside Balfour	100	50	20	30	20	50	270
Walden	240	220	150	130	80	70	890
Valley East	290	300	210	210	100	150	1,260
Rural	70	50	0	30	0	80	230
City of Greater Sudbury	**1,670**	**1,600**	**1,000**	**1,090**	**520**	**980**	**6,860**

b. Housing by Community – Reference Scenario

					Table 16
Historical Total Occupied Households, 2001 - 2016					
City of Greater Sudbury by Former Local Municipality					
	2001	**2006**	**2011**	**2016**	**2001-16**
Sudbury	35,940	37,750	38,460	38,730	**2,790**
Capreol	1,400	1,230	1,240	1,260	**(140)**
Nickle Centre	3,670	4,730	5,140	5,210	**1,540**
Onaping Falls	1,310	1,530	1,630	1,620	**310**
Rayside Balfour	4,650	4,140	4,200	4,910	**260**
Walden	2,120	2,120	2,140	2,250	**130**
Valley East	6,000	6,650	7,320	7,560	**1,560**
Rural	7,900	6,750	7,510	7,670	**(230)**
City of Greater Sudbury	**62,990**	**64,900**	**67,640**	**69,210**	**6,220**

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Table 17

Share of Housing Growth by Community City of Greater Sudbury, 2011 - 2046							
	2011-16	2016-21	2021-26	2026-31	2031-36	2036-41	2041-46
Sudbury	17.2%	52.9%	52.6%	52.9%	52.8%	54.2%	51.4%
Capreol	1.3%	0.5%	0.7%	1.0%	1.1%	0.0%	2.9%
Nickle Centre	4.5%	9.9%	10.2%	9.6%	10.1%	10.4%	8.6%
Onaping Falls	-0.6%	1.0%	1.5%	1.0%	1.1%	0.0%	2.9%
Rayside Balfour	45.2%	5.2%	4.4%	5.8%	4.5%	4.2%	5.7%
Walden	7.0%	8.9%	8.8%	8.7%	9.0%	10.4%	8.6%
Valley East	15.3%	15.7%	15.3%	15.4%	15.7%	14.6%	14.3%
Rural	10.2%	5.8%	6.6%	5.8%	5.6%	6.3%	5.7%
City of Greater Sudbury	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table 18

Forecast Total Occupied Households, 2016 - 2046 City of Greater Sudbury by Former Local Municipality							
	2016	2021	2026	2031	2036	2041	2046
Sudbury	38,730	39,740	40,460	41,010	41,480	41,740	41,920
Capreol	1,260	1,270	1,280	1,290	1,300	1,300	1,310
Nickle Centre	5,210	5,400	5,540	5,640	5,730	5,780	5,810
Onaping Falls	1,620	1,640	1,660	1,670	1,680	1,680	1,690
Rayside Balfour	4,910	5,010	5,070	5,130	5,170	5,190	5,210
Walden	2,250	2,420	2,540	2,630	2,710	2,760	2,790
Valley East	7,560	7,860	8,070	8,230	8,370	8,440	8,490
Rural	7,670	7,780	7,870	7,930	7,980	8,010	8,030
City of Greater Sudbury	**69,210**	**71,120**	**72,490**	**73,530**	**74,420**	**74,900**	**75,250**

Table 19

Forecast Total Occupied Households Growth, 2016 - 2046 City of Greater Sudbury by Former Local Municipality							
	2016-21	2021-26	2026-31	2031-36	2036-41	2041-46	2016-46
Sudbury	1,010	720	550	470	260	180	3,190
Capreol	10	10	10	10	0	10	50
Nickle Centre	190	140	100	90	50	30	600
Onaping Falls	20	20	10	10	0	10	70
Rayside Balfour	100	60	60	40	20	20	300
Walden	170	120	90	80	50	30	540
Valley East	300	210	160	140	70	50	930
Rural	110	90	60	50	30	20	360
City of Greater Sudbury	**1,910**	**1,370**	**1,040**	**890**	**480**	**350**	**6,040**

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<table>
<tr><td colspan="10" align="right">Table 20</td></tr>
</table>

	Sudbury	Capreol	Nickle Centre	Onaping Falls	Rayside Balfour	Walden	Valley East	Rural	City of Greater Sudbury
Housing Growth by Unit Type and Community **City of Greater Sudbury, 2016 - 2046**									
Single/Semi									
2016	20,230	1,060	4,380	1,450	3,460	2,030	6,630	7,270	46,510
2016-46	1,790	50	360	70	180	340	450	370	3,610
2046	**22,020**	**1,110**	**4,740**	**1,520**	**3,640**	**2,370**	**7,080**	**7,640**	**50,120**
Row									
2016	2,250	20	140	20	290	10	100	10	2,840
2016-46	140	0	20	0	10	30	40	0	240
2046	**2,390**	**20**	**160**	**20**	**300**	**40**	**140**	**10**	**3,080**
Apartments									
2016	16,240	170	690	140	1,160	200	830	380	19,810
2016-46	1,270	0	220	0	120	180	450	0	2,240
2046	**17,510**	**170**	**910**	**140**	**1,280**	**380**	**1,280**	**380**	**22,050**

c. Employment Growth by Community – Reference Scenario

<table>
<tr><td colspan="8" align="right">Table 21</td></tr>
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Total Place of Work Employment Forecast by Community City of Greater Sudbury, 2016 - 2041							
	2016	**2021**	**2026**	**2031**	**2036**	**2041**	**2046**
Sudbury	59,750	60,860	61,830	62,190	63,050	63,790	64,360
Capreol	930	950	960	970	990	1,000	1,010
Nickle Centre	3,220	3,310	3,370	3,400	3,460	3,500	3,540
Onaping Falls	2,300	2,370	2,440	2,460	2,530	2,590	2,630
Rayside Balfour	3,460	3,520	3,560	3,580	3,610	3,630	3,660
Walden	4,590	4,670	4,750	4,780	4,850	4,910	4,950
Valley East	5,180	5,290	5,380	5,430	5,500	5,550	5,610
Rural	0	0	0	0	0	0	0
City of Greater Sudbury	**79,430**	**80,970**	**82,290**	**82,810**	**83,990**	**84,970**	**85,760**

<table>
<tr><td colspan="8" align="right">Table 22</td></tr>
</table>

Total Place of Work Employment Forecast by Community City of Greater Sudbury, 2016 - 2041							
	2016-21	**2021-26**	**2026-31**	**2031-36**	**2036-41**	**2041-46**	**2016-46**
Sudbury	1,110	970	360	860	740	570	4,610
Capreol	20	10	10	20	10	10	80
Nickle Centre	90	60	30	60	40	40	320
Onaping Falls	70	70	20	70	60	40	330
Rayside Balfour	60	40	20	30	20	30	200
Walden	80	80	30	70	60	40	360
Valley East	110	90	50	70	50	60	430
Rural	0	0	0	0	0	0	0
City of Greater Sudbury	**1,540**	**1,320**	**520**	**1,180**	**980**	**790**	**6,330**

VI CONCLUSIONS

The most recent set of forecasts for Greater Sudbury were completed in 2013 when a lack of data on employment meant that the full effects of the recession were not incorporated into the forecast. Since 2001, the total population in Greater Sudbury has grown by 5,000, and, while the most recent pace of growth has been somewhat more modest than had been previously forecast in 2013, most other major urban centres in the north have been declining.

Three scenarios have been developed to illustrate how Greater Sudbury may grow to 2046. These scenarios build on previous forecasts prepared in 2013, updated with the most current data from the 2016 Census, as well as recent building permit activity. The broader social and economic trends identified as inputs to the previous forecast exercise have been confirmed as having a significant influence going forward.

From a current (2016) population of 166,130, the city's population in 2046 may range from a low of 165,090, to a mid-range total of 172,990 under the reference scenario, or even to a high of 181,290 should economic conditions and migration to the city, notably by young adults, significantly change.

Similarly, from a 2016 total of 79,440 jobs, total employment could grow modestly to 81,230, increase under the reference scenario to 85,750, or possibly as high as 90,460 under the high growth scenario.

It is our view that the reference scenario represents the most reasonable scenario for City planning purposes. Firstly, it most closely aligns to recent development activity. Secondly, it accounts for known institutional, resource and retail investments and the associated employment. Finally, it reflects the aging of the existing community and modest migration increases to the City.

The low scenario is based on continuing past migration trends and is not reflective of recent building permit activity, while the high growth scenario is presented to illustrate how growth might be affected by a combined impact of higher migration levels coupled with effects from substantial investments in the Ring of Fire within the forecast period.

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Table 23

	Low	Reference	High
Forecast Population by Scenario			
City of Greater Sudbury, 2016 to 2046			
2016	**166,130**	**166,130**	**166,130**
2021	167,130	167,800	168,720
2026	167,870	169,400	171,340
2031	167,320	170,400	174,210
2036	166,890	171,490	176,840
2041	166,180	172,000	179,200
2046	165,090	172,990	181,290
2016-46	**(1,040)**	**6,860**	**15,160**

Table 24

	Low	Reference	High
Forecast Households by Scenario			
City of Greater Sudbury, 2016 to 2046			
2016	**69,200**	**69,200**	**69,200**
2021	70,880	71,120	71,450
2026	71,930	72,500	73,220
2031	72,370	73,530	74,730
2036	72,660	74,410	76,000
2041	72,800	74,910	76,920
2046	72,890	75,250	77,590
2016-46	**3,690**	**6,050**	**8,390**

Table 25

	Low	Reference	High
Forecast Employment by Scenario			
City of Greater Sudbury, 2016 to 2046			
2016	**79,440**	**79,440**	**79,440**
2021	80,570	80,970	81,520
2026	81,390	82,300	83,470
2031	80,960	82,810	85,080
2036	81,260	83,990	87,140
2041	81,590	84,970	89,160
2046	81,230	85,750	90,460
2016-46	**1,790**	**6,310**	**11,020**

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