

# AUTOMOTIVE INDUSTRY LABOUR MARKET ANALYSIS

## REGIONAL AUTOMOTIVE MANUFACTURING PROFILE: VANCOUVER



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 PAPER** was prepared for the Auto Labour Market Information (LMI) Project, now known as the *Future of Canadian Automotive Labourforce (FOCAL) Initiative*.

The goal of the 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 labour market information 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.

**(FOCAL) Initiative**, [futureautolabourforce.ca](http://futureautolabourforce.ca)

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

**Prism Economics and Analysis**, [prismeconomics.com](http://prismeconomics.com)

**Automotive Policy Research Centre**, [automotivepolicy.ca](http://automotivepolicy.ca)

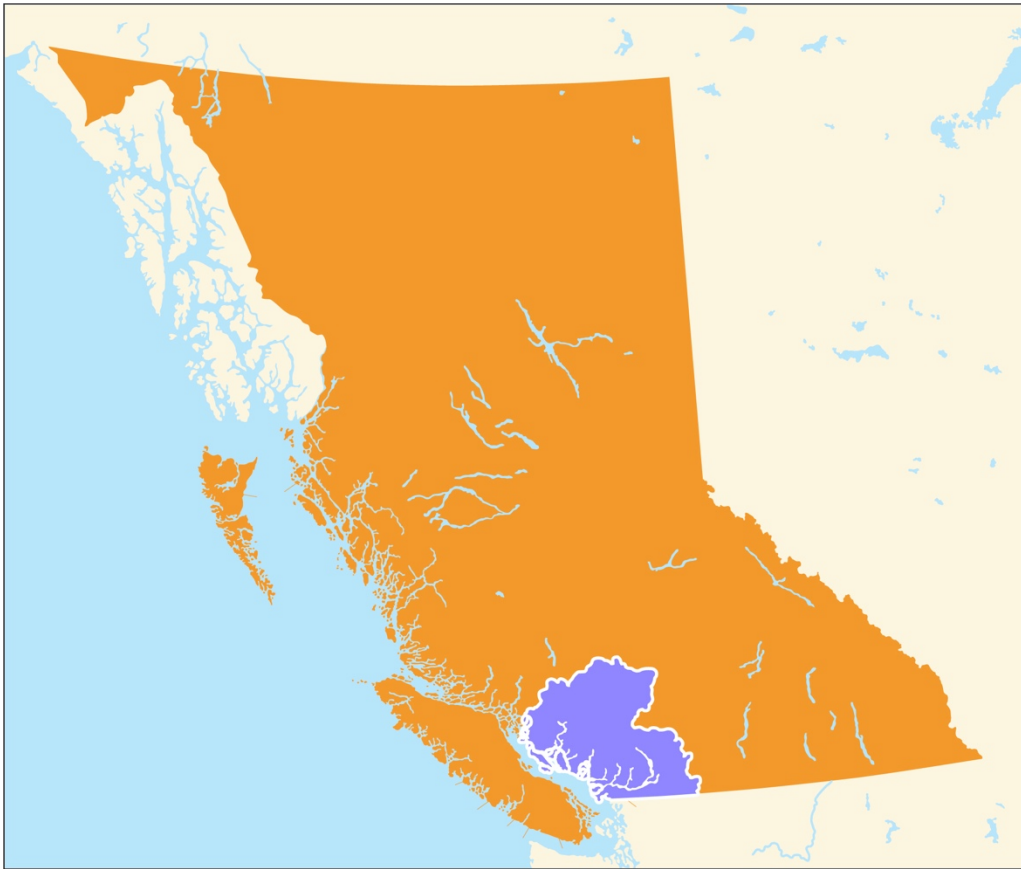
October, 2019



# TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	3
PROJECT BACKGROUND.....	5
INTRODUCTION .....	9
REGIONAL ECONOMY.....	10
REGIONAL LABOUR CONSIDERATIONS.....	13
Population, Age Distribution and Regional Diversity .....	13
Educational Attainment.....	15
Labour Market Activity.....	16
REGIONAL AUTOMOTIVE MANUFACTURING ANALYSIS .....	19
Profile of Automotive Manufacturing Employment .....	19
Automotive Manufacturing Labour Market .....	20
Competition from Other Industries .....	21
Automotive Manufacturing Demographics .....	22

## EXECUTIVE SUMMARY



The Vancouver region is comprised of the Economics Region (ER) of Lower Mainland-Southwest and the Census Divisions (CDs) of Fraser Valley, Greater Vancouver, Sunshine Coast, and Squamish Lillooet. The region's GDP was an estimated \$155 billion in 2018, 8% of which was generated by the manufacturing sector. Manufacturing is also a major employer in the region, accounting for 6% of the total labour force, including less than 1% from automotive manufacturing. The region has a positive economic outlook, with annual GDP growth of at least 2.8% projected through 2030. However, the region's manufacturing sector is expected to see its GDP growth slow in the coming years.

The Vancouver region's population was an estimated 3 million in 2018. Healthy population growth is expected in the region through 2025 before slowing in the latter half of the next decade. Population growth will likely be driven primarily by migration into the region as a declining birth rate means little 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 16% in 2016 to 20% by 2030. The region is also expected to see its unemployment fall from 5.9% in 2016 to 4.7% by 2020 before stabilizing over the coming decade.

The Vancouver region's automotive manufacturing industry employed an estimated 610 workers in 2018, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data.

## 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.

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

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

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 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.

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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"

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.

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)
- Coating, engraving, cold and heat treating and allied activities (NAICS 3328)
- Plastic product manufacturing (NAICS 3261)
- Computer and peripheral equipment manufacturing (NAICS 3341)
- Rubber product manufacturing (NAICS 3262)
- Communications equipment manufacturing (NAICS 3342)
- Glass and glass product manufacturing (NAICS 3272)
- Semiconductor and other electronic component manufacturing (NAICS 3344)
- Iron and steel mills and ferro-alloy manufacturing (NAICS 3311)
- Navigational, measuring, medical and control instruments manufacturing (NAICS 3345)
- Steel product manufacturing from purchased steel (NAICS 3312)
- Electric lighting equipment manufacturing (NAICS 3351)
- Foundries (NAICS 3315)
- Electrical equipment manufacturing (NAICS 3353)
- Forging and stamping (NAICS 3321)
- Other electrical equipment and component manufacturing (NAICS 3359)
- Cutlery and hand tool manufacturing (NAICS 3322)
- Architectural, engineering and related services (NAICS 5413)
- Architectural and structural metals manufacturing (NAICS 3323)
- Computer systems design and related services (NAICS 5415)
- Hardware manufacturing (NAICS 3325)
- Management, scientific and technical consulting services (NAICS 5416)
- Machine shops, turned product, and screw, nut and bolt manufacturing (NAICS 3327)
- 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 Vancouver region is comprised of a single Economic Region (ER), Lower Mainland-Southwest, consisting of four Census Divisions (CDs) as defined by Statistics Canada: Fraser Valley, Greater Vancouver, Sunshine Coast, and Squamish Lillooet. The Greater Vancouver CD is the largest of the four CD regions and includes the city of Vancouver. Lower-Mainland-Southwest is home to approximately 61% of British Columbia's population and covers a land area of nearly 36,000 square kilometers. The region includes also includes major trade routes between Canada and the United States.

