



# REGIONAL AUTOMOTIVE MANUFACTURING PROFILE: Windsor-Sarnia

The project is a collaboration of the Canadian Skills Training and Employment Coalition, Prism Economics and Analysis, and the Automotive Policy Research Centre.

October 2019

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This report was prepared for the Auto Labour Market Information (LMI) Project.

The goal of the Auto LMI project is to help stakeholders better understand the automotive labour market. The Project will create industry-validated, regional, occupational supply and demand analyses and forecasts and skill profiles for skilled trades and other key skilled occupations in the broader automotive sector including vehicle assemblers, parts manufacturers and technology companies that supply the industry. The project will also examine various labour market trends in the sector and facilitate discussions among stakeholders about how to address any forecasted skills shortages and other labour market challenges. The planned outcome of the project is enhanced regional LMI that will support colleges, employers, policy makers and other stakeholders in taking practical steps to address skills shortages and other labour market challenges in the automotive sector.

This project is funded by the Government of Canada's Sectoral Initiatives Program. The opinions and interpretations in this publication are those of the author(s) and do not necessarily reflect those of the Government of Canada.

Canadian Skills Training and Employment Coalition, [cstec.ca](http://cstec.ca)

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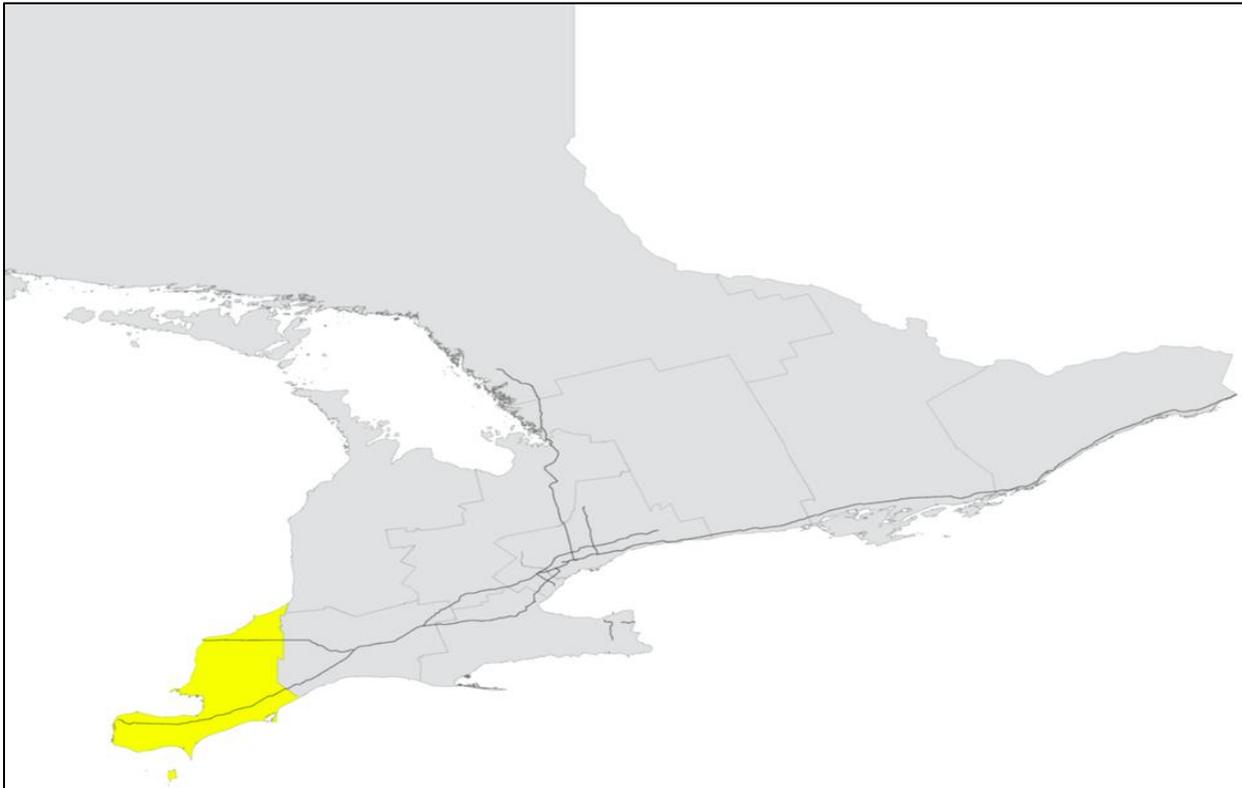
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## Executive Summary



The Windsor-Sarnia region is comprised of the Economics Region (ER) of Windsor-Sarnia and three Census Divisions (CDs): Chatham-Kent, Essex, and Lambton. The region's GDP was an estimated \$28 billion in 2018, 23% of which was generated by the manufacturing sector. Manufacturing is also a major employer in the region, accounting for 17% of the total labour force, including 6% from automotive manufacturing. The region has a positive economic outlook, with annual GDP growth of at least 2.0% projected through 2029. However, the region's manufacturing sector is expected to see its GDP growth slow in the coming years.

The Windsor-Sarnia region's population was an estimated 650,000 in 2018. Marginal population growth is expected in the region through 2025 before reaching an estimated 685,000 in 2030. Population growth will likely be driven primarily by migration into the region as the region is expected to experience a negative net natural population change. The region is expected to see an aging trend in its population, with the share of the population aged 65 years and over projected to increase from 18% in 2016 to 26% by 2030. The region is also expected to see its unemployment fall from 7.5% in 2016 to 6.3% by 2020 before stabilizing over the coming decade.

The Windsor-Sarnia region's automotive manufacturing industry employed an estimated 22,800 workers across 107 businesses in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data. Employment in the past five years is estimated to have ranged from a low of 18,800 in 2013 to a peak of 23,100 in 2017. The region is home to one assembly and two engine plants that employed an estimated 7,800 workers in 2018. A total 66 parts suppliers located in the Essex CD employed nearly 11,500 workers in 2018. The region's largest automotive manufacturing-related employers include FCA, Ford, and Flex-N-Gate.

## Project Background

The automotive industry is critically important to Canada's economic well-being. Despite a declining trend over the past decade, Canada still produced over 2 million vehicles in 2018. Furthermore, vehicle assembly plants have the capacity to build over 2.3 million vehicles annually. The industry directly accounted for over 8% of Canada's manufacturing GDP and 17% of Ontario's manufacturing GDP in 2017. The industry also contributes to Canada's economy through expenditures on capital, which totaled \$1.7 billion as of 2017, and research & development, where businesses spent an additional \$265 million in 2018. However, expenditure levels in both cases have dropped off since the early to mid-2000s. Finally, Canada's automotive industry is deeply tied to the global market through foreign trade. The majority of vehicles produced in Canada are exported, mostly to the United States. The U.S. is also the top export destination for automotive parts and components manufactured domestically. Canada also imports vehicles and parts, mainly from the U.S. and Mexico but also from Japan, Germany, South Korea and China. Although Canada has historically maintained a trade surplus in vehicles despite a trade deficit in parts it faced a deficit in both sub-sectors in 2018, leading to a total automotive trade deficit of \$24.6 billion.

The automotive industry is one of the key drivers of innovation in the advanced manufacturing sector and it increasingly spurs innovation across a wide range of industries. In addition to developing new manufacturing technologies and production systems that will increase productivity and competitiveness, the industry is developing innovative solutions to challenges in vehicle connectivity and advanced driver assistance systems and is breaking new ground in vehicle light-weighting and alternative propulsion to reduce greenhouse gas (GHG) emissions. A recent automotive advisory report outlined how the industry can achieve its future goals. It identified talent and skills development as key to industry's success going forward and recommended a detailed analysis of the industry's workforce<sup>1</sup>. Similarly, the Canadian Automotive Partnership Council (CAPC) encouraged industry to work with government and its agencies to invest in both current and future workforces in its most recent "Call for Action" report<sup>2</sup>.

Since talent and skills will be a driving force in enabling this innovation and facilitating the industry's future prosperity, it is important to undertake a comprehensive analysis of the workforce required to design and build the new technology intensive vehicles, parts, and systems of today and tomorrow. Accordingly, the Canadian Skills Training and Employment Coalition (CSTEC) and the Automotive Policy Research Centre (APRC) are undertaking a comprehensive labour market analysis of the automotive industry and its supply chain. The project is funded by the Government of Canada's Sectoral Initiatives Program (SIP) and will be completed over a three-year period.

Under the North American Industry Classification System (NAICS) automotive manufacturing is traditionally defined as being comprised of two main sub-sectors: motor vehicle assembly (NAICS 3361), which includes chassis manufacturing, and motor vehicle parts manufacturing (NAICS 3363). These sub-sectors directly employ a combined 125,000 Canadians, based on data collected through the 2016 Census. However, this definition of the industry understates the workforce because it excludes establishments that have been misclassified by Statistics Canada as belonging to a non-automotive NAICS code. Misclassification occurs because many of these establishments dedicate only a portion of

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<sup>1</sup> Tanguay, "Drive to Win"

<sup>2</sup> Canadian Automotive Partnership Council (CAPC), "A Call for Action: II"

their output to automotive-related activities and are not always present within the automotive supply chain<sup>3</sup>. A 2017 report by the APRC profiling the automotive manufacturing industry in Canada identified over 200 automotive parts manufacturing establishments that were assigned a NAICS industry code other than 3361 or 3363<sup>4</sup>. The APRC's estimates of automotive manufacturing employment, which supplemented Statistics Canada data with establishment-level estimates for businesses that have been misclassified, placed the industry's workforce at over 140,000 people as of 2016.

