

Growth Analysis Study

City of St. Thomas

Final Report

Watson & Associates Economists Ltd.
905-272-3600
info@watsonecon.ca

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List of Acronyms and Abbreviations

Acronym	Full Description of Acronym
C.M.A.	Census Metropolitan Area
COVID-19	Coronavirus disease
EV	Electric vehicle
G.D.P.	Gross domestic product
G.G.H.	Golden Greater Horseshoe
GM	General Motors
G.T.H.A.	Greater Toronto and Hamilton Area
I.M.F.	International Monetary Fund
M.O.F.	Ministry of Finance
N.F.P.O.W.	No fixed place of work
P.M.I.	Purchasing Manager's Index
P.P.S.	Provincial Policy Statement
P.P.U.	Persons per unit
U.S.	United States



Executive Summary

Executive Summary

Introduction

Watson & Associates Economists Ltd. (Watson) was retained by the City of St. Thomas in the summer of 2023 to assess the City's long-term population, housing, and employment growth potential to the year 2051. This update is intended to specifically consider the economic impacts associated with the Volkswagen Electric Vehicle (EV) battery plant and the implications it would have on the long-term growth potential of the City and the broader commuter-shed.[1] More specifically, this study provides the following:

- A brief demographic, economic, and socio-economic profile of the City of St. Thomas;
- An assessment of the economic impacts of the Volkswagen EV battery plant related to direct, indirect, and induced employment growth opportunities both within the City of St. Thomas and the surrounding commuter-shed;
- A review of long-term economic and demographic drivers of population growth within the City of St. Thomas outside of the impacts of the EV battery plant;
- A projection of trends regarding population by age, labour force participation rates by age, permanent households and forecast persons per dwelling unit (persons per unit);
- Forecast market trends in population and occupied households by structure type (i.e., singles/semi-detached, townhouses, and apartments);
- An employment forecast for the City of St. Thomas to 2051 by major employment sector; and
- An Employment Area land needs analysis to 2051, to determine the City's non-residential land requirements over the next 25 years.

A key driver of the City's future economic growth potential is the recently announced Volkswagen EV battery manufacturing plant, which is anticipated to begin production in 2027. It is planned to be the largest Volkswagen plant in North America and is expected to directly employ 3,000 people. The federal government is providing up to $13 billion in subsidies to Volkswagen and has reasoned that this project will generate

[1] The commuter shed is defined as the predominant locations to which City of St. Thomas residents commute. This includes Elgin County and the City of London.

$200 billion in the Canadian economy over the next decade.[1] The EV battery plant is expected to generate significant population, housing, and employment growth for the City and the surrounding commuter-shed, which was not considered in the most recent population and housing update prepared for the City in 2022.[2]

Approach

Ultimately, future population and housing growth within St. Thomas will be determined in large measure by the competitiveness of the export-based economy within the City and the surrounding regional economic area. In assessing the City's long-term population growth potential, it is important to recognize that there is a direct link between provincial/regional economic growth trends and forecast regional net migration potential across the City and the surrounding commuter-shed.

The City-wide population forecast builds on the cohort-survival approach that was undertaken for the 2022 City of St. Thomas Population and Households Projections. Further to this, a labour force participation rate and commuter trend analysis was undertaken to determine the City's expected share of population and housing growth within the broader commuter-shed related to the EV battery plant. In addition to a specific analysis related to the Volkswagen battery plant impacts, the broader population and employment growth potential for the commuter-shed has been assessed. This document is not intended to unduly constrain the municipality. Instead, the intent of this exercise is to provide guidance to the City regarding its potential growth trajectory and establish minimum targets towards which it should strive. The continual monitoring of this growth trajectory will be a vital next step for the City, in order to ensure that growth expectations and associated infrastructure planning are happening in alignment with each other.

Drivers of Future Population Change in Elgin County and the City of St. Thomas

Elgin County and the City of St. Thomas are located directly to the south of the City of London, which in accordance with the 2021 Census was identified as the fastest-growing large municipality in Ontario, with nearly a 2% annual population growth rate

[1] https://www.cbc.ca/news/canada/london/vw-volkswagen-st-thomas-battery-plant-german-autos-car-industry-electric-vehicles-1.6817262
[2] Population and Household Projections, City of St. Thomas. Final Report. August 2022.

between 2016 and 2021. Elgin County and the City of St. Thomas are also located to the west of one of the fastest-growing Cities/Regions in North America, known as the Greater Golden Horseshoe (G.G.H.).

The strength of the broader regional G.G.H. economy, in particular the west G.G.H. Outer Ring and the City of London, presents an opportunity for working-age residents in Elgin County and St. Thomas living within commuting distance to these steadily growing regional employment markets. Steady economic growth across the broader regional economy also continues to provide synergies and economic development opportunities across a range of employment sectors locally.

At the same time, rising costs associated with housing and urban land development within the G.G.H. and the City of London have placed continued outward growth pressure onto Elgin County and the City of St. Thomas. These trends were further accelerated during the coronavirus disease (COVID-19) pandemic driven by further appreciation in housing prices and changes to the nature of work (i.e., increased options for remote or hybrid work). Collectively, these conditions are providing greater opportunities for working-age residents to live in Elgin County and St. Thomas and work locally or within the surrounding commuter shed, provided that a range of ownership and rental housing options are available. Higher provincial population growth through increased immigration is anticipated to drive continued outward growth pressures from the larger urban centres of Southern Ontario to Elgin County and the City of St. Thomas over the long term.

Added to these broader regional trends, increased local economic growth associated with the Volkswagen battery plant is anticipated to further accelerate population and housing growth within the City of St. Thomas and the surrounding area over the next decade, well beyond previous projections. These impacts are briefly summarized below.

Economic Impact Assessment of the Volkswagen EV Battery Plant

Employment multipliers provide a summary of the indirect economic effect or “shock” from income and/or employment generated by a particular employment sector. The direct employment of the St. Thomas EV battery plant and the potential “spin-off” employment of the St. Thomas EV battery plant has the potential to generate approximately 14,000 direct, indirect, and induced jobs within Canada.

As shown in Figure ES-1, the total direct, indirect, and induced employment potential in the St. Thomas Primary Commuter-shed is 7,400 jobs. Of this, 100% of direct jobs (Volkswagen EV battery plant) are to be located in the City of St. Thomas, 50% of indirect jobs and 77% of induced employment. On an aggregate basis, the City of St. Thomas is expected to accommodate 77% of the St. Thomas commuter shed jobs, totalling 5,800 jobs.

Figure ES-1
St. Thomas EV Battery Plant Total Potential Employment Impacts within the St. Thomas Commuter-shed and the City of St. Thomas

Economic Impact	St. Thomas Primary Commuter-shed	City of St. Thomas	
		% Share	Jobs
Direct Employment	3,000	100%	3,000
Indirect Employment	2,500	50%	1,300
Induced Employment	1,900	77%	1,500
Total Direct, Indirect, and Induced	**7,400**	**77%**	**5,800**

Source: Watson & Associates Economists Ltd., 2024.

It is important to note that this forecast of 5,800 jobs in St. Thomas will have disruptive impacts on the City's existing labour force and population base. While the battery plant will generate new jobs within the City, constraints exist regarding the supply of sufficient skilled labour which can be attracted to the St. Thomas commuter shed from elsewhere in Ontario in response to these employment opportunities. Accordingly, the plant and associated supply chain employment growth will likely lead to increased competition for labour and could displace employees from existing businesses that operate currently in the regional area.

City of St. Thomas Long-Term Population, Housing, and Employment Forecast, 2021 to 2051

The following provides a summary of key forecast metrics for the City of St. Thomas:

- The 2022 City of St. Thomas growth analysis projected a 2051 population of 65,100 people. This updated forecast estimates a 2051 population of 79,500 by 2051, representing a difference of 14,400.
- Under the current forecast, the population in St. Thomas is expected to steadily increase from 44,000 in 2021 to 79,500 by 2051, representing a population increase of 2% annually over the 30-year period.[1]
- While the Volkswagen EV battery plant is expected to attract a greater share of working-age residents to the City, the St. Thomas population base is still anticipated to steadily age over the next three decades.
- By 2051 the City's housing base is forecast to increase to 33,400 households from 18,100 in 2021. This represents an increase of approximately 15,300 households, which is higher than the 9,400 households forecast over the 30-year period in the previously conducted 2022 forecast for the City.
- The housing forecast comprises 55% low-density units, 19% medium-density units, and 26% high-density units. This shift in dwelling type preferences towards medium and high density is anticipated to be driven largely by the aging of the population and, to a lesser extent, from continued upward pressure on local housing prices.
- Forecast new dwellings are expected to continue to increase between 2021 and 2026 and then experience a strong peak by 2031, partly due to the expected completion of the Volkswagen plant during the 2026 to 2031 period. Consistent with forecast population trends over the longer term, the rate of future housing growth is expected to steadily slow towards the latter portion of the forecast period.
- Between 2006 and 2021, the City's labour force increased but the participation rate declined from 64% to 59%.[2] The participation rate in the City is forecast to

[1] Includes a Census undercount estimated at approximately 2.7%. The net Census undercount represents the net number of persons missed during Census enumeration.
[2] The participation rate is a measure of the total labour force (comprising those who are employed and unemployed, combined) relative to the size of the working-age population.

continue to decline, albeit at a slower rate than historically observed. The labour force participation rate is forecast to decrease from 59% in 2021 to 53% by 2051.

- Employment within the City is forecast to increase from 22,800 in 2024 to 38,600 by 2051. This represents an employment increase of 15,800 over the forecast period or an average annual growth rate of 2%. Employment is expected to spike in 2031 with the completion and operation of the Volkswagen EV battery plant.
- Land-based employment sectors, including commercial, industrial, and institutional, are anticipated to account for 87% of employment growth over the forecast period. No fixed place of work (N.F.P.O.W.) and work at home employment categories are forecast to comprise the remaining 13% of employment growth.

City of St. Thomas Employment Area Land Needs, 2024 to 2051

The new Industrial Park is approximately 620 total hectares (ha) in size. Of these 620 total ha, it is assumed that 460 ha are classified as developable.[1] In addition to the 460 ha of developable land identified in section 6.1.1., the City also has an existing supply of vacant Employment Area land. There are 14 additional sites outside the new Industrial Park which total nearly 60 ha of developable land area. In total, this amounts to nearly 520 ha (approximately 1,300 acres) of vacant developable Employment Area land across the City as of year-end 2023.

Due to increasing growth pressures forecast in the City, additional employment lands will be required within St. Thomas beyond what is designated today. More specifically, the City is expected to experience a 19 ha (47-acre) shortfall of vacant land by 2051. Designating urban employment lands can be a slow process and it is important to ensure the City is proactive in its ability to accommodate anticipated demand within Employment Areas. As an immediate next step, the City should initiate a process of identifying additional employment lands to ensure that it is well-positioned to accommodate employment land demand within a broad range of sectors and development types. Identifying additional employment lands within St. Thomas would involve a review of employment intensification opportunities to increase the utilization of

[1] Subject to further refinement of the environmental and engineering analysis.

existing sites and it may also involve further expansion of the City's corporate boundary in the future.

Conclusions

Regular monitoring of the City's population, housing, and employment forecast is recommended to assist the City and its residents in better understanding current real estate development trends and demographic conditions, the progress of current development initiatives, overall tracking of population, and housing growth to O.P. forecasts/targets, as well as the influence of O.P. planning policies on urban development patterns. Further to this, it is recommended that the City also monitor the absorption of vacant Employment Area land to ensure that an adequate supply of land is available to accommodate changing patterns in demand over the next several decades. Given the immense pressure for urban development that is forecast in the next decade, in part due to the Volkswagen battery plant, the City should continue to build on local monitoring frameworks to ensure that growth forecasts and housing targets are reviewed annually. This foundational data will also help the City assess and evaluate broader growth management objectives and performance measures regularly.



Report

Chapter 1
Introduction

1. Introduction

1.1 Terms of Reference

Watson & Associates Economists Ltd. (Watson) was retained by the City of St. Thomas in the summer of 2023 to assess the City's long-term population, housing, and employment growth potential to the year 2051. This update is intended to specifically consider the economic impacts associated with the Volkswagen EV battery plant and the implications it would have on the long-term growth potential of the City and the broader commuter-shed.[1] More specifically, this study provides the following:

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- Forecast market trends in population and occupied households by structure type (i.e., singles/semi-detached, townhouses, and apartments);
- An employment forecast for the City of St. Thomas to 2051 by major employment sector; and
- An Employment Area land needs analysis to 2051, to determine the City's non-residential land requirements over the next 25 years.

The results of the analysis provided herein are intended to assist in decision-making specifically related to land use planning and growth management, infrastructure planning/phasing, and financial planning for the City of St. Thomas.

[1] The commuter shed is defined as the predominant locations to which City of St. Thomas residents commute. This includes Elgin County and the City of London.

1.2 Background

Situated within Southwestern Ontario, approximately 30 km south of the City of London, the City of St. Thomas is home to a diverse and growing employment base which includes a mix of industrial, commercial, and institutional businesses. For the City of St. Thomas, the manufacturing sector has historically been a core driver of economic growth over the past several decades, which in turn has contributed to moderate population growth and steady local housing demand.

Following the 2008/2009 global economic downturn and the subsequent closure of the St. Thomas Ford Assembly Plant in 2011, the City and the surrounding regional economy experienced a significant decline in direct manufacturing jobs and supporting industries between 2011 and 2016. Since that time, export-based employment sectors within the City and the surrounding regional economy have gradually recovered, contributing to stronger population growth and a strengthening housing market in recent years.

Since the onset of the coronavirus disease (COVID-19) pandemic in March 2020, housing demand within the City of St. Thomas has accelerated, led by increased opportunities for remote work combined with growing regional employment growth opportunities within the St. Thomas commuter-shed, most notably within the City of London. The longer-term population and employment growth potential for the City will be heavily dependent on the sustained economic growth potential of the broader economic region and the Province as a whole.

A key driver of the City's future economic growth potential is the recently announced Volkswagen Electric Vehicle (EV) battery manufacturing plant, which is anticipated to begin production in 2027. It is planned to be the largest Volkswagen plant in North America and is expected to directly employ 3,000 people. The federal government is providing up to $13 billion in subsidies to Volkswagen and has reasoned that this project will generate $200 billion in the Canadian economy over the next decade.[1] The EV battery plant is expected to generate significant population, housing, and employment

[1] https://www.cbc.ca/news/canada/london/vw-volkswagen-st-thomas-battery-plant-german-autos-car-industry-electric-vehicles-1.6817262

growth for the City and the surrounding commuter-shed, which was not considered in the most recent population and housing update prepared for the City in 2022.[1]

While the EV battery plant is expected to have a sustained impact on the local and regional economy, the St. Thomas commuter-shed has been experiencing increasing growth pressures over the last several years that are expected to continue regardless of the Volkswagen plant. Accordingly, this report aims to assess the long-term growth potential for the City by considering both the impacts of the EV battery plant and this broader economic potential.

1.3 Provincial Planning Policy Context

This technical growth and land needs analysis was prepared under the purview of the Provincial Policy Statement (P.P.S.), 2020. On April 7, 2023, the Province of Ontario released a new Provincial Planning Statement (P.P.S.) in concert with introducing Bill 97: *Helping Homebuyers, Protecting Tenants Act, 2023.* Bill 97 proposes amendments to seven provincial statutes, including the *Planning Act*. The proposed P.P.S., 2023 is intended to simplify and integrate existing provincial policies (A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019 (Growth Plan, 2019) and the P.P.S., 2020) while providing municipalities and the Province with greater flexibility to deliver on housing objectives. A key focus of the proposed P.P.S., 2023 is that it recognizes the approach for achieving housing and employment outcomes will vary by municipality and, as such, moves away from a prescriptive guideline approach to growth analysis and urban land needs assessments.

According to the proposed P.P.S., 2023, at the time of each O.P. update, sufficient land shall be made available to accommodate an appropriate range and mix of land uses to meet projected needs for a time horizon of at least 25 years. Another key change in the proposed P.P.S., 2023 is that planning authorities are permitted to extend beyond this time frame for infrastructure, Employment Areas, and Strategic Growth Areas. In contrast, the P.P.S., 2020 requires that municipalities accommodate projected needs for up to 25 years. While the P.P.S., 2020 allows for the long-term planning and protection

[1] Population and Household Projections, City of St. Thomas. Final Report. August 2022.

of Employment Areas beyond a 25-year horizon, it does not allow for the designation of land beyond a 25-year horizon.

While this study does not contemplate long-term residential land needs, it is still important to understand the policy context around urban expansion. Similar to the P.P.S., 2020, the proposed P.P.S., 2023 still requires planning authorities to maintain, at all times, the ability to accommodate residential growth for a minimum of 15 years through lands that are designated and available for residential development. It also prescribes that where new development is to occur, planning authorities maintain at all times, land with servicing capacity sufficient to provide at least a three-year supply of residential units, available through lands suitably zoned, including units in draft approved or registered plans. In contrast to the P.P.S., 2020, references to residential intensification have been removed from the proposed P.P.S., 2023 when addressing municipal requirements to accommodate a three-year and a 15-year urban land supply.

Bill 185 and a Proposed Planning Statement, 2024 were recently introduced on April 10, 2024. Upon initial review of these documents, the technical results of this analysis would remain unchanged.

Chapter 2
Approach

2. Approach

2.1 What Drives Population Growth?

Ultimately, future population and housing growth within St. Thomas will be determined in large measure by the competitiveness of the export-based economy within the City and the surrounding regional economic area. In assessing the City's long-term population growth potential, it is important to recognize that there is a direct link between provincial/regional economic growth trends and forecast regional net migration potential across the City and the surrounding commuter-shed.

The Volkswagen EV battery plant represents a fundamental consideration in determining the short- and longer-term impacts this development will have on an already strengthening economic outlook for the broader region and the City of St. Thomas. Jobs associated with the plant can be defined in four broad categories (explored further in Chapter 4):

- **Direct Employment** – associated employment at the Volkswagen EV battery plant (captured entirely within St. Thomas);
- **Indirect Employment** – jobs generated from economic activity created in preceding stages of production (i.e., mining, material processing, battery components) – local, regional, and beyond;
- **Induced Employment** – jobs generated in population-related employment sectors resulting from household expenditures associated with direct and indirect activities of the EV battery plant – local, regional, and beyond; and
- **Temporary Construction Employment** – jobs associated with the construction of the plant; expected to have a minimal permanent impact on St. Thomas.

Economic growth in the regional export-based economy generates wealth and economic opportunities, which in turn stimulates community-based or population-related employment sectors, including retail trade, accommodation and food, and other service sectors. As such, economic growth represents a key driver of net migration and, ultimately, the growth of the working-age population and their dependents (i.e., children, spouses not in the labour force, and others). In contrast, growth of the City's 65+ population will be largely driven by the aging of the City's existing population and, to a

lesser extent, the attractiveness of the City to new seniors from elsewhere in Southern Ontario.

In developing the City of St. Thomas population and housing projections prepared herein, the following key economic trends, growth drivers, and disruptors have been briefly addressed:

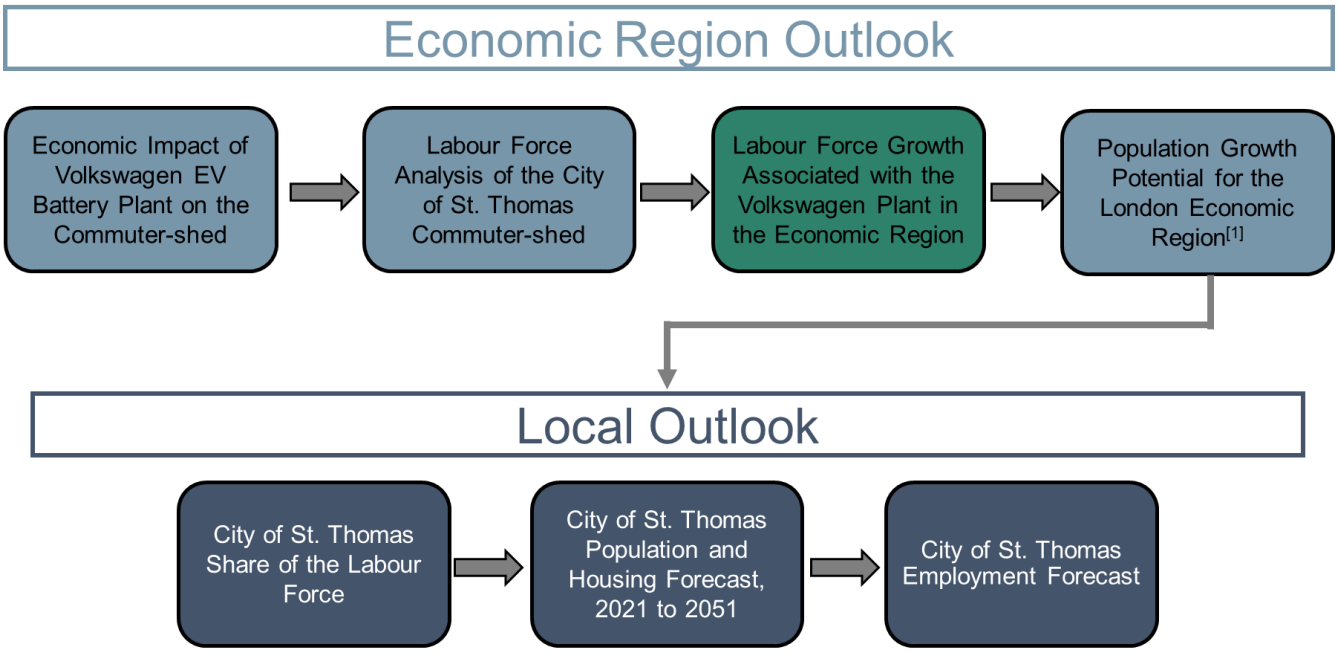
- National, provincial, and region-wide economic trends that are anticipated to influence development and economic competitiveness within the local and regional employment market;
- The population, housing, labour, employment, and land impacts of the Volkswagen EV battery plant on the City of St. Thomas to 2051;
- The influence of forecast population changes within St. Thomas, associated with:
    - Local employment opportunities within the City and the surrounding commuter-shed (an analysis of recent commuting trends is presented in Chapter 3);
    - Demographic and labour-force impacts associated with an aging population;
    - Forecast housing market demand geared to empty nesters and retirees (i.e., 55+ age group); and
    - A brief assessment of housing affordability within the City.

This broader analysis has been used to assess local long-term trends and potential within St. Thomas related to the following:

- Labour force growth;
- Net migration;
- Population change by age;
- Future permanent housing needs and forecast trends in household occupancy; and
- Housing demand by structure type.

Figure 2-1 provides a schematic overview of the population and housing growth projection approach discussed above.

Figure 2-1
Approach to Long-Term Population and Housing Growth Projection



[1] High-level assessment of population potential based on a review of the labour force participation rate.

This growth forecast update is critical in answering the following questions regarding long-term demographic and housing growth trends within the City and the surrounding area:

- What is the long-term economic and population growth potential for St. Thomas within the broader economic region (i.e., commuter-shed)?
- How many of the direct, indirect, and induced jobs associated with the Volkswagen EV battery plant will be held by City of St. Thomas residents?
- In addition to the Volkswagen EV battery plant, what are the key economic drivers and disruptors of future population and housing growth within St. Thomas?
- What share of forecast population growth within the broader regional market area and the County should be assumed for St. Thomas? How is this share expected to change over time?
- How will evolving demographic/economic trends (e.g., population age structure, housing affordability) and planning policy impact future population growth rates and market demand for housing by type?

- What will future housing development look like in St. Thomas? What forms will new housing take in terms of structural type and housing occupancy? Who will be the target demographic groups?

2.2 Long-term Population and Household Forecast Approach

As previously noted, the City-wide population forecast builds on the cohort-survival approach that was undertaken for the 2022 City of St. Thomas Population and Households Projections. Further to this, a labour force participation rate and commuter trend analysis was undertaken to determine the City's expected share of population and housing growth within the broader commuter-shed related to the EV battery plant. In addition to a specific analysis related to the Volkswagen battery plant impacts, the broader population and employment growth potential for the commuter-shed has been assessed. This document is not intended to unduly constrain the municipality. Instead, the intent of this exercise is to provide guidance to the City regarding its potential growth trajectory and establish minimum targets towards which it should strive. The continual monitoring of this growth trajectory will be a vital next step for the City, in order to ensure that growth expectations and associated infrastructure planning are happening in alignment with each other.

As a starting point, the most recent (Spring 2023) Ministry of Finance (M.O.F.) population projections for Elgin County have been reviewed and assessed.[1] Recent Statistics Canada 2021 Census population estimates for Elgin County and St. Thomas are also examined. Historical and forecast population trends are also considered at the regional and provincial levels relative to St. Thomas in accordance with historical Census data and approved municipal, regional, and provincial forecasts. This analysis provides further insight into the City's potential share of population growth relative to the broader regional market area.

Forecast trends in population age structure provide important insights concerning future housing needs based on forecast trends in average household occupancy (see Appendix A). Accordingly, City-wide total housing growth has been generated from the

[1] M.O.F. population projections for Elgin County include the City of St. Thomas.

population forecast by major age group using a headship rate forecast (see Appendix B for more details).

A headship rate is defined as the ratio of primary household maintainers, or heads of households, by major population age group (i.e., cohort).[1] An understanding of historical headship rate trends is important because this information provides insights into household formation trends associated with population growth by age. While major fluctuations in headship rates are not common over time, the ratio of household maintainers per capita varies by population age group. For example, a city with a higher percentage of seniors will typically have a higher household maintainer ratio per capita (i.e., headship rate) compared to a municipality with a younger population. This is because households occupied by seniors typically have fewer children than households occupied by adults under 65 years of age. Forecast trends in population age structure and housing occupancy are further discussed in Chapter 5.

As discussed above, a headship rate analysis provides important insights regarding projected trends in average household occupancy or P.P.U. As the City's population continues to age over the 2021 to 2051 forecast period, average housing occupancy levels for the City of St. Thomas are forecast to continue to steadily decline as the ratio of household maintainer per household increases.

Forecast trends in households by type (i.e., singles/semi-detached, townhouses, and apartments) have been developed based on the following supply and demand factors:

- Recent trends in historical housing activity by structure, based on Census data and building permit activity/housing completions;
- Provincial and regional economic conditions influencing housing trends in the City of St. Thomas, Elgin County, and the broader City of St. Thomas commuter-shed;
- City of St. Thomas commuting patterns;
- The working-age population associated with the Volkswagen EV battery plant and associated spin-off jobs;
- Consideration of the City's appeal to families, empty nesters, and seniors; and
- Potential housing unit supply by structure type in the development approvals process.

[1] It is noted that each household is represented by one household maintainer.

Chapter 3
Drivers and Disruptors of Future Population Change in Elgin County

3. Drivers and Disruptors of Future Population Change in Elgin County

This chapter summarizes the global, national, provincial, and regional economic trends that are anticipated to continue to influence the population and employment growth outlook for the County of Elgin over the next three decades.

3.1 Global Economic Outlook

In its latest World Economic Outlook, the International Monetary Fund (I.M.F.) is forecasting global economic growth to moderate from 3.5% in 2022 to 3.0% in 2023 and 2.9% in 2024. For advanced economies, economic growth of 2.6% in 2022 exceeded the I.M.F.'s forecast of 2.4% from its October 2022 projections. The outlook has slightly improved from I.M.F.'s October 2022 projections, with forecast growth of 1.5% in 2023 and 1.4% in 2024. Forecast economic growth for advanced economies, however, is half what was achieved in 2022, with 90% of advanced economies projected to experience a sharp slowdown due to higher unemployment. Growth prospects for emerging markets and developing economies are much more varied, but overall have strengthened from the I.M.F.'s October 2022 outlook and are noticeably stronger relative to advanced economics with economic growth projections of 4.0% in 2023 and 4.0% in 2024.[1]

Within the United States (U.S.), real gross domestic product (G.D.P.) grew by a relatively moderate 2.1% in 2022. For the remainder of 2023, the U.S. economic growth is projected to stay at 2.1% before decreasing to 1.4% in 2024. This outlook is due to several factors including high household debt, rising interest rates, relatively high inflation, a tightening in financial conditions, and a slowdown in global trade.

3.2 Evolving Macro-Economic Trends Associated with COVID-19

Since being declared a pandemic by the World Health Organization on March 12, 2020, the economic impacts of COVID-19 on global economic output have been significant.

[1] International Monetary Fund, World Economic Outlook, Navigating Global Divergences, October 2023.

Economic sectors such as travel and tourism, accommodation and food, manufacturing, and energy were hit particularly hard by COVID-19 social distancing measures. On the other hand, many employment sectors, particularly knowledge-based sectors, that have been more adaptable to the current remote work environment and evolving hybrid work-from-home/work-at-office environment have been less negatively impacted, and in many cases have prospered. Furthermore, required modifications to social behaviour (i.e., physical distancing) and increased work at home requirements resulting from government-induced containment measures have resulted in significant ongoing economic disruption, largely related to changes to the nature of work (refer to subsection 3.2.1., herein). Lastly, escalating tensions and constraints to international trade, as well as increased geopolitical unrest, increasingly point to potential vulnerabilities of globalization and logistical challenges associated with global supply chains which were severely disrupted during the height of the pandemic.

Following a sharp national economic recovery in 2020 in response to COVID-19 policy measures, federal economic support and fiscal stimulus, and vaccine rollouts, the Canadian economy experienced a sharp economic recovery in 2021 and 2022. Notwithstanding this recovery, there are growing macro-economic headwinds of which to be aware, that are influencing the economy at national, provincial, and regional levels. Most notably, persistently high global and national inflation levels have required an aggressive response by central banks to tighten monetary conditions through sharp increases in interest rates and quantitative tightening.[1] It is noted that as of December 2023, Canada's inflation rate was at 3.4%, which is down from its recent peak of 8.1% in June 2022.[2] Current measures by central banks are anticipated to continue to cool economic output and consumer demand; however, ongoing trade disruptions, geo-political conflict, and tight labour conditions continue to aggravate global supply shortages of goods and services. In turn, this somewhat limits the ability of tighter monetary conditions to ease rising inflationary pressures.

Rising public-sector debt due to pandemic response measures and increasing household debt loads resulting from sharp housing price appreciation in many areas of Canada, most notably the Country's largest urban centres, are also a concern.

[1] Quantitative tightening is a process whereby a central bank reduces the supply of money circulating in the economy by selling its accumulated assets, mainly bonds.
[2] Statistics Canada, The Daily, Consumer Price Index: December 2023, January 16, 2024.

Recently, the national housing market has started to show cooling signs with respect to sales and price appreciation; however, recent trends in the housing market vary by region across Canada. Higher mortgage rates, rising borrowing costs, and upward pressures on rents are further exacerbating challenges associated with declining housing affordability through increases in monthly household carrying costs. These impacts, combined with the broader inflationary concerns outlined above, are increasingly likely to result in potential near-term setbacks in the path to economic recovery for Ontario and Canada. Despite these consequences of COVID-19 and the near-term economic headwinds discussed herein, the long-term economic and housing outlook for the County of Elgin remains positive, as Canada continues to be attractive to international investment and newcomers alike. Similarly, the long-term economic outlook for the Province of Ontario also remains positive considering recent provincial immigration trends, the numerous planned large-scale manufacturing projects underway across Southern Ontario, and the steady labour force growth experienced more broadly across all major employment sectors over the past several years (refer to sections 3.3 to 3.5 and 4.1 for further details).

3.2.1 COVID-19 and the Changing Nature of Work

In addition to its broader impacts on the economy, COVID-19 is also accelerating changes in work and commerce as a result of technological disruptions which were already taking place before the pandemic. Businesses are increasingly required to rethink the way they conduct business with an increased emphasis on remote work enabled by technologies such as virtual private networks, virtual meetings, cloud technology and other remote work collaboration tools. These disruptive forces continue to broadly impact the nature of employment by place of work and sector, and have a direct influence on commercial, institutional, and industrial real estate space needs.

As of 2016, it was estimated that approximately 5% of the St. Thomas workforce was working from home on a full-time basis. This estimate has increased to about 19% in 2021, which is unreliable due to reporting taking place during the COVID-19 pandemic.[1] This estimate excludes hybrid workers, who are captured as residents with a usual place of work. From a municipal planning and urban development perspective,

[1] It is important to note that the 2021 Census enumeration occurred during the COVID-19 pandemic, when many employees across Canada were required to work remotely, making it likely that this number is higher than the actual work at home number.

it is important to consider the impact of hybrid workers when assessing non-residential space needs, particularly in the office sector.

In addition to work at home employment, there are workers within the City who have no fixed place of work (N.F.P.O.W.).[1] The percentage of workers within St. Thomas who reported N.F.P.O.W. was approximately 15% in 2016 and has slightly increased to 16% according to the 2021 Census.[2]

It is anticipated that the percentage of people who work from home on a full-time and part-time basis, as well as those who do not have a fixed place of work, will remain relatively high across the City of St. Thomas over the long term, driven by continued growth in knowledge-based employment sectors and continued technological advancement.

3.3 Provincial Economic Outlook within the Broader Canadian and Global Context

3.3.1 National and Provincial Gross Domestic Product Trends and Near-Term Forecast

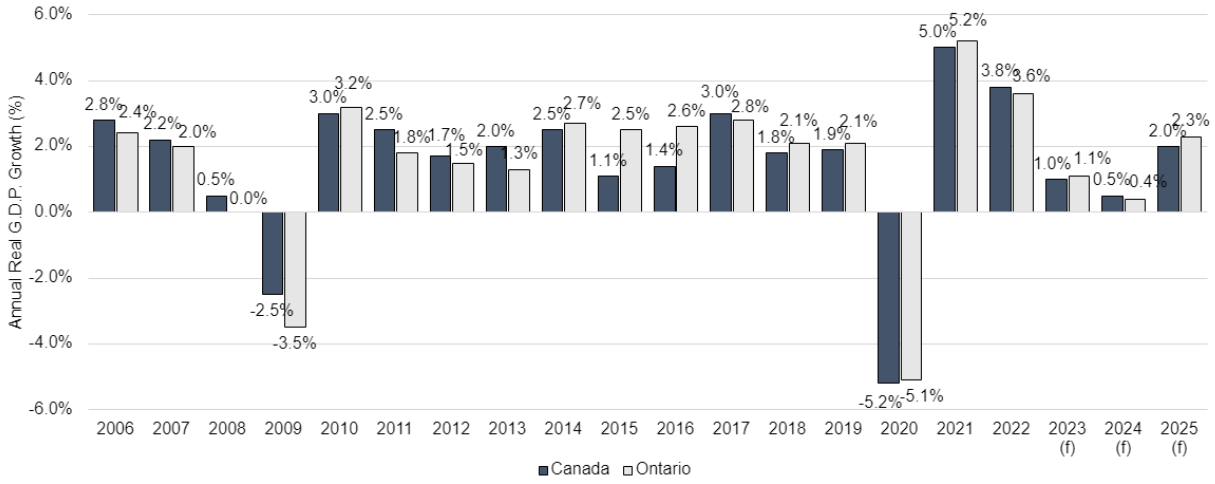
Similar to the broader Canadian economy, the economic base of Ontario, as measured by G.D.P. output, has shifted from goods-producing sectors (i.e., manufacturing and primary resources) to services-producing sectors over the past several decades. This shift has largely been driven by G.D.P. declines in the manufacturing sector which were accelerated because of the 2008/2009 global economic downturn. It is noted, however, that these G.D.P. declines in the manufacturing sector have started to show signs of stabilization over the past few years, both before the pandemic and through the more recent economic recovery.

[1] Statistics Canada defines N.F.P.O.W. employees as "persons who do not go from home to the same workplace location at the beginning of each shift. Such persons include building and landscape contractors, travelling salespersons, independent truck drivers, etc."
[2] Work at home and N.F.P.O.W. employment derived from 2016 and 2021 Statistics Canada Census data. It is noted that the 2021 Census data may not be reliable due to the timing of enumeration coinciding with COVID-19.

Over the past decade, the Ontario export-based economy experienced a rebound in economic activity following the 2008/2009 downturn; however, this recovery was relatively slow to materialize with levels sharply rebounding by 2014, as illustrated in Figure 3-1. This economic rebound has been partially driven by a gradual recovery in the manufacturing sector, fueled by a lower-valued Canadian dollar combined with the gradual strengthening of the U.S. economy.[1] Provincial G.D.P. growth eased in 2019 to 2.1%, largely because of a tightening labour market and slowing global economic growth.[2]

As illustrated in Figure 3-1, the Ontario economy contracted by 5.1% in 2020, before rebounding by 5.2% in 2021. Throughout 2022, the Ontario economy continued to expand and grew by 3.6%, while the overall Canadian economy grew by 3.5%. BMO Capital Markets has forecast that G.D.P. growth declined to 1.1% in Ontario and 1.0% overall for Canada in 2023. For 2024, 0.4% G.D.P. growth is forecast for Ontario and 0.5% for all of Canada. Annual G.D.P. growth is forecast to increase to 2.3% for Ontario and 2.0% for Canada by 2025.

Figure 3-1
Province of Ontario and Canada
Annual Real G.D.P. Growth, Historical (2006 to 2022) and Forecast (2023 to 2025)



Note: 2023, 2024, and 2025 are forecast by BMO Capital Markets Economics.
Source: Derived from BMO Capital Markets Economics, Provincial Economic Outlook, December 1, 2023. By Watson & Associates Economists Ltd.

[1] Valued at approximately $0.73 U.S. as of November 17, 2023.
[2] Provincial Economic Outlook, BMO Capital Markets, November 10, 2023.

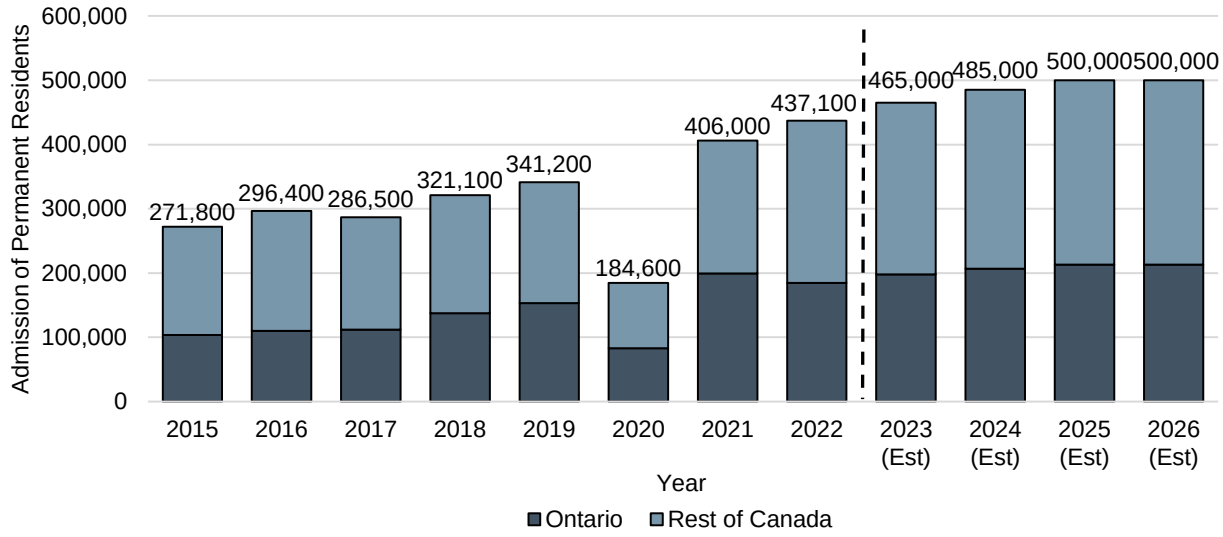
3.3.2 Canadian Immigration Targets

In November 2023, the Canadian federal government released its Immigration Levels Plan for the next three years. Canada has continued to raise its immigration targets and aims to welcome 485,000 new permanent residents in 2024, 500,000 in 2025, and 500,000 in 2026. The federal government will also be stabilizing targets for permanent residents at 500,000 per year after 2026 to allow for successful integration and sustainable growth. Immigration accounts for almost 100% of Canada's labour force growth and nearly 80% of its population growth. With 960,000 currently unfilled positions across all sectors and an estimated worker-to-retiree ratio of only 3:1 by 2030, Canada has a strong economic need for increased immigration.[1] [2]

Figure 3-2 shows annual admissions to Canada and Ontario since 2015. In 2020, national and provincial immigration levels sharply declined due to COVID-19. Immigration in 2021 rebounded strongly, resulting in 405,000 permanent residents admitted to Canada in 2021, roughly half of which were accommodated in the Province of Ontario that year. Based on 2022 data and looking forward through 2023 and beyond, immigration levels to Canada and Ontario are anticipated to remain strong, exceeding pre-pandemic averages between 2015 and 2019.

[1] https://www.canada.ca/en/immigration-refugees-citizenship/news/notices/supplementary-immigration-levels-2024-2026.html
[2] https://www.canada.ca/en/immigration-refugees-citizenship/news/2022/02/infographic-immigration-and-canadas-economic-recovery.html

Figure 3-2
Admission of Permanent Residents in Ontario and Canada
Historical (2015 to 2022) and Forecast (2023 to 2026)

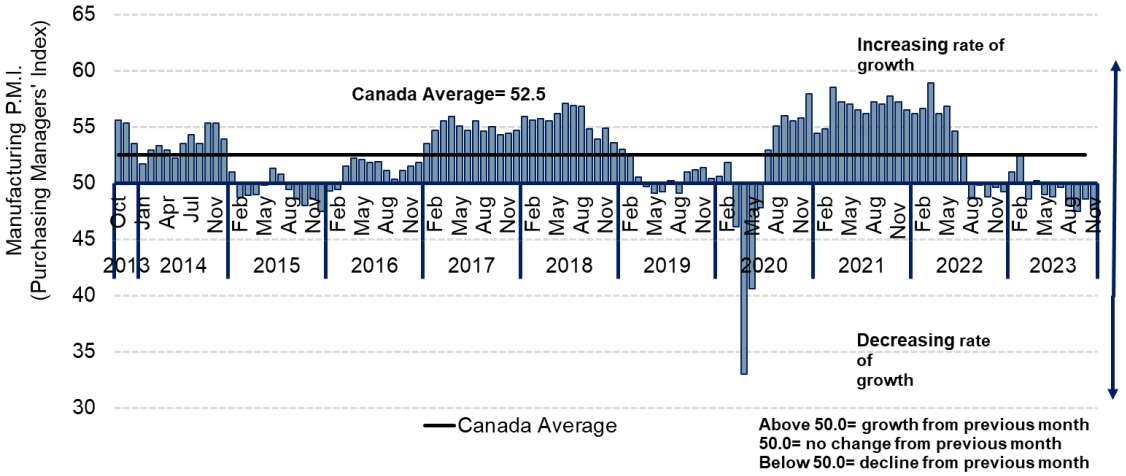


Source: 2015 to 2022 derived from IRCC December 31, 2022 data. 2023 to 2026 federal targets from Government of Canada's Immigration Levels Plan for 2023-2025 and 2024 to 2026, and Ontario target estimated based on historical share of about 45% of the Canadian Permanent Residents Admissions from 2018 to 2022, by Watson & Associates Economists Ltd.

3.3.3 Outlook for National and Provincial Manufacturing Sector

The Purchasing Managers' Index (P.M.I.) is a prevailing economic indicator for economic trends in the manufacturing and services sectors, which is based on the purchasing managers' market condition outlook and serves as a key measure of the direction of the manufacturing sector monthly. The P.M.I. is a number that ranges between 1 and 100. A P.M.I. value greater than 50 represents an expansion relative to the previous month, while a P.M.I. value less than 50 represents a contraction. Figure 2-3 summarizes the P.M.I. for Canada between 2013 (October) and 2023 (September). As illustrated in Figure 3-3, the P.M.I. indicated moderate to strong expansion between 2013 and 2021, except in the years 2015, 2019, and 2020 for which the index showed sustained monthly contractions. The P.M.I. shows steep contractions in manufacturing at the beginning of March 2020 due to the negative effects of COVID-19 on the global economy, international trade, and the general demand for goods and services. These conditions worsened into April 2020; however, they showed signs of a strong rebound by July 2020 before moderating by July 2022. For the rest of 2022 through November 2023, the index showed sustained contractions in most months. The Canadian P.M.I. average for the entire reference period is 52.5.

Figure 3-3
Purchasing Managers' Index for Canada, October 2013 to November 2023



Source: HIS Markit Canada, Canada P.M.I. Index, October 2013 to November 2023, summarized by Watson & Associates Economists Ltd., 2023.

As summarized in Figure 3-4, from 2004 to 2009 the labour force and G.D.P. of Ontario's manufacturing sector decreased significantly. Between 2009 and 2019, however, provincial labour force levels stabilized in this sector, while G.D.P. output steadily increased. Since stabilizing in 2010, labour force levels in the manufacturing sector have remained relatively steady except for the mid-2020 decline and sharp recovery following the onset of COVID-19.

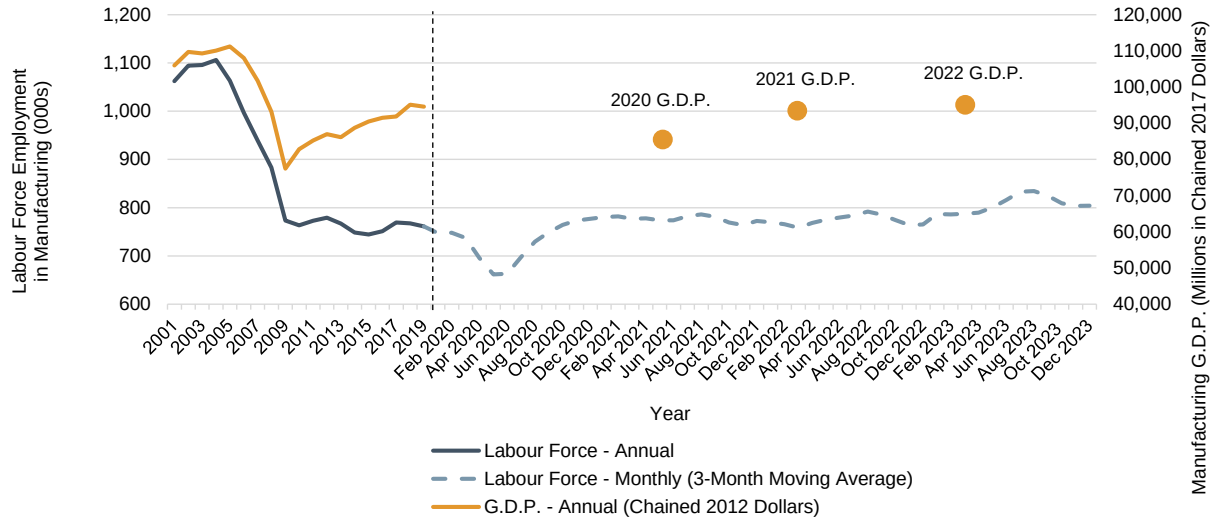
While manufacturing remains vitally important to the provincial and regional economy with respect to jobs and economic output, it has not represented an employment growth sector at the provincial or regional level over the past several decades. Notwithstanding these recent trends, within the London Census Metropolitan Area (C.M.A.), the manufacturing sector has experienced a relatively strong recovery over the past decade, increasing from a 2014 labour force of 27,700 to a labour force of 38,700 by 2023.[1]

While there will continue to be a manufacturing focus in Ontario, the nature of industrial processes is rapidly shifting, becoming more capital/technology intensive and automated, with lower labour requirements. The highly competitive nature of the manufacturing sector will require production to be increasingly cost-effective and value-

[1] Statistics Canada Employment by Industry, Census Metropolitan Areas, Annual.

added oriented, which bodes well for firms that are specialized and capital/technology intensive. As a result of increased technological efficiencies in the manufacturing sector, provincial G.D.P. levels related to this sector are anticipated to outpace labour force growth over the next decade, indicating increasing G.D.P. output per employee.

Figure 3-4
Manufacturing Labour Force Trends in Ontario, 2001 to December 2023



Source: Annual labour force data from Statistics Canada Labour Force Survey, Table 282-0125, 2020 monthly data from Table 14-10-0091-01, and 2021 to 2023 monthly data from Table 14-10-0388-01. Annual G.D.P. data from Statistics Canada Table 36-10-0402-01, by Watson & Associates Economists Ltd.

3.4 Volkswagen EV Battery Plant

As noted previously, it was announced on April 21, 2023, that the Federal Government of Canada and the Provincial Government of Ontario reached a deal with Volkswagen, Europe's largest automaker, to establish an EV battery manufacturing plant in St. Thomas, Ontario.

The completed project would be the largest factory in Canada and would also represent Volkswagen's largest EV battery manufacturing facility worldwide. The project would be the first overseas development of such a facility by the German automaker, with the federal government agreeing to give Volkswagen up to $13 billion in subsidies over the next decade as part of a deal to entice the company. The provincial government is expected to give the firm an additional $500 million worth of grants in what it calls "direct

incentives."[1] There are also $700 million in capital expense grants which will be made available to the company via the Federal Strategic Innovation Fund. The high level of public investment was deemed necessary as the company would be eligible for billions in subsidies just south of the border with the financing mechanisms established by the U.S.'s *Inflation Reduction Act*.

Volkswagen is investing $7 billion to build the plant with six production lines, which would make enough batteries for one million cars every year. Volkswagen has plans to make 25 new electric vehicle models in the coming decades, and most of their batteries will come from the planned St. Thomas site. The plant in St. Thomas is expected to employ up to 3,000 people and create thousands of spinoff job opportunities, with the Prime Minister's Office citing the creation of 30,000 indirect jobs in the initial announcement.[2] Accommodating this level of job growth will require a sufficient labour force pool across the Province and beyond. Being able to attract sufficient labour to absorb the direct and indirect jobs related to the Volkswagen EV battery plant into the St. Thomas commuter-shed may also present a challenge. This is discussed further in section 4.5.

3.5 Outward Growth Pressure

Elgin County is located directly to the south of Middlesex County, which contains the City of London. The 2021 Census has identified the City of London as one of the fastest-growing large municipalities in Ontario, with nearly a 2% annual population growth rate between 2016 and 2021. The long-term outlook for Middlesex County and the City of London is positive, with strong population growth driven by economic growth from the City of London. As the City of London's existing urban areas mature and its remaining greenfield areas build out, there will be continued outward growth pressure put on St. Thomas and the other municipalities surrounding London.

Elgin County is also located to the west of one of the fastest-growing Cities/Regions in North America, known as the Greater Golden Horseshoe (G.G.H.). This region comprises the municipalities that make up the Greater Toronto Hamilton Area

[1] https://www.cbc.ca/news/canada/london/vw-volkswagen-st-thomas-battery-plant-german-autos-car-industry-electric-vehicles-1.6817262
[2] New Ontario Volkswagen EV battery plant to create 3,000 jobs. CTV News. April 21, 2023.

(G.T.H.A.), as well as the surrounding Regions/Counties within Central Ontario, known as the G.G.H. "Outer Ring," which extends from Haldimand County in the southwest to Simcoe County in the north, to Peterborough County in the northeast (refer to Figure 3-5).

As identified in the Growth Plan, 2019, the long-term outlook for the G.G.H. is positive, characterized by strong population growth primarily through net migration, fueled by economic growth that is increasingly concentrated in large urban centres. In accordance with Schedule 3 of the Growth Plan, 2019, the G.G.H. population is forecast to increase from 10.5 million in 2021 to 14.8 million in 2051. This represents a population increase of approximately 4.3 million people or 143,300 people per year. With respect to employment, the G.G.H. is forecast to increase from 4.6 million employees in 2016 to 7 million by 2051, an increase of 2.4 million employees, or 68,600 employees per year.[1] This represents a substantial increase in population and employment relative to other North American metropolitan regions of comparable population.

The rate and distribution of growth throughout Central Ontario, in particular the G.G.H., is of key significance to Elgin County. As the more populated municipalities within Central Ontario continue to mature and their remaining greenfield areas gradually build out, increasing outward growth pressure is anticipated to be placed on municipalities within proximity to the G.G.H. Outer Ring, and beyond. The strength of the broader regional G.G.H. economy, in particular the G.G.H. Outer Ring, presents an opportunity for the Elgin County economy and the County's residents within commuting distance to this growing regional employment market.

[1] A Place to Grow. Growth Plan for the Greater Golden Horseshoe. 2019. Ontario. Schedule 3.

Figure 3-5
City of St. Thomas within the Context of the Greater Golden Horseshoe (G.G.H.)

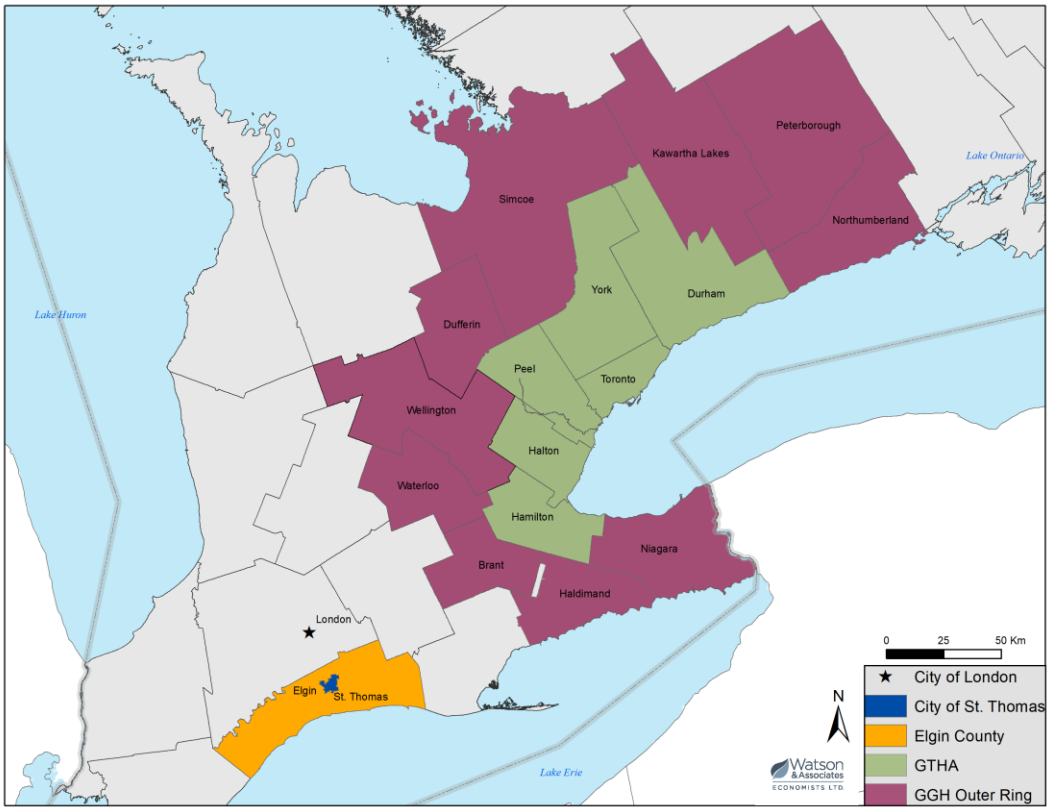
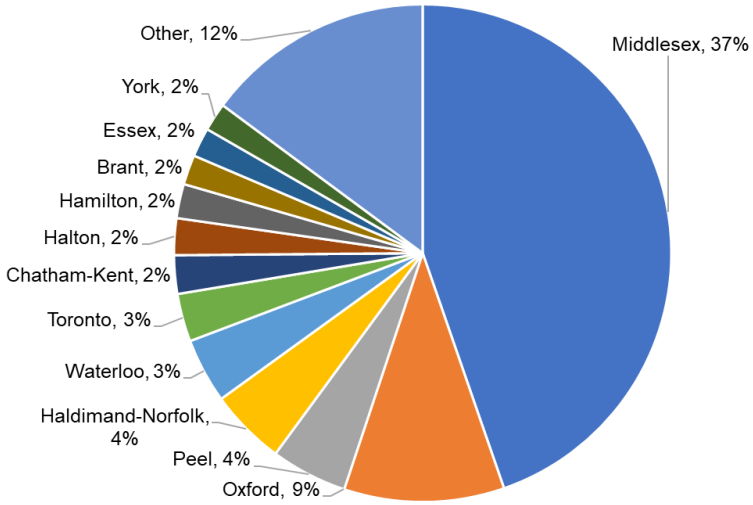


Figure 3-6 summarizes intra-provincial migration flows into the Elgin County Census Division during the 2015 to 2021 period.[1] For the Elgin County Census Division, which includes the City of St. Thomas, this outward growth pressure is anticipated to be most heavily felt from the larger urban centres within Middlesex County, which accounted for 37% of intra-provincial migration between 2015 and 2021. Municipalities within the G.G.H. accounted for approximately one-third of all intra-provincial migration to Elgin County.

[1] Intra-provincial migration represents individuals migrating from a Census Division within Ontario to another Census Division within Ontario.

Figure 3-6
Historical Migration Flows into the Elgin County Census Division, 2015 to 2021



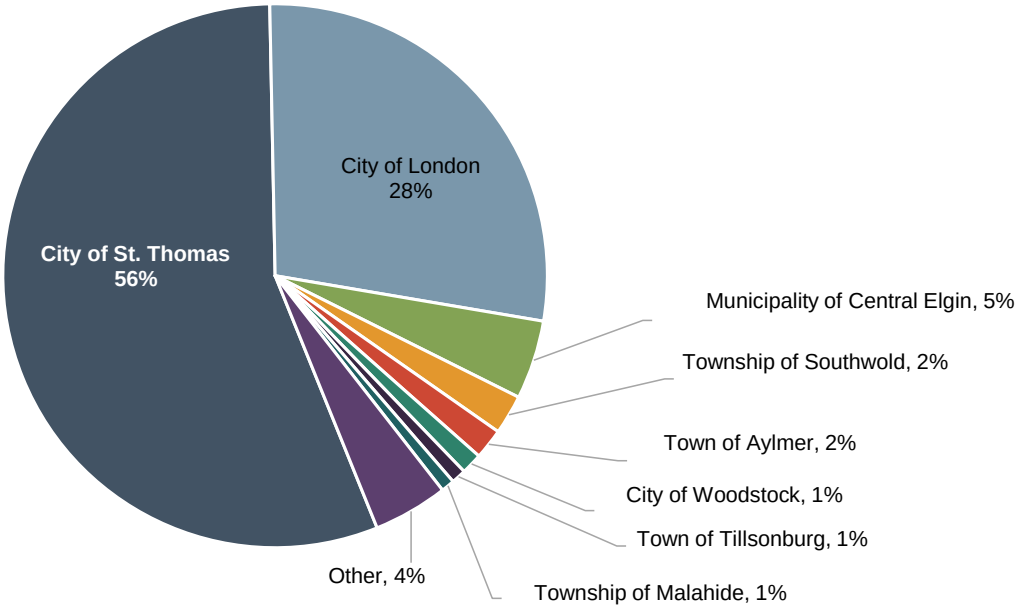
Source: Statistics Canada Custom Order Data, Derived by Watson & Associates Economists Ltd., 2023.

3.5.1 City of St. Thomas Commuting Patterns

Figure 3-7 summarizes to where City of St. Thomas residents with a usual place of work commute for work, while Figure 3-8 identifies from where City of St. Thomas employees commute, based on 2021 Census data. Key observations include the following:

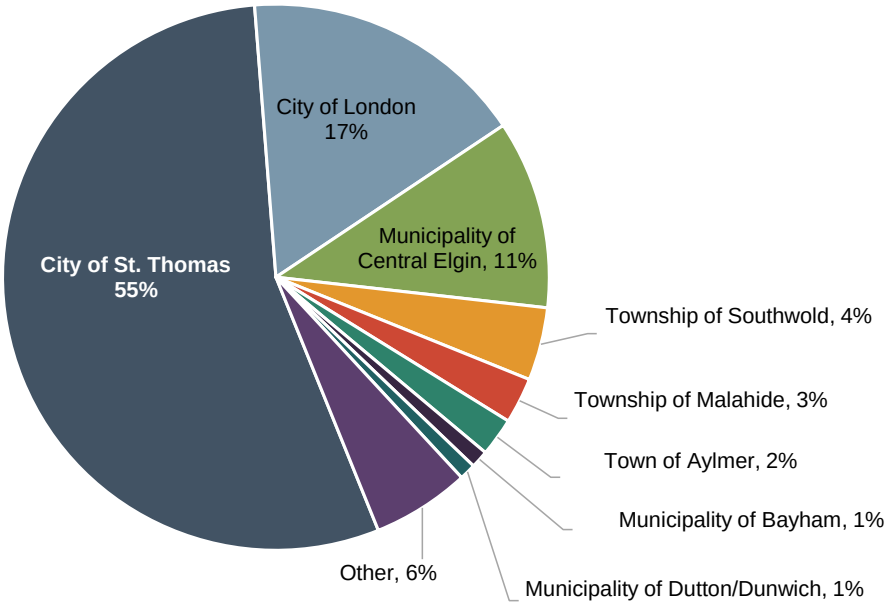
- More than half of St. Thomas residents also work within the City, with 56% of the population considered as live/work while 44% of residents are out-commuters.
- The City of London accounted for the largest component of the St. Thomas commuter-shed, comprising 28% of total out-commuters. The City of London also provides the largest share of in-commuters to St. Thomas relative to other surrounding municipalities.
- The Municipality of Central Elgin represents the second largest source of in-commuters to the City of St. Thomas, signifying the place of residence for 11% of the City's employees.

Figure 3-7
To Where St. Thomas Residents Commute, 2021



Source: Statistics Canada Census, 2021, Table: 98-10-0459-01, summarized by Watson & Associates Economists Ltd., 2024.

Figure 3-8
From Where St. Thomas Employees Commute, 2021



Source: Statistics Canada Census, 2021, Table: 98-10-0459-01, summarized by Watson & Associates Economists Ltd., 2024.

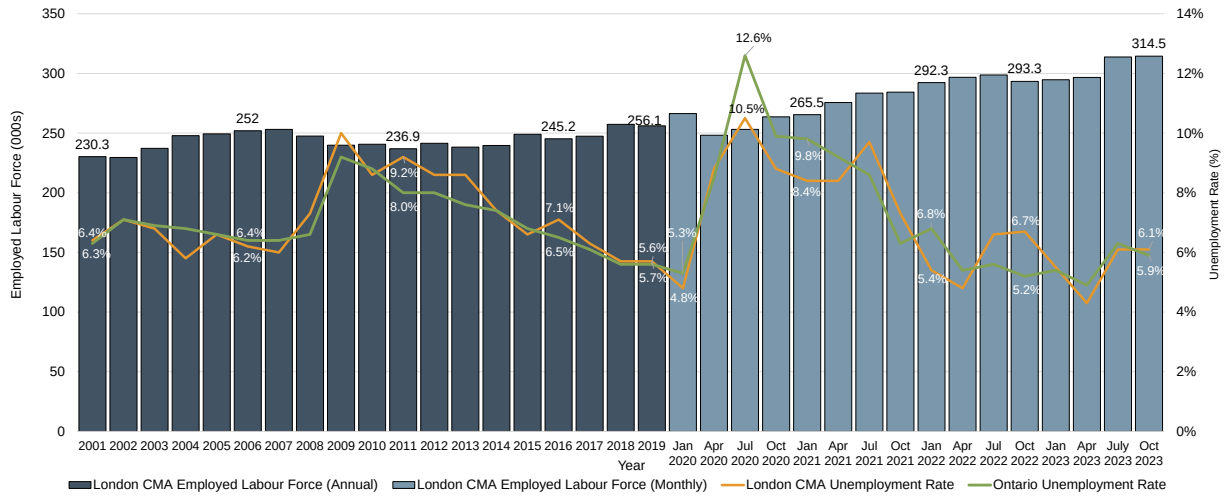
3.5.2 Labour Force Trends, 2001 to 2023

Figure 3-9 illustrates the total labour force and unemployment rate trends for the London C.M.A. alongside the unemployment rate in Ontario.[1] Labour force data represents the number of residents who live in the London C.M.A. and are part of the labour force, regardless of where they work. This includes residents who live and work in the region, those who work from home, and those who commute outside the region for work. Key observations include the following:

- The unemployment rate in the London C.M.A. rose to 10% in 2009, coinciding with the 2008/2009 global economic recession, and subsequently fell to 5.7% in 2019, before peaking in July 2020 at 12.6% as a result of the COVID-19 pandemic.
- From 2001 to 2020, the employed labour force within the region increased at an annual rate of approximately 0.8%.
- After the second quarter of 2020, the labour force for the C.M.A. steadily recovered, reaching new record heights in October 2023. Between January 2020 and October 2023, the labour force grew substantially at a rate of 4.6% annually. This steady increase in the regional labour force has resulted in pre-pandemic labour force unemployment rates over the past two years following the economic recovery from COVID-19.
- To ensure that economic growth is not constrained by future labour shortages, continued effort will be required by the municipalities within the London C.M.A. (working with their public- and private-sector partners) to explore ways to attract and accommodate new skilled and unskilled working residents within a broad range of ownership and rental housing options. This is particularly relevant regarding the Volkswagen EV battery plant and the spin-off employment it will generate.

[1] Based on the levels of geography for which the data on labour force and employment rate trends is maintained, C.M.A. level data is the closest regional data available for St. Thomas.

Figure 3-9
London Census Metropolitan Area
Employed Labour Force and Unemployment Rate Trends, 2001 to 2023 YTD



Note: Statistics Canada Labour Force Survey and Census labour force statistics may differ.
Source: Statistics Canada Data Tables 14-10-0096-01, 14-10-0385-01, 14-10-0378-01, 14-10-0327-01, and 14-10-0017-01. By Watson & Associates Economists Ltd., 2023.

Chapter 4
Economic Impact Assessment of the Volkswagen EV Battery Plant

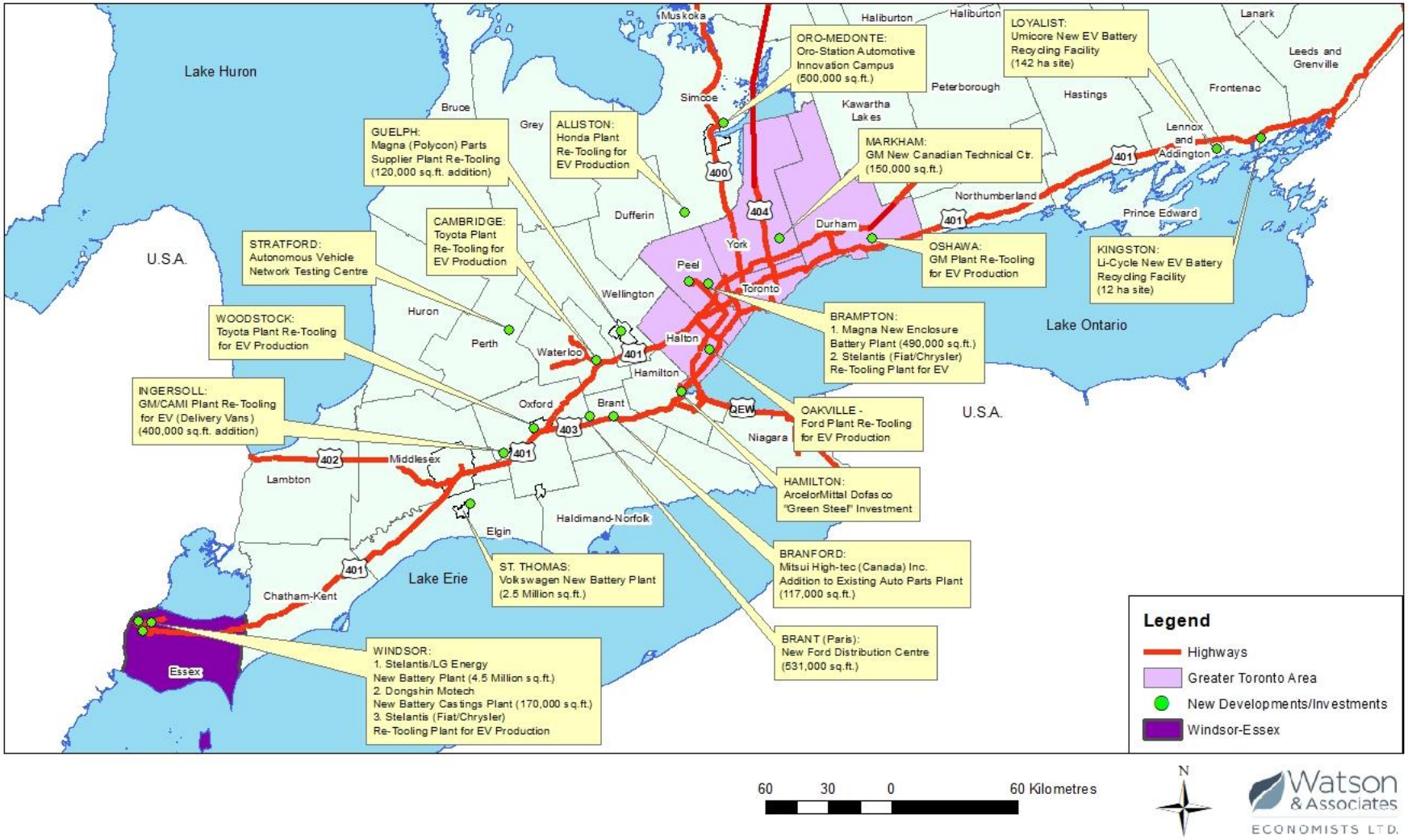
4. Economic Impact Assessment of the Volkswagen EV Battery Plant

The study provides an assessment of the economic impacts associated with the development and operation of the recently announced Volkswagen EV battery plant in St. Thomas. This analysis assesses the impact of the plant locally within the City and the growth implications within the St. Thomas Primary Commuter-shed. The analysis has helped inform the updated population, housing, and employment forecast for the City of St. Thomas, presented herein, which is considerate of the impacts of the Volkswagen EV battery plant and the changing macro-economic conditions addressed in Chapter 3.

4.1 Project Overview

As the broader economy is undergoing a transition towards clean technologies, government and private-sector investments are increasingly supporting the restructuring of Ontario's key manufacturing sectors, specifically the automotive sector. Large-scale investments have been announced to support the EV supply chain (i.e., EV batteries). A number of these investments are in the mid-stream and down-stream stages of the EV supply chain and support a growing EV cluster that is emerging in Southern Ontario, as presented in Figure 4-1. This includes battery components and materials processing that are critical inputs into EV production, which includes the St. Thomas EV battery plant discussed herein.

Figure 4-1
Electric Vehicle (EV) Industry Cluster in Southern Ontario



Canada has the potential to enhance its role across the entire EV supply chain which is presented in Figure 4-2 and discussed below.

- **Mineral Exploration and Mining** – Several mining districts in Canada, including Ontario's Abitibi Greenstone Belt and Ring of Fire, hold significant potential for mining key critical minerals required for clean technology, including cobalt, copper, lithium, nickel, titanium, chromium, and zinc.[1] Expanded exploration and production of these critical minerals offers significant potential economic impacts for the Canadian economy.
- **Materials Processing** – This includes the refinement and processing of Canadian mined minerals to transform them into cathode, anode, and electrolyte materials. This manufacturing is medium and heavy industrial in nature, with facilities likely to be located in proximity to mineral mining sources with access to rail and ports. A number of projects have been announced in Quebec and Ontario to expand Canada's materials processing capabilities, including several projects in Bécancour, Quebec, and Northern Ontario.
- **Battery Component Manufacturing** – This includes the manufacturing of a range of components that feed into EV batteries, including plastic parts and electronic components. This manufacturing process is very similar in format to more traditional auto parts suppliers. Many of these facilities are expected to cluster in locations within proximity to EV battery plants and assembly operations, including in Southern Ontario.
- **Battery Cell Production –** This includes a range of lithium-ion battery production facilities. Over the past couple of years, two large-scale investments have been announced in Southwestern Ontario – Stellantis and LG Energy in Windsor and the Volkswagen EV battery plant in St. Thomas. Another 13 battery cell production plants are operating or are expected to open in the next five years in the U.S. across a range of locations extending from Michigan to Georgia. These states, along with Ontario, are now referred to as the "EV Battery Belt" characterized by the high concentration of existing and planned EV battery plant facilities.
- **Electric Vehicle Auto Assembly** – Many of Ontario's automotive plants (e.g., Honda in Alliston; Ford in Oakville; Chrysler in Brampton and Windsor; General

[1] Critical Minerals: Making the Most of Ontario's Big Opportunity, Ontario 360, University of Toronto, August 8, 2023.

Motors (GM) in Oshawa; and GM (CAMI) in Ingersoll) are undergoing retooling to support the production of EVs. As these facilities and others in North America continue to transition from ICE to EV production, the demand for EV batteries is expected to expand significantly over the next decade.

- **Battery Recycling/Reuse** – The circular economy includes bringing products that have reached their end-of-use life back into industrial production as a resource. The EV market is anticipated to require industrial activities to support the recycling of EV batteries. While EVs are considered a green alternative to gas-powered vehicles, EVs are powered by lithium-ion batteries and are considered highly toxic. According to auto research firm J.D. Power, EV batteries have a lifespan of 10 to 20 years[1] which suggests that the early users of EVs in Canada are approaching the need to replace batteries. The anticipated growth in the use of EVs in Canada will require consideration of not only the manufacturing of vehicles and batteries but also the recycling of batteries.

Figure 4-2
Electric Vehicle (EV) Supply Chain

	Economic Activity
Upstream	• Mineral Exploration • Mining
Mid-Stream	• Materials Processing • Battery Components
Down Stream	• Battery Cell/Pack Production • EV Assembly • Battery Recycling/Re-Use

Source: Watson & Associates Economists Ltd., 2024

As previously mentioned, the Volkswagen Group, in collaboration with PowerCo SE, is constructing a 15 million sq.ft. facility on 152 ha (375 acres) of property in northeast St. Thomas to produce battery cells (manganese-rich lithium-ion) for EVs. The facility is expected to be one of the largest battery cell plants in North America, producing up to

[1] CBC News, Electric vehicle sales are racing ahead, but is there a plan for the waste they create? – retrieved April 27, 2023.

90 gigawatt hours per year. The facility is anticipated to ramp up production starting in 2027 and will provide 3,000 direct permanent jobs.

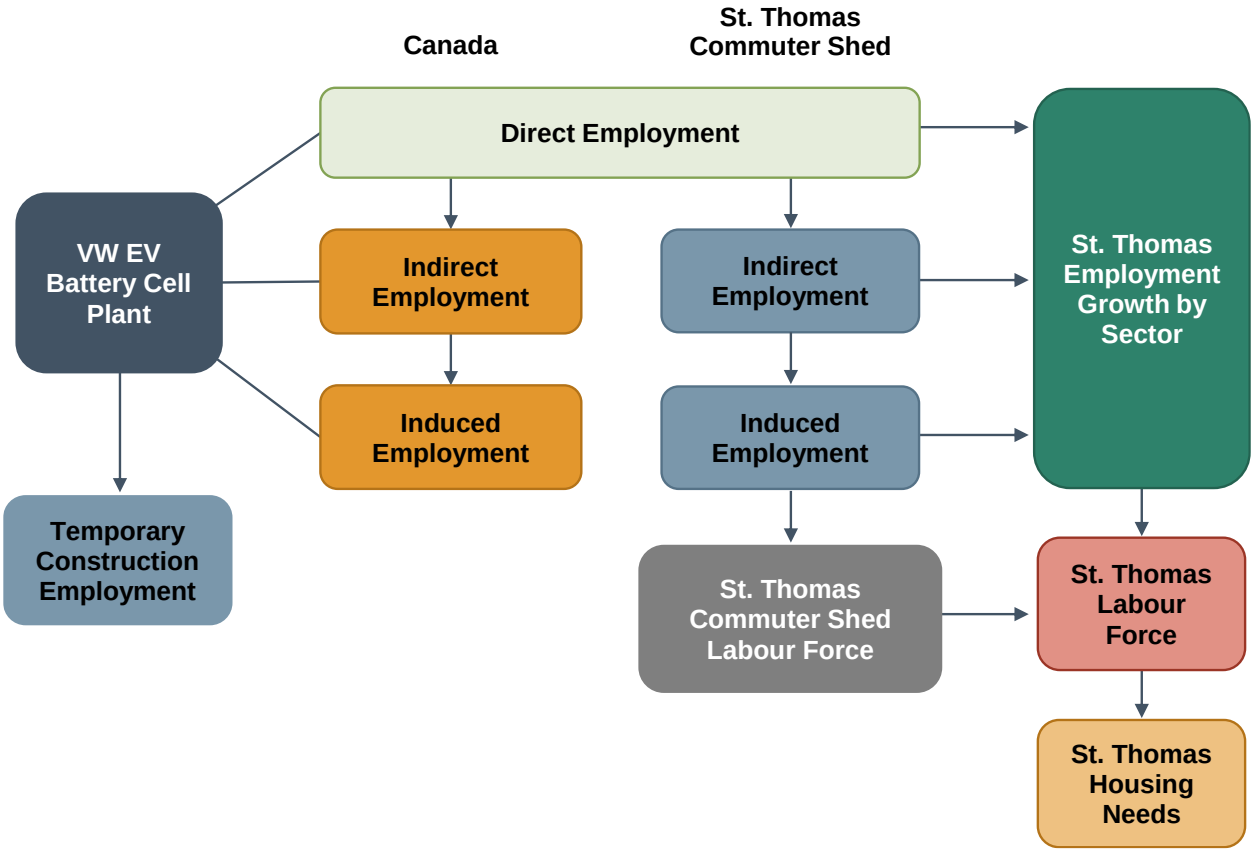
The facility is located on a 460 ha "mega-site" industrial area. The mega-site in St. Thomas is expected to accommodate a range of suppliers and uses which synergize with the EV Batter Plant, generating additional jobs in the area, as part of the broader EV supply chain discussed above.

4.2 Economic Impact Analysis Approach

The approach to assessing the economic impacts of the Volkswagen EV battery plant in St. Thomas is outlined below and presented in Figure 4-3.

- Review the Volkswagen EV battery plant in St. Thomas and the associated direct employment and economic activity within the context of the broader EV supply chain.
- Using appropriate economic input/output model multipliers, identify indirect, induced "spin-off" employment and shorter-term temporary construction employment associated with the Volkswagen EV battery plant.
- Estimate the share of indirect and induced employment that would be Canada-wide and within the St. Thomas commuter-shed.
- Identify regional labour force growth by sector related to spin-off employment associated with the Volkswagen EV battery plant.

Figure 4-3
Economic Impact Assessment Approach



4.3 Economic Impacts

Employment multipliers provide a summary of the indirect economic effect or "shock" from income and/or employment generated by a particular employment sector. The direct employment of the St. Thomas Volkswagen EV battery plant and the potential "spin-off" employment of the battery plant within the Canadian context is summarized in Figure 4-4. As shown, the St. Thomas EV battery plant has the potential to generate approximately 14,000 direct, indirect, and induced jobs within Canada. This is discussed below.

Direct Employment

At full capacity, the St. Thomas EV battery plant is anticipated to employ 3,000 full-time employees. The direct jobs are anticipated to be entirely within the battery cell/ production phase of the EV supply chain.

Indirect Employment Growth Potential

Figure 4-4 summarizes the potential indirect "spin-off" employment based on multipliers utilized by the Trillium Network for Advanced Manufacturing in their scenario development of the EV sector in Canada using an input/output model, which provides a model of the inter-industrial structure of the EV battery supply chain within the Canadian economy.[1]

The results of this analysis identify that the EV battery plant could potentially yield up to an additional 7,300 indirect jobs by buildout distributed on a broad national basis. Collectively, the total number of jobs (direct and indirect) generated from the Volkswagen EV battery plant is 10,300.

Induced Effect of Employment

Employment also generates positive "induced" effects which are derived from the spending of labour income on the consumption of goods and services that drive "non-basic" employment growth. These effects are not captured in the economic multipliers, but they are significant, nonetheless. The strength of the "induced" effects is largely related to average household income. Higher-income opportunities permit families and individuals to enjoy a higher standard of living with more disposable income. In turn, this generates growth in household savings, taxation, and consumption of goods and services within the local economy. This increase in demand results in the further expansion of local and regional employment markets, largely in the retail and business services sectors. As illustrated, potential induced employment from the Volkswagen EV battery plant is expected to total 3,600 jobs.

[1] Developing Canada's Electric Vehicle Battery Supply Chain: Quantifying the Economic Impacts and Opportunities, prepared by the Trillium Network for Advanced Manufacturing for Clean Energy Canada, September 2022.

Figure 4-4
Canada-wide St. Thomas EV Battery Plant Total Potential Employment Impacts

	Number of Jobs
Direct Employment	3,000
Indirect Employment[1]	7,300
Total Direct and Indirect Employment	**10,300**
Induced Employment[2]	3,600
Total Direct, Indirect and Induced Employment	**13,900**

[1] Indirect employment generated based on a multiplier of 3.43. Multiplier adapted from Potential Economic Impact of Cell Manufacturing model scenarios presented in Developing Canada's Electric Vehicle Battery Supply Chain: Quantifying the Economic Impacts and Opportunities, prepared by the Trillium Network for Advanced Manufacturing for Clean Energy Canada, September 2022.
[2] Induced employment generated from multiplier adapted from Potential Economic Impact of Cell Manufacturing model scenarios presented in Developing Canada's Electric Vehicle Battery Supply Chain: Quantifying the Economic Impacts and Opportunities, prepared by the Trillium Network for Advanced Manufacturing for Clean Energy Canada, September 2022.
Source: Watson & Associates Economists Ltd., 2024.

Of the 7,300 indirect jobs identified in Figure 4-4 above, the anticipated number of jobs in the EV supply chain and the share captured in the St. Thomas Primary Commuter-shed are presented in Figure 4-5. As shown:

- Based on the anticipated distribution of employment in the EV supply chain, it is anticipated that, of the 7,300 indirect jobs generated, 1,300 jobs (18% of total indirect employment) will be in mining/mineral exploration, 4,800 jobs (66%) in battery materials processing, and 1,200 jobs (16%) in battery components.
- Of the total indirect employment anticipated to be generated, 34% (2,500 jobs) is expected to be accommodated within the St. Thomas Primary Commuter-shed. This assessment is based on a broad review of the share of employment opportunities by sector in the EV supply chain based on geographic attributes, competitiveness, and planned developments. As shown:
    - **Mining/mineral exploration** – No mining/mining exploration jobs are anticipated to be located in the St. Thomas Primary Commuter-shed. Jobs in this sector are located primarily in northern Canada where critical

minerals are found, along with mining corporate jobs which are located primarily in large urban centres, including Toronto and Vancouver.

- **Battery Materials Processing** – Thirty percent (1,400 jobs) of battery materials processing jobs have the potential to be located in the St. Thomas Primary Commuter-shed. While a large share of jobs is expected to be in locations within geographic proximity to sources of critical minerals and rail/port facilities, it is possible that a moderate share of battery materials processing-related jobs may be located in proximity to the emerging EV cluster in Southern Ontario, including the St. Thomas Primary Commuter-shed.
- **Battery Components** – It is anticipated that 90% (1,200 jobs) of battery component jobs are anticipated to be located in the St. Thomas Primary Commuter-shed. There is a high probability of jobs in the battery components sector being situated near the EV battery plant.

Figure 4-5
St. Thomas EV Battery Plant Potential Indirect Employment Impacts within Canada and the St. Thomas Commuter-shed

Supply Chain	Total Indirect Employment in Canada	% Captured in St. Thomas Primary Commuter-shed	Indirect Employment in St. Thomas Primary Commuter-shed
Materials Mining/Mineral Exploration	1,300	0%	-
Battery Materials Processing	4,800	30%	1,400
Battery Components	1,200	90%	1,100
Total Indirect Employment	7,300	34%	2,500

Note: Indirect employment generated by sector adapted from Potential Economic Impact of Cell Manufacturing model scenarios presented in Developing Canada's Electric Vehicle Battery Supply Chain: Quantifying the Economic Impacts and Opportunities, prepared by the Trillium Network for Advanced Manufacturing for Clean Energy Canada, September 2022.
Source: Watson & Associates Economists Ltd., 2024.

Figure 4-6 summarizes the total employment potential within the St. Thomas Primary Commuter-shed and the anticipated share within the City of St. Thomas. As shown, the

total direct, indirect, and induced employment potential in the St. Thomas Primary Commuter-shed is 7,400 jobs. Of this, 100% of direct jobs (Volkswagen EV battery plant) are to be located in the City of St. Thomas, in addition to 50% of indirect jobs and 77% of induced employment. On an aggregate basis, the City of St. Thomas is expected to accommodate 77% of the St. Thomas commuter-shed jobs, totalling 5,800 jobs.

Figure 4-6
St. Thomas EV Battery Plant Total Potential Employment Impacts within the St. Thomas Commuter-shed and the City of St. Thomas

Economic Impact	St. Thomas Primary Commuter-shed	City of St. Thomas	
		% Share	Jobs
Direct Employment	3,000	100%	3,000
Indirect Employment	2,500	50%	1,300
Induced Employment	1,900	77%	1,500
Total Direct, Indirect, and Induced	**7,400**	**77%**	**5,800**

Source: Watson & Associates Economists Ltd., 2024.

4.4 Temporary Construction Growth

Anticipated residential and non-residential development will also influence growth within temporary employment sectors such as the construction industry. During the construction phase, expenditures will be made for the construction of buildings and infrastructure. This investment will create employment associated with construction, as well as generate spending on materials and services required. Additional benefits (multipliers) will be derived as employees spend income earned in the local economy.

Figure 4-7 provides an estimate of direct and indirect temporary employment generated (in person-years) for every $1,000 spent on non-residential construction and the

purchased materials, equipment, and services by the commercial operations, using employment multiplier data available from the Statistics Canada Input-Output model.[1]

The construction of new residential and non-residential development would generate a total of 45,654 person-years of (temporary construction) employment. Based on an average of seven years of work per employee (i.e., the 2023 to 2030 period), this would generate demand for approximately 6,550 construction employees in St. Thomas and the surrounding area. Additional employment generated from the construction of infrastructure associated with new development has been excluded from this analysis.

Figure 4-7
Volkswagen EV Battery Plant Temporary (Construction) Employment

Project Value	
Value of Construction (000s) 2023 $	$7,000,000
Value of Construction (000s) 2019 $	$6,424,731
Employment Multipliers[1]	
Direct	0.00450
Indirect	0.00260
Total	**0.00931**
Person-Years of Employment Generated	
Direct	28,937
Indirect	16,717
Total	**45,654**

[1] Employment calculated from Statistics Canada Provincial Input-Output Multipliers, 2019.
Source: Watson & Associates Economists Ltd., 2024.

[1] For the purposes of this exercise, it was necessary to estimate construction costs in 2019 $ to apply available Statistics Canada Input-Output multiplier data to calculate employment generated. The cost of constructing residential and non-residential development is based on industry averages for 2023 using RS Means Cost of construction.

The City of St. Thomas is located within a larger urban regional market area, which includes the City of London. Temporary construction jobs will partially be held by individuals commuting daily into the City of St. Thomas to construct the EV battery plant. These daily commuters would not have a substantial impact on the City's housing market or accommodation industry. Workers, however, that temporarily locate within the City or the surrounding regional market area would have an upward impact on the accommodation sector within the regional market area, driving demand for hotels, motels, and other short-term rental options. The EV Battery Plant cluster that is expected to materialize over the next several decades could also have a longer-term impact on the accommodation industry. While its beyond the scope of this study to conduct a detailed assessment of these impacts on the City's rental and accommodation market, further study could be conducted to attempt to quantify these impacts.

4.5 Disruptive Impacts of Growth to the Existing Population, Housing, and Labour Force Base

As stated in this chapter, the Volkswagen EV battery plant and the associated spin-off employment is forecast to generate 7,400 jobs across the commuter-shed, with 5,800 jobs expected to occur locally within the City. It is important to note that this forecast of 5,800 jobs in St. Thomas will have disruptive impacts on the City's existing labour force and population base. While the battery plant will generate new jobs within the City, there may be constraints in being able to attract a sufficient skilled labour force into the broader St. Thomas commuter-shed from elsewhere in Ontario to absorb these employment opportunities. Accordingly, the plant and associated supply chain employment growth will likely lead to increased competition for labour and could take employees from existing businesses that currently operate in the regional area. It is anticipated that the 5,800 jobs associated with the plant would have a disruptive effect on existing labour and, accordingly, would not result in a net increase of 5,800 jobs within the City. The extent to which this replacement will occur within the 5,800 new local jobs identified is difficult to quantify.

Similar to labour, the population and housing growth associated with the Volkswagen EV battery plant and spin-off employment will not be solely achieved through new families migrating to St. Thomas. Many of these jobs will be retained by residents who already live and work within the St. Thomas commuter-shed and, as such, would not

generate additional demand for housing. Accordingly, Chapter 5 provides an overview of the growth potential for St. Thomas from a broader macroeconomic perspective to understand the potential long-term constraints to growth and how the battery plant and supply chain form a component of the City's growth potential over the next 30 years.

Chapter 5
City of St. Thomas Long-Term Population, Housing, and Employment Forecast, 2021 to 2051

5. City of St. Thomas Long-Term Population, Housing, and Employment Forecast, 2021 to 2051

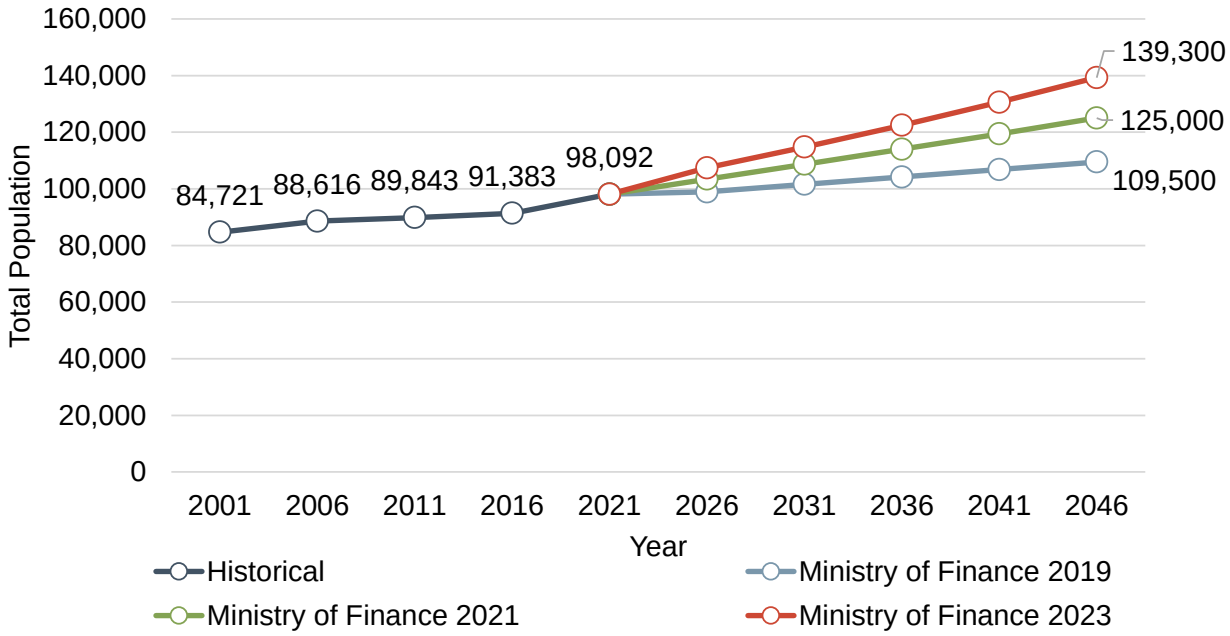
5.1 Ministry of Finance Population Projections for Elgin County

Figure 5-1 presents three previously conducted long-term population forecasts for the Elgin Census Division by the M.O.F.[1] For comparative purposes, the 2019, 2021, and 2023 M.O.F. forecasts have been summarized. The following key trends have been identified:

- The M.O.F. has been steadily increasing its long-term outlook for Elgin County over the past several years. As shown, in 2019 the M.O.F. was projecting a population of 109,500 by 2046 and in its most recent 2023 update, the M.O.F. is now projecting a 2046 population of 139,300.
- From an incremental perspective, in 2019 the M.O.F. projected an annual growth of approximately 600 people between 2016 and 2046. Comparatively, the 2023 M.O.F. forecast assumes an annual population growth of approximately 1,650 people annually. This represents a considerable increase in the long-term growth outlook.
- It is important to recognize that the most recent M.O.F. forecast would not have contemplated the impact of the Volkswagen EV battery plant. The M.O.F. does not directly assess the influence of business investments in its forecasts, as its modelling is largely focused on demographic statistics and trends. As such, these continual upward shifts in growth trajectories represent an increasing macroeconomic outlook for the Elgin Census Division and the broader economic region.

[1] Elgin County includes the City of St. Thomas.

Figure 5-1
Elgin County
Ministry of Finance Long-Term Population Forecast Comparison, 2021 to 2046



Source: Historical data from Statistics Canada Census Profiles, 2001 to 2021. Forecast data from Ministry of Finance. Figure prepared by Watson & Associates Economists Ltd., 2024.

5.2 St. Thomas Population Forecast, 2021 to 2051

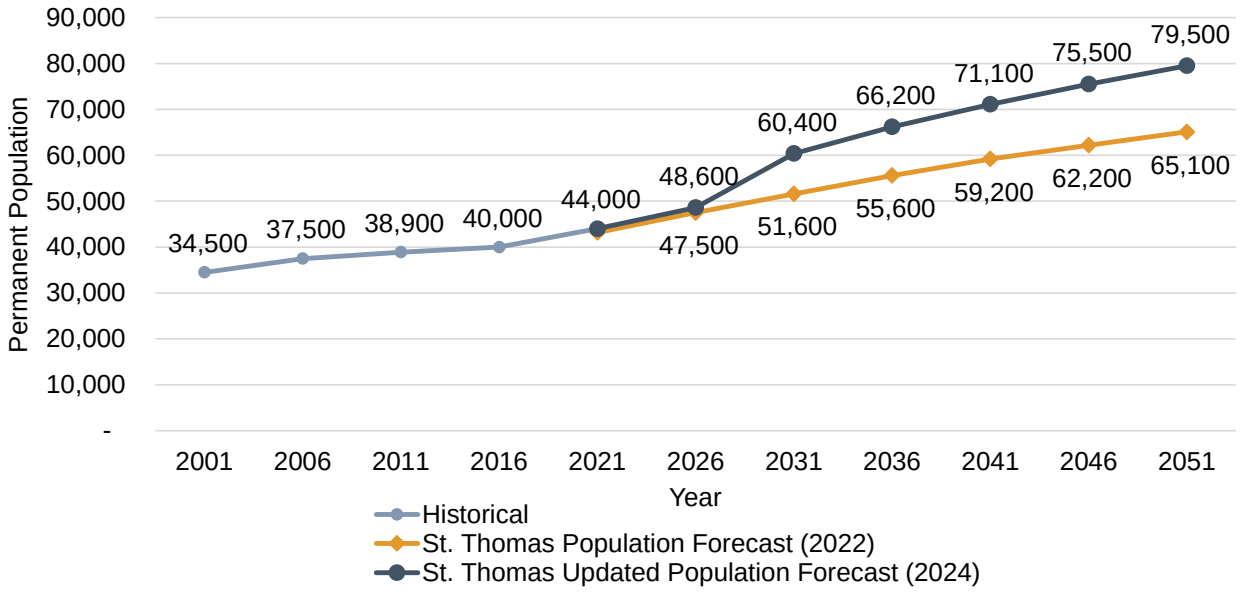
Figure 5-2 summarizes the long-term population growth forecast for the City of St. Thomas from 2021 to 2051 in five-year increments (see Appendix C for more details). Historical population trends between 2001 and 2021 are also provided for additional context. A labour force forecast for the City of St. Thomas has informed the population growth outlook and is provided in section 5.4. The previously conducted 2022 City of St. Thomas population forecast is provided for comparative purposes. The following observations and key findings are provided:

- The 2022 City of St. Thomas growth analysis projected a 2051 population of 65,100 people. This updated forecast estimates a 2051 population of 79,500 by 2051, representing a difference of 14,400.
- Under the current forecast, the population in St. Thomas is expected to steadily increase from 44,000 in 2021 to 79,500 by 2051, representing a population

increase of 2% annually over the 30-year period.[1] The rate of population growth in the latter half of the forecast period is anticipated to slow, due to the aging of the City's population and labour force base. As the City's population continues to age, population growth associated with natural increase (births less deaths) is expected to become increasingly negative.

- Relative to historical population trends over the past 15 years, the City's population is expected to increase at a significantly faster rate between 2021 and 2051, driven by relatively higher levels of forecast net in-migration. As a result, this is anticipated to generate increased annual demand for new housing over the long-term planning horizon.
- The short- to long-term growth potential for the City considers the impact of the Volkswagen site but it also generally captures the increasing growth outlook being observed for the broader commuter-shed.

Figure 5-2
City of St. Thomas
Population Growth Forecast 2021 to 2051



Note: Forecast includes the net Census undercount of 102.7% based on the final 2016 undercount for Elgin County.
Source: Historical data from Statistics Canada Census. Forecast by Watson & Associates Economists Ltd., 2024.

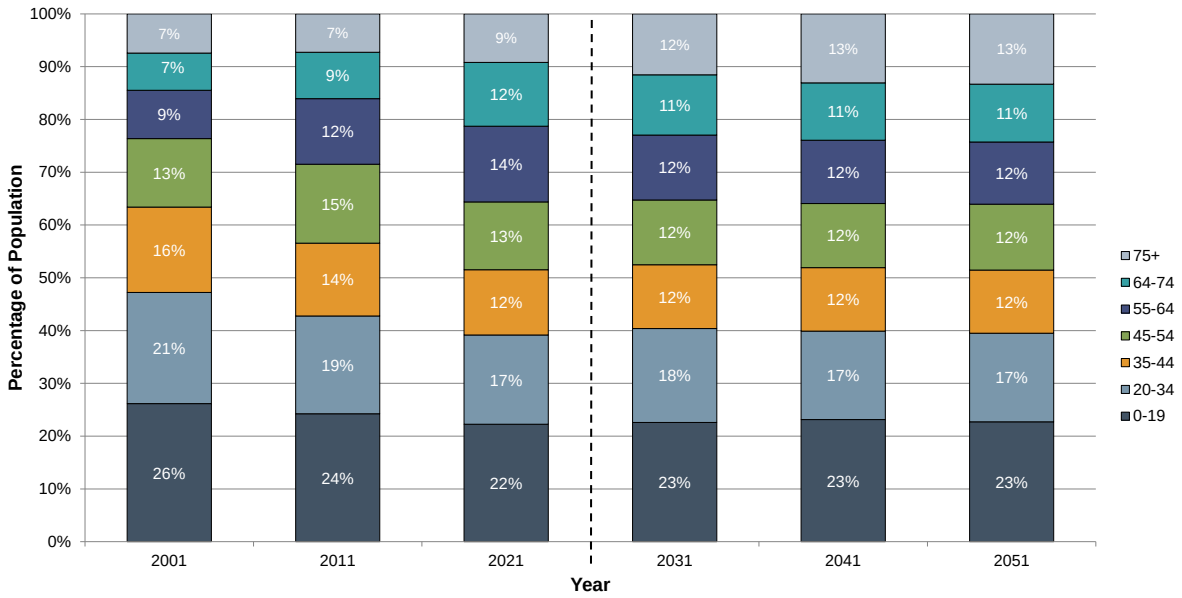
[1] Includes a Census undercount estimated at approximately 2.7%. The net Census undercount represents the net number of persons missed during Census enumeration.

5.2.1 City of St. Thomas Forecast Population Age Structure, 2021 to 2051

Figure 5-3 summarizes the population growth forecast by major age group over the 2021 to 2051 period for the City of St. Thomas. Despite the Volkswagen EV battery plant being expected to generally attract the working-age population to the City, the age structure of the population at the City-wide level is not expected to noticeably change because of this segment of the population. Key observations include the following:

- The percentage of the population in the 0-19 age cohort (youth population) is forecast to slightly increase from 22% in 2021 to 23% in 2051.
- The population share of the 55-64 age cohort is forecast to experience a steady decline from 14% in 2016 to 12% in 2051.
- The County's population in the 34-54 age group is forecast to slightly decline from 25% in 2021 to 24% in 2051.
- The 55-74 age group (empty nesters/younger seniors) is forecast to marginally decrease from 26% in 2016 to 23% in 2041.
- The percentage of the population in the 75+ age group (older seniors) is the only age group expected to increase as a share over the forecast period, steadily increasing from 9% in 2021 to 13% in 2051.

Figure 5-3
City of St. Thomas
Historical and Forecast Population by Age Cohort, 2001 to 2051



Note: Population includes net Census undercount.
Source: Population forecast by age derived from 2006 to 2021 Statistics Canada Census by Watson & Associates Economists Ltd. 2021 to 2051 population forecast by age prepared by Watson & Associates Economists Ltd., 2024.

5.3 City of St. Thomas Housing Forecast, 2021 to 2051

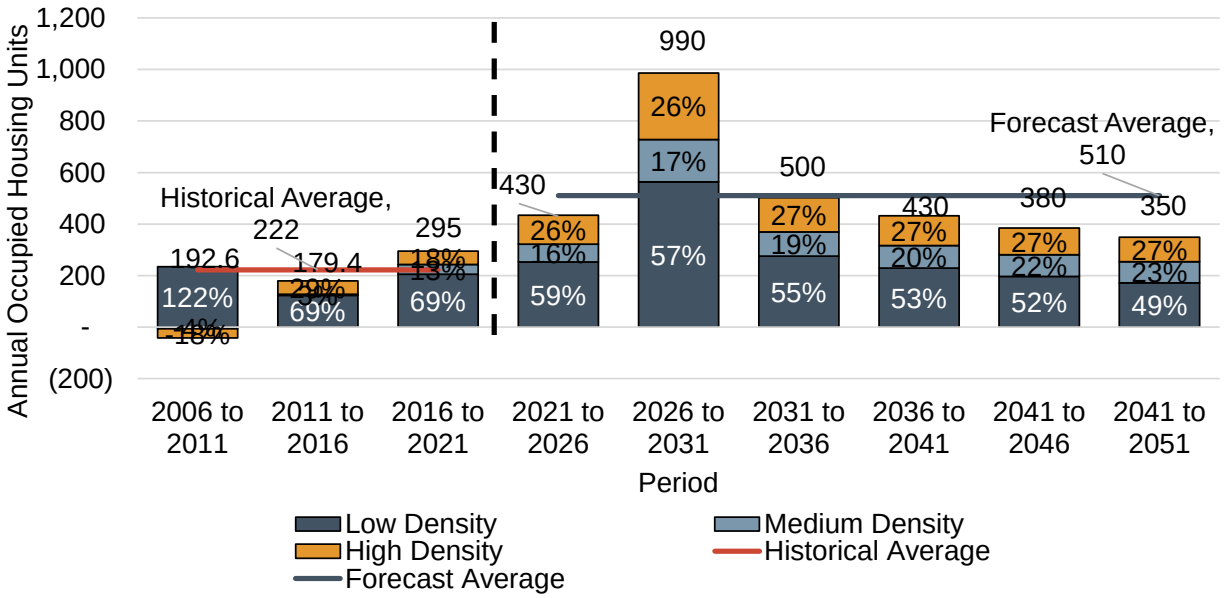
Figure 5-4 summarizes the City of St. Thomas household forecast from 2021 to 2051 (see Appendix C for more details). Housing trends between 2006 and 2021 are also provided for historical context. By 2051, the City's housing base is forecast to increase to 33,400 households from 18,100 in 2021. This represents an increase of approximately 15,300 households, which is higher than the 9,400 households forecast over the 30-year period in the previously conducted 2022 forecast for the City. The following trends can be observed:

- From 2006 to 2021, new housing development averaged slightly over 220 units annually.
- The latest five-year historical Census period has shown an increase in residential development activity, at almost 300 new housing units annually. Growth has been accelerating historically and it is expected to continue over the short-term period. As shown, forecast new dwellings are expected to continue to increase between 2021 and 2026 and then experience a strong peak by 2031, partly due

to the expected completion of the Volkswagen EV battery plant during the 2026 to 2031 period and the impact that will have on housing demand.

- Consistent with forecast population trends over the longer term, the rate of future housing growth is expected to steadily slow over the forecast period.
- New residential development within St. Thomas will continue to be concentrated in low-density housing forms, largely driven by demand from new families and move-up buyers. There will still be a need for low-density housing opportunities within the City to accommodate a range of family sizes, particularly as a sizeable share of forecast employees associated with the Volkswagen EV battery plant will be in prime family-forming years.
- Between 2006 and 2021, the share of medium- and high-density housing increased. This trend is expected to continue into the short-term forecast period, as recent building permit activity associated with new housing construction suggests an increasing trend towards medium- and high-density residential development.
- The housing forecast comprises 55% low-density units, 19% medium-density units, and 26% high-density units. This shift in dwelling type preferences towards medium and high density is anticipated to be driven largely by the aging of the population and, to a lesser extent, from continued upward pressure on local housing prices.

Figure 5-4
City of St. Thomas
Five-Year Incremental Housing Growth – Historical and Forecast, 2001 to 2051

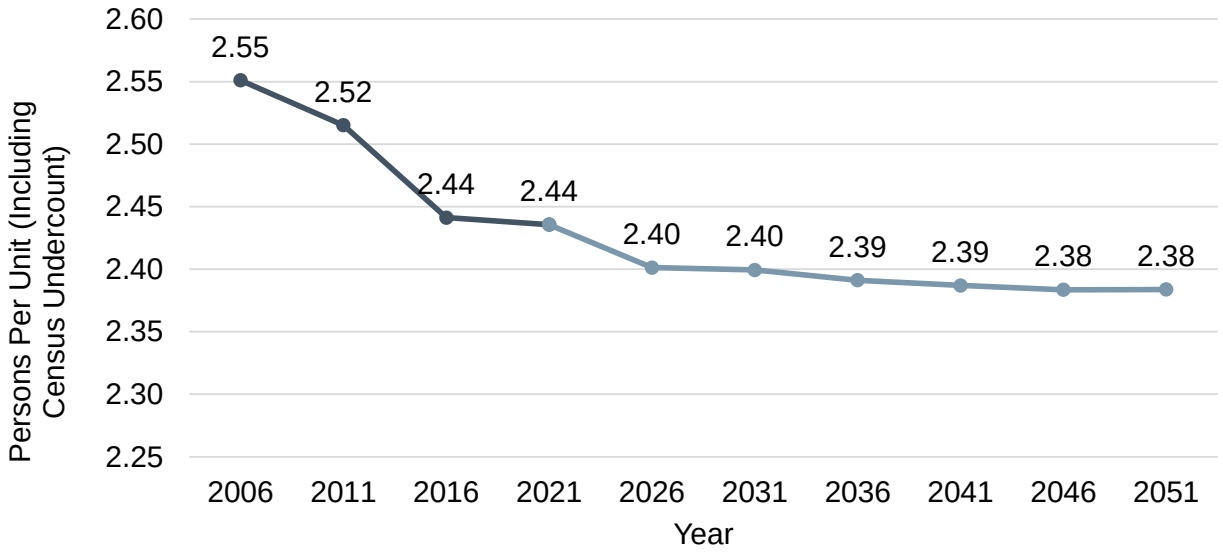


Source: Historical data from Statistics Canada Census. Forecast by Watson & Associates Economists Ltd., 2024.

Figure 5-5 summarizes anticipated trends in long-term housing occupancy, or average P.P.U., for the City of St. Thomas from 2021 to 2051. Key observations include the following:

- Between 2006 and 2021, the average P.P.U. for St. Thomas declined from 2.55 to 2.44.
- Over the forecast period, the average P.P.U. for St. Thomas is anticipated to continue to gradually decline from 2.44 in 2021 to 2.38 in 2051.
- Overall P.P.U.s are expected to decline as a result of several factors. Shifting housing preferences towards high-density dwelling types with lower occupancy patterns results in an overall decline in the aggregate P.P.U of total dwellings. This trend is largely because of the aging of the City's population and other demographic trends such as changes in household structure (e.g., changes in the share of family vs. non-family households or fewer families having children). On the other hand, relatively stronger forecast net migration levels, which also help add new families to the City, are anticipated to help offset this trend.

Figure 5-5
City of St. Thomas
Historical and Forecast Persons Per Unit, 2006 to 2051



Source: Historical data from Statistics Canada Census. Forecast by Watson & Associates Economists Ltd., 2024.

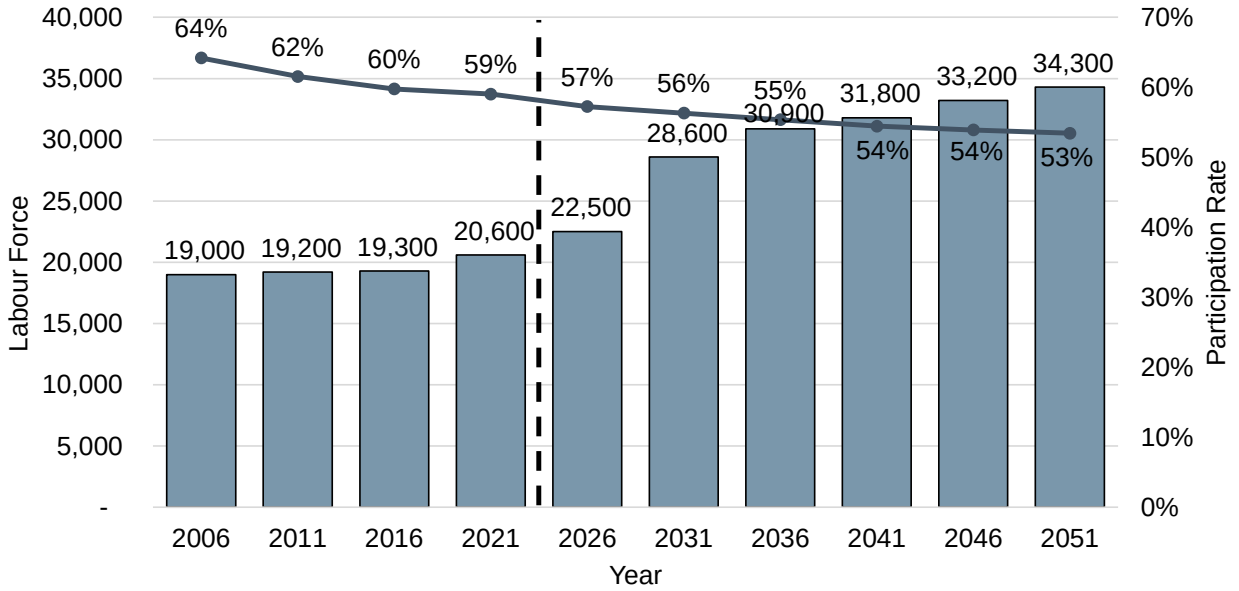
5.4 City of St. Thomas Labour Force Forecast, 2021 to 2051

Figure 5-6 summarizes the historical and forecast labour force in the City of St. Thomas. As previously mentioned, forecast trends in labour force growth and labour force participation represent a key driver of forecast population growth. The participation rate is also included in Figure 5-6 and it measures the total labour force (comprising those who are employed and unemployed, combined) relative to the size of the working-age population. Generally speaking, labour force participation rates have been declining across the Country over the past several decades due to the aging of the population. While initiatives such as the Volkswagen EV battery plant can attract labour to St. Thomas, it is difficult to have an impact on the overall labour force participation rate. Attracting younger working-age demographics to the City is not expected to impact age-specific participation rates, however, the decline in the overall participation rate is slowed as the aging of the population is effectively moderated due to an influx of working-age adults. It is also important to note that many of the jobs held in St. Thomas related to the EV battery plant and associated supply chain employment would be held by individuals who live elsewhere and commute to the City for work.

The following trends regarding the City of St. Thomas labour force forecast can be observed:

- Between 2006 and 2021, the City's labour force increased but the participation rate declined from 64% to 59%.
- The City's labour force base is forecast to continually increase over the 30-year forecast horizon, with an uptick during the 2026 to 2031 period.
- The participation rate in the City is forecast to continue to decline, albeit at a slower rate than historically observed. As shown, the labour force participation rate is forecast to decrease from 59% in 2021 to 53% by 2051.

Figure 5-6
City of St. Thomas
Labour Force Forecast, 2021 to 2051



Source: Historical data from Statistics Canada Census, derived by Watson & Associates Economists Ltd., 2023.

5.5 City of St. Thomas Long-Term Employment Forecast, 2021 to 2051

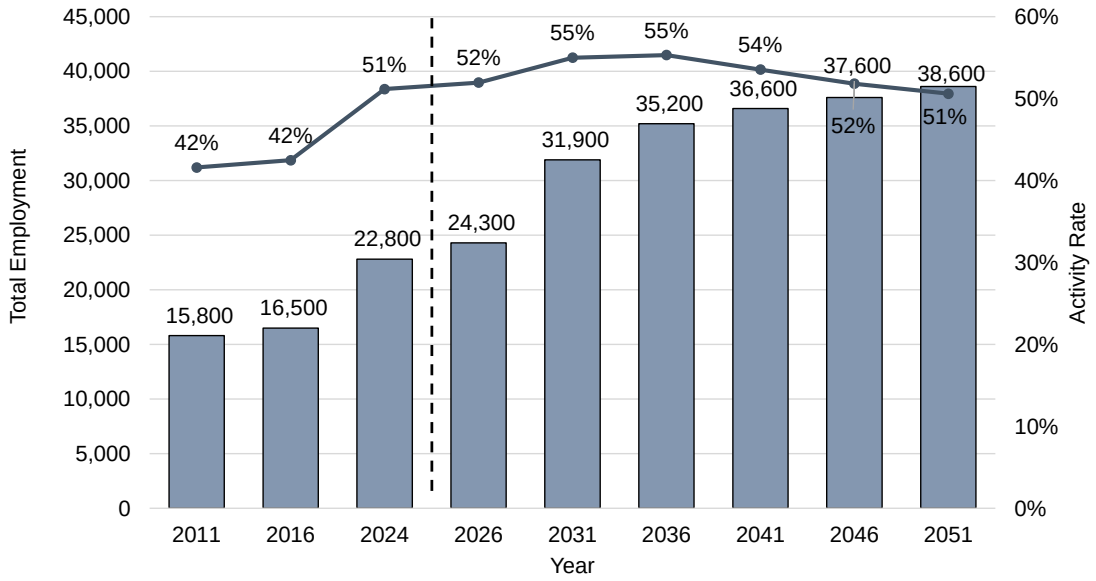
While the previous subsection explored the City's long-term labour force outlook (City of St. Thomas residents within the labour force), this subsection provides a forecast of the City's employment outlook (jobs within St. Thomas) by major sector to 2051. The employment forecast would capture all direct jobs (on-site) associated with the

Volkswagen EV battery plant as well as the indirect and induced employment that would fall within the City of St. Thomas. As noted previously, there will be supply chain growth that which is located elsewhere in Elgin County and beyond.

More broadly, opportunities exist within the local economy across a range of export-based employment sectors (e.g., transportation, wholesale trade, construction, manufacturing) and population-related employment sectors such as retail, accommodation and food, professional, scientific and technical services, and health care. Forecast job growth is also anticipated to be accommodated through home occupations, home-based businesses, and off-site employment such as construction. Figure 5-7 provides a summary of the total employment and activity rate (ratio of jobs to people) forecast for the City to 2051 (see Appendix D for more details). The following trends can be observed:

- Employment within the City is forecast to increase from 22,800 in 2024 to 38,600 by 2051. This represents an employment increase of 15,800 over the forecast period or an average annual growth rate of 2%.
- Employment is expected to spike in 2031 as a result of the completion and operation of the Volkswagen EV battery plant.
- The City's employment activity rate is expected to increase between 2024 and 2031 in accordance with the EV battery plant but, over the longer-term period, is expected to decrease to 51% by 2051. This slight decrease is anticipated to be largely driven by local population growth outpacing employment opportunities. For the City of St. Thomas, population growth is expected to slightly outpace employment growth due to the aging of the local labour force base.

Figure 5-7
City of St. Thomas
Historical and Forecast Employment Forecast, 2011 to 2051



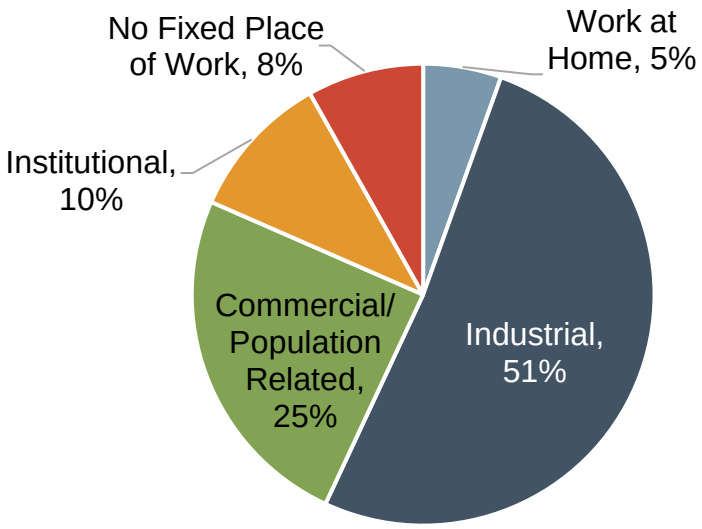
Note: Figures have been rounded. Employment figures include work at home and no fixed place of work (N.F.P.O.W.). 2021 Census data has been excluded due to the unreliable nature of the data, as Census enumeration occurred during a lockdown due to the COVID-19 pandemic, resulting in inflated work at home metrics.
Source: Historical 2011 to 2016 from Statistics Canada place of work data. Forecast 2024 to 2051 prepared by Watson & Associates Economists Ltd., 2024.

Figure 5-8 summarizes the share of employment growth by sector during the 2024 to 2051 forecast period. Land-based employment sectors, including commercial, industrial, and institutional, are anticipated to account for 87% of employment growth over the forecast period. No fixed place of work (N.F.P.O.W.) and work at home employment categories are forecast to comprise the remaining 13% of employment growth.[1] Industrial employment is forecast to be the largest growing sector in the City over the next several decades. As previously noted, the manufacturing outlook across Ontario has been improving over the last several years; this is expected to continue into the forecast period as the reshoring of supply chains continues as a consequence of

[1] Statistics Canada defines employees with no fixed place of work as "persons who do not go from home to the same workplace location at the beginning of each shift. Such persons include building and landscape contractors, travelling salespersons, independent truck drivers, etc."

COVID-19 and increased protectionist measures regarding world trade. For St. Thomas particularly, the impact of the Volkswagen EV battery plant and the associated spin-off industrial employment has also contributed to the industrial forecast for the City. Accordingly, just over half of the City-wide growth forecast is within the industrial sector.

Figure 5-8
City of St. Thomas
Share of Employment Growth, 2024 to 2051



Source: Watson & Associates Economists Ltd., 2024.

5.6 Observations

The growth outlook for the City of St. Thomas is strong over the next several decades, with forecast average annual growth rates for both population and employment at 2%. The economic outlook for the broader St. Thomas commuter-shed has been continually improving over the past several years. This outlook has been further improved due to the announcement of the Volkswagen EV battery plant with the new housing and jobs (direct, indirect, and induced) it is expected to generate both locally and regionally.

It is important to recognize that while the City's population base is growing, it is also getting older. With an aging population, the City will be more reliant on net migration as a source of population growth as opposed to natural increase. The City of St. Thomas is also anticipated to accommodate a growing share of young, working-age adults and

new families seeking competitively priced housing opportunities. Population growth associated with young adults is anticipated to be primarily driven by net migration.

Looking forward over the next five to 10 years and beyond, housing demand within the City is anticipated to remain strong, largely fueled by continued opportunities and outward growth pressure from elsewhere in Ontario. It is noted, however, that declining housing affordability and a range of broader economic headwinds, including tightening monetary policy (i.e., rising interest rates and quantitative tightening), persistently high inflation rates, and rising household debt, are anticipated to moderate housing demand (particularly ownership housing) in the near-term relative to recent historical trends over the past two to three years.

Chapter 6
City of St. Thomas Employment Area Land Needs, 2024 to 2051

6. City of St. Thomas Employment Area Land Needs, 2024 to 2051

The chapter provides an inventory of the vacant developable employment land supply within the City of St. Thomas. The Consultant Team has worked collaboratively with City staff to develop the employment land supply using geographic information systems mapping software. The vacant land supply captures the new proposed industrial park (hereinafter referred to as the "new Industrial Park") where the Volkswagen site is proposed to be located. This vacant Employment Area land supply is then compared against the long-term employment demand to assess the City's land needs by 2051.

6.1 Vacant Urban Designated Employment Lands

6.1.1 City of St. Thomas New Industrial Park

The City of St. Thomas has purchased and annexed land from Central Elgin to accommodate a new Industrial Park which is proposed to be situated within the northeast portion of the municipal boundary (see Figure 6-1 in the next subsection). The new Industrial Park is approximately 620 total hectares (ha) in size. Of these 620 total ha, it is assumed that 460 ha are classified as developable.[1] For the purposes of this study, it is assumed that all 460 ha are within the City of St. Thomas' vacant Employment Area land supply. The Volkswagen EV battery plant site represents approximately 150 ha of this total developable land supply.

6.1.2 Existing Vacant Employment Lands

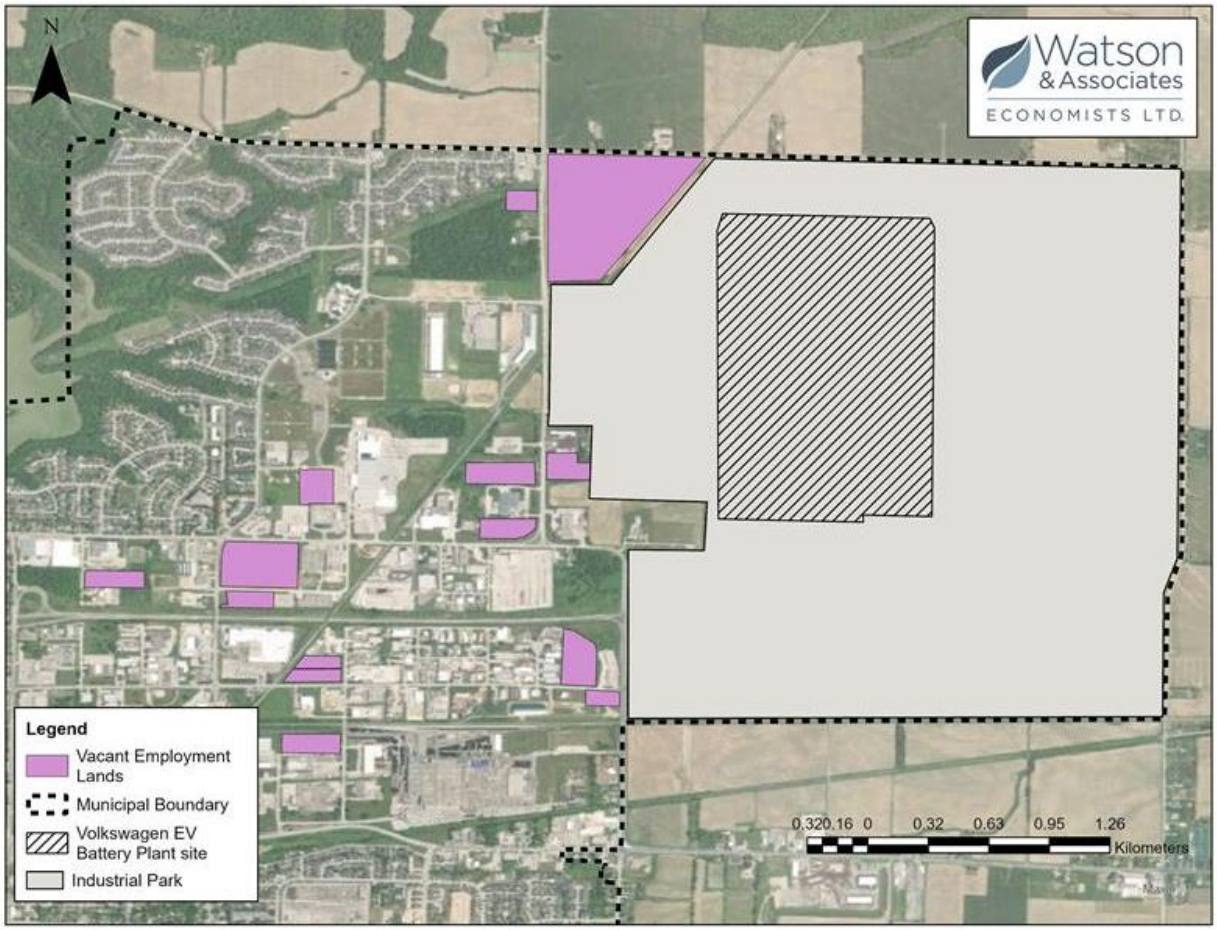
In addition to the 460 ha of developable lands identified in section 6.1.1., the City also has an existing supply of vacant Employment Area land. As shown in Figure 6-1, there are 14 sites outside the new Industrial Park which total nearly 60 ha of developable land area. In total, this amounts to nearly 520 ha (approximately 1,300 acres) of vacant developable Employment Area land across the City as of year-end 2023.

Some of the City's vacant employment land parcels will likely not develop over the planning horizon, due to small size, fragmentation, odd configuration, access issues,

[1] Subject to further refinement of the environmental and engineering analysis.

inactivity/land banking, etc., which may tie up potentially developable lands. Long-term land vacancy is a common characteristic that is experienced in Employment Areas across Ontario. For this analysis, an estimate of 10% long-term land vacancy has been applied to the developable employment land inventory. Adjusted for land vacancy, the City's long-term land supply is nearly 470 developable ha (1,150 acres).

Figure 6-1
City of St. Thomas
Vacant Employment Area Supply



Source: Watson & Associates Economists Ltd., 2024.

6.1.3 Underutilized Employment Lands

Given the large number of established industrial areas in St. Thomas, a wide array of opportunities exists for intensification. Intensification can take on several forms, including the development of underutilized lots (infill), expansion (horizontal or vertical)

of existing buildings, and redevelopment of occupied sites. Intensification offers the potential to accommodate future employment growth and achieve improved land utilization resulting in higher employment density in existing Employment Areas. Higher land utilization on existing employment lands can also lead to more effective use of existing infrastructure (e.g., roads, water/sewer servicing), a built form that is more conducive to supporting public transit, resulting in communities that are more functional and complete.

Identifying and evaluating intensification opportunities against market demand is challenging. The intensification potential of the underutilized industrial lands will largely be determined by future development plans of existing or future landowners, which is highly speculative. The timing and the potential amount of intensification on employment lands is based on a variety of market-driven conditions. Potential redevelopment or development of sites needs to be evaluated in terms of economic viability and marketability with respect to market demand. Generally speaking, infill and redevelopment of existing developed lands is expected to decrease over time within St. Thomas due to the availability of vacant land that will be created at the Volkswagen site and the new industrial area. Accordingly, a 10% intensification target has been identified for this analysis.

6.2 Employment Land Needs, 2024 to 2051

The following section compares the forecast demand between 2024 and 2051 against the employment land supply. The new Industrial Park is a component of this calculation and is reflected in the City's long-term urban Employment Area land needs calculation.

6.2.1 Employment Land Demand, 2024 to 2051

Employment Areas accommodate primarily export-based employment, including a wide range of industrial uses (e.g., manufacturing, distribution/logistics, transportation services) and specific population-related uses (e.g., office, services, ancillary/accessory retail). In contrast to other urban land uses (e.g., commercial and mixed-use areas), Employment Areas provide an opportunity to accommodate export-based employment sectors that cannot be easily accommodated in other areas of the City. Anticipated Employment Area land needs within the City of St. Thomas should consider the following:

- Long-term employment land employment growth potential;
- Forecast employment density assumptions (i.e., employees/net ha or acre) in Employment Areas;
- The vision for the newly established Industrial Park in the City;
- The employment impact of the Volkswagen EV battery plant and the associated spin-off jobs that will be located within the City's Employment Areas;
- Trends in forecast Employment Area absorption; and
- The amount of vacant, developable land within Employment Areas across the City of St. Thomas.

Figure 6-2 summarizes the City of St. Thomas' Employment Area forecast from 2024 to 2051. Over the long-term planning horizon, St. Thomas Employment Areas are anticipated to accommodate approximately 61% of the City's industrial, commercial, and institutional employment growth, totalling 8,380 employees. Employment Areas within the City are expected to accommodate 100% of City-wide industrial employment, 5% of commercial employment, and a minor share of institutional employment at 2%.

Figure 6-2
City of St. Thomas Employment Growth on Employment Areas, 2024 to 2051

Employment Sector	Total Employment Growth	Employment Growth within Employment Areas	% Share of Employment Growth within Employment Areas
Industrial	8,150	8,150	100%
Commercial	3,900	200	5%
Institutional	1,630	30	2%
Total	**13,680**	**8,380**	**61%**

Source: Forecast by Watson & Associates Economists Ltd., 2024.

6.2.2 New Industrial Area Land Demand, 2024 to 2051

As previously noted, the new Industrial Area in the City is expected to have a developable land area of 460 ha, as of year-end 2023. Adjusting for a mid-2024 base and a 10% land vacancy factor, it is assumed that 460 developable ha of vacant Employment Area land exist across the City, including remaining vacant industrial sites

outside the new Industrial Area.[1] Figure 6-3 provides a summary of the expected land areas, jobs, and densities expected in the new industrial area by sector type. The following trends can be observed:

- The Volkswagen EV battery plant is expected to employ 3,000 people on a 152 ha site, resulting in a density of 20 jobs per developable ha.
- As previously established in section 4.3, jobs within the battery materials processing, battery components, and warehousing/logistics sectors are all expected to function as supply chain inputs to the EV battery plant. Combined, these sectors are forecast to employ an additional 3,000 people and require 247 ha of land.
- There is a small component of non-EV jobs assumed within the new industrial site, resulting in a land demand of 14 developable ha.
- Combined, it is assumed that 6,280 jobs will be facilitated within the new Industrial Park by 2051, with a combined density of 15 jobs per developable ha. There will be further opportunities post-2051 to absorb the remaining vacant lands and to generate an increase in employment density through intensification.

Figure 6-3
City of St. Thomas Employment Growth on Employment Areas, 2024 to 2051

Sector	Jobs	Job Density (jobs per developable ha)	Developable Land Required
EV Battery Plant	3,000	20	152
Battery Materials Processing	1,400	8	175
Battery Components	1,100	32	34
Warehousing/Logistics	500	13	38
Non-EV	280	20	14
Total	**6,280**	**15**	**414**

Source: Watson & Associates Economists Ltd., 2024.

6.2.3 City-wide Employment Land Needs, 2024 to 2051

In accordance with the City's long-term employment forecast, Figure 6-4 summarizes forecast Employment Area demand from 2024 to 2051 in 10-year increments.[2] As

[1] Supply in section 6.1 was as of year-end 2023. For the purposes of aligning to the 2024 to 2051 land needs calculation, the supply has been updated to a mid-2024 base.
[2] It is assumed that the City's new Official Plan will be approved in approximately 2026, making the 2051 horizon an appropriate 25-year planning horizon.

previously noted, a 10% employment intensification assumption has been made on Employment Areas.[1] Assuming an average target density on Employment Areas of 16 jobs per gross ha (nearly 7 jobs per gross acre), the City of St. Thomas is forecast to generate a total land demand of 480 gross ha (1,186 gross acres) over the long-term planning horizon.[2]

Figure 6-4 also summarizes forecast Employment Area land needs for the City of St. Thomas over the long-term planning horizon. Due to increasing growth pressures forecast in the City, additional employment lands will be required within St. Thomas beyond what is designated today. More specifically, the City is expected to experience a 19 ha (47-acre) shortfall of vacant land by 2051. Designating urban employment lands can be a slow process and it is important to ensure the City is proactive in its ability to accommodate anticipated demand within Employment Areas. As an immediate next step, the City should initiate a process of identifying additional employment lands to ensure that it is well positioned to accommodate employment land demand within a broad range of sectors and development types. Identifying additional employment lands within St. Thomas would involve a review of employment intensification opportunities to increase the utilization of existing sites and it may also involve further expansion of the City's corporate boundary in the future. As part of this initiative, it is recommended that the employment land supply and demand is regularly monitored to ensure that the City has an adequate supply of employment land to accommodate long-term demand.

[1] Intensification can refer to expansion of existing buildings, additional development on partially vacant Employment Area land, and/or infill development.
[2] A density of 15 jobs per gross ha is assumed on the net Industrial Park expansion site, including the Volkswagen EV battery plant. A density of 23 jobs per gross ha is assumed for all other vacant Employment Area land in the City, combining for an aggregate density of 16 jobs per gross ha.

Figure 6-4
City of St. Thomas
Forecast Employment Area Land Needs (Demand vs. Supply), 2024 to 2051

City of St. Thomas Land Needs Calculation		Gross ha
Total Employment in Employment Areas	A	8,380
Intensification in Employment Areas (10%)	B = A * 10%	840
Total Employment in Employment Areas Adjusted for Intensification	C = A - B	7,540
Employment Density (jobs per gross ha)	D	16
Total Employment Area Land Demand	E = C / D	480
Vacant Employment Area Supply (gross ha)[1]	F	511
Land Vacancy Adjustment (10%)	G = F * 10%	51
Vacant Employment Area Supply Remaining (gross ha)	H = F - G	460
Employment Area Shortfall by 2051	I = E - H	19

[1] Supply was as of year-end 2023. The supply to mid-2024 has been adjusted to align with the demand forecast.

Source: Watson & Associates Economists Ltd., 2024.

Figure 6-5
City of St. Thomas
Incremental Employment Area Land Needs (Demand vs. Supply), 2024 to 2051

Period	Employment Area Employment Demand	Employment Density (Jobs per Gross ha)	Employment Area Land Demand	Employment Area Land Supply [1]	Employment Area Surplus/Shortfall
	A	B	C = A / B	D	E = D - C
2024 to 3031	4,610	16	293	460	167
2024 to 2036	6,420		408		52
2024 to 2041	6,900		439		21
2024 to 2046	7,250		461		(1)
2024 to 2051	7,540		480		(19)

[1] Supply was as of year-end 2023. The supply to mid-2024 has been adjusted to align with the demand forecast.
Source: Watson & Associates Economists Ltd., 2024.

6.3 Observations

The analysis provided herein forecasts a land demand of 480 developable ha between 2024 and 2051, resulting in a land need of 19 developable ha by the end of the forecast horizon. Additional land may be required beyond the 19 ha identified to account for environmental features and infrastructure requirements. In accordance with the minimum 25-year planning horizon established in the P.P.S. for employment lands, the entirety of the new industrial area will be required in the City to accommodate long-term Employment Area demand. This long-term employment demand forecast is related to the Volkswagen EV battery plant, the local supply-chain employment generated by its

presence, and other employment growth on employment lands that is not related to the plant. The City should proactively monitor the absorption of its employment lands to ensure that there is an adequate supply of vacant land to accommodate long-term demand over the planning horizon.

Chapter 7
Conclusions

7. Conclusions

Population and housing growth within the City of St. Thomas has accelerated between 2016 and 2021 compared to the previous decade. Population and housing growth within St. Thomas is expected to remain above 2016 to 2021 levels over the forecast period. Growth in the latter half of the forecast period is expected to gradually slow, largely due to the aging of the regional population and labour force. Population growth within the first half of the forecast period is expected to remain stronger than historical trends, driven by steady regional and local economic expansion including the completion of the Volkswagen EV battery plant.

While the battery plant will generate new jobs within the City, there are potential constraints regarding the availability of sufficient skilled labour that can be attracted into the broader St. Thomas commuter-shed from elsewhere in Ontario to absorb these employment opportunities. Accordingly, the plant and associated supply chain employment growth will likely lead to increased competition for labour and could displace employees from existing businesses that currently operate in the regional area. Similar to labour, population and housing growth associated with the Volkswagen EV battery plant and spin-off employment will not be solely achieved through new families migrating into St. Thomas. Many of these jobs will be retained by residents who already live and work within the St. Thomas commuter-shed and, as such, would not generate additional demand for new housing.

Considering these macroeconomic and regional trends, the population base within the City is anticipated to steadily increase from 44,000 to 79,500. To accommodate forecast population growth, approximately 15,300 new residential dwellings will need to be constructed within the City between 2021 and 2051. Housing preferences by structure type are anticipated to gradually shift towards medium- and high-density housing forms over the long term. This shift is anticipated to be driven largely by the aging of the population and, to a lesser extent, by continued upward pressure on regional housing prices.

Employment within the City is expected to increase substantially by 2031 in relation to the Volkswagen EV battery plant and related supply chain growth and then moderate with a total forecast of 38,600 jobs by 2051. Based on the demand and supply of vacant Employment Area land (including the new Industrial Park), it is forecast that the City will require 19 additional ha of developable employment land by 2051. Additional

land may be required beyond this 19 ha deficit to account for environmental features and infrastructure requirements.

Regular monitoring of the City's population, housing, and employment forecast is recommended to assist the City and its residents in better understanding current real-estate development trends and demographic conditions, the progress of current development initiatives, overall tracking of population and housing growth to O.P. forecasts/targets, and the influence of Official Plan policies on urban development patterns. Further to this, it is recommended that the City also monitor the absorption of vacant Employment Area land to ensure that an adequate supply of land is available to accommodate changing patterns in demand over the next several decades. Given the immense pressure for growth that is forecast in the next decade, in part due to the Volkswagen battery plant, the City should continue to build on local monitoring frameworks to ensure that growth forecasts and housing targets are reviewed annually. This foundational data will also help the City assess and evaluate broader growth management objectives and performance measures regularly.

Appendices

Appendix A
Population Forecast by Major Age Group, 2021 to 2051

Appendix A: Population Forecast by Major Age Group, 2021 to 2051

Age Cohort	Population By Age									
	2006	2011	2016	2021	2026	2031	2036	2041	2046	2051
0-14	6,867	6,938	6,865	7,305	8,264	9,656	11,130	12,228	12,868	13,550
15-24	4,849	4,771	4,810	5,003	5,710	6,630	7,394	8,047	8,549	9,002
25-34	5,304	4,955	4,544	5,065	5,829	6,729	7,265	7,828	8,403	8,848
35-44	5,703	5,377	5,141	5,297	5,768	6,887	7,976	8,472	9,040	9,519
45-54	5,277	5,829	5,638	5,683	6,184	7,009	7,599	8,569	9,422	9,922
55-64	4,230	4,837	5,474	6,034	6,263	7,025	7,799	8,448	8,892	9,363
65-74	2,639	3,425	4,306	4,872	5,540	6,523	7,058	7,669	8,276	8,715
75+	2,706	2,829	3,253	3,927	5,045	6,581	7,985	9,199	10,049	10,581
Total Population Including Census Undercount	**37,575**	**38,962**	**40,031**	**43,186**	**48,603**	**57,040**	**64,206**	**70,460**	**75,500**	**79,500**
Total Population Excluding Census Undercount	**36,100**	**37,900**	**38,900**	**42,840**	**48,200**	**56,600**	**63,700**	**69,900**	**74,900**	**78,900**

Age Cohort	Population By Age									
	2006	2011	2016	2021	2026	2031	2036	2041	2046	2051
0-14	18%	18%	17%	17%	17%	17%	17%	17%	17%	17%
15-24	13%	12%	12%	12%	12%	12%	12%	11%	11%	11%
25-34	14%	13%	11%	12%	12%	12%	11%	11%	11%	11%
35-44	15%	14%	13%	12%	12%	12%	12%	12%	12%	12%
45-54	14%	15%	14%	13%	13%	12%	12%	12%	12%	12%
55-64	11%	12%	14%	14%	13%	12%	12%	12%	12%	12%
65-74	7%	9%	11%	11%	11%	11%	11%	11%	11%	11%
75+	7%	7%	8%	9%	10%	12%	12%	13%	13%	13%

Source: Historical data from Statistics Canada Census. Forecast by Watson & Associates Economists Ltd.

Appendix B
Headship Rates

Appendix B: Headship Rates

Forecast trends in population age structure provide important insights concerning future housing needs based on forecast trends in average household occupancy. Accordingly, City-wide total housing growth has been generated from the population forecast by major age groups using a headship rate forecast. A headship rate is defined as the ratio of primary household maintainers, or heads of households, by major population age group (i.e., cohort).

An understanding of historical headship rate trends is important because this information provides insights into household formation trends associated with population growth by age. While major fluctuations in headship rates are not common over time, the ratio of household maintainers per capita varies by population age group. For example, a municipality with a higher percentage of seniors will typically have a higher household maintainer ratio per capita (i.e., headship rate) compared to a municipality with a younger population. This is because households occupied by seniors typically have fewer children than households occupied by adults under 65 years of age. Figure B-1 provides a summary of forecast headship rates for St. Thomas by household maintainer.

Figure B-1
City of St. Thomas Historical and Projected Headship Rates, 2006 to 2051

Age Cohort	Household Headship Rates									
	2006	2011	2016	2021	2026	2031	2036	2041	2046	2051
0-14	-	-	-	-	-	-	-	-	-	-
15-24	0.11857	0.11318	0.08939	0.08939	0.08939	0.08939	0.08939	0.08939	0.08939	0.08939
25-34	0.41855	0.43085	0.47319	0.47319	0.47319	0.47319	0.47319	0.47319	0.47319	0.47319
35-44	0.56115	0.56537	0.55144	0.55144	0.55144	0.55144	0.55144	0.55144	0.55144	0.55144
45-54	0.56096	0.55671	0.56403	0.56403	0.56403	0.56403	0.56403	0.56403	0.56403	0.56403
55-64	0.58504	0.58917	0.60469	0.60469	0.60469	0.60469	0.60469	0.60469	0.60469	0.60469
65-74	0.61574	0.60728	0.63631	0.63631	0.63631	0.63631	0.63631	0.63631	0.63631	0.63631
75+	0.62088	0.63988	0.59636	0.59636	0.59636	0.59636	0.59636	0.59636	0.59636	0.59636
Total	**0.39215**	**0.40296**	**0.41420**	**0.41829**	**0.41685**	**0.41830**	**0.41663**	**0.41733**	**0.41954**	**0.41950**

Source: Historical data from Statistics Canada Census. Forecast by Watson & Associates Economists Ltd.

Appendix C
Population and Housing Forecast in Five-Year Increments, 2021 to 2051

Appendix C: Population and Housing Forecast in Five-Year Increments, 2021 to 2051

Year		Population (Including Census Undercount)[1]	Population Excluding Census Undercount	Housing Units					Persons Per Unit (P.P.U.): Total Population/ Total Households
				Singles & Semi-Detached	Multiple Dwellings[2]	Apartments[3]	Other	Total Households	
Historical	*Mid 2006*	37,590	36,110	10,220	1,145	3,340	30	14,735	2.55
	Mid 2011	39,460	37,905	11,394	1,111	3,163	21	15,689	2.52
	Mid 2016	40,500	38,909	12,010	1,135	3,420	25	16,590	2.44
	Mid 2021	44,000	42,840	13,035	1,325	3,680	25	18,065	2.44
	Mid 2024	46,400	44,573	13,580	1,473	3,924	25	19,002	2.44
Forecast	*Mid 2026*	48,600	46,686	14,299	1,668	4,247	25	20,239	2.40
	Mid 2031	60,400	58,021	17,120	2,490	5,538	25	25,173	2.40
	Mid 2036	66,200	63,593	18,496	2,960	6,205	25	27,686	2.39
	Mid 2041	71,100	68,300	19,606	3,387	6,768	25	29,786	2.39
	Mid 2046	75,500	72,526	20,570	3,801	7,279	25	31,675	2.38
	Mid 2051	79,500	76,369	21,390	4,198	7,737	25	33,350	2.38
Incremental	**Mid 2006 - Mid 2011**	**1,870**	**1,795**	**1,174**	**-34**	**-177**	**-9**	**954**	
	Mid 2011 - Mid 2016	**1,040**	**1,004**	**616**	**24**	**257**	**4**	**901**	
	Mid 2016 - Mid 2021	**4,100**	**3,931**	**1,025**	**190**	**260**	**0**	**1,475**	
	Mid 2021 - Mid 2026	**4,600**	**3,846**	**1,264**	**343**	**567**	**0**	**2,174**	
	Mid 2021 - Mid 2031	**16,400**	**15,181**	**4,085**	**1,165**	**1,858**	**0**	**7,108**	
	Mid 2021 - Mid 2036	**22,200**	**20,753**	**5,461**	**1,635**	**2,525**	**0**	**9,621**	
	Mid 2021 - Mid 2041	**27,100**	**25,460**	**6,571**	**2,062**	**3,088**	**0**	**11,721**	
	Mid 2021 - Mid 2046	**31,500**	**29,686**	**7,535**	**2,476**	**3,599**	**0**	**13,610**	
	Mid 2021 - Mid 2051	**35,500**	**33,529**	**8,355**	**2,873**	**4,057**	**0**	**15,285**	

[1] Census undercount estimated at approximately 4.1%. Note: Population including the undercount has been rounded.

[2] Includes townhouses and apartments in duplexes.

[3] Includes bachelor, 1-bedroom and 2-bedroom+ apartments.

Appendix D
Employment Forecast by Major Sector in Five-Year Increments, 2024 to 2051

Appendix D: Employment Forecast by Major Sector in Five-Year Increments, 2024 to 2051

Period	Population	Activity Rate								Employment							
		Primary	Work at Home	Industrial	Commercial/ Population Related	Institutional	Total	N.F.P.O.W.[1]	Total Including N.F.P.O.W.	Primary	Work at Home	Industrial	Commercial/ Population Related	Institutional	Total	N.F.P.O.W.[1]	Total Employment (Including N.F.P.O.W.)
Mid 2011	37,905	0.002	0.020	0.120	0.141	0.095	0.378	0.063	0.416	60	755	4,568	5,338	3,605	14,325	2,373	15,766
Mid 2016	38,909	0.001	0.020	0.131	0.131	0.103	0.386	0.065	0.425	40	765	5,090	5,115	4,005	15,015	2,523	16,529
Mid 2024	44,573	0.002	0.023	0.153	0.163	0.111	0.451	0.060	0.512	70	1,043	6,820	7,250	4,940	20,123	2,681	22,804
Mid 2026	46,686	0.002	0.023	0.161	0.163	0.111	0.459	0.060	0.520	70	1,092	7,520	7,594	5,174	21,450	2,808	24,258
Mid 2031	58,021	0.001	0.023	0.204	0.158	0.104	0.490	0.060	0.550	70	1,334	11,820	9,167	6,034	28,425	3,481	31,906
Mid 2036	63,593	0.001	0.023	0.217	0.154	0.100	0.495	0.058	0.553	70	1,463	13,800	9,793	6,359	31,485	3,688	35,173
Mid 2041	68,300	0.001	0.024	0.209	0.151	0.094	0.479	0.056	0.535	70	1,639	14,300	10,313	6,420	32,742	3,825	36,567
Mid 2046	72,526	0.001	0.024	0.202	0.148	0.090	0.465	0.053	0.518	70	1,741	14,670	10,734	6,527	33,742	3,844	37,586
Mid 2051	76,369	0.001	0.025	0.196	0.146	0.086	0.454	0.052	0.506	70	1,909	14,970	11,150	6,568	34,667	3,971	38,638
Incremental Change																	
Mid 2006 - Mid 2011	0	0.000	0.000	-0.008	-0.008	0.000	-0.016	0.000	-0.016	0	0	-313	-313	0	-625	18	-607
Mid 2011 - Mid 2016	1,004	-0.0006	-0.0003	0.0103	-0.0094	0.0078	0.0080	0.0009	0.0089	-20	10	523	-223	400	690	73	763
Mid 2016 - Mid 2021	3,931	0.0008	0.0518	-0.0103	-0.0278	-0.0141	0.0004	-0.0389	-0.0385	40	2,295	75	-675	-200	1,535	-1,514	21
Mid 2024 - Mid 2026	2,113	-0.0001	0.0000	0.0081	0.0000	0.0000	0.0080	0.0000	0.0080	0	49	700	344	234	1,327	127	1,454
Mid 2024 - Mid 2031	13,449	-0.0004	-0.0004	0.0507	-0.0047	-0.0068	0.0384	-0.0002	0.0383	0	291	5,000	1,917	1,094	8,302	800	9,102
Mid 2024 - Mid 2036	19,020	-0.0005	-0.0004	0.0640	-0.0087	-0.0108	0.0436	-0.0022	0.0415	0	420	6,980	2,543	1,419	11,362	1,007	12,369
Mid 2024 - Mid 2041	23,727	-0.0005	0.0006	0.0564	-0.0117	-0.0168	0.0279	-0.0042	0.0238	0	596	7,480	3,063	1,480	12,619	1,144	13,763
Mid 2024 - Mid 2046	27,954	-0.0006	0.0006	0.0493	-0.0147	-0.0208	0.0138	-0.0072	0.0066	0	698	7,850	3,484	1,587	13,619	1,163	14,782
Mid 2024 - Mid 2051	31,796	-0.0007	0.0016	0.0430	-0.0167	-0.0248	0.0025	-0.0082	-0.0057	0	866	8,150	3,900	1,628	14,544	1,290	15,834

[1] Statistics Canada defines no fixed place of work (N.F.P.O.W.) employees as "persons who do not go from home to the same work place location at the beginning of each shift. Such persons include building and landscape contractors, travelling salespersons, independent truck drivers, etc."

Note: The 2021 Census is unreliable so a 2024 base has been utilized here. The 2024 base is an estimate utilizing Lightcast employment data.

Source: Historical data from Statistics Canada. Forecast by Watson & Associates Economists Ltd.