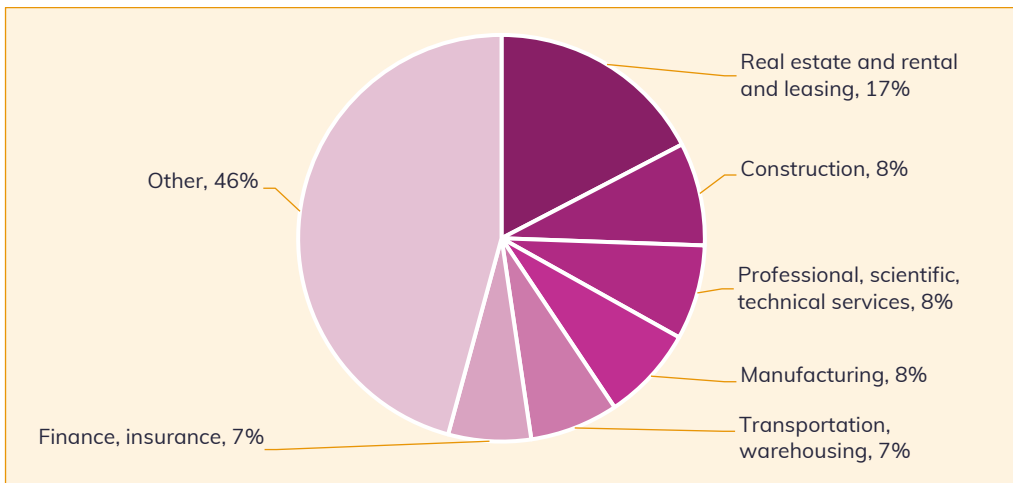
This regional profile includes three main sections. First, a discussion of the regional economy, including outlooks for GDP. Next, a section outlining trends in the region's population, demographic characteristics and overall workforce. Finally, an overview of the region's automotive manufacturing industry,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

All regional data presented in this profile are aggregates (or weighted averages where appropriate) of ER & CD level data for the Vancouver region. 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 Vancouver region's GDP totaled an estimated \$155 billion dollars in 2018. Real estate, rental, and leasing was the largest single contributor to the region's GDP of any sector, accounting for nearly one-fifth (17%) or approximately \$27 billion. The next largest sector, real construction, accounted for 8% of the regional economy. Other major sectors in the region include manufacturing (8% of GDP), professional, scientific, and technical services (8%), and transportation and warehousing (7%).

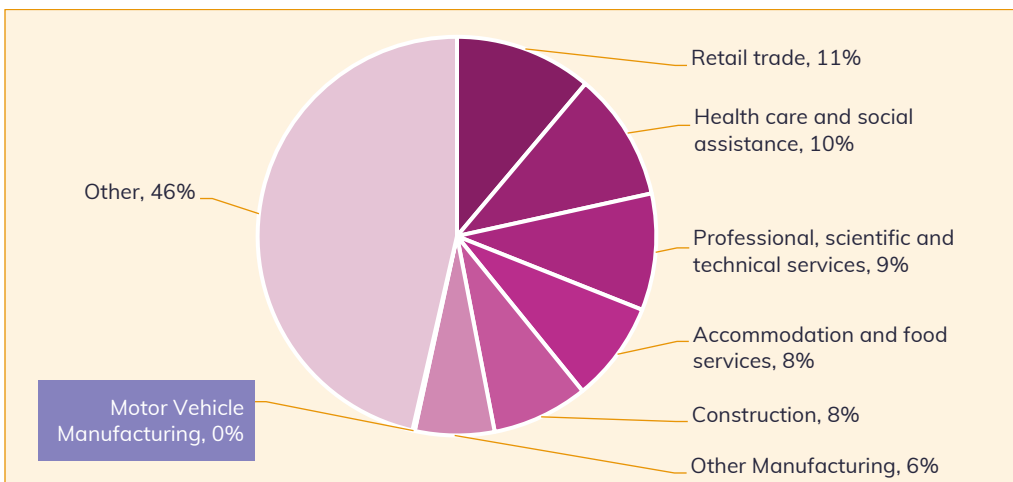
## REGIONAL GDP SHARES BY SECTOR, 2018



**Source:** Canadian Skills Training & Employment Coalition, Metro Economics

The region's largest sectors by workforce size include retail trade (11% of total regional labour force), health care and social assistance (10%) and professional, scientific, and technical services (9%). The Vancouver workforce is concentrated in services sectors such as construction and accommodation and food services, which each account for 8% of the region's labour force respectively.

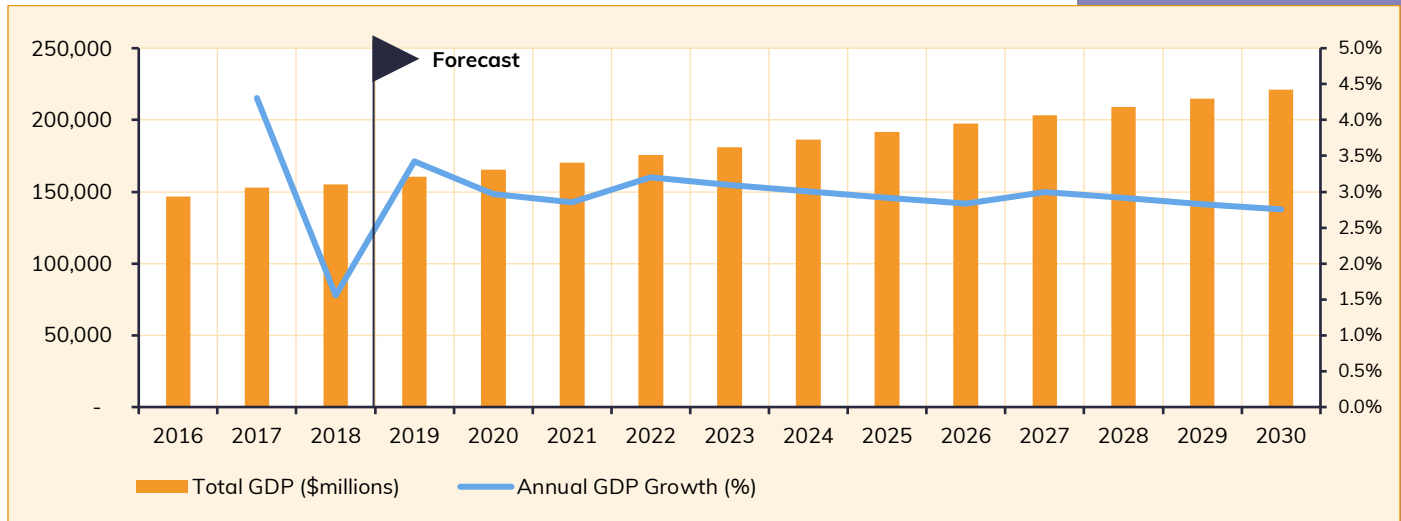
## REGIONAL LABOUR FORCE SHARES BY SECTOR, 2016



**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 3.2% in 2019 and 2.97% in 2020, surpassing \$165 billion. Furthermore, annual GDP growth of at least 2.8% is projected for every year from 2019 to 2029, surpassing \$215 billion, with 2.8% growth projected in 2030.