Rather than limiting automotive manufacturing to Statistics Canada's two main automotive manufacturing NAICS codes, this project will instead broaden the definition of the sector to include producers in the supply chain that have been classified in non-automotive industries. This broader definition of automotive manufacturing will include establishments in the following categories:

1. **OEM Vehicle Assembly** – Car and light-duty truck assembly plants owned by Original Equipment Manufacturers (OEMs) including Ford, Fiat Chrysler Automobiles (FCA), Toyota, Honda and General Motors.
2. **OEM Parts Suppliers** - Motor vehicle parts and components manufacturing plants owned by OEMs. These include facilities that produce internal combustion engines, transmissions, cast wheels and other structural metal components, and plastic or composite interior or exterior trim and mouldings.
3. **Primary Independent Parts Suppliers** – Establishments whose primary purpose is to supply parts and components or provide value-added services (e.g. sub-assembly, sequencing) to the supply chain of OEMs.
4. **Diversified Independent Parts Suppliers** – Establishments that supply OEMs or primary parts suppliers but who also supply a number of other industries.
5. **Automotive Tooling and Automation** – Establishments that provide machine tools, dies, moulds and/or automation equipment (e.g. welding cells, presses, complete assembly lines) to OEMs and parts suppliers.
6. **Bus and Heavy Truck** – Establishments that manufacture buses, medium-duty trucks and/or heavy-duty trucks, or whose primary purpose is to supply parts and components to bus and heavy truck manufacturers.
7. **Automotive Technology** – Establishments that build or develop automotive technologies, including those that are included in the vehicle (e.g. embedded software), in the production process (e.g. systems that monitor the assembly line) and/or in infrastructure (e.g. electric vehicle charging stations).
8. **Raw Materials** – Establishments that are primarily engaged in the production and processing of raw materials (e.g. steel, rubber, glass) used in automotive manufacturing.

It should be noted that while some establishments could be included within more than one of these categories, they are ultimately assigned to only one. Establishments are classified based on the research and expertise of the project team.

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<sup>3</sup> Sweeney & Mordue, "The Restructuring of Canada's Automotive Industry, 2005-2014"

<sup>4</sup> Sweeney, "A Profile of the Automotive Manufacturing Industry in Canada, 2012-2016"

The following industries will be included as part of the broader definition of the sector, in addition to the two main automotive manufacturing NAICS codes:

- Paint, coating and adhesive manufacturing (NAICS 3255)
- Plastic product manufacturing (NAICS 3261)
- Rubber product manufacturing (NAICS 3262)
- Glass and glass product manufacturing (NAICS 3272)
- Iron and steel mills and ferro-alloy manufacturing (NAICS 3311)
- Steel product manufacturing from purchased steel (NAICS 3312)
- Foundries (NAICS 3315)
- Forging and stamping (NAICS 3321)
- Cutlery and hand tool manufacturing (NAICS 3322)
- Architectural and structural metals manufacturing (NAICS 3323)
- Hardware manufacturing (NAICS 3325)
- Machine shops, turned product, and screw, nut and bolt manufacturing (NAICS 3327)
- Coating, engraving, cold and heat treating and allied activities (NAICS 3328)
- Computer and peripheral equipment manufacturing (NAICS 3341)
- Communications equipment manufacturing (NAICS 3342)
- Semiconductor and other electronic component manufacturing (NAICS 3344)
- Navigational, measuring, medical and control instruments manufacturing (NAICS 3345)
- Electric lighting equipment manufacturing (NAICS 3351)
- Electrical equipment manufacturing (NAICS 3353)
- Other electrical equipment and component manufacturing (NAICS 3359)
- Architectural, engineering and related services (NAICS 5413)
- Computer systems design and related services (NAICS 5415)
- Management, scientific and technical consulting services (NAICS 5416)
- Motor vehicle and motor vehicle parts and accessories merchant wholesalers (NAICS 415)

One of the central challenges of this project will be to understand the links between companies in these industries and those included in the primary automotive NAICS codes. A two-pronged approach will be used to ensure the broader definition of the sector closely reflects the true profile of the Canadian automotive industry:

1. A bottom up approach will use an establishment-level database to identify individual producers that are involved in the automotive supply chain.
2. A top down approach will use Statistics Canada's input-output tables, which track inter-industry transactions, to better understand the contributions to employment and output that establishments from non-automotive NAICS codes make to the sector.

Preliminary estimates based on this approach indicate the broader automotive manufacturing sector employed roughly 177,000 workers in Canada as of 2015.

# Introduction

The Windsor-Sarnia region is a single Economic Region (ERs) and an aggregate region comprised of three Census Divisions (CD) as defined by Statistics Canada: Chatham-Kent, Essex, and Lambton. The Essex CD is the larger of the three regions and includes the cities of Windsor and Essex. The Windsor-Sarnia region is home to approximately 4.7% of Ontario’s population and covers a land area of approximately 7,300 square kilometers. The region includes Highway 401 and major trade routes between Canada and the United States, including two links to Michigan.

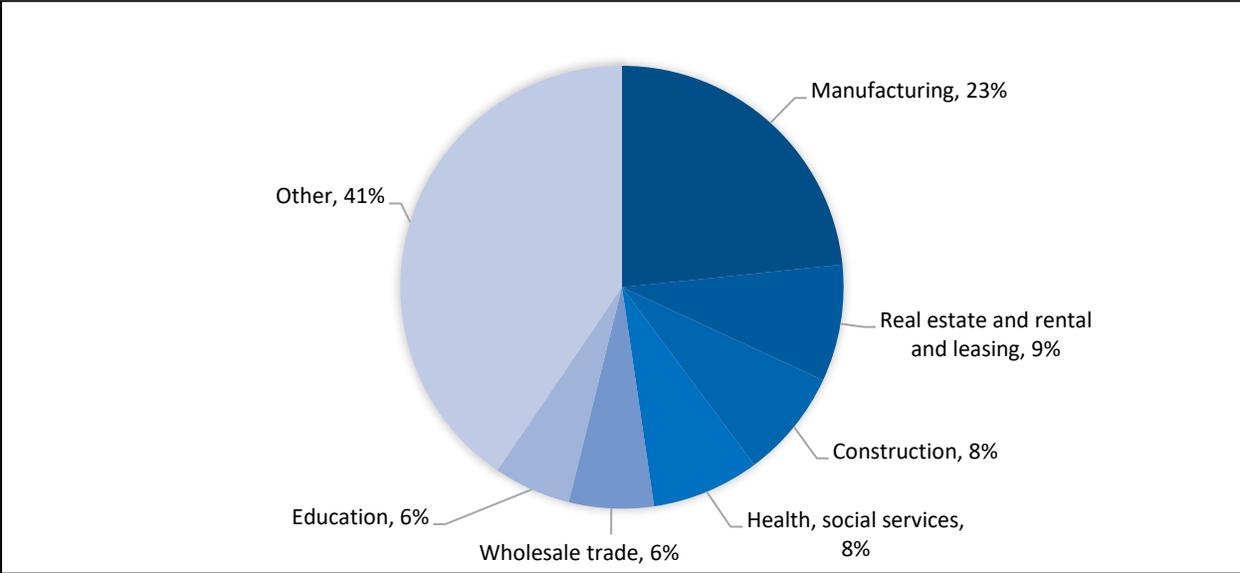
This regional profile includes three main sections. First, a discussion of the regional economy, including outlooks for GDP. Next, a section outlining trends in the region’s population, demographic characteristics and overall workforce. Finally, an overview of the region’s automotive manufacturing industry, including key employers and occupations.

All regional data presented in this profile are aggregates (or weighted averages where appropriate) of ER-level data for Windsor-Sarnia. Except where noted, data on the automotive manufacturing industry refers to Statistics Canada’s two main industry codes for motor vehicle assembly (NAICS 3361) and parts manufacturing (NAICS 3363).

# Regional Economy

The Windsor-Sarnia region’s GDP totaled an estimated \$28 billion dollars in 2018. Manufacturing was the largest single contributor to the region’s GDP of any sector, accounting for nearly one-quarter (23%) or approximately \$6.5 billion. The next largest sector, real estate and construction, accounted for 16% of the regional economy. Other major sectors in the region include real estate, rental, and leasing (8% of GDP), construction (8%), and health care and social services (8%).

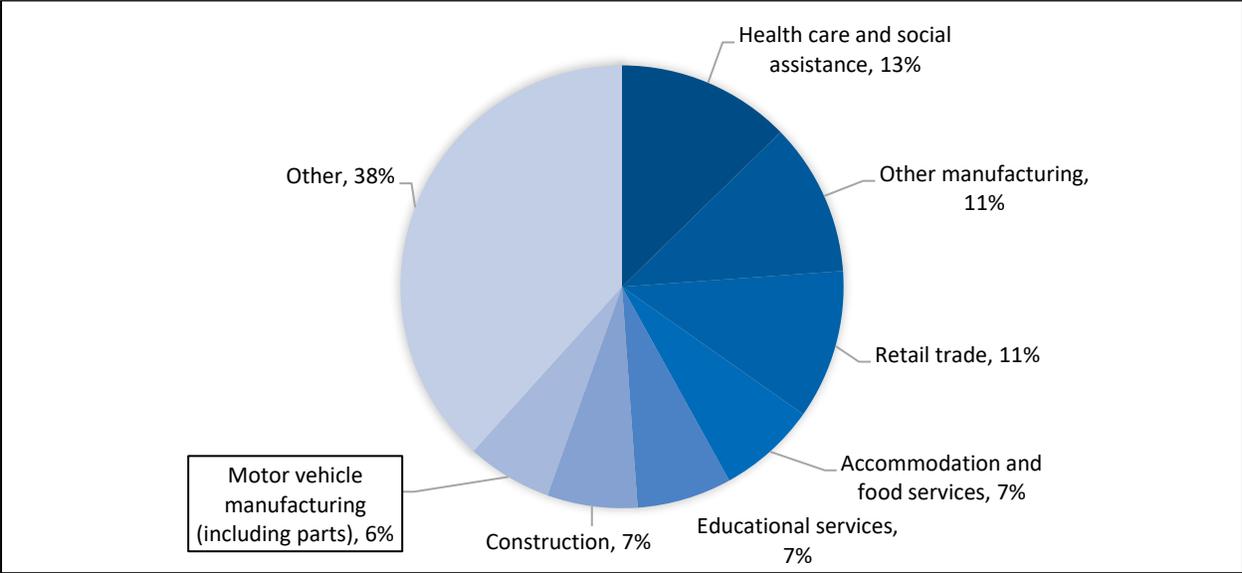
**Regional GDP Shares by Sector, 2018**



Source: Canadian Skills Training & Employment Coalition, Metro Economics

The region’s largest sectors by workforce size are health care and social assistance (13% of total regional labour force), retail trade (11%), and non-motor vehicle manufacturing (11%). Overall, manufacturing accounts 17% of the region’s total labour force, with motor vehicle manufacturing in particular comprising 6% of the labour force.