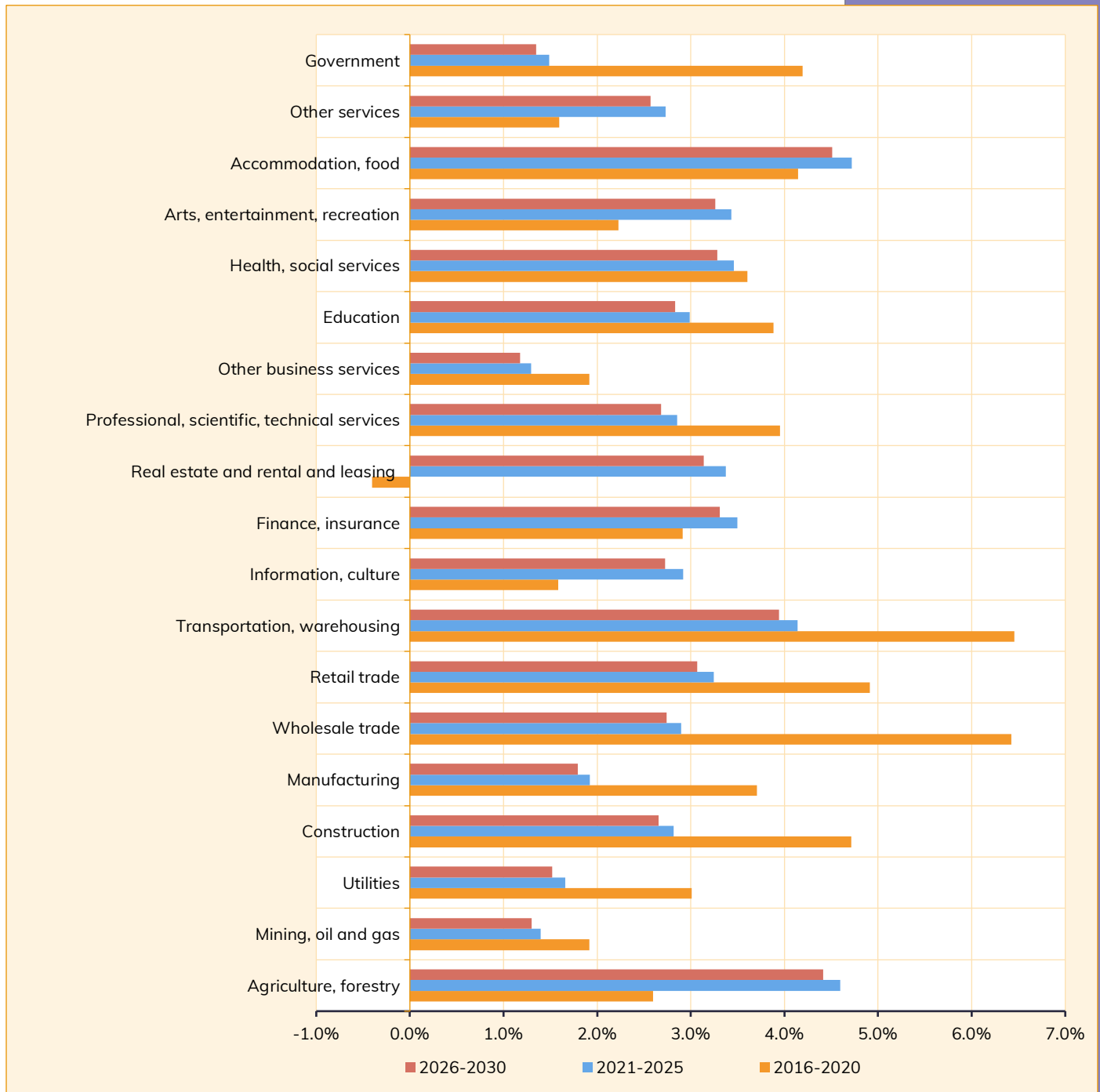
**TOTAL REGIONAL GDP OUTLOOK, 2016-2030**



While the region's overall GDP growth outlook is healthy, projections by sector vary significantly. In the near term, industries such as wholesale trade (6.4%), construction (4.7%), and government services (4.2%) have experienced strong GDP growth and will continue to do so through 2020. Accommodations and food services (4.7%) is expected to experience the strongest growth between 2021 and 2025, while mining and oil (1.4%) and government services (1.5%) are expected to see little growth during the same period. Both agriculture (4.4%) and food services (4.5%) 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 3.7% larger in 2020 than 2016, growth is projected to fall to 1.9% for the 2021-2025 period and 1.8% for the 2026-2030 period.

**Source:** Canadian Skills Training & Employment Coalition, Metro Economics

ANNUAL AVERAGE REGIONAL GDP GROWTH BY SECTOR, 2016-2030



Source: Canadian Skills Training & Employment Coalition, Metro Economics

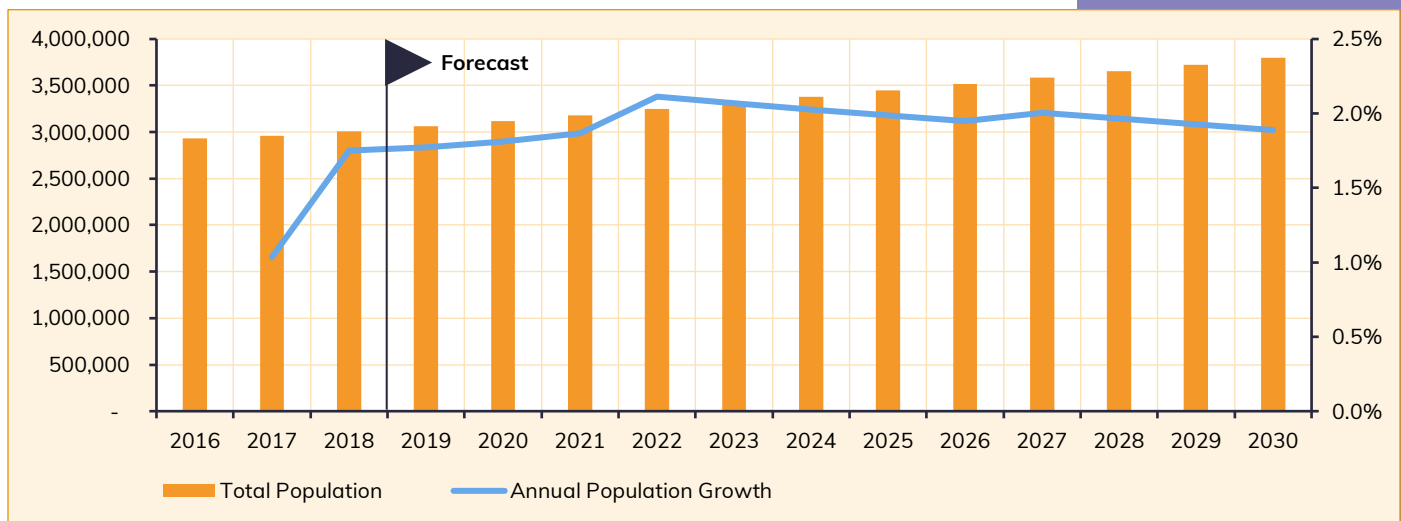
# REGIONAL LABOUR CONSIDERATIONS

## POPULATION, AGE DISTRIBUTION AND REGIONAL DIVERSITY

The Vancouver region is the most populous region in British Columbia, with approximately 61% of the total provincial population residing in the region. The principal population centre of the region is the Greater Vancouver CD, which includes the city of Vancouver.

The region's population was estimated at just over 3 million people in 2018, approximately 87% of whom reside in the Greater Vancouver CD. Looking ahead, the region's population is expected to reach 3.19 million people by 2020. The population is then expected to grow by 8.0% between 2021 and 2025 to 3.4 million. Population growth is expected to remain at 8% over the latter half of the next decade, reaching 3.8 million by 2030.

### TOTAL REGIONAL POPULATION OUTLOOK, 2016-2030



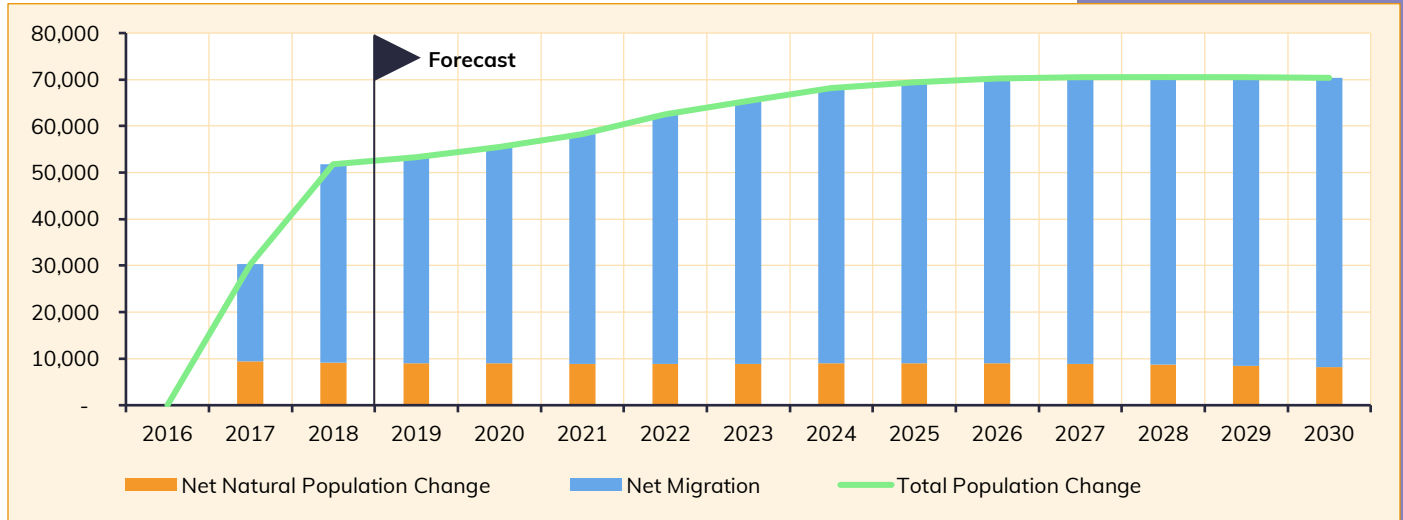
Changes in total population occur through net natural population change (i.e. the difference between the number of births and deaths in a region) and net migration (i.e. the difference between the number of people moving in and out of a region). Categorizing a region's total population change based on 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 Vancouver region population change is predominantly a result of net migration, which was responsible for nearly 82% of the region's population growth in 2018. This share is expected to increase over the next decade as natural population

Source: Canadian Skills Training & Employment Coalition, Metro Economics

change shrinks. The annual growth rate in the number of births in the region is projected to decline. 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. Overall, the region is expected to add an average of nearly 62,000 people to its population annually through 2030.

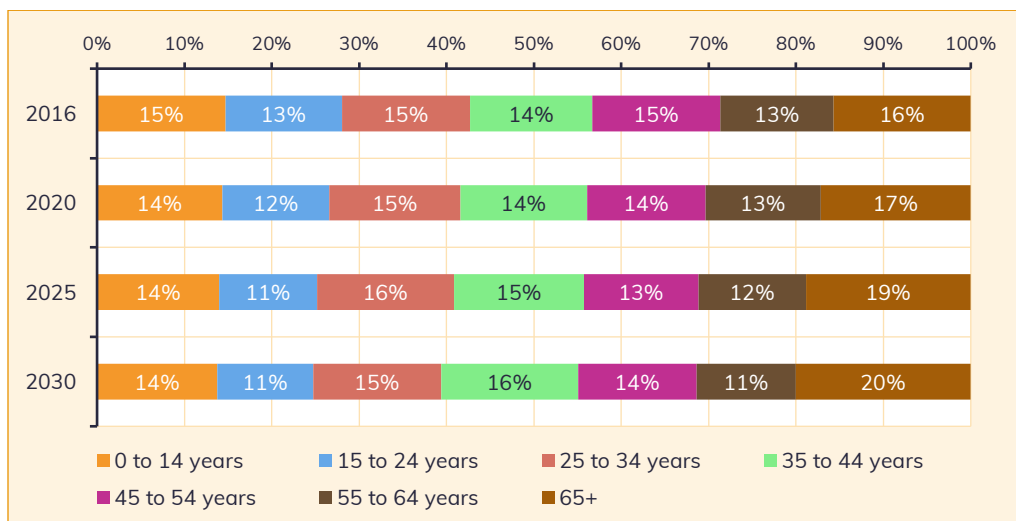
**TOTAL REGIONAL POPULATION CHANGE OUTLOOK, 2016-2030**



The Vancouver region’s age distribution is expected to remain stable in the coming years. In 2018, an estimated 16% of the region’s population were 65 years of age or older; that proportion is expected to rise to 20% 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 fall from 15% to 14% during the period. This is notable as this cohort is traditionally the largest source of new entrants to the labour force.