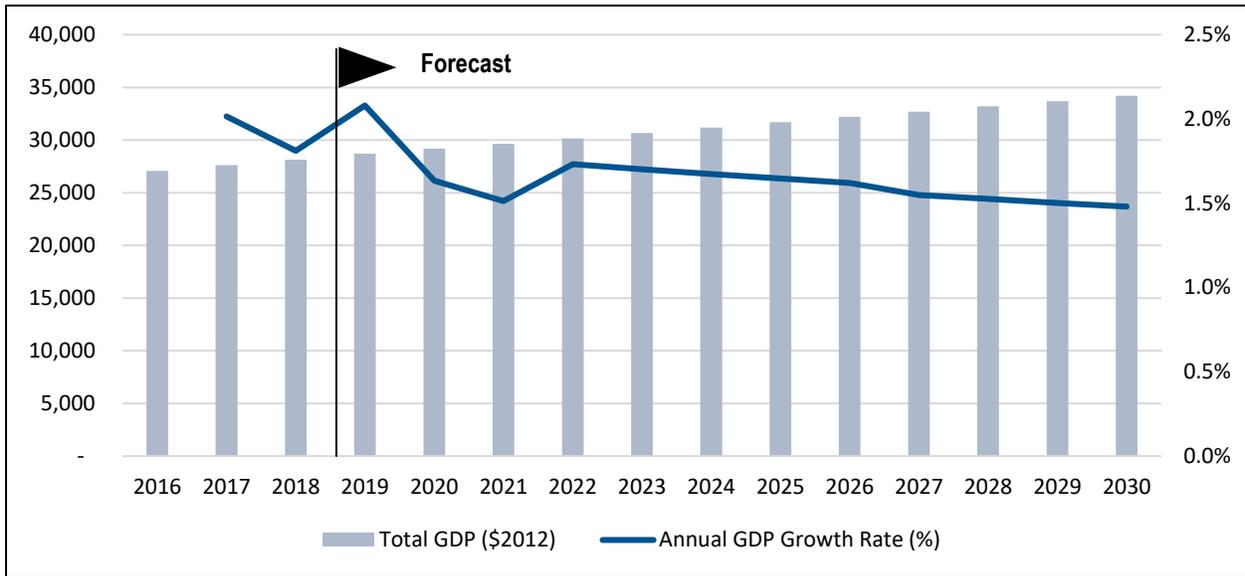
**Regional Labour Force Shares by Sector, 2016**



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

The region’s economic outlook is expected to be positive over the coming decade. Regional GDP is expected to grow 2.1% in 2019 and 1.6% in 2020, surpassing \$29 billion. Furthermore, annual GDP growth of at least 1.5% is projected for every year from 2019 to 2029, surpassing \$60 billion, with 1.5% growth projected in 2030.

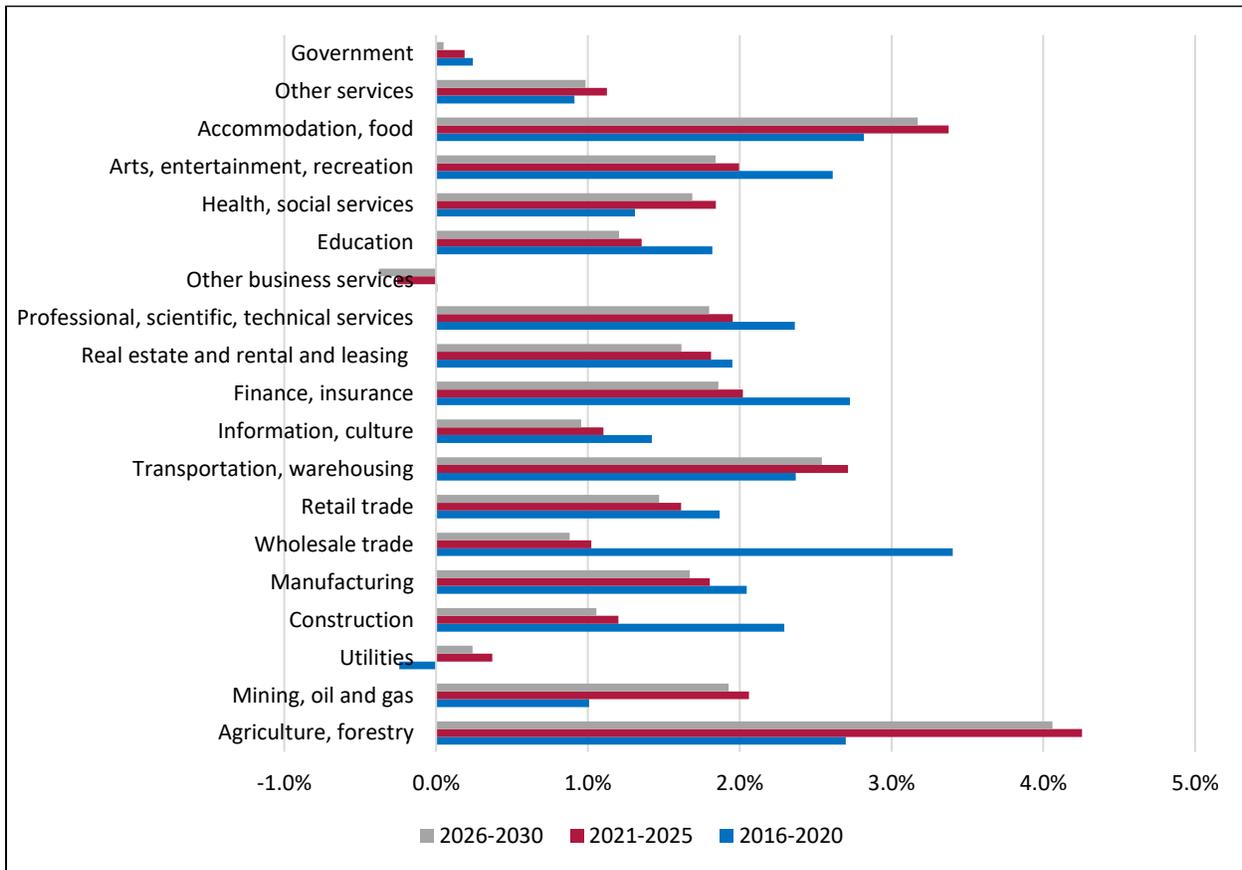
### Total Regional GDP Outlook, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

While the region’s overall GDP growth outlook is healthy, projections by sector vary significantly. In the near term, finance and insurance (2.7%), agriculture and forestry (2.7%), and transportation and warehousing (2.4%) have experienced strong GDP growth and will continue to do so through 2020. Agriculture, forestry, fishing and hunting (4.3%) is expected to experience the strongest growth between 2021 and 2025, while utilities (0.4%) and government services (0.2%) are expected to see little growth during the same period. Both agriculture (4.4%) and transportation (2.5%) are projected to continue their strong growth over the 2026 to 2030 period. The manufacturing sector, which includes automotive manufacturing, is expected to see its GDP growth slow in the coming years. While the sector’s GDP is expected to be larger in 2020 than 2016, growth is projected to fall for the 2021-2025 period and again for the 2026-2030 period.

### Annual Average Regional GDP Growth by Sector, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

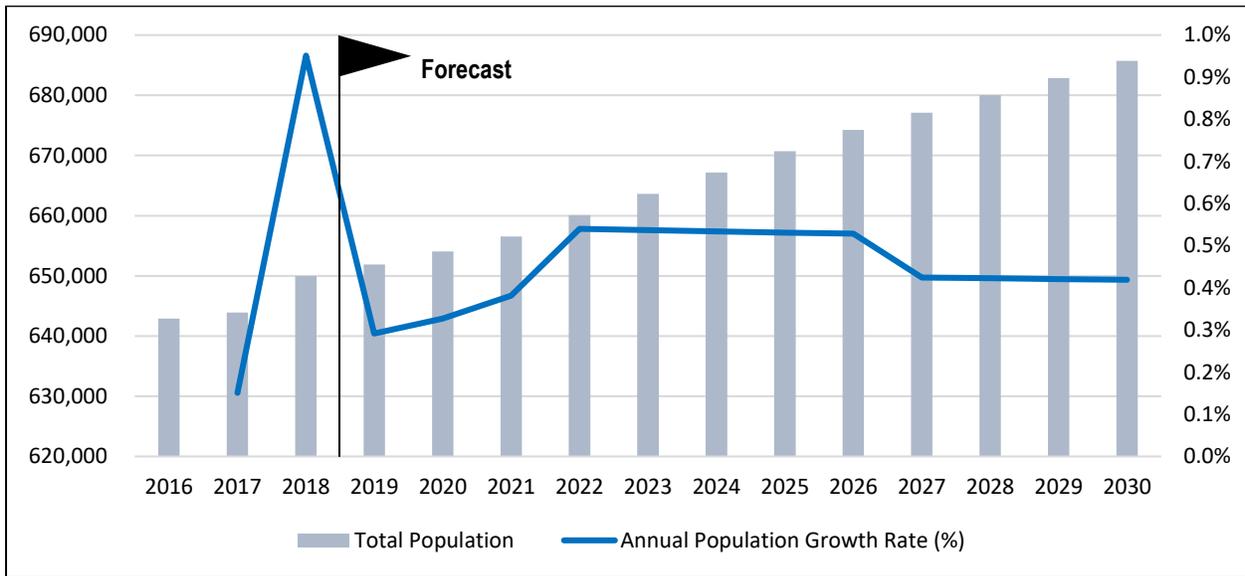
## Regional Labour Considerations

### Population, Age Distribution and Regional Diversity

The Windsor-Sarnia region makes up approximately 4.7% of the total provincial population residing in the region. The principal population centre of the region is the Essex CD, which includes the cities of Windsor and Essex. The region also includes the Lambton and Chatham-Kent CDs.

The region’s population was estimated at just over 650,000 people in 2018, approximately 64% of whom reside in the Essex CD. Looking ahead, the region’s population is expected to reach 654,000 people by 2020. The population is then expected to grow by 2.2% between 2021 and 2025 to 670,000. Population growth is expected to slow marginally to 1.3% over the latter half of the next decade, reaching 685,000 by 2030.

### Total Regional Population Outlook, 2016-2030

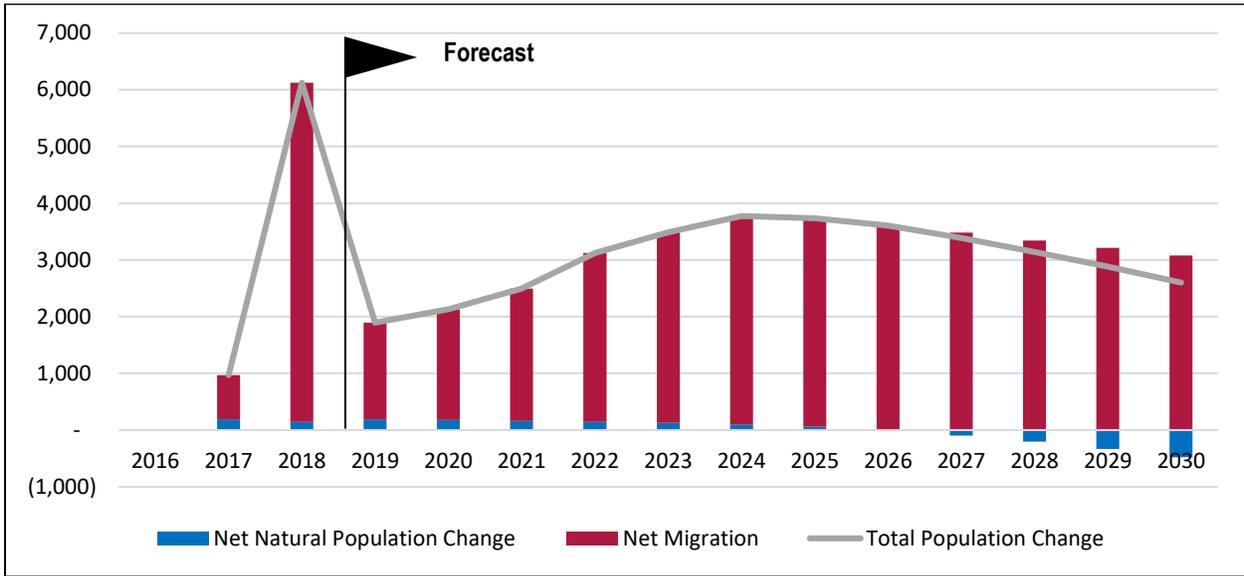


Source: Canadian Skills Training & Employment Coalition, Metro Economics

Changes in total population occur through net natural population change (i.e. the difference between the number of births and deaths in a region) and net migration (i.e. the difference between the number of people moving in and out of a region). Categorizing a region’s total population change based on these components can be useful in identifying whether its future population growth will be driven by natural means or through drawing people in from outside the region.

In the case of the Windsor-Sarnia region, population change is predominantly a result of net migration, which was responsible for nearly 98% of the region’s population growth in 2018. This share is expected to increase over the next decade as natural population change shrinks. Deaths are expected to outnumber births in the region by 2030, resulting in a negative natural population change. In contrast, net migration is expected to increase annually over the next several years before beginning to decline over the latter half of the next decade. The region is expected to experience an average increase of 3,000 people to its population annually to 2030.

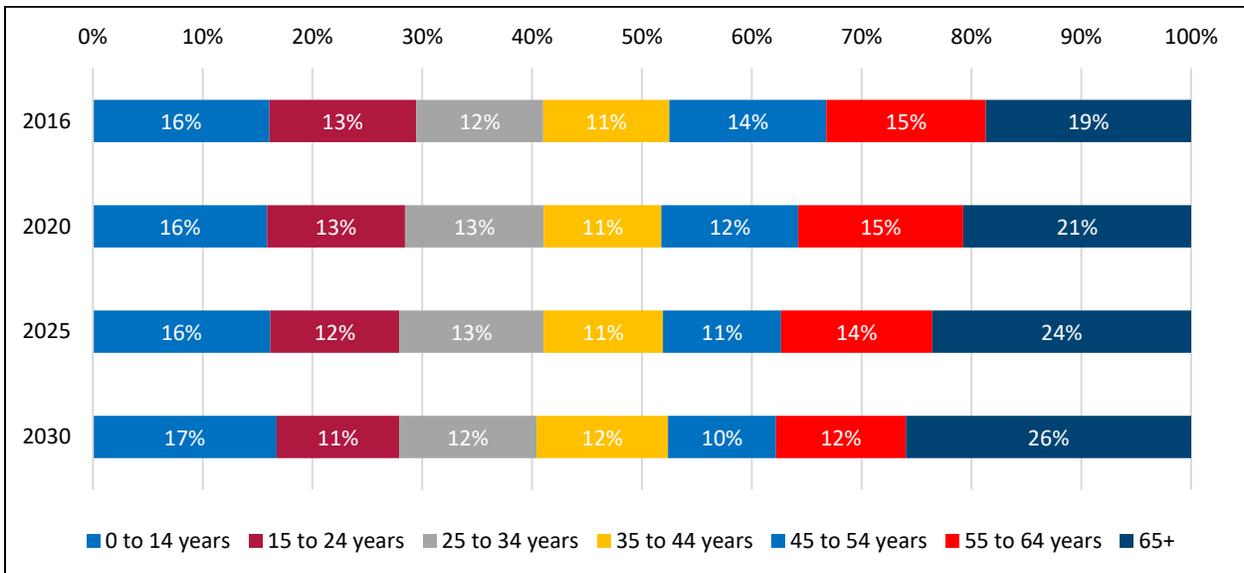
### Total Regional Population Change Outlook, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

The Windsor-Sarnia region’s age distribution is also expected to shift in the coming years. In 2018, an estimated 19% of the region’s population were 65 years of age or older and that proportion is expected to rise to 26% by 2030. The region will also see concurrent declines in the population shares of the 45-54 and 55-64 age cohorts as part of the aging trend. Among younger age cohorts, the population share of the 15-24 age cohort is projected to remain stable around 16%.

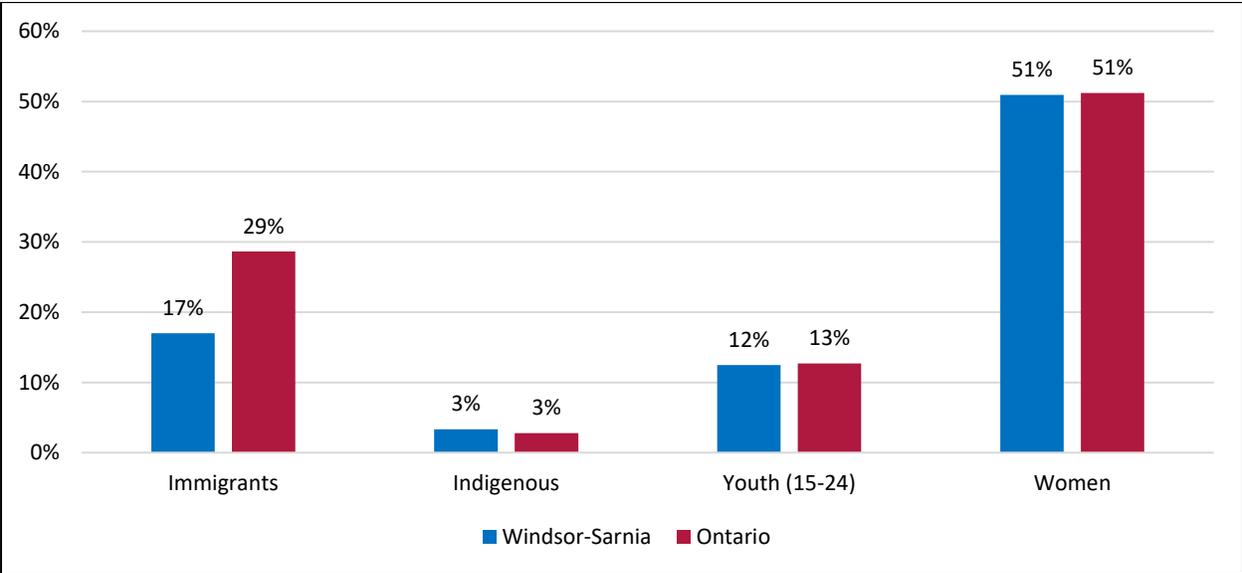
### Regional Population Outlook by Age Distribution, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

Some portions of society are likely underrepresented in the automotive manufacturing workforce. Examining their population shares in the region’s total population can illustrate the magnitude of the untapped potential for the industry. The shares of these groups in the Windsor-Sarnia region’s population are generally on par with those of Ontario as a whole. The region had similar shares of Indigenous peoples, youth and women as the provincial population as of 2016. One notable exception is in the share of the population who are immigrants. In the Windsor-Sarnia region this share was 17%, which is substantially lower than the provincial average (29%).