Source: Canadian Skills Training & Employment Coalition, Metro Economics

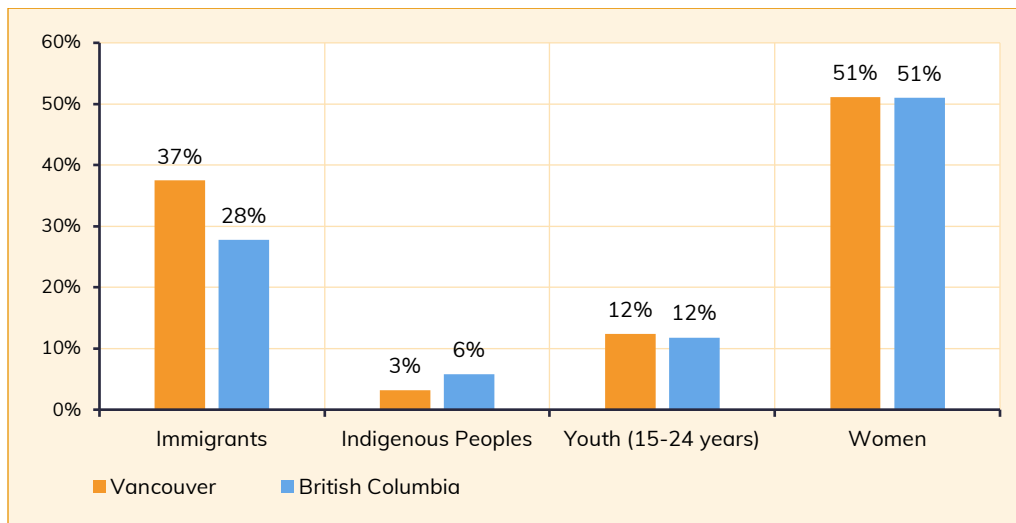
**REGIONAL POPULATION OUTLOOK BY AGE DISTRIBUTION, 2016-2030**



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 Vancouver region's population are generally on par with those of British Columbia 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 Vancouver region, this share was 37%, which was greater than the provincial average (28%).

**REGIONAL AND PROVINCIAL POPULATION DIVERSITY, 2016**



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

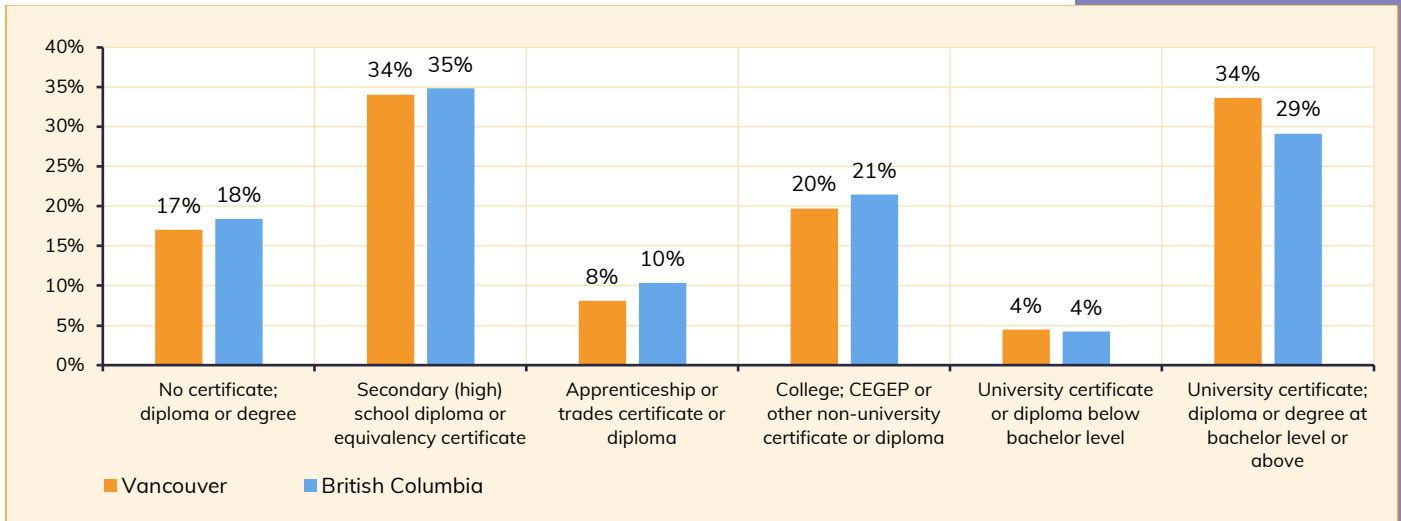
**EDUCATIONAL ATTAINMENT**

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.

Over half (51%) of people in the Vancouver 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 53% for British Columbia as a whole. The region also had a similar share of people with college degrees (20%) compared to the provincial average (21%). Conversely, 34% of the Vancouver region had a university degree at bachelor level or above, compared to 29% for British Columbia.



**REGIONAL AND PROVINCIAL EDUCATIONAL ATTAINMENT, 2016**

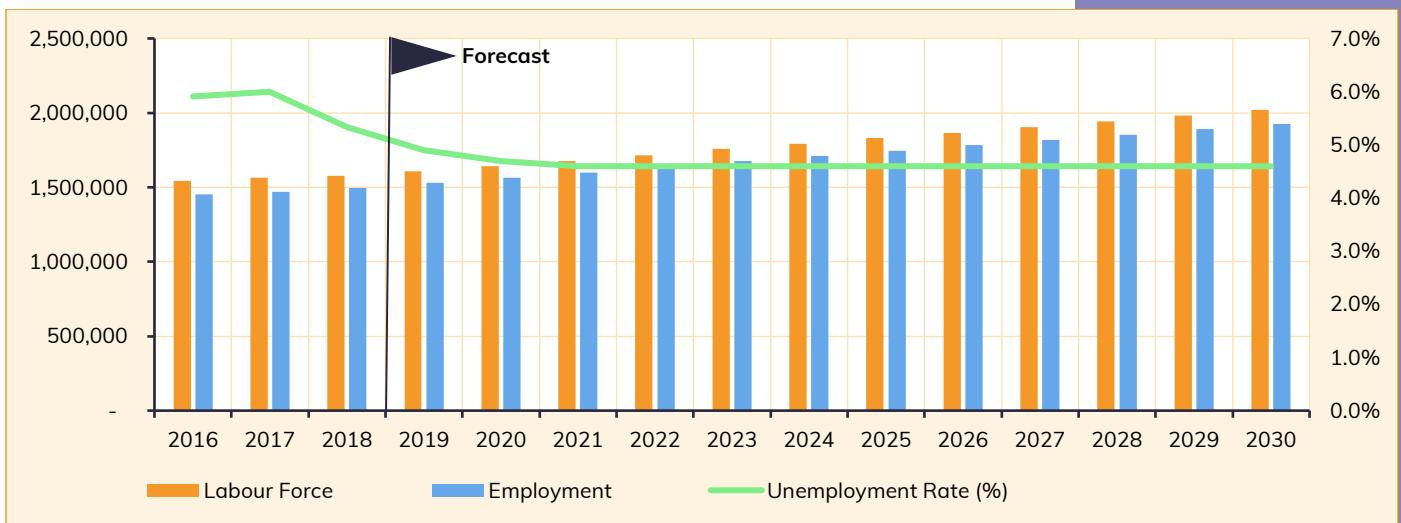


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

**LABOUR MARKET ACTIVITY**

Total employment in the Vancouver region was an estimated 1.5 million in 2018, while the region’s labour force, including both the employed and those who are unemployed and actively seeking work, totaled 1.57 million. The unemployment rate, or the proportion of unemployed persons in the labour force, was 5.3%. This was a sharp decline from both 2016 and 2017, when the unemployment rate was 5.9% and 6.0% respectively. The region’s unemployment rate is projected to continue this trend going forward, falling to 4.7% by 2020 before stabilizing to 4.6% over the coming decade.