**Regional and Provincial Population Diversity, 2016**



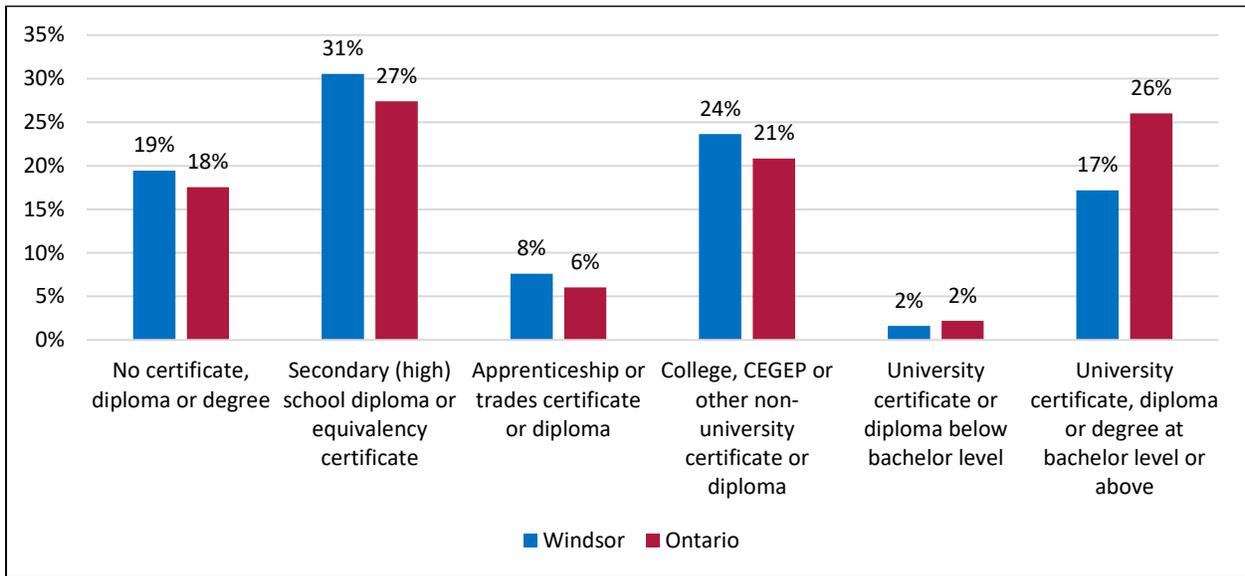
Source: Canadian Skills Training & Employment Coalition, Statistics Canada

**Educational Attainment**

Educational attainment among the population aged 15 years and over provides important insights into workforce qualifications and potential labour supply for the automotive industry. Comparing regional educational attainment rates to provincial averages can help identify what skills the region needs to cultivate internally or attract externally.

50% of people in the Windsor-Sarnia region had either a high school diploma or no certificate, diploma or degree of any kind as of 2016. The share of the same group was 45% for Ontario as a whole. The region also had a slightly higher share of people with college degrees (24%) than the provincial average (21%). Conversely, 17% of the Windsor-Sarnia region had a university degree at bachelor level or above, compared to 26% for Ontario as a whole.

## Regional and Provincial Educational Attainment, 2016

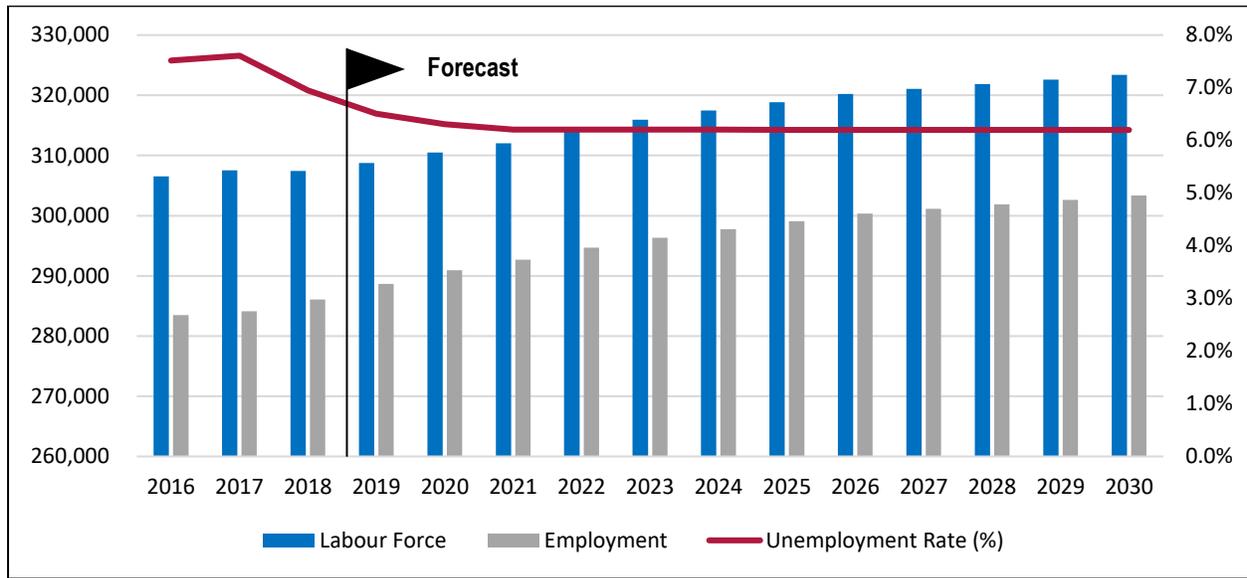


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

### Labour Market Activity

Total employment in the Windsor-Sarnia region was an estimated 286,000 in 2018, while the region's labour force, including both the employed and those who are unemployed and actively seeking work, totaled 307,400. The unemployment rate, or the proportion of unemployed persons in the labour force, was 6.9%. This was a sharp decline from both 2016 and 2017, when the unemployment rate was 7.5% and 7.6% respectively. The region's unemployment rate is projected to continue this trend going forward, falling to 6.3% by 2020 before stabilizing over the coming decade.

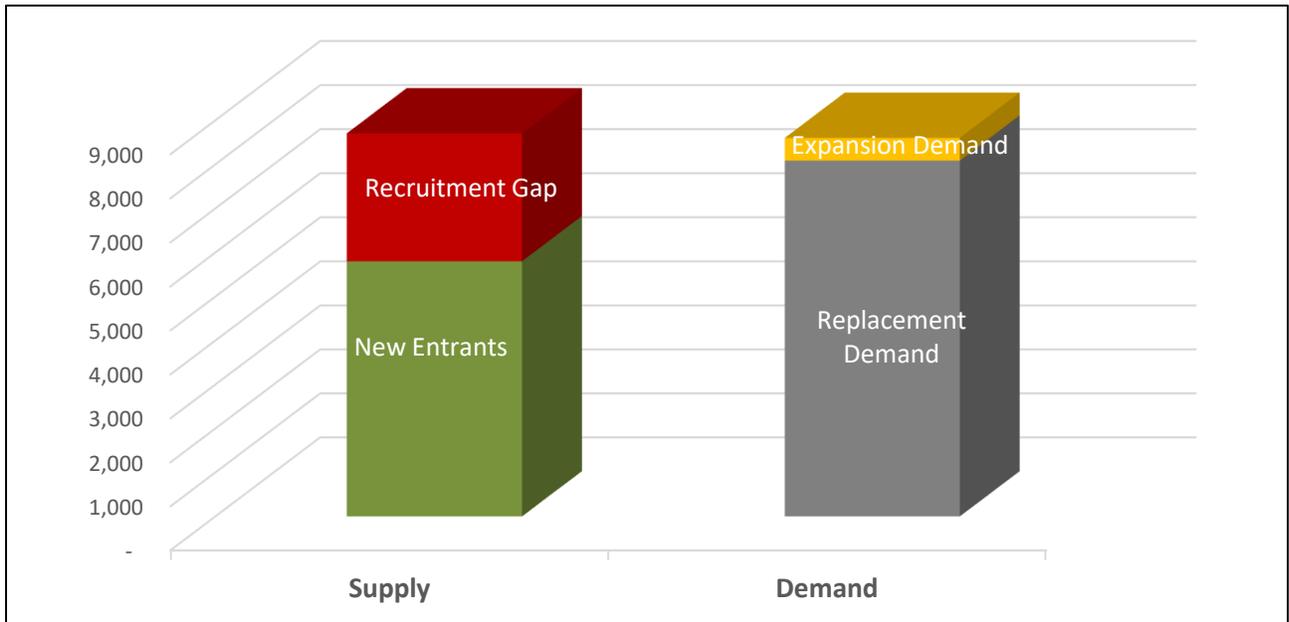
### Total Regional Employment Outlook, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

A forecast of the region’s manufacturing hiring requirements can provide additional insights into labour market trends for the automotive manufacturing sub-sector. Total manufacturing hiring requirement is comprised of expansion demand (additional jobs as a result of industry growth) and replacement demand (workers needed to replace exits from the labour force due to deaths and retirements). To meet the hiring requirement, the industry relies on individuals entering the workforce for the first time (i.e. new entrants) and workers entering from other regions or industries (i.e. recruitment gap). Projections for Windsor-Sarnia Region (CMA) indicate that new entrants will cover only 67% of the region’s manufacturing hiring requirement between 2016 and 2025. The remaining 33% is the industry’s recruitment gap in the region.

### Windsor - Sarnia CMA Manufacturing Hiring Requirement, 2016-2025



Source: Canadian Skills Training & Employment Coalition, Prism Economics and Analysis

The industry's hiring requirements vary significantly between occupations based on labour demand. Manufacturing occupations with the largest hiring requirements tend to be skilled trades and technical occupations, such as welders or millwrights. The following table lists the occupations with the largest hiring requirements:

### Windsor - Sarnia CMA Manufacturing Hiring Requirement by Occupation, 2016-2025

Occupations	Total Hiring Requirement 2016 - 2025	Share of 2016 Employment
All Occupations in Manufacturing	8,703	30.6%
Labourers in food, beverage and associated products processing	1,223	41%
Process control and machine operators, food, beverage and associated products processing	839	49%
Manufacturing managers	811	32%
Motor vehicle assemblers, inspectors and testers	502	39%
Transport truck drivers	472	41%
Material handlers	378	31%

Plastics processing machine operators	336	31%
Construction millwrights and industrial mechanics	298	41%
Shippers and receivers	218	20%
Other labourers in processing, manufacturing and utilities	116	22%
Machinists and machining and tooling inspectors	85	33%
Mechanical engineers	64	28%
Industrial and manufacturing engineers	48	31%
Industrial electricians	47	50%
Senior managers - construction, transportation, production and utilities	24	43%
Mechanical engineering technologists and technicians	23	28%
Welders and related machine operators	20	34%
Industrial engineering and manufacturing technologists and technicians	17	20%
Contractors and supervisors, machining, metal forming, shaping and erecting trades	12	38%
Chemical technologists and technicians	9	32%
Electrical and electronics engineers	8	40%
Electrical and electronics engineering technologists and technicians	6	30%
Sheet metal workers	5	45%
Furniture and fixture assemblers and inspectors	5	69%
Industrial sewing machine operators	5	76%
Structural metal and platework fabricators and fitters	4	39%
Labourers in wood, pulp and paper processing	2	28%

Source: Canadian Skills Training & Employment Coalition, Prism Economics and Analysis

## Regional Automotive Manufacturing Analysis

The following sections use data based on a broader definition of the automotive manufacturing industry where applicable, including the traditional industry codes (NAICS 3361 and 3363) as well as an additional set of industries. Please refer to the Project Background section of this report for more details.

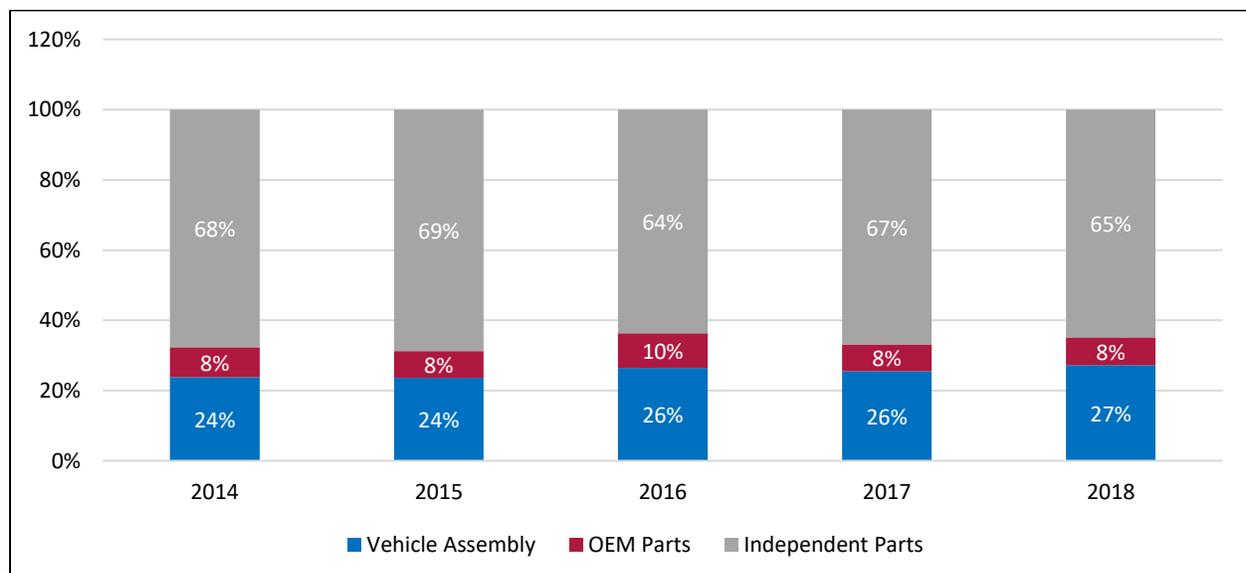
### Profile of Automotive Manufacturing Employment

Total automotive manufacturing employment in the region, including Original Equipment Manufacturer (OEM) plants and parts suppliers, was an estimated 22,800 workers across 107 establishments in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data. Employment in the five years prior is estimated to have ranged from a low of 18,800 in 2013 to a peak of 23,100 in 2017. In comparison, data from Statistics Canada's 2016 Census reports the region's automotive manufacturing employment as totaling 18,070 workers.

The Windsor -Sarnia region is home to an FCA (Fiat Chrysler) plant in Windsor that produces the Chrysler Pacifica. There are additional Ford-owned engine plants in Essex. These plants employed an estimated 7,800 workers combined in 2018. Notably, employment at OEM plants has declined, having reached as high of 8,100 in 2017.

There are an estimated 84 parts suppliers in the region. Out of these, 66 of these establishments are located in the Essex CD, which are dedicated to sub-assembly and other related parts production. There are also multiple establishments working in plastics, seating, sub-assembly and suspension manufacturing. Employment across all parts suppliers in the Essex CD is estimated at approximately 11,500 in 2018. The remaining parts suppliers reside in the Lambton and Chatham-Kent CDs. The most common establishment types among them are metal stamping, plastics, propulsion and rubber product manufacturing. Estimated total parts employment in the Lambton and Chatham-Kent CDs was approximately 3,400 in 2018.

**Regional Automotive Manufacturing Employment by Activity, 2013-2018**

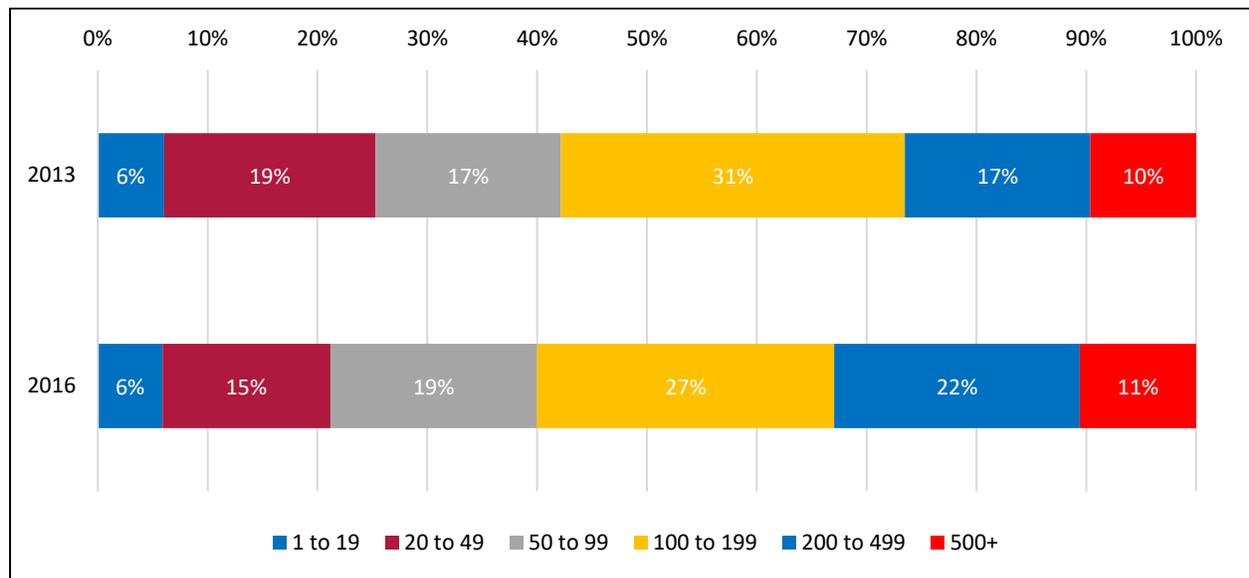


Source: Canadian Skills Training & Employment Coalition, Automotive Policy Research Centre

## Profile of Automotive Manufacturing Employers

Statistics Canada's business counts data provides insights into the mix of business types present in the Windsor-Sarnia region's automotive manufacturing industry. A comparison of data from 2013 and 2016 reveals that while the proportion of small-sized automotive manufacturing establishments (i.e. 1 to 19 employees) remained stable there was a slight decline among businesses with 20 to 49 employees. The region also saw the share of automotive manufacturing establishments with 100 to 199 employees decrease from 31% in 2013 to 27% in 2016. The largest gains during the period were seen among automotive manufacturing establishments with 200 to 499 employees.

### Regional Automotive Manufacturing Establishments by Employment Size, 2013-2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

The largest automotive manufacturing-related employers in the Windsor-Sarnia region include FCA and Ford, who have three plants combined in the region. Flex-N-Gate, which has six plants in the region, and Magna International, with two plants, are the region's largest parts suppliers. Taken together, the region's top employers employed 16,240 people in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data.

### Largest Regional Automotive Manufacturing-Related Employers, 2018

Employer	Plants	Employees
FCA	1	6,100
Ford	2	1,700
Flex-N-Gate	6	1,520
Magna International	2	1,400
AP Plasman	5	1,050
Valliant	8	900
Waterville TG	1	805
TRQSS	1	800
CenterLine	2	710
NARMCO	5	650
KSR International	1	605

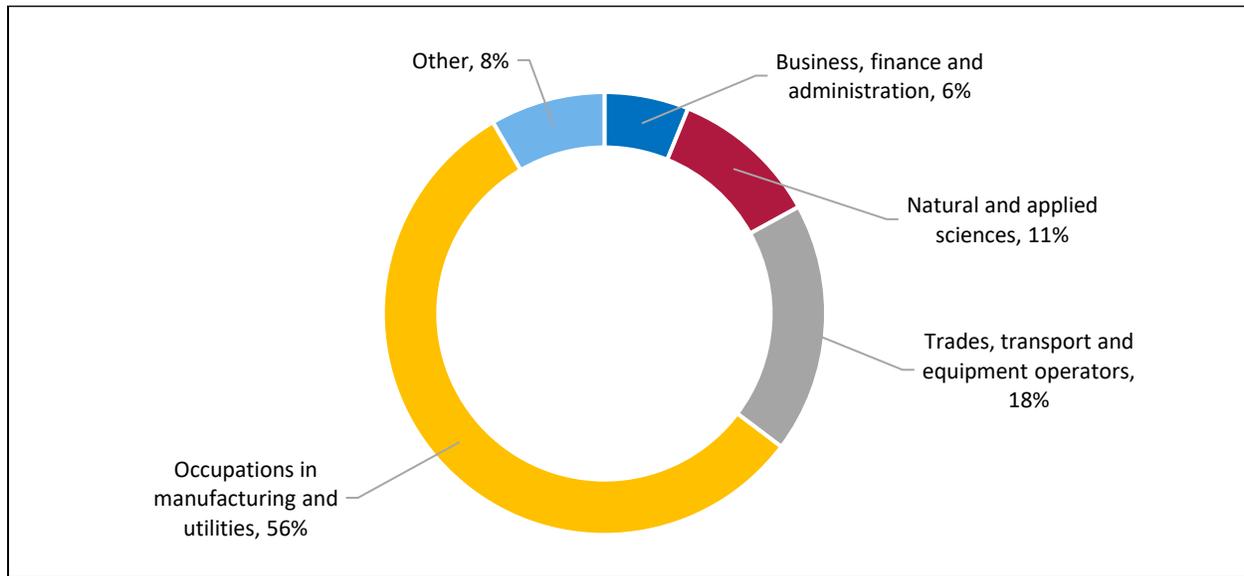
Source: Canadian Skills Training & Employment Coalition, Automotive Policy Research Centre

#### Automotive Manufacturing Labour Market

Workers in the Windsor-Sarnia region's automotive manufacturing industry can be classified by job family, which indicates the broad area of work in which they are employed. Employees in each of these occupational groups play distinct roles in contributing to the industry's success.