**TOTAL REGIONAL EMPLOYMENT OUTLOOK, 2016-2030**

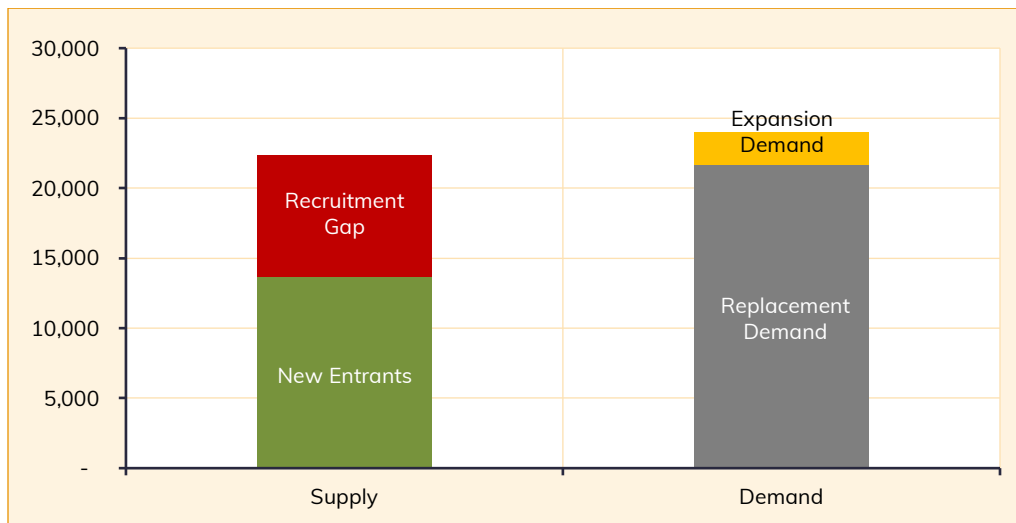


Source: Canadian Skills Training & Employment Coalition, Metro Economics

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 the Vancouver Region (CMA) indicate that new entrants will cover only 61% of the region's manufacturing hiring requirement between 2016 and 2025. The remaining 39% is the industry's recruitment gap in the region.

**VANCOUVER 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:

**VANCOUVER CMA MANUFACTURING HIRING REQUIREMENT BY OCCUPATION, 2016-2025**

Occupations	Total Hiring Requirement 2016 - 2025	Share of 2016 Employment
<b>All Occupations in Manufacturing</b>	22,356	28.8%
<b>Manufacturing managers</b>	1,327	31%
<b>Labourers in food, beverage and associated products processing</b>	1,286	32%
<b>Construction millwrights and industrial mechanics</b>	539	35%
<b>Machinists and machining and tooling inspectors</b>	519	32%
<b>Senior managers - construction, transportation, production and utilities</b>	507	36%
<b>Material handlers</b>	501	28%
<b>Welders and related machine operators</b>	498	30%
<b>Shippers and receivers</b>	447	26%
<b>Other labourers in processing, manufacturing and utilities</b>	425	27%

Occupations	Total Hiring Requirement 2016 - 2025	Share of 2016 Employment
Industrial sewing machine operators	396	39%
Process control and machine operators, food, beverage and associated products processing	356	28%
Furniture and fixture assemblers and inspectors	216	28%
Labourers in wood, pulp and paper processing	211	28%
Structural metal and platework fabricators and fitters	202	26%
Transport truck drivers	197	31%
Plastics processing machine operators	189	29%
Mechanical engineers	187	22%
Industrial electricians	162	36%
Industrial engineering and manufacturing technologists and tec	146	24%
Sheet metal workers	116	23%
Chemical technologists and technicians	114	28%
Electrical and electronics engineering technologists and technicians	109	22%
Mechanical engineering technologists and technicians	105	34%
Electrical and electronics engineers	102	18%
Motor vehicle assemblers, inspectors and testers	95	33%
Contractors and supervisors, machining, metal forming, shaping and erecting trades	91	27%
Industrial and manufacturing engineers	88	25%

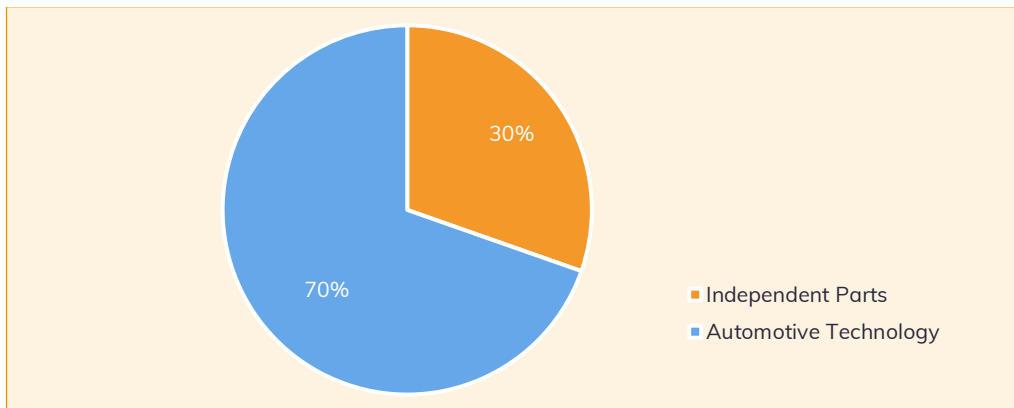
# REGIONAL AUTOMOTIVE MANUFACTURING ANALYSIS

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 was an estimated 610 workers, based on findings from industry contacts, company websites, industry literature and other sources of publicly available data.

### REGIONAL AUTOMOTIVE MANUFACTURING EMPLOYMENT BY ACTIVITY, 2018



**Source:** Canadian Skills Training & Employment Coalition, Statistics Canada

The largest automotive manufacturing-related employers in the Vancouver region include Ballard Power Systems, Ampco Manufacturers, and Manterra Technologies, which each have one plant in the region. Taken together, the region’s top employers employed 609 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
Ballard Power Systems	1	420
Ampco Manufacturers	1	110
Manterra Technologies	1	50
SWITCH Materials	1	25

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

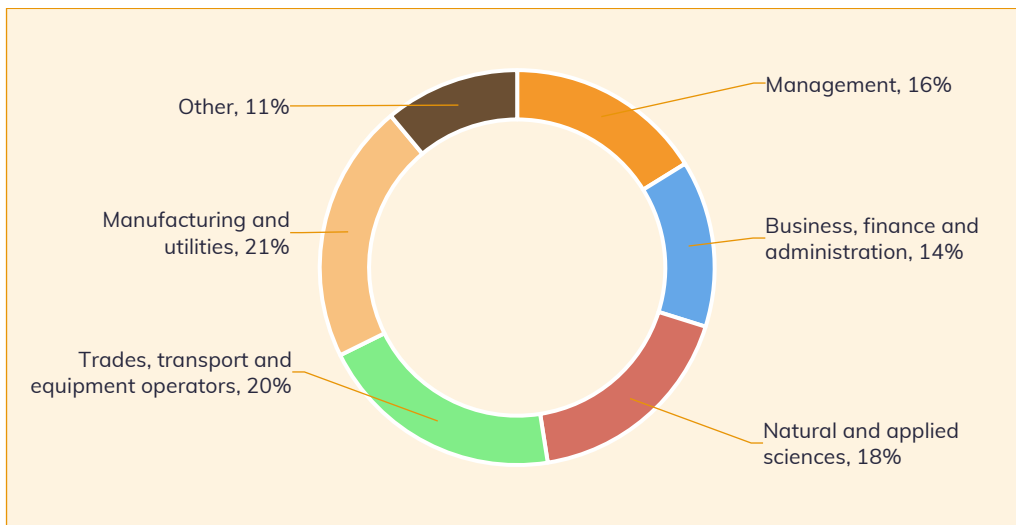
## AUTOMOTIVE MANUFACTURING LABOUR MARKET

The following section uses data based on a broader definition of the automotive manufacturing industry, 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.

Workers in the Vancouver 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.

Trades, transport, and equipment operators account for over one-fifth (25%) of the region’s automotive manufacturing workforce. A further 21% is accounted for by occupations in manufacturing and utilities. The remaining workers are split between business, finance and administration occupations (14%); natural and applied sciences occupations (18%); management occupations (16%); and all other occupation types (9%).

### REGIONAL AUTOMOTIVE MANUFACTURING WORKFORCE BY JOB FAMILY, 2016



Source: Canadian Skills Training & Employment Coalition, Statistics Canada

Key occupations in the region’s automotive manufacturing workforce include manufacturing managers (NOC 0911); machinists and machining and tooling inspectors (3.8%); and electrical and electronics engineers (NOC 2133). The following table lists the occupations that account for at least 1.0% of the region’s automotive manufacturing workforce:

KEY REGIONAL AUTOMOTIVE MANUFACTURING OCCUPATIONS AND TRADES, 2016

Occupation	Automotive Manufacturing Employment	Share of Automotive Manufacturing Employment
Manufacturing managers (NOC 0911)	270	5.2%
Machinists and machining and tooling inspectors (NOC 7231)	200	3.8%
Electrical and electronics engineers (NOC 2133)	150	2.9%
Welders and related machine operators (NOC 7237)	135	2.6%
Automotive service technicians, truck and bus mechanics and mechanical repairers (NOC 7321)	130	2.5%
Motor vehicle assemblers, inspectors and testers (NOC 9522)	130	2.4%
Electronics assemblers, fabricators, inspectors and testers (NOC 9523)	120	2.2%
Mechanical engineers (NOC 2132)	115	2.2%
Material handlers (NOC 7452)	110	2.1%
Senior managers - construction, transportation, production and utilities (NOC 0016)	105	2.0%
Software engineers and designers (NOC 2173)	105	2.0%
Shippers and receivers (NOC 1521)	105	2.0%
Electrical and electronics engineering technologists and technicians (NOC 2241)	80	1.5%
Other labourers in processing, manufacturing and utilities (NOC 9619)	70	1.4%
Industrial engineering and manufacturing technologists and technicians (NOC 2233)	70	1.3%
Plastics processing machine operators (NOC 9422)	65	1.3%

Source: Canadian Skills Training & Employment Coalition, Statistics Canada

## COMPETITION FROM OTHER INDUSTRIES

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 less than 1% of the Vancouver’s region’s total workforce in 2016. Among manufacturing and utilities occupations, however, the industry accounted for 3% of the workforce. The primary competition for these occupations comes from other manufacturing employers (65%). Greater regional competition exists within other job families. For example, the construction industry accounted for 39% 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

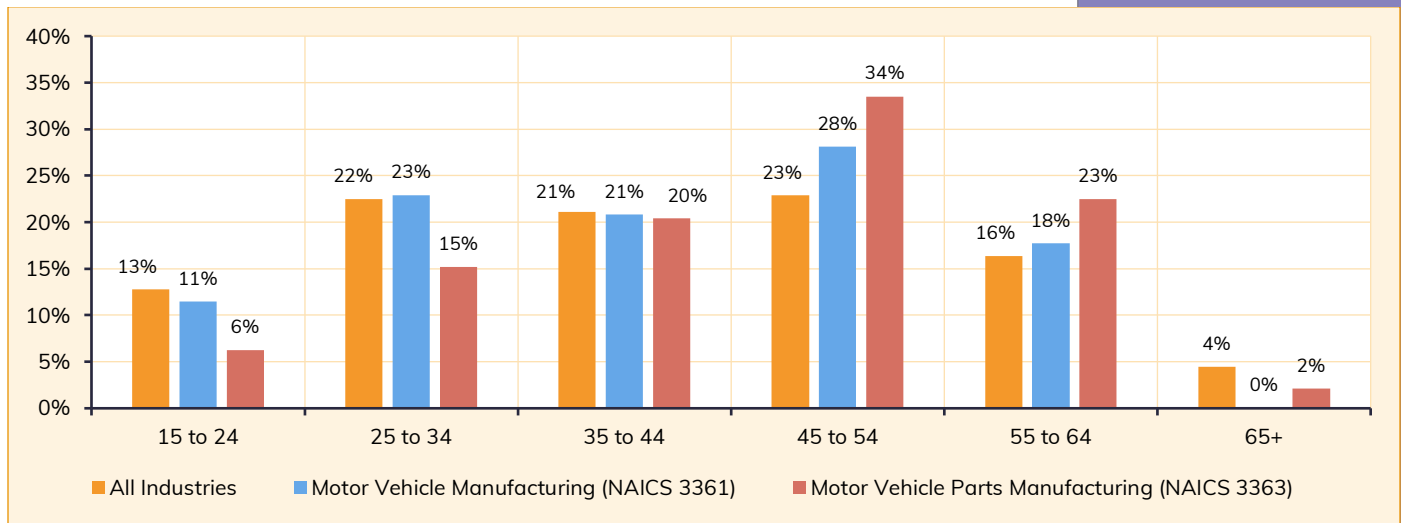


Source: Canadian Skills Training & Employment Coalition, Statistics Canada

## AUTOMOTIVE MANUFACTURING DEMOGRAPHICS

The age distribution of the Vancouver Region’s automotive manufacturing workforce is distinct from that of the region’s total workforce across all industries. Notably, 11% of motor vehicle manufacturing workers and 6% of motor vehicle parts manufacturing workers were between the ages of 15 and 25 as of 2016. In contrast, 13% 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 has similar shares of workers aged 55+ (21%) as motor vehicle manufacturing (18%) or motor vehicle parts manufacturing (25%).

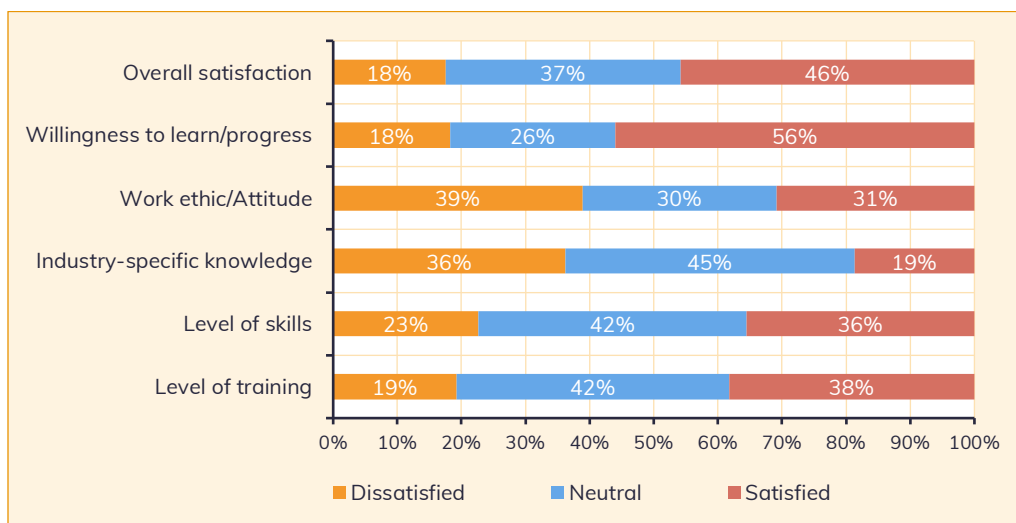
**REGIONAL AUTOMOTIVE MANUFACTURING WORKFORCE AGE DISTRIBUTION, 2016**



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.

Source: Canadian Skills Training & Employment Coalition, Statistics Canada

**CANADIAN MANUFACTURING EMPLOYER SATISFACTION WITH YOUNG WORKERS, 2016**



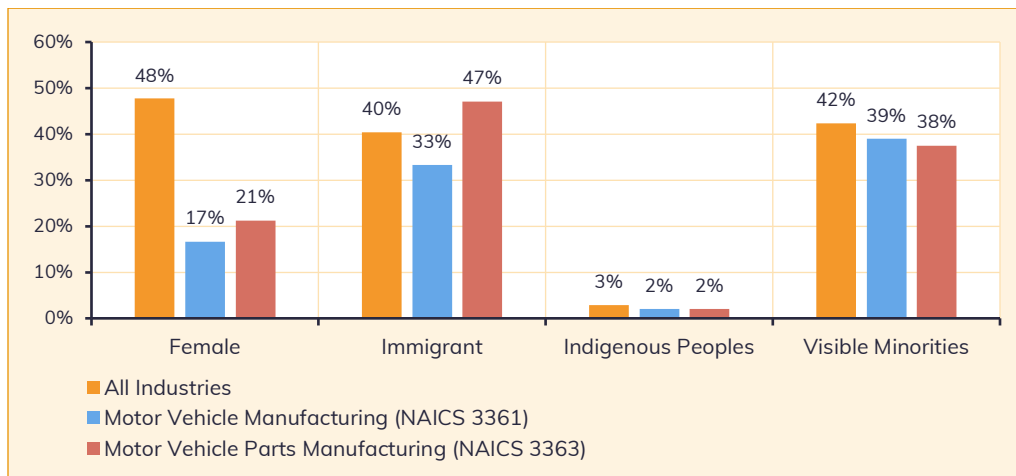
Source: Canadian Skills Training & Employment Coalition, Prism Economics and Analysis

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 48% as of 2016, on par with their population share. However, the proportions of women



working in motor vehicle manufacturing (17%) and motor vehicle parts manufacturing (21%) were well-below average. Elsewhere, foreign-born workers account for 40% of the region’s total workforce, slightly higher than the share found in motor vehicle manufacturing (33%) but slightly lower than the share found in motor vehicle parts manufacturing (47%). 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.

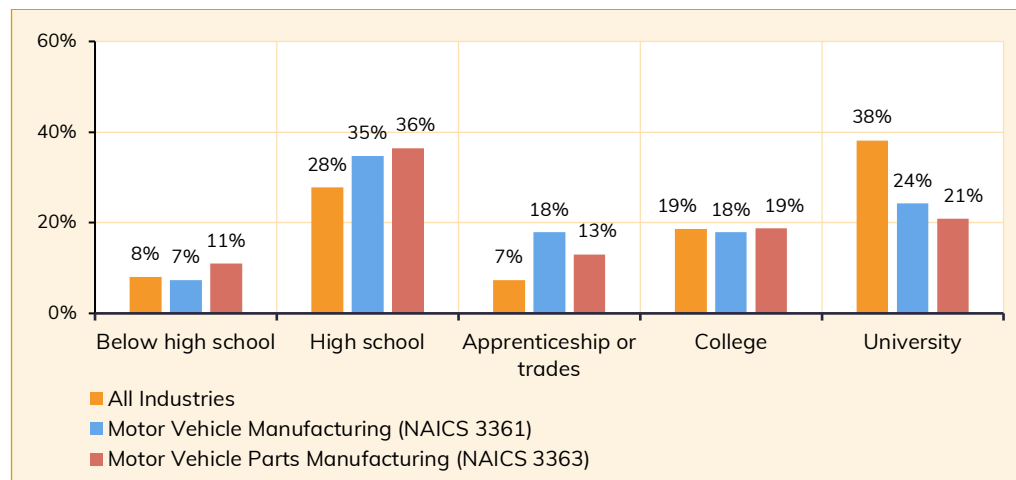
**REGIONAL AUTOMOTIVE MANUFACTURING WORKFORCE DIVERSITY, 2016**



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, 42% of motor vehicle manufacturing workers and 47% of motor vehicle parts manufacturing workers in the region have no more than a high school diploma as of 2016, compared to 36% for the total regional workforce. Conversely, the automotive manufacturing workforce has a much lower proportion of workers with a university degree as compared to the provincial average (38%).

**REGIONAL AUTOMOTIVE MANUFACTURING WORKFORCE EDUCATIONAL ATTAINMENT, 2016**



Source: Canadian Skills Training & Employment Coalition, Statistics Canada