Unsurprisingly, manufacturing and utilities occupations account for over half (56%) of the region's automotive manufacturing workforce. A further 18% is accounted for by trades, transport and equipment operators. The remaining workers are split between natural and applied sciences occupations (11%), business and finance (6%), and all other occupation types (8%).

## Regional Automotive Manufacturing Workforce by Job Family, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

A more granular analysis of the region's automotive manufacturing workforce shows that over two-fifths (42%) of the industry's workforce are classified by Statistics Canada as motor vehicle assemblers, inspectors and testers (NOC 9522). This occupational code covers a range of activities including<sup>5</sup>:

- connecting cables, tubes and wires to complete assemblies and installations;
- positioning and installing parts, subassemblies and accessories such as engines, transmissions, door panels or instrument panels;
- driving and testing motor vehicles on roll testing devices to ensure proper functioning;
- and fitting and adjusting parts such as doors, hoods and trunk lids

Other key occupations in the region's automotive manufacturing workforce include material handlers (NOC 7452), supervisors (NOC 9221), mechanical engineers (NOC 2132), and manufacturing managers (NOC 0911). The following table lists the occupations that account for at least 1.0% of the region's automotive manufacturing workforce:

<sup>5</sup> <http://noc.esdc.gc.ca/English/NOC/QuickSearch.aspx?ver=&val65=9522>

### Key Regional Automotive Manufacturing Occupations and Trades, 2016

Occupation	Automotive Manufacturing Employment	Share of Automotive Manufacturing Employment
Motor vehicle assemblers, inspectors and testers (NOC 9522)	7,650	41.6%
Material handlers (NOC 7452)	950	5.2%
Supervisors, motor vehicle assembling (NOC 9221)	800	4.4%
Mechanical engineers (NOC 2132)	765	4.1%
Manufacturing managers (NOC 0911)	500	2.7%
Industrial electricians (NOC 7242)	410	2.2%
Construction millwrights and industrial mechanics (NOC 7311)	310	1.7%
Industrial and manufacturing engineers (NOC 2141)	295	1.6%
Other labourers in processing, manufacturing and utilities (NOC 9619)	280	1.5%
Tool and die makers (NOC 7232)	280	1.5%
Mechanical assemblers and inspectors (NOC 9526)	250	1.4%
Automotive service technicians, truck and bus mechanics and mechanical repairers (NOC 7321)	240	1.3%
Metalworking and forging machine operators (NOC 9416)	220	1.2%
Transport truck drivers (NOC 7511)	215	1.2%
Industrial painters, coaters and metal finishing process operators (NOC 9536)	190	1.0%
Electrical and electronics engineers (NOC 2133)	180	1.0%

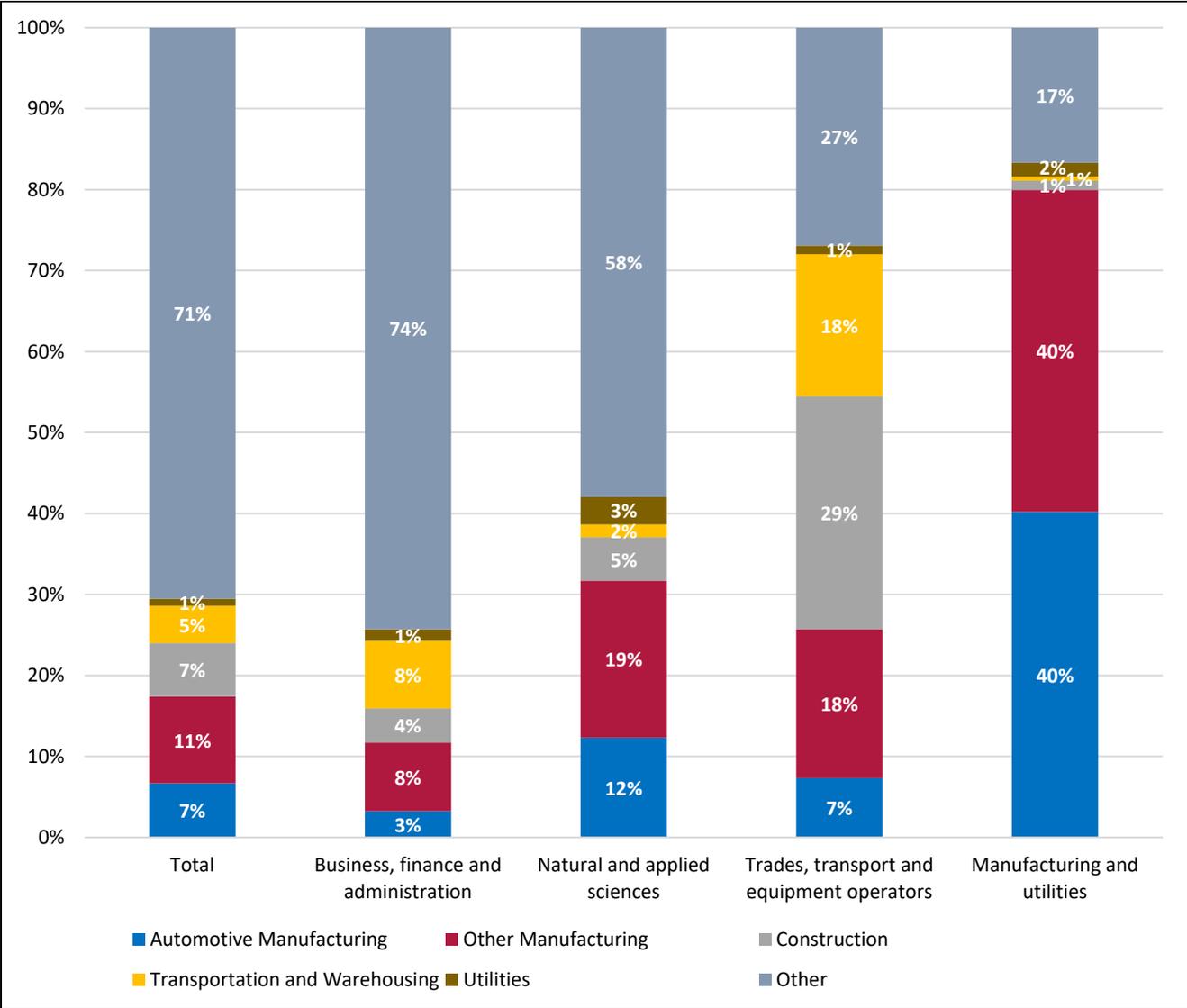
Source: Canadian Skills Training & Employment Coalition, Statistics Canada

### Competition from Other Industries

While the automotive manufacturing industry remains a premier employer, competing employment demands from other industries are worth analyzing for their potential impact on hiring decisions for key trades and occupations.

Overall, automotive manufacturing accounted for 7% of the Windsor region’s total workforce in 2016. Among manufacturing and utilities occupations, however, the industry accounted for 40% of the workforce. The primary competition for these occupations comes from other manufacturing employers (40%). Greater regional competition exists within other job families. For example, the construction industry accounted for 29% of region’s workforce employed in trades, transport and equipment operator positions. Regional growth in this industry could impact the availability of workers in this job family for automotive manufacturing employers.

**Regional Workforce Distribution by Job Family and Sector, 2016**

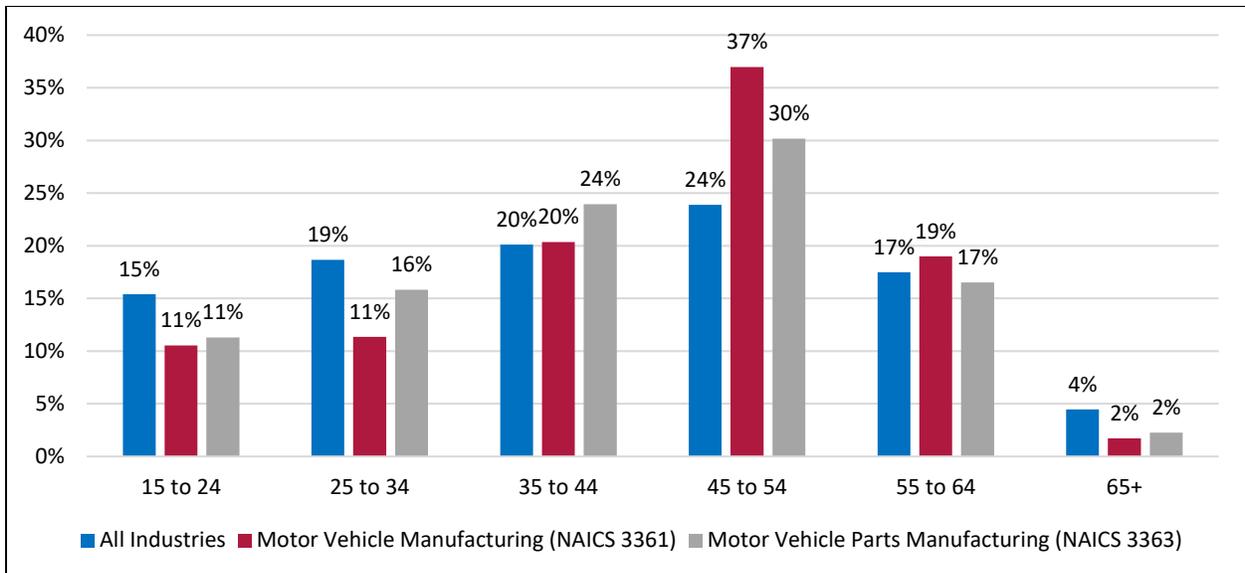


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

## Automotive Manufacturing Demographics

The age distribution of the Windsor-Sarnia region's automotive manufacturing workforce is distinct from that of the region's total workforce across all industries. Notably, 11% of both motor vehicle manufacturing workers and motor vehicle parts manufacturing workers were between the ages of 15 and 25 as of 2016. In contrast, 15% of the region's total workforce belonged to the 15-24 age cohort. New entrants to the workforce are critical for sustaining long-term growth for the industry. The region's automotive manufacturing workforce consists of more mid-career workers, with higher proportions of the workforce belonging to the 35-44 and 45-54 age cohorts. The region's total workforce (22%) saw similar levels of workers aged 55+ compared to motor vehicle manufacturing (21%) and motor vehicle parts manufacturing (19%).

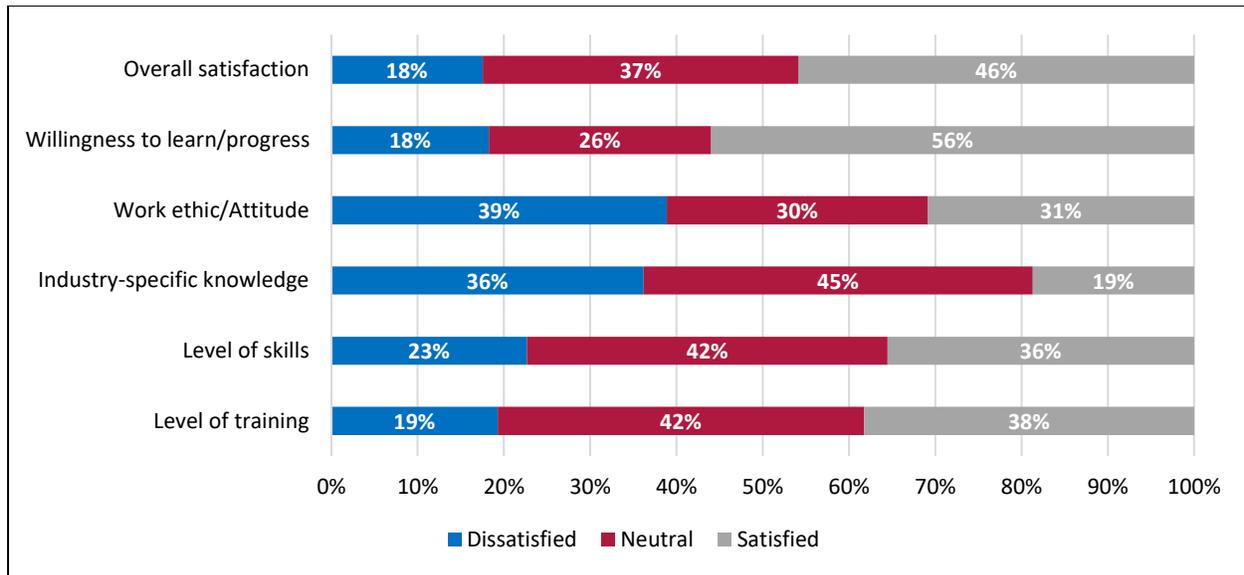
**Regional Automotive Manufacturing Workforce Age Distribution, 2016**



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

As older workers move into retirement it will be essential to replenish the region's automotive manufacturing workforce with the next generation of skilled workers. A recent survey of Canadian manufacturers examined the level of satisfaction with the young workers they employ. Overall, manufacturers were only moderately satisfied, with just 46% of respondents indicating that they are satisfied with their young workers. 39% of employers were dissatisfied with their work ethic and attitude, while 56% were dissatisfied with their industry specific knowledge. However, 56% of employers were satisfied with their willingness to learn.

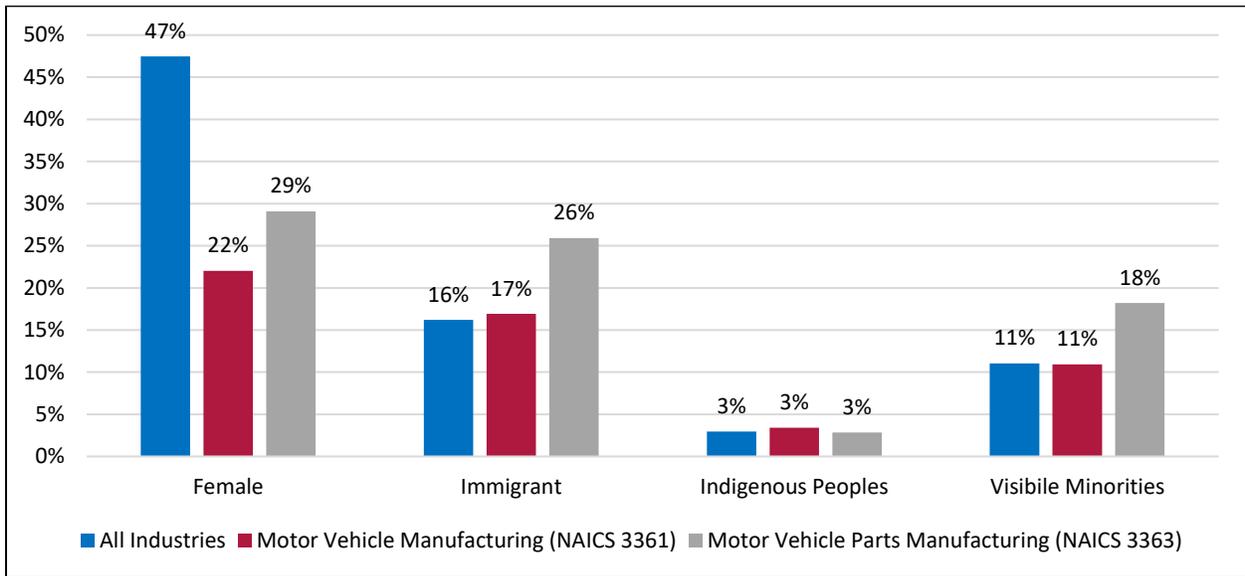
### Canadian Manufacturing Employer Satisfaction with Young Workers, 2016



Source: Canadian Skills Training & Employment Coalition, Prism Economics and Analysis

The region’s automotive manufacturing workforce also differs from the total workforce in terms of its diversity. The biggest difference is with respect to the proportion of women in the workforce. The female share of the region’s total workforce was 47% as of 2016, on par with their population share. However, the proportions of women working in motor vehicle manufacturing (22%) and motor vehicle parts manufacturing (29%) were well below average. Elsewhere, foreign-born workers account for 14% of the region’s total workforce, similar to the share found in motor vehicle manufacturing (17%) but significantly lower than the share found in motor vehicle parts manufacturing (26%). A similar trend is observed with regard to the share of workers who are visible minorities. There is no notable difference in the proportion of the workforce who are Indigenous peoples between automotive manufacturing and the total regional workforce.

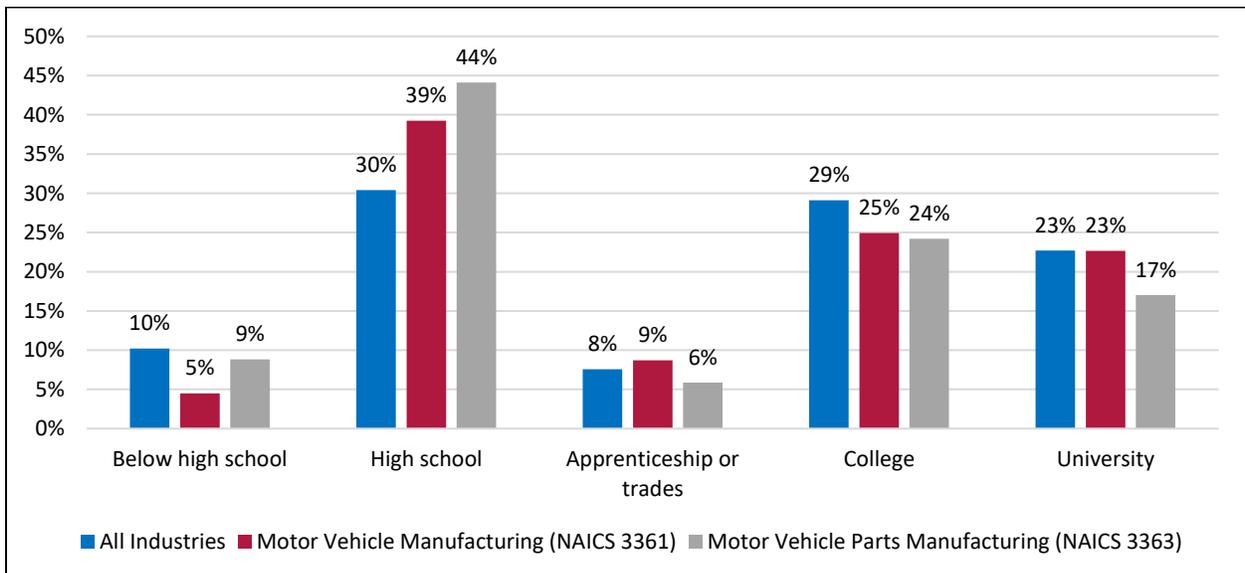
### Regional Automotive Manufacturing Workforce Diversity, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Educational attainment is yet another dimension where the region’s automotive manufacturing workforce diverges from the total regional workforce. In this region, 44% of motor vehicle manufacturing workers and 53% of motor vehicle parts manufacturing workers in the region have no more than a high school diploma as of 2016, compared to 41% for the total regional workforce. Conversely, the motor vehicle parts manufacturing workforce has a somewhat lower than average proportion of workers with a university degree.

### Regional Automotive Manufacturing Workforce Educational Attainment, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada