

Subject: Emerging Sectors Research and Analysis

Report to: Planning and Economic Development Committee

Report date: Wednesday, July 12, 2023

Recommendations

1. That this report **BE RECEIVED** for information.

Key Facts

- This report outlines the importance of work on the growth of emerging sectors to diversify the economic base of the Niagara Region. It validates the need to devote further time and resources to the emerging sectors as identified in the 10 Year Economic Development Strategy.
- The six emerging sectors include Electric Vehicle (EV) Battery Manufacturing (Electrification), Marine, Healthcare (Lifesciences), Active Economy/Sport Tourism, Film and Aerospace. Briefs on each of these sectors have been developed and speak to current trends, opportunities and barriers to market (Appendices 1 through 6).
- As we continue to unlock the potential of these emerging and core sectors as identified in the 10 Year Economic Development Strategy there may be a need to review the current service delivery framework within the department to compliment the future needs of the investor through a sector specialist lens.

Financial Considerations

The activities described in this report have been accommodated within the Council approved 2022 Economic Development Budget at a cost of \$88,800 for six briefs.

Analysis

Niagara Region's 10 Year Economic Development Strategy outlines strategic directions, goals and actions that will guide the work of Niagara Economic Development (NED), as it collaborates with its partners to build a strong and sustainable economy.

The strategic directions of the Economic Development Strategy were established by combining input from the research conducted through the background review, the economic and industrial base analysis and community and business engagement activities.

The objective is to achieve a confident and positive business environment that will assist in growing a strong regional economy. The six strategic directions are: Sector Development and Support; Diversity, Equity and Inclusion; Education and Workforce Development; Business Retention and Expansion; Green Development and Sustainability; and Infrastructure and Transportation.

Emerging sector analysis falls within the strategic direction of "Sector Development and Support". NED will continue to support and build on existing core sectors as outlined within the 10 Year Economic Development Strategy, which include agriculture, manufacturing, and tourism. In addition to those sectors five new emerging sectors have been identified through private sector activity, or the establishment of major assets as catalysts in the region for future development and exploration.

The emerging sectors identified in the 10 Year Economic Development Strategy are:

- Electrical Vehicle (EV) Battery Manufacturing (Electrification)
- Marine
- Healthcare (Lifesciences)
- Active Economy/ Sport Tourism
- Film

Through the initial stages of review of these industries, a contextual review of Niagara and its assets, as well as the consideration of global geopolitical trends, a sixth emerging sector was identified for review and analysis - that sector is Aerospace.

Deloitte LLP was retained by Niagara Region to perform a detailed analysis of the emerging sectors identified through Niagara Region's 10 Year Economic Development

Strategy, and guide sector-based economic development activities in the region. The analysis defines the sector's core and associated industries, gathers local intelligence, and identifies global opportunities and trends in each emerging sector. The analysis and reporting are designed to provide internal research to Niagara Region to inform its activities.

Sector briefs were developed by defining the industries that make up and broadly support each sector. These industries were characterized using business and employment data and include support and supply businesses. From this broad overview, international, national, and local trends were considered to identify high potential areas relevant to Niagara's economy. The research also includes the perspectives of local experts in industry, current international trade agreements as well as a review of existing literature. The data was pulled together to show a picture of each sector's future potential.

Each of the sector briefs are meant to be used internally to inform future decisionmaking (they are not to be used for marketing purposes) and will over time receive updates to reflect current market conditions.

The briefs will offer a framework and recommendations to assist NED and its partners to work together to grow and support each sector.

The goal of this initiative was to receive third party validation through the analysis that each sector shows potential and or positive momentum, where further staff time and financial resources should be dedicated to exploring and growing the sector.

Throughout Ontario, there are several regions / municipalities that drive economic investment through the implementation of Sector Specialists within their economic development function. These roles offer a global opportunity for world-class talent to drive the development and execution of emerging sectors within those jurisdictions. Through their relationships they foster connectivity and collaboration across the global and regional ecosystem, advance the brand of a region/ municipality, and manage day-to-day operations. The number of activities performed and the level of intensity of those activities varies by sector due to many factors, including the level of the candidate and the complexity of the sector.

Being able to speak the language of a specific industry and having the technical knowledge to understand process and policy implications within that sector of focus is key to unlocking its future potential. To fully implement and action the 10 Year

Economic Development Strategy ratified by Council in 2022, there will be a need to invest in the potential of the Niagara Region through people that have firsthand industry experience.

A sector specialist can then develop industry specific strategies that can achieve targeted growth and compliment the existing base of economic development professionals that have hybrid knowledge of their industry base.

As we continue to unlock the potential of these emerging sectors as identified in the 10 Year Economic Development Strategy there may be a need to review the current structure/framework in how we deliver our core services within the department to compliment the future needs of the investor through a sector specialist lens.

Exploring emerging sectors includes, but is not limited to:

- Conducting research and exploration of new market opportunities and sharing those findings with our strategic partners.
- Leading international investment missions with "Team Niagara" partners in new and existing markets.
- Proactively engaging with Provincial and Federal government partners, Foreign
 Direct Investment (FDi) partners (Invest Canada, Invest Ontario, and the Consider
 Canada Cities Alliance) to inform them of emerging opportunities and assets within
 Niagara.
- Engaging with decision makers at all levels to inform them of new emerging industries to influence policy change that is complimentary to sector growth.

Niagara Economic Development is mandated to be the Investment attraction arm of the Niagara Region as per the Memorandum of Understanding (MOU) signed by all partner municipalities and these specialist functions would serve to compliment retention and expansion activities at the local level by amplifying the Niagara advantage and value proposition on the world stage. Critical to the success of the 10 Year Economic Development Strategy and growing these emerging sectors is the ability to leverage Niagara's value proposition, which includes, but is not limited to:

- Strategic location Proximity to the United States and Greater Toronto area, truly multimodal (access to air, rail, shipping and 400 series highways).
- Skilled workforce Training the labour force of the future.

- Post Secondary Institutions Developing programming of the future to compliment industry needs.
- Innovation Spaces Connecting industry to new technologies and processes as well as harnessing research and development potential.
- Strategic Assets Welland Canal/Niagara Falls etc.
- Quality of life Surrounded by green space, but within days drive of 60% of the North American industrial market.

At NED we develop and lead global strategies and provide programs and services that unite our network. We see the importance of adapting to change and by doing so we create value. By investing in emerging sectors, we have the opportunity to make an impact through the diversification of the regional economy.

Please refer to appendices 1 through 6 to review each of the emerging sector briefs.

Relationship to Council Strategic Priorities

This supports Council's strategic priority of supporting Businesses and Economic Growth.

Other Pertinent Reports

Not applicable

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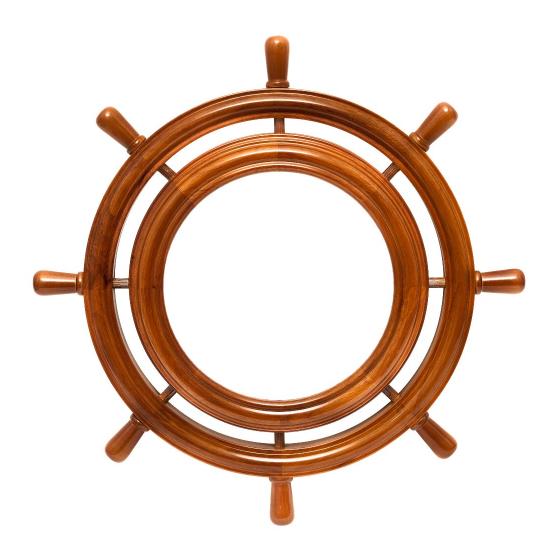
This report was prepared in consultation with Renee Muzzell, Manager Program Financial Support and reviewed and reviewed by George Spezza, Director of Economic Development and Michelle Sergi, Commissioner, Growth Strategy and Economic Development.

Consultants from Deloitte LLP will present findings.

Appendices

Appendix 1 Emerging Sector: Marine
Appendix 2 Emerging Sector: Electric Vehicle Battery Manufacturing
Appendix 3 Emerging Sector: Health Care and Life Sciences
Appendix 4 Emerging Sector: Active Economy/Sport Tourism
Appendix 5 Emerging Sector: Aerospace
Appendix 6 Emerging Sector: Film

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Niagara Region

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Disclaimer

This report has been provided for the purpose of informing and assisting the Regional Municipality of Niagara ("Niagara Region") to produce sector profiles for five emerging sectors, with this profile featuring the investment and growth potential of the marine sector.

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Observations are made on the basis of economic, industrial, competitive and general business conditions prevailing as at the date hereof. In the analyses, we may have made assumptions with respect to the industry performance, general business, and economic conditions and other matters, many of which are beyond our control, including government and industry regulation.

No opinion, counsel, or interpretation is intended in matters that require legal or other appropriate professional advice. It is assumed that such opinion, counsel, or interpretations have been, or will be, obtained from the appropriate professional

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We believe that our analyses must be considered as a whole and that selecting portions of the analyses or the factors considered by it, without considering all factors and analyses together, could create a misleading view of the issues related to the report.

Amendment of any of the assumptions identified throughout this report could have a material impact on our analysis contained herein. Should any of the major assumptions not be accurate or should any of the information provided to us not be factual or correct, our analyses, as expressed in this report, could be significantly different.



Introduction

The marine sector is an important industry that influences people's daily lives. Over 80% of the volume of international trade in goods is carried by sea, and fluctuations in the sector influence the cost of goods that are purchased every day¹. In addition, the global ship repairing market is expected to grow at a compound annual growth rate (CAGR) of 6% from 2021 to 2025 and by 2025, reaching a market value of \$US8.75 billion². Considering the importance of this sector, and the natural advantages the Niagara region possesses, interest in continuing to develop the sector has increased. In fact, Niagara's 10 Year Economic Development Strategy 2022-2032 identifies the marine sector as an emerging sector for the region.

¹ United Nations Conference on Trade and Development. Review of Maritime Transport 2021.

² Research and Markets, Boat Repairing Global Market Report 2023, 2023.

The Emerging Sector Profiles

Niagara Region Economic Development retained Deloitte LLP to produce sector profiles for five emerging sectors, including the marine sector, the health sector, film sector, and active economy/sport tourism, and electric vehicle battery industry. In the design of the project, the aerospace sector was added to the analysis. These sectors were initially identified in 'Niagara's 10 Year Economic Development Strategy 2022-2032'. This profile features the investment and growth potential of the marine sector. This Marine Sector Profile was developed by defining the industries that make up and broadly support the marine sector. These industries were characterized using business and employment data and include support and supply businesses. From this broad overview, international, national, and local trends were considered to identify high potential areas relevant to Niagara's economy. The research also included a focus group to ground the findings in the perspectives of local stakeholders, as well as a review of existing literature. The data were pulled together to show a picture of the sector's future potential. This profile does not include a benchmarking of the marine sector, and further research is needed to accurately identify employment directly linked to the marine sector.

The following data sources were used in the development of this sector profile: Lightcast (formerly EMSI Economic Modeling) 2022, Vicinity Jobs 2022, FDI Markets, Statistics Canada, and Canadian Business Counts³ June 2022.

Investment Attraction Highlights for the Marine Sector

Investment attraction efforts targeting the marine sector are expected to positively impact the Niagara Region's economy. The Welland Canal and its connection to the Great Lakes shipping network provides unique advantages for the Niagara Region. The sector shows significant growth potential in related segments of the economy such as

for Niagara Region included all local businesses that met at least one of the three following criteria: Have an employee workforce for which they submit payroll remittances to CRA, or have a minimum of \$30,000 in annual sales revenue, or are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

³ The June 2022 Canadian Business Counts were used to determine the total number of registered businesses in the Niagara Region. Statistics Canada's Canadian Business Counts Data provides a record of business establishments by industry and size. This data is collected from the Canada Revenue Agency (CRA). The business data collected

manufacturing and maintenance, as well as support demand for developing technologies.

With global opportunities in manufacturing and technology, marine-related regional assets, and recent investment ranging from \$180 million the marine sector in Niagara Region is an emerging sector ready for further economic development.

Key Highlights

Identified high potential sub-sectors: Considering its strategic location on the St. Lawrence Seaway, the region has the potential to play an important role in areas such as ship manufacturing, vessel parts and component manufacturing, equipment maintenance. Increasing investments for this sector in the region can also leverage other areas of growth such as digitization tools for ships, vessels with emphasis on implementing robotics, automated tools, sensors, and the internet of things into operations. In terms of technology opportunities, adoption and local business development would be more feasible, but this does not limit Niagara from attracting propellor technology companies. The digitization segment requires a mix or retention of expansion opportunities as well as new foreign direct investment. Niagara has plenty of vacant sites along the St. Lawrence Seaway and Welland Canal and while traditional ship maintenance and construction is the stronger segment, the future of the marine industry veers towards digitization and should be considered.

Foreign Direct Investment (FDI) markets in the United States: Overall, the United States ranks highly as a recruitment zone for the marine industry with key metro areas being Miami (FL), New York City (NY), Houston (TX), and Chicago (IL). Other important recruitment zones include Shanghai, China; Athens, Greece; and London and Aberdeen in the UK.

Market value: Globally, the marine industry will represent a market value of \$188.5 billion in 2028. Within this segment, commercial and passenger ship segments will be the largest product type and the demand for transportation of both people and goods is expected to continue to be steady.

Recent investments: St. Catharines-headquartered Heddle Shipyards has been awarded a \$135.5 million contract for the Vessel Life Extension (VLE) of the Canadian Coast heavy icebreaker CCGS Terry Fox. The nearly three-year project will involve an extensive engineering, planning and procurement phase, with shipyard work scheduled to begin in December 2023. This multi-year project is expected to create and sustain over 200 hundred jobs at the Port Weller Dry Docks facility through the summer of 2025

when the heavy icebreaker is scheduled for redelivery⁴ ⁵. In addition, on January 2023, A \$45.3-million project to reconstruct wharfs along the Welland Canal was announced by the Federal Government, this investment will rebuild wharfs 18-1, 18-2 and 18-3, on the west side of the canal running from the end of West Street south to ADM milling⁶. This is inclusive of a 1,000-foot dock that will support an additional 1-million gross tonnes of product being shipped along the canal, as well will support Viking Cruise lines doubling of their cruise itineraries to Port Colborne, supporting their Polaris class of ships.

The Marine Sector in Niagara Region

- Sector-related employment: Niagara's core marine sector businesses and broader support industries employ more than 12,900 people in the region. Although not all this employment can be linked directly to the marine sector, related employment numbers show a strong environment that could enable opportunities in the sector.
- Concentration of business activity: The Niagara region has a slightly above average concentration of businesses in the marine sector and related sectors, relative to Ontario (LQ 1.01), with higher concentrations in most of the core marine industries including deep sea, coastal and great lakes water transportation; inland water transportation; scenic and sightseeing transportation, water; support activities for water transportation; and ship and boat building manufacturing. In addition, the region also has a high concentration of sectors linked to the marine sector supply chain, particularly in those related to manufacturing.
- Proximity to markets and customers: Proximity is a key determinant for foreign direct investment in marine sector projects in North America and Niagara region has access to a third of North America's population within a 24-hour drive, as well as access to the Welland Canal and ports on Lake Erie and Lake Ontario.
- Existing business community: As of June 2022, a significant number of businesses in the marine industry operate in the region (859 businesses). Core

⁴ MarineLog, retrieved from

https://www.marinelog.com/shipbuilding/shipyards/shipyard-news/port-weller-dry-docks-wins-heavy-icebreaker-life-extension-contract/>

⁵ These estimates has not been developed by Deloitte and have not been independently verified for this analysis.

⁶ Ontario Construction News, retrieved from

https://www.ontarioconstructionnews.com/45-3-million-investment-in-welland-canal-to-revitalize-port-colborne-wharfs/>

marine industry sectors with the largest number of businesses include freight transportation arrangement (8% of total businesses), followed by support activities for water transportation (1%), marinas (1%), and sip and boat building (1%).

- Regional support for the marine sector: Regional leaders and marine industry representatives are confident in the sector's future. They are encouraging the provincial government to develop a strategic and well-funded vision for the marine sector in Ontario⁷. Lobbying efforts with other strategic partners for a Provincial Marine Strategy to make Niagara and Ontario competitive with other jurisdictions both nationally and internationally.
- Increased interest from cruise companies in the region: Communities in Niagara region (e.g., Port Colborne) have been added to the scheduled list of ports for luxury cruise companies including Viking Cruises, Victory Cruises, and Pearl Seas Cruises.
- According to Statistics Canada International Accounts and Trade Division,
 the Niagara region recorded less than 5 exporting establishments in 2020 in the
 ship, boats and floating structures. These businesses did not record a significant
 number of exports (a total of \$30,000) in ship, boats and floating structures
 products. On the other hand, a total of 17 establishment recorded the import of
 ship, boats and floating structures; these establishments imported more than
 \$49.7 million in these products.

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⁷ Great Lakes and St. Lawrence Cities Initiative – Press Release June 23, 2023



Marine Sector Overview

According to Statistics Canada, the marine sector includes industries involved in fishing and seafood production; offshore oil and gas; transportation; coastal tourism and recreation; manufacturing and construction of ships, vessels, ports and harbours; and the public sector (universities and environmental Non-Government Organizations (NGOs).8

Defining the Marine Sector

The marine sector's core and related industries were defined using North American Industry Classification System (NAICS) codes. The industries comprising the marine sector ranged from goods-producing industries such as fishing, oil and gas extraction, construction, and manufacturing, to service-oriented industries such as trade, transportation, professional services, recreation, and public administration. Figure 1 shows the NAICS codes that make up the sector, these categories were used to identify

⁸ Fisheries and Oceans Canada, Marine sectors in Canada methodology, retrieved from < https://www.dfo-mpo.gc.ca/stats/mar-method-eng.htm>.

employment and business insights. In addition, and with the support of Niagara Region's project team, the marine industry subsectors were further classified into core, and support/supply chain subcategories. Core industry subsectors are identified in the figure with a blue highlight.

Figure 1 – Marine Sector NAICS Codes

| Industry | NAICS | Description |
|----------------------------|-------|--|
| Agriculture, Forestry, | 1141 | Fishing |
| Fishing and Hunting | | 1 lotting |
| Mining, Quarrying, and Oil | 2111 | Oil and gas extraction |
| and Gas Extraction | | |
| Construction | 2379 | Other heavy and civil engineering construction |
| | 3117 | Seafood product preparation and packaging |
| | 3252 | Resin, synthetic rubber, and artificial and |
| | | synthetic fibres and filaments |
| | 3255 | Paint, coating, and adhesive manufacturing |
| | 3261 | Plastic product manufacturing |
| | 3311 | Iron and steel mills and ferro-alloy |
| | 0011 | manufacturing |
| | 3313 | Alumina and aluminum production and |
| Manufacturing sector | 3313 | processing |
| | 3323 | Architectural and structural metals |
| | | manufacturing |
| | 3325 | Hardware manufacturing |
| | 3328 | Coating, engraving, cold and heat treating and |
| | 3320 | allied activities |
| | 3363 | Motor vehicle parts manufacturing |
| | 3366 | Ship and boat building |
| | 3399 | Other miscellaneous manufacturing |
| | 4161 | Electrical, plumbing, heating and air- |
| Wholesale trade | 4101 | conditioning equipment and supplies |
| Wildlesale trade | 4163 | Lumber, millwork, hardware, and other building |
| | 4103 | supplies merchant wholesalers |
| | 4831 | Deep sea, coastal and Great Lakes water |
| | 4031 | transportation |
| Transportation and | 4832 | Inland water transportation |
| Warehousing | 4872 | Scenic and sightseeing transportation, water |
| | 4883 | Support activities for water transportation |
| | 4885 | Freight Transportation arrangement |

| Industry | NAICS | Description |
|-------------------------------------|--------|--|
| Professional, Scientific, | 5413 | Architectural, engineering, and related services |
| and Technical Services | 5417 | Scientific research and development services |
| Arts, entertainment, and recreation | 713930 | Marinas |
| | 9111 | Defense services |
| Public administration | 9112- | Other federal services |
| | 9119 | Other rederal services |

Sector Trends

The marine sector in Canada is on a growth trajectory, with GDP increasing by 15% between 2016 and 2020 (up from \$29.7 billion). The sector was estimated to contribute 1.5% of overall Canadian GDP by 2019 (approximately \$34.2 billion). Due to its strategic position on the Great Lakes and St. Lawrence Seaway, and with a large cargo market, Niagara region has the potential to capitalize on global trends gaining traction in the sector, including ship and boat building, port sensors and robotics. Regional stakeholders also expressed interest in becoming the first in-land port of entry.

Regionally, the Great Lakes – St. Lawrence Seaway is an important trade route, supporting economic activity throughout the United States and Canada. Marine cargo and vessel activity in the waterway generated a total of \$59.2 billion in economic activity across the United States and Canada in 2017.¹⁰ This activity encompasses the impact of all domestic and international cargo moving on the Great Lakes, its connecting rivers, St. Lawrence Seaway, and Lower St. Lawrence River.¹¹

Between 2018 and 2020, Canada's marine industry saw a 19% increase in sales. ¹² In addition, Canada's marine sector saw an increase by 14% in total employment, and an increase of 7% in total exports during the same time-period. ¹³ Recognizing these trends, Niagara region has included this emerging sector as a key target for further research.

The Niagara Region Advantage

The region has easy access to large markets that include both the Greater Toronto Area and the United States, due to its position adjacent to the U.S. border. The region's road and rail transit routes are well developed for shipping goods, and the region is connected with global markets through the St. Lawrence Seaway. The Seaway is an important corridor for North American cargo shipments and has recently seen a boom in general cargo shipments in 2021 due to the increased demand for manufacturing and

⁹ <u>Fisheries and Oceans Canada, Gross Domestic Product by sector and year, retrieved from < https://www.dfo-mpo.gc.ca/stats/maritime/tab/mar-tab1-eng.htm>.</u>

¹⁰ Martin Associates, Economic Impacts of Maritime Shipping in the Great Lakes – St. Lawrence Region, July 2018.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

building materials (i.e., iron ore, steel, cement, stone, and other raw materials). According to the Chamber of Marine Commerce, general cargo shipments were up 60%.¹⁴

Niagara region has important assets in the marine sector and many of Niagara's manufacturing companies and services industries are suppliers to the marine industry. The region's major assets in the marine sector include access to the Great Lakes and Welland Canal (including potential for associated employment lands) and the recent investment in a multimodal hub by the Hamilton Oshawa Port Authority (HOPA). ¹⁵ The development of a hub in the City of Thorold was the initial phase of the Niagara Ports plan to create a corridor of multimodal industrial hubs along the Welland Canal. ¹⁶

Thorold Multimodal Hub

The Thorold Multimodal Hub is a 400-acre multimodal industrial complex in Niagara region, adjacent to the Welland Canal. The hub features marine, rail and highway access, as well as close to 1,000,000 square feet of indoor warehouse and outdoor storage space, which can be configured to a wide variety of industrial, cargo handling and ancillary operations. The Hub has been developed in two phases¹⁷.

- Bioveld 1 Phase I 3363 Davis Road, Thorold: A 200-acre multimodal industrial complex in the heart of the Niagara region, immediately adjacent to the Welland Canal. The site is unique to Niagara region, and features marine, rail and highway access, as well as over 500,000 square feet of indoor warehouse and outdoor storage space, which can be configured to suit a wide variety of industrial cargo handling and ancillary operations.
- Bioveld 2 Phase II 100 Hayes Road, Thorold: This phase added 170 acres of land and 450,000 square feet of warehouse space, creating room for industrial, manufacturing and logistics businesses to locate or grow in the region. The new facility offers up to 55-foot ceiling heights, overhead doors, loading docks, multiple spray booths, rail transload capability and multiple heavy cranes. The space can be configured to the needs of large or small-footprint businesses. The Hub is located immediately adjacent to the Welland Canal, with access to the CN rail line via GIO Rail spur activations on site.

¹⁴ The Standard, General cargo shipments up 60.51% on St. Lawrence Seaway, 2021.

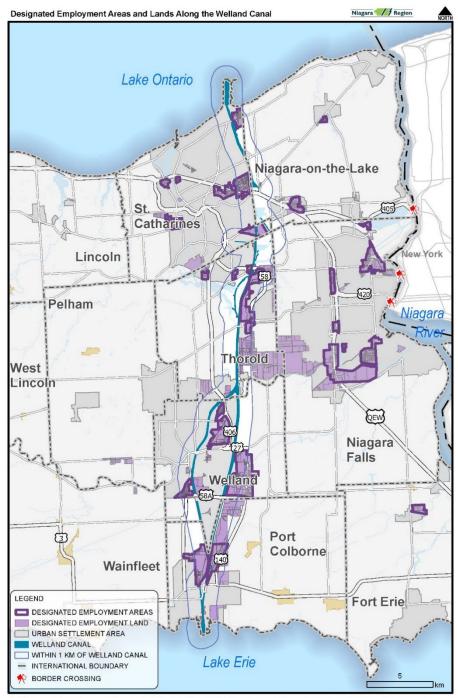
¹⁵ Niagara's 10 Year Economic Development Strategy 2022-2032

¹⁶ Ibid.

¹⁷ HOPA Ports, Niagara Ports, 2023.

Available Employment Land

The image below highlights the designated employment lands in Niagara Region land and identifies which land parcels are within one kilometre of the Welland Canal. These lands present future opportunities to work with the Hamilton Oshawa Port Authority and the St. Lawrence Seaway Management Corporation to identify lands that may be able to accommodate future industrial related uses that could support marine related activities.



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Employment and Business Structure in Niagara Region

Marine sector employment in the Niagara Region is estimated at 12,959 jobs, as illustrated in Figure 2.¹⁸ Most of the employment is related to core industries (directly associated with marine industries) and come from the following sectors:

- Freight transportation arrangement (703 jobs or 5% of the estimated jobs).
- Deep sea, coastal and great lakes water transportation (614 jobs or 5% of the estimated jobs).

Some of the industry sectors presented below have a larger number of jobs, and only a portion of these will classify as marine jobs (e.g., other amusement and recreation industries – NAICS 7139, includes marinas, but also include many other facilities). ¹⁹

Figure 2 – Employment Marine Industries and Supply Chain Industries, Niagara Region, 2022

| Industry | Description | Employment 2022 | % |
|---|--|--------------------|---------------|
| Total Marine Industry | | 12,959 | 100% |
| Agriculture, Forestry, Fishing and Hunting | Fishing | 0 | 0% |
| Mining, Quarrying, and Oil and Gas Extraction | Oil and gas extraction | <10 | Insf. Data |
| Construction | Other heavy and civil engineering construction | 382 | 3% |
| | Seafood product preparation and packaging | <10 | Insf. Data |
| Manufacturing | Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing | 240 | 2% |
| sector | Paint, coating, and adhesive manufacturing | 138 | 1% |
| | Plastic product manufacturing | 649 | 5% |
| | Iron and steel mills and ferro-alloy manufacturing | 368 | 3% |

¹⁸ The total number of jobs include employment for the core marine sectors as well as the total employment for supply chain sectors.

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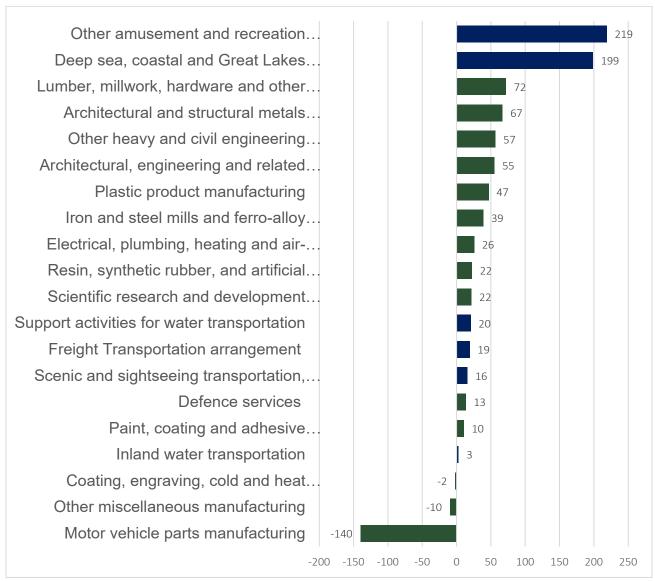
¹⁹ Employment data at the 6-digit NAICS level is not publicly available.

| Industry | Description | Employment 2022 | % |
|-------------------------------------|--|--------------------|---------------|
| | Alumina and aluminum production and processing | 0 | 0% |
| | Architectural and structural metals manufacturing | 820 | 6% |
| | Hardware manufacturing | <10 | Insf. Data |
| | Coating, engraving, cold and heat treating and allied activities | 163 | 1% |
| | Motor vehicle parts manufacturing | 158 | 1% |
| | Ship and boat building | <10 | Insf. Data |
| | Other miscellaneous manufacturing | 488 | 4% |
| Wholesale trade | Electrical, plumbing, heating and air-conditioning equipment and supplies merchant wholesalers | 565 | 4% |
| vilolesale trade | Lumber, millwork, hardware, and other building supplies merchant wholesalers | 725 | 6% |
| | Deep sea, coastal and Great Lakes water transportation | 614 | 5% |
| | Inland water transportation | 12 | 0% |
| Transportation and Warehousing | Scenic and sightseeing transportation, water | 160 | 1% |
| wateriousing | Support activities for water transportation | 179 | 1% |
| | Freight Transportation arrangement | 703 | 5% |
| Professional, Scientific, and | Architectural, engineering, and related services | 1,760 | 14% |
| Technical Services | Scientific research and development services | 296 | 2% |
| Arts, entertainment, and recreation | Other amusement and recreation industries | 2,688 | 21% |
| Public | Defense services | 158 | 1% |
| administration | Other federal services | 1,692 | 13% |

Source: Lightcast, 2022 - Datarun 2022.1 | Core subsectors highlighted in blue

The industry sectors (core marine industries) projected to see the largest growth in employment include deep sea, coastal and great lakes water transportation (+199 jobs or 32% growth), followed by support activities for water transportation (+20/+1%). Motor vehicle parts manufacturing is expected to see a decline of 140 jobs by 2028. This could be in part to shifting global supply chains or that vehicles will require less parts as the industry begins its shift to electric vehicles

Figure 3 – Forecasted Employment Change, Marine Sector, Niagara Region, 2022-2028



Source: Lightcast, 2022 - Datarun 2022.1 | This chart does not include industry subsectors with zero growth, or insufficient data | Core subsectors highlighted in blue

A total of 859 businesses related to the marine sector were recorded in Niagara region in June 2022. Most of these businesses were businesses with employees (431 businesses), which indicates the significant employment impact of the sector in the region.

Industry sectors (core marine industries) with the largest number of businesses include freight transportation arrangement (65 businesses or 8% of total businesses), followed by support activities for water transportation (11/1%), marinas (11/1%), and ship and boat building (5/1%).

Figure 4 – Business Counts, Marine Sector, Niagara Region, June 2022

| Industry | Description | With Employees | Without Employees | Total |
|--|--|-------------------|----------------------|-------|
| Total Marine Sector | | 431 | 428 | 859 |
| Agriculture, Forestry, Fishing and Hunting | Fishing | 2 | 2 | 4 |
| Mining, Quarrying, and Oil and Gas Extraction | Oil and gas extraction | 1 | 0 | 1 |
| Construction | Other heavy and civil engineering construction | 13 | 13 | 26 |
| | Seafood product preparation and packaging | 0 | 0 | 0 |
| Manufacturing | Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing | 3 | 0 | 3 |
| | Paint, coating, and adhesive manufacturing | 7 | 2 | 9 |
| | Plastic product manufacturing | 13 | 7 | 20 |

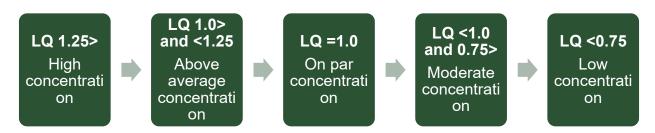
| Industry | Description | With Employees | Without Employees | Total |
|--------------------------------|--|-------------------|----------------------|-------|
| | Iron and steel mills | . , | . , | |
| | and ferro-alloy | 2 | 4 | 6 |
| | manufacturing | | | |
| | Alumina and | | | |
| | aluminum production | 0 | 0 | 0 |
| | and processing | | | |
| | Architectural and | | | |
| | structural metals | 32 | 9 | 41 |
| | manufacturing | | | |
| | Hardware manufacturing | 1 | 1 | 2 |
| | Coating, engraving, | | | |
| | cold and heat treating | 11 | 2 | 13 |
| | and allied activities | | | |
| | Motor vehicle parts | 40 | _ | 4.4 |
| | manufacturing | 10 | 4 | 14 |
| | Ship and boat | Г | 0 | _ |
| | building | 5 | 0 | 5 |
| | Other miscellaneous | 34 | 61 | 05 |
| | manufacturing | 34 | 61 | 95 |
| Wholesale trade | Electrical, plumbing, heating and air-conditioning equipment and supplies merchant wholesalers | 33 | 13 | 46 |
| | Lumber, millwork, hardware, and other building supplies merchant wholesalers | 42 | 21 | 63 |
| Transportation and Warehousing | Deep sea, coastal and Great Lakes water transportation | 3 | 1 | 4 |
| and warehousing | Inland water transportation | 0 | 3 | 3 |

| Industry | Description | With Employees | Without Employees | Total |
|---|--|-------------------|----------------------|-------|
| | Scenic and sightseeing transportation, water | 2 | 2 | 4 |
| | Support activities for water transportation | 7 | 4 | 11 |
| | Freight Transportation arrangement | 41 | 24 | 65 |
| Professional, Scientific, and | Architectural, engineering, and related services | 144 | 237 | 381 |
| Technical Services | Scientific research and development services | 17 | 14 | 31 |
| Arts, entertainment, and recreation | Marinas | 8 | 3 | 11 |
| Public administration | Defense services Other federal services | 0 | 0 | 0 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region | Core subsectors highlighted in blue

Location Quotient

As part of the economic baseline analysis, a Location Quotient (LQ) Analysis was completed to determine the concentration of employment in the marine sector, in Niagara region and relative to the province. The location quotient reveals what makes a region unique, in this case in comparison with other communities in Ontario. The following chart shows common LQ Classifications to interpret the figures in Figure 5.



The Niagara region has a high concentration of businesses in most of the core marine industries including deep sea, coastal and great lakes water transportation; inland water

transportation; scenic and sightseeing transportation, water; support activities for water transportation; and ship and boat building manufacturing.

The region also has a high concentration of businesses traditionally linked to the marine sector supply chain, particularly in those related to the marine's sector supply chain. An important number of these are within the manufacturing subsector and are in areas such as resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing; paint, coating, and adhesive manufacturing; iron and steel mills and ferro-alloy manufacturing; and coating, engraving, cold and heat treating and allied activities.

Figure 5 – Business Concentrations (Location Quotients), Marine Sector, Niagara Region, June 2022

| Description | LQs Total |
|--|-----------|
| Total Marine Sector | 0.91 |
| Iron and steel mills and ferro-alloy manufacturing | 3.78 |
| Inland water transportation | 2.40 |
| Deep sea, coastal and Great Lakes water transportation | 2.10 |
| Resin, synthetic rubber, and artificial and synthetic fibres | 1.80 |
| and filaments manufacturing | |
| Paint, coating and adhesive manufacturing | 1.70 |
| Support activities for water transportation | 1.67 |
| Ship and boat building | 1.59 |
| Other heavy and civil engineering construction (NAICS | 1.50 |
| 2379) | |
| Scenic and sightseeing transportation, water | 1.41 |
| Coating, engraving, cold and heat treating and allied | 1.38 |
| activities | |
| Architectural and structural metals manufacturing | 1.30 |
| Fishing (NAICS 1141) | 1.23 |
| Freight Transportation arrangement (NAICS 4885) | 1.05 |
| Other miscellaneous manufacturing | 1.02 |
| Marinas | 0.95 |
| Lumber, millwork, hardware and other building supplies | 0.92 |
| merchant wholesalers | |
| Motor vehicle parts manufacturing | 0.88 |
| Architectural, engineering and related services | 0.87 |
| Electrical, plumbing, heating and air-conditioning | 0.81 |
| equipment and supplies merchant wholesalers | |

| Description | LQs Total |
|--|-----------|
| Hardware manufacturing | 0.68 |
| Plastic product manufacturing | 0.66 |
| Scientific research and development services | 0.47 |
| Oil and gas extraction (NAICS 2111) | 0.30 |
| Other federal services (9112-9119) | 0.22 |
| Seafood product preparation and packaging (NAICS 3117) | 0.00 |
| Alumina and aluminum production and processing | 0.00 |
| Defense services (NAICS 9111) | 0.00 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region

Job Demand

Between January 1, 2020, and November 30, 2022, a total of 378 job postings in industries related to the marine sector were recorded in Niagara region; this represents 0.7% of the total number of job postings in the Niagara region during the same period. Over 50% of these job postings were in the freight transportation arrangement (192 job postings), while 10% were in paint, coating, and adhesive manufacturing (39 job postings). Most of these job postings were advertised in 2022, indicating an increase in employment demand over the period.

Figure 6 – Job Demand (Job Postings) by Industry Sector, Niagara Region (Marine Sector), January 1, 2020, to November 30, 2022

| NAICS | 2020 | 2021 | 2022 | Total Postings | % |
|---|------|------|------|-------------------|-------|
| Total | 70 | 122 | 186 | 378 | 100% |
| Freight Transportation Arrangement | 33 | 48 | 111 | 192 | 50.8% |
| Paint, Coating and Adhesive Manufacturing | 11 | 9 | 19 | 39 | 10.3% |
| Electrical, Plumbing, Heating and Air-Conditioning Equipment and Supplies Wholesaler-Distributors | 5 | 5 | 14 | 24 | 6.3% |
| Other Heavy and Civil Engineering Construction | 1 | 18 | 0 | 19 | 5.0% |
| Plastic Product Manufacturing | 4 | 11 | 3 | 18 | 4.8% |
| Other Miscellaneous Manufacturing | 1 | 7 | 9 | 17 | 4.5% |
| Lumber, Millwork, Hardware, and Other Building Supplies Wholesaler- Distributors | 4 | 10 | 3 | 17 | 4.5% |

| NAICS | 2020 | 2021 | 2022 | Total Postings | % |
|--|------|------|------|-------------------|------|
| Architectural and Structural Metals Manufacturing | 2 | 4 | 10 | 16 | 4.2% |
| Coating, Engraving, Heat Treating and Allied Activities | 3 | 4 | 1 | 8 | 2.1% |
| Deep Sea, Coastal and Great Lakes Water Transportation | 3 | 1 | 3 | 7 | 1.9% |
| Motor Vehicle Parts Manufacturing | 1 | 1 | 4 | 6 | 1.6% |
| Ship and Boat Building | 2 | 2 | 2 | 6 | 1.6% |
| Seafood Product Preparation and Packaging | 0 | 2 | 2 | 4 | 1.1% |
| Resin, Synthetic Rubber, and Artificial and Synthetic Fibres and Filaments Manufacturing | 0 | 0 | 3 | 3 | 0.8% |
| Oil and Gas Extraction | 0 | 0 | 2 | 2 | 0.5% |

Source: Vicinity Jobs | Core subsectors highlighted in blue

Sector Development

A few highlights of sector activity include the proposed Ontario Marine Strategy, to develop investment in the sector in the province, the Green Shipping Corridors Network, which builds green industry, and the workforce development activities of the Canadian Marine Careers Foundation. These initiatives serve to advance the profile and performance of the sector in the province.

Stakeholders in the marine sector in Niagara region have been advocating for an Ontario Marine Strategy. This strategy is proposed with the goal of increasing economic activity related to the sector, increasing employment, attracting new businesses, reducing the environmental footprint of the industry and ultimately making Ontario competitive. Many regions, in Canada, Ontario, and worldwide, offer financial or other incentives that entice private sector investment. A provincial strategy for marine transportation, with participation from the Region, could support the development of the sector.

In 2022, Canada and the United States announced their joint work to establish the Green Shipping Corridors Network in the Great Lakes – St. Lawrence Seaway System. This initiative is intended to help spur early adoption of zero-emission fuels and technologies to align the shipping sector with the environmental goals of both nations. The Canadian government offers funding through the National Trade Corridors Fund, to upgrade critical infrastructure and reduce greenhouse gas emissions.

In terms of workforce development, the Canadian Marine Careers Foundation is bringing diverse stakeholders together through its Imagine Marine campaign, including the private sector, unions, post-secondary institutions, and the public sector to jointly promote careers in the marine sector. Ensuring regional alignment with these national efforts can leverage their impact to benefit regional business.

Global Market Drivers

Key subsectors: maintenance and construction and port machinery digitization Located in a strategic position on the Great Lakes, Niagara region's marine sector has the potential to expand commensurate with global trends. With over 100 individual ports, ships in the Great Lakes deliver 230 million metric tons of cargo worth US\$77.4 billion.²⁰ To highlight the size of this market, the Panama Canal delivers 150 million metric tons of cargo a year.²¹ Niagara region has assets and strengths in water transportation, ship and boat building and the potential for a strong manufacturing supply chain. In addition, the region strategic transportation linkages to both rail and road that service markets in Canada and the U.S.

Trends gaining traction in the global marine sector are the relevant sub-sectors of port machinery, maintenance, and the digitalization of the marine industry, including automated port sensors and robotics, which are likely to propel more efficient operations in this segment. ²² The construction of ships spurs demand in other key sub-sectors such as electronic navigational devices, communication equipment, radar and sonar, marine robotics, sub-sea vehicles, imaging equipment, and marine applications programming. These areas have seen advancements in the development of tools and processes in recent years. For example, Asian manufacturers have embraced tools such as automated cutting and welding machines and robots that can remove rust and contaminants. ²³

Key opportunities for growth in the industry are related to increased automation such as unmanned cranes, automated gates for entry and exit, and optical character recognition technology to track cargo movement, radiation scanning technology for cargo container movements as well as continuous applications of data and logistics analysis tools and services.²⁴ This trend has been prominent in Europe with 23% of roles in Internet of

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²⁰ Chamber of Marine Commerce, Great Lakes-St. Lawrence River Shipping, 2022.

²¹ Statista, Cargo volume in the Panama Canal in FY 2021, by Country of origin, 2022.

²² Markets and Markets, Smart Port Market by Technology – Global Forecast to 2027, 2022.

²³ The Maritime Executive, NYK Readies New Rust Management Technology, 2018.

²⁴ Industry Canada, First Research.

Things (IoT) being in the ship industry.²⁵ The connected ship market that tracks fleet operations management, in particular technology that has the capacity to respond to real-time data exchange among different ships and ports is an important trend in the ship IoT segment.

Investment Trends & Location Factors

While the marine industry did not register a high level of venture capital investment rounds in 2022,²⁶ developments in major companies go some way in highlighting key trends. For example, in 2022 Hyundai Heavy Industries invested US\$897 million into green construction technology for the development of eco-friendly ships. In the same year, Mitsubishi Shipbuilding received recognition for the world's first marine-based CO₂ capture system on voyage to successfully separate and capture CO₂ from flue gas. These trends indicate a move towards technological efficiency, but also a move towards a cleaner, greener marine industry.

Examining motives and determinants for projects in the marine sector shows that the most important unique location requirement for foreign direct investment into North America is proximity to markets and customers, which accounts for 48% of projects, meaning a central logistics location²⁷ is key in their decision process.

Figure 7– Investment motives into the North American marine market

| Motive | % of FDI Projects | % of Companies |
|-----------------------------------|----------------------|----------------|
| Proximity to markets or customers | 48.6 | 50.0 |
| Skilled workforce availability | 24.3 | 22.2 |
| Domestic market growth | 21.6 | 22.2 |
| Industry cluster | 16.2 | 16.6 |
| Government support | 16.2 | 16.6 |
| Regulatory environment | 10.8 | 11.1 |
| Transport infrastructure | 5.4 | 5.5 |

²⁵ Skip Technology, Europe is seeing a hiring boom in ship industry IoT roles, 2022.

²⁷ Logistic location refers to physical infrastructure, especially for international investments. The type of infrastructure needed of course depends on the volume and type/weight of the product but the overall ease to reach international destinations and ship goods to the global market is crucial for manufacturers. With a sector that deals with a high volume or heavy products, access to the sea is also preferred as it lowers the cost of moving goods. Airport access is important for worker retention especially in businesses that are more tech oriented

²⁶ Crunchbase, 2022.

| Motive | % of FDI | % of |
|--------------------------------------|----------|-----------|
| | Projects | Companies |
| Universities and research hubs | 5.4 | 5.5 |
| Quality of life | 2.7 | 2.7 |
| Technology and innovation | 2.7 | 2.7 |
| Sites & property | 2.7 | 2.7 |
| Lower costs | 2.7 | 2.7 |
| Suppliers and joint venture partners | 2.7 | 2.7 |

Source: fDimarkets

Outlook

Globally, the marine industry will represent a market value of \$188.5 billion in 2028. Within this segment, commercial and passenger ship segments will be the largest product type as the demand for transportation of both people and goods continues to be steady. Recent announcements from the Federal Government to upgrade wharfs 18.1/18.2/18.3 in Port Colborne will create an additional 1,000 foot dock that will support another 1 Million gross tonnes of movement along the canal system as well will support the announcement from Viking Cruises in doubling their itineraries to Port Colborne and through the canal system. The new dock will support their Polaris Class ships.

In terms of areas of growth worldwide, the global ship repairing market is expected to grow at a CAGR of 6% from 2021 to 2025 and by 2025, the market will reach US\$8.75 billion. ²⁹ The United States marine market is projected to be worth \$6.2 billion in 2023. ³⁰ The Asia Pacific region accounts for 50% of the global market share with China, Republic of Korea, and Japan are home to half the world's fleet. The European marine market is registering a lower CAGR growth, 3% from 2021 and 2027. ³¹ Another key segment, the port machinery digitization market will be worth US\$6.4 billion by 2026 ³² and expected to grow at a CAGR of 32% from 2020 to 2027 with North America making up the largest market followed by Europe and Asia Pacific. ³³

²⁸ Fortune Business Insights, Marine Vessel Market Size, Share and COVID-19 Impact Analysis, 2021.

²⁹ Research and Markets, Boat Repairing Global Market Report 2023, 2023.

 $^{^{30}}$ Ibis World, Marinas in the US – Market Size 2004 – 2029, 2023.

³¹ kbv Research, Europe Shipbuilding Market Size, Share & Industry Trends Analysis Report, 2022.

³² Export Market Research, 2022.

³³ Grand View Research, Smart Port Market Size, Share & Trends Analysis Report by Technology, 2019.

Recruitment Zones³⁴

Examining prospective growth companies in this target sector (Marine) shows that of the companies projected to grow over the next year, 50% are based in the United States, 7% in the United Kingdom and 4% in Spain (Gazelle.ai). Overall, the United States ranks as highly as a recruitment zone for the ship building and maintenance industry with key metro areas being Miami (FL), New York City (NY), Houston (TX) and Chicago (IL). Tech oriented hubs such as New York City stand out as a hub for digitization. China is home to one of the world's biggest ship owning countries with Shanghai being the biggest metro area as well as Beijing. In Europe, Greece is one of the largest shipping commerce nations with Athens ranking as the key center. In Europe, technology trends highlight London (UK) and Aberdeen (UK) in marine-related industries.

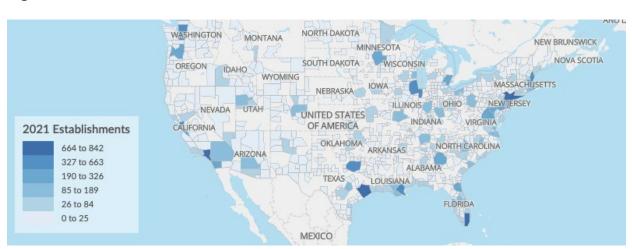


Figure 8 – Marine Hubs in the United States

Source: Lightcast

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³⁴ Recruitment zones refer to areas where Niagara Region can focus marketing and promotion efforts to attract potential investors.

SWOT Analysis

The strengths and weaknesses identified in this study reflect the primary research and literature review, as well as the engagement activities conducted in the form of an industry sector workshop and one-on-one interviews. The SWOT reflects the economic assets and location advantages of Niagara region; the region continues to benefit from its strategic location and the availability of industrial land, while being hampered by labour market constraints and the Federal regulation of ports.

The following is an overview of the strengths, weaknesses, opportunities, and threats that face the marine sector in Niagara region. This SWOT analysis utilizes the background research that was completed for the sector, as well as engagement from key stakeholders from the marine manufacturing sector in Niagara region.

Marketing messaging is recommended to align with the opportunities and strengths statements detailed below, which were drawn from stakeholder focus group sessions and uncovered through the research.

Key subsectors: maintenance and construction and port machinery digitization

| Marine Sector SWOT | | |
|---|--|--|
| Strengths | Weaknesses | |
| Location requirement for foreign direct investment into North America for the marine sector is proximity to markets and customers; Niagara region's geography is well suited to address this requirement. Niagara region's existing business assets in water transportation, ship, and boat building and a manufacturing supply chain familiar with the marine industry (over 12,00 people employed in marine-related sectors, 859 | Employers are concerned about the availability of a skilled workforce for the marine sector and a growing demand for skills such as shipbuilding at the Port Welland dry dock. Workforce is a key investment driver, and labour shortages across Canada can impact potential investments. The marine sector did not register a prominent level of venture capital | |

- businesses, and important assets such as the Welland Canal and ports in both Lake Erie and Lake Ontario)
- The region has a high concentration of businesses in subsectors such as deep sea, coastal and Great Lakes water transportation; inland water transportation; scenic and sightseeing transportation (water); and support activities for water transportation compared to the Province of Ontario.
- Niagara region has comparatively more available serviced industrial land than that of other nearby Golden Horseshoe Regions, as evidenced by the Hamilton-Oshawa Port Authority looking to Niagara Region for additional marine industrial land.³⁵
- The Welland Canal has enabled the region to become an industrial powerhouse with niche industries growing from demand created by the canal (e.g., large round turning and upholstery for ships).
- Niagara region has port operators and multiple facilities throughout the Region. The Hamilton-Oshawa Port Authority owns and operates multimodal industrial properties in Thorold and Port Colborne.
- Niagara's industrial and engineering
 workforce will be key for its marine industry
 in particular, welders, cutters solderers and
 brazers as well as assemblers and
 fabricators have been the top in demand
 occupations in ship maintenance and
 construction. In terms of port digitization,
 workers in software occupations and
 electrification such as electricians stand out.
 There is an emerging talent pool for light

- investment rounds in 2022; this may suggest a lack of innovation in the sector.
- Despite its location and strength in marine transportation, Niagara region still only has an above average concentration of overall marine sector and support businesses (relative to Ontario).
- The high cost of marine freight; rail and truck shipping options operate efficiently in the region, while the marine industry is not as established and has higher costs.
- Information available on serviced land in areas within proximity to the canal and of the appropriate sizes and service availability to attract investment, and the availability of such properties, from stakeholders.
- There is a lack of succession planning for businesses, which will become increasingly important to the marine sector due to the aging demographic shift and trade shortages across all sectors.

³⁵ Hamilton Port Authority Eyes Niagara for Growth

technology and professional services which will be key for business attraction.

Opportunities

- Niagara can prioritize investment and regional support for key marine areas related to a greener/cleaner marine sector, commercial and passenger ship building, component manufacturing, technology and automation (for example, unmanned cranes, gates and tools, and optical character recognition technology to track cargo).
- Niagara Region could develop commercialization strategies and facilitate partnerships related to technology research with post-secondary institutions with marine sector and relevant technology-related research programs.
- The Region can reinforce how well the region's overall brand is connected to the marine sector and connect local brand strengths to regional opportunities.
- Niagara could prioritize the development of high-quality serviced land in proximity to Welland Canal.
- Niagara should increase the profile of its marine shipping, as it can become an important part of the other established and emerging sector supply chains.
- Cruise ships and passenger craft are not captured in the sector statistics strongly, but Niagara region's location and the presence of cruise ship traffic is important to monitor for opportunities.
- Since Hamilton's port is operating at capacity, there is an opportunity to open more docks/ports in Niagara region.
- Build workforce development programming and awareness in partnership with postsecondary institutions and leveraging

Threats

- The Port of Hamilton is well-established and has strong branding, which presents competition for significant investments and may be competitive for high value opportunities.
- There is a perceived complexity of moving goods by marine compared to other established and more familiar shipping modes.
- There are administrative hurdles getting CBSA (Canada Border Services Agency) approval and support for becoming the first inland port of arrival, which creates difficulties to move more goods into Niagara region's port system.
- A sufferance warehouse has been agreed to in principle between the Hamilton-Oshawa Port Authority and Canada Border Services Agency (CBSA) in Niagara region, but CBSA has not been able to put together staffing complements since their priority for staffing has been given to air passenger travel.
- Connectivity with provincial transportation networks to provide flexibility for road and air travel to major centres for business and personal travel.
- The seasonality of marine shipping impairs the sectors' ability to provide continuous service.

- initiatives like the Canadian Marine Careers Foundation.
- Work provincially to influence the Ontario
 Marine Strategy to increase the
 attractiveness of the region as a location for
 investment and securing key contracts in
 ship building, manufacturing, and technology
 adoption and development.

Conclusion

The Marine Sector is strongly positioned within the Niagara Region and there are relevant and immediate opportunities available within the sector for further economic development.

Access to the St. Lawrence Seaway and the Welland Canal are advantages for the Region in attracting investment into the Marine Sector. Recent interest in Niagara region as a location for canal-facing investment, as other areas along the seaway reach high levels of investment absorption, present opportunities.

To take advantage of these opportunities, the research points to a full assessment of available lands to facilitate development of marine businesses and associated supply and service businesses in the region, significant effort to build a regional workforce for the future including fostering partnerships with post-secondary institutions, as well as involvement in the Ontario Marine Strategy.

Despite its position with respect to the border with the U.S., Niagara is still relatively distant as compared to competitive jurisdictions in southern Ontario and improving transportation linkages with major centres is important to improve the region's competitive position in the marine sector and other emerging sectors. Niagara Region's role with respect to area municipalities, needs to be defined.

To move into a leadership position in the marine sector, global trends indicate opportunities to augment regional businesses' technology adoption and the move to green transportation through partnerships, foreign direct investment strategies, and succession support that align the region with global trends in the sector.

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Niagara Region Electric Vehicle Battery Manufacturing Sector Profile March 2023



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This report has been provided for the purpose of informing and assisting the Regional Municipality of Niagara ("Niagara Region") to produce sector profiles for five emerging sectors, with this profile featuring the investment and growth potential of the Electric Vehicle Battery Manufacturing sector.

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Introduction

The demand for electric vehicles (EV) and related manufacturing industries are on a strong growth trajectory in Ontario. This trend is supported by public and government investment in the interest of achieving net-zero emissions by 2035, as well as advancing zero-emission vehicle infrastructure and critical materials resource development. All levels of government are seeking to invest in EV battery manufacturing projects in order to realize employment and business development benefits associated with the sector.

The Emerging Sector Profiles

Niagara Region Economic Development retained Deloitte LLP to produce sector profiles for five emerging sectors: marine, health, film, sport tourism, and electric vehicle (EV) 5

battery manufacturing. In the design of the project, the aerospace sector was added to the analysis. These sectors were initially identified in 'Niagara's 10 Year Economic Development Strategy 2022-2032'.

This sector profile features the investment and growth potential of EV manufacturing, EV battery manufacturing, and supply sectors. This profile was developed by defining the industries that make up and broadly support EV manufacturing. These industries were characterized using business and employment data and include support and supply businesses. From this broad overview, international, national, and local trends were considered to identify opportunities relevant to Niagara region's economy. A review of existing literature and a focus group was conducted with local partners to ground the findings in local perspectives. The data was analyzed to show a picture of the sector's future potential. This profile does not include a benchmarking of the sector, and further research is needed to accurately identify employment directly linked to the EV battery and EV manufacturing.

The following data sources were used in the development of this sector profile: Lightcast (formerly EMSI Economic Modeling) 2022, Vicinity Jobs 2022, FDI Markets, Statistics Canada, and Canadian Business Counts¹ June 2022.

Investment Attraction Highlights for the EV Battery Manufacturing Sector

Opportunities in the EV and related auto manufacturing sectors have increased in recent years, as recent investments from \$4 billion in Ontario have created opportunities for the Niagara Region to capture new investment and support the growth of its existing business sectors. The EV sector and related manufacturing in Niagara Region is an emerging sector with high growth potential for further development with the support of employers in the region and larger players in the industry to identify mutual areas of interest and opportunity.

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¹ The June 2022 Canadian Business Counts were used to determine the total number of registered businesses in the Niagara Region. Statistics Canada's Canadian Business Counts Data provides a record of business establishments by industry and size. This data is collected from the Canada Revenue Agency (CRA). The business data collected for Niagara Region included all local businesses that met at least one of the three following criteria: Have an employee workforce for which they submit payroll remittances to CRA, or have a minimum of \$30,000 in annual sales revenue, or are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

Key Highlights

High potential sub-sectors: Opportunities exist for local battery production, refurbishing and recycling. Another sub-sector related to automotive manufacturing is automotive textiles. The automotive textiles market is expected to be valued at US\$41.4 billion by 2030, with upholstery being the biggest segment due to the need for vehicle floor coverings and seats. Niagara region's traditional strength in steel production can also be leveraged for automotive chassis derived from green steel.

Foreign Direct Investment (FDI) markets for attraction: Analysis of prospective growth companies² in the EV battery manufacturing sector show 40% of high-growth companies worldwide are located in the United States and 13% are located in Canada. The autonomous vehicle and electrification market is clustered around traditional automotive hubs in North America. The mid-west United States, including Detroit (MI), Chicago (IL) and Columbus (OH) stand out as the key clusters in this segment. Beyond that, growing hubs include San Antonio (TX), Athens (TN), and Los Angeles (CA). Outside of North America, major automotive hubs are Germany, Israel, United Kingdom, France, Spain, and the Netherlands.

Market value: Electrification has a strong growth trend within the automotive sector and EVs are expected to account for 75% of car sales by 2030.³ In terms of areas of growth, the revenue in the electric vehicle market in the United States will increase to US\$139.2 billion by 2027 from US\$61.3 billion in 2023 and is expected to register an annual growth rate of 22% from 2023 to 2027.⁴Canada also benefits from this growth, within the past three years Canada and Ontario attracted more than C\$17 billion in investments in electric vehicle batteries and battery materials.⁵

Recent major investments: EVSX, a subsidiary of St-Georges Eco-Mining Corporation is moving its battery recycling and battery mineral processing facility inside the Thorold

² Research conducted by ROI, not verified by Deloitte LLP, breakdown of prospective growth industries.

³ Why the automotive future is electric? McKinsey and Company, 2021 https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/why-the-automotive-future-is-electric

⁴ Statista, Electric Vehicles – United States, 2023.

⁵ Invest Ontario, Canada and Ontario welcome historic investment from Volkswagen, March 2023, retrieved from < https://www.investontario.ca/press-release/canada-ontario-welcome-historic-investment-

volkswagen#:~:text=On%20August%2023%2C%20222%2C%20the%20Government %20of%20Canada,Canada%20is%20a%20destination%20of%20choice%20for%20inve stments.>

Multimodal Hub to take advantage of reduced transportation time and costs. In addition, General Motors has informed its St. Catharines facility that, subject to completing support agreements with Federal and Ontario government partners, the company plans to invest at the plant to manufacture new Ultium electric drive units for General Motors (GM) fast growing electric vehicle lineup. THK Rhythm Automotive Canada received \$1 million in funding from the Province through the Regional Development Program towards a \$27 million investment to retool its linkage and suspension component manufacturing in Niagara region⁶.

The EV Manufacturing Sector in Niagara Region

- Sector-related employment: Employment in sectors with potential to be relevant to EV battery and the broader manufacturing supply chain in Niagara region was estimated at 5,923 jobs in 2022. This speaks to Niagara region's existing strength in manufacturing. An important percentage of employment related to the sector comes from core industries such as motor vehicle manufacturing (15% of the sector's employment), and motor vehicle parts manufacturing (3% of the sector's employment).
- Concentration of business activity: Niagara region's concentration of business in the broader auto manufacturing supply chain as shown in the report's location quotient analysis is 1.05, which is slightly above average. However, the lack of a well-established supply-chain network specific to EV may deter prospective businesses from locating in the area, especially when considering the region will be competing with highly specialized vehicle manufacturing areas in the Ontario automotive corridor (including cities such as Oshawa, Oakville, Cambridge, Woodstock, Ingersoll, and Windsor). The region is anticipating a significant investment from GM at the St. Catharines Propulsion Plant. This investment would be expected to support around 500 jobs at the St. Catharines facility and enable the production of more than 400,000 EV drive units a year⁷. This investment would potentially increase the concentration and business activity in Niagara region.
- Strong market access: The region offers easy access to large markets, including both the Greater Toronto Area (GTA) and the United States through

⁶ Province of Ontario, Province Invests in Tillsonburg Automotive Parts Manufacturer to Boost Regional Economy, Nov 2021, retrieved from

https://news.ontario.ca/en/release/1001249/province-invests-in-tillsonburg-automotive-parts-manufacturer-to-boost-regional-economy

⁷ General Motors, retrieved from < https://news.gm.ca/en/home/newsroom.detail.html/Pages/news/ca/en/2023/feb/0220-stcatherines.html>

road, rail, air, and the St. Lawrence Seaway. These strengths contribute to opportunities for several of the emerging sectors with connections to manufacturing.



EV Battery Manufacturing Sector Overview

The Electric Vehicle (EV) battery sector represents a specific product within a new sector. It is evaluated here along with the larger EV manufacturing sector and supply chain, including a range of industries that are linked to EV manufacturing, and are specifically relevant to attracting investment in EV battery manufacturing.

Defining the EV Battery and EV Manufacturing Sector

EV manufacturing's core and related industries were defined using North American Industry Classification System (NAICS) codes. EV manufacturing and its supply chain include a range of businesses across the manufacturing and wholesale trade industries. These range from the manufacturing of electronic and digital components to the production of plastics and textiles used for product detailing and customization. Core

sectors for the EV manufacturing include engine, turbine and power transmission equipment manufacturing, motor vehicle manufacturing, motor vehicle body and trailer manufacturing, motor vehicle parts manufacturing, motor vehicle merchant wholesalers, new motor vehicle parts and accessories and merchant wholesalers.

Supply chain sectors that directly or indirectly provide services and contribute to the overall EV manufacturing supply chain include textile mills, leather production, paint and coating manufacturing, glass production, steel production, etc.

The definition for the EV sector includes a wide range of industries that are directly or indirectly linked to EV manufacturing and its broader supply chain, including EV batteries. Core NAICS for this sector exist at a detailed level (e.g., NAICS 335910 battery manufacturing, and NAICS 336320 motor vehicle electrical and electronic equipment manufacturing), nonetheless, access to data at this level is not readily available. Data is presented at the 4-digit NAICS level.

For this analysis, the codes shown below were used to collect employment and business counts and other numbers for the sector. In addition, and with the support of the Niagara Region's Project Team, the EV manufacturing supply chain subsectors were further classified into core, and support/supply chain subsectors. Figure 1 below identifies the core industry subsectors; these are highlighted in blue. It is important to note that only a portion of these would form part of the EV manufacturing supply chain. These NAICS focus on the production side, and does not include design, engineering or product marketing.

Figure 1 – Electric Vehicle (EV) Manufacturing and Supply Chain NAICS Codes

| Industry | NAICS | Description |
|---|-------|--|
| | 3114 | Textile product mills |
| | 3161 | Leather and hide tanning and finish |
| | 3255 | Paint, coating, and adhesive manufacturing |
| | 3261 | Plastic product manufacturing |
| | 3262 | Rubber product manufacturing |
| | 3272 | Glass and glass product manufacturing |
| | 3279 | Other non-metallic mineral product manufacturing |
| Manufacturing 3311 Iron and steel mills and ferro-alloy manufacturing | | Iron and steel mills and ferro-alloy manufacturing |
| | 3312 | Steel product manufacturing from purchased steel |
| | 3315 | Foundries |
| | 3321 | Forging and stamping |
| | 3323 | Architectural and structural metals manufacturing |
| 3325 Hardware manufacturing | | Hardware manufacturing |
| | 3327 | Machine shops, turned product, and screw, nut, and |
| | | bolt manufacturing |

| Industry | NAICS | Description |
|-----------|-------|---|
| | 3329 | Other fabricated metal product manufacturing |
| | 3334 | Ventilation, heating, air-conditioning and commercial |
| | 0000 | refrigeration equipment |
| | 3336 | Engine, turbine, and power transmission |
| | | equipment manufacturing |
| | 3345 | Navigational, measuring, medical and control |
| | | instruments manufacturing |
| | 3359 | Other electrical equipment and component |
| | | manufacturing |
| | 3361 | Motor vehicle manufacturing |
| | 3362 | Motor vehicle body and trailer manufacturing |
| | 3363 | Motor vehicle parts manufacturing |
| | 4151 | Motor vehicle merchant wholesalers |
| Wholesale | 4152 | New motor vehicle parts and accessories merchant |
| Trade | | wholesalers |
| ITAUE | 4161 | Electrical, plumbing, heating and air-conditioning |
| | | equipment and supplies merchant wholesalers |

Sector Trends

Invest Canada states that electric vehicles and its supply chain are critical elements of the strategies that multiple countries are adopting to meet their environmental sustainability pledge of net-zero by 2050. Canada is well positioned to lead across all five segments of the EV battery supply chain, these include mining and mineral processing, cathode and anode manufacturing, chemical precursors, battery manufacturing, electric vehicle manufacturing, and part supply and recycling.⁸

An analysis by the Trillium Network for Advanced Manufacturing showed that between 2020 and 2022, Canada has attracted:

- At least \$1 billion of capital investment related to mining and battery materials manufacturing, \$5.2 billion related to EV battery cell and module manufacturing.
- \$6.9 billion related to EV assembly (not including investments in hybrid vehicles), and approximately \$1 billion related to EV battery components and recycling (combined).⁹

Niagara's most recent 10 Year Economic Development Strategy highlights the recent announcements of automakers investing \$4 billion in transformative electric vehicle investments at their Ontario assembly plants.¹⁰ other examples of key investments include:

- Stellantis announced it will invest up to \$1.5 billion to upgrade its assembly plant in Windsor to build new electrified vehicles. A \$4.9 billion investment is also being made by LG Energy Solutions and Stellantis in Windsor, to produce lithium-based batteries for electric vehicles. This is the largest single investment in manufacturing to be made in Ontario and will serve as a catalyst for the establishment of a strong battery supply chain.
- GM announced it would invest \$1 billion in its plant in Ingersoll to produce their BrightDrop EV delivery van – the first all-electric vehicle produced by a mainstream automaker in Canada. With the recent announcement of potential investment, the drive units built at St. Catharines will be used in vehicles built on GM's flexible EV architecture, called Ultium. 2023 will be a breakout year for Ultium vehicles with the

⁸ https://www.investcanada.ca/industries/batteries-and-electric-vehicles-ev

⁹ Developing Canada's Electric Vehicle Battery Supply Chain: Quantifying the Economic Impacts and Opportunities, September 2022.

¹⁰ Niagara Region, Niagara's 10 Year Economic Development Strategy 2022-2032

electric Cadillac LYRIQ the affordable Chevrolet Equinox EV, Chevrolet Blazer EV, Chevrolet Silverado EV, GMC Sierra EV, and GMC HUMMER SUV EV all entering the North American market¹¹.

- In November 2021, Tesla announced that they were opening a battery manufacturing facility in Markham.
- Magna International announcing \$470 million in electric vehicle product in Ontario in February 2023.¹²
- Volkswagen announced an EV battery facility in St. Thomas in March 2023.¹³

In a response to these investments, and the current federal agenda to increase support and investment for electric vehicles in Canada, we have seen these announcements and plans for upgrades or expansions to their manufacturing operations to support electric vehicle manufacturing.¹⁴

The Niagara Region Advantage

From the region, industry has access to large consumer and employment markets that include both the GTA and the United States via road and rail, in addition to access to the global market via St. Lawrence Seaway, these transportation linkages are indispensable for moving and shipping EV components. The Seaway is an important corridor for North America cargo shipment and has recently seen a boom in general cargo shipments at the end of 2021, due to the increasing demand for manufacturing and building materials (i.e., iron ore, steel, cement, stone, and other raw materials).

¹¹ General Motors, retrieved from

https://news.gm.ca/en/home/newsroom.detail.html/Pages/news/ca/en/2023/feb/0220-stcatherines.html

¹² Magna International, Magna Announces New Facility and Expands in Five Other Locations Across Ontario to Support New Business, Feb 2023, retrieved from ">13 Invest Ontario, Canada and Ontario welcome historic investment from Volkswagen, March 2023, retrieved from https://www.investontario.ca/press-release/canada-ontario-welcome-historic-investment-

volkswagen#:~:text=On%20August%2023%2C%2022%2C%20the%20Government %20of%20Canada,Canada%20is%20a%20destination%20of%20choice%20for%20inve stments. >

¹⁴ Conference Board of Canada, An Electrified Outlook for Motor Vehicle and Parts Manufacturing, December 2021.

According to the Chamber of Marine Commerce, general cargo shipments were up 60%.¹⁵

The Region offers a suite of incentives to entice investment in manufacturing through their Gateway CIP Program, which compliments other municipal program offerings, among other incentives, Niagara offers the Niagara Free Trade Zone (FTZ), Brownfield Incentives, the Niagara's Development Charges Reduction Program, and Industrial Development Charge incentives and grants. Significant cost savings and benefits including lower utility costs that create potential operational cost savings of up to 19% have been identified by analysis completed by Niagara Economic Development¹⁶. According to Niagara Region Economic Development, the region ranked 7th among 115 North American cities when comparing the cost of operating a manufacturing business; the Region ranked ahead of cities such as Toronto, Montreal, Cleveland, Detroit, Chicago, Pittsburgh, and New York.

The region has a number of physical features amenable to EV production. As of 2019, 1,849 of vacant employment lands were in the region's Economic Gateway Municipalities¹⁷, The inventory includes approximately 2,300 designated employment parcels totaling 6,550 ha of land (with an average parcel size of 2.6 ha)¹⁸ The region has access to discarded graphite that can be repurposed for use in products such as lithium batteries in electric cars and robotics.¹⁹

¹⁵ https://www.stcatharinesstandard.ca/business/2021/09/16/general-cargo-shipments-up-6051-on-st-lawrence-seaway.html

¹⁶ https://niagaracanada.com/key-sectors/manufacturing/

¹⁷ Niagara Economic Gateway Municipalities include Thorold, Port Colborne, Welland, Niagara Falls and Fort Erie.

¹⁸ Niagara Region's Official Plan – Niagara's Employment Area Strategy, 2020

¹⁹ Niagara Region, retrieved from https://niagaracanada.com/graphite-mining-eyed-on-former-ucar-property-in-welland/

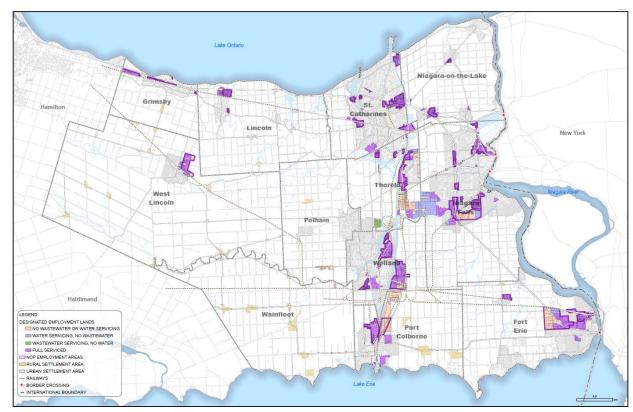


Figure 2 – Designated employment lands within the Niagara Region

Source: Niagara Region

Employment and Business Structure in Niagara Region

According to Lightcast, employment in Niagara region's electric vehicle and supply chain sectors supported 5,923 jobs in 2022²⁰. The largest subsectors are motor vehicle manufacturing (917 jobs or 15% of sector employment), new motor vehicle parts and accessories merchant wholesalers (228/4%), and motor vehicle parts manufacturing (158/3%).

EV battery manufacturing has an extensive supply chain in the region. Among the largest supply chain sectors by employment are architectural and structural metals manufacturing, and plastic product manufacturing.

 $^{^{20}}$ Employment in some of these sectors may not be related to EV manufacturing. 16

Figure 3 – Employment EV and Supply Chain, Niagara Region, 2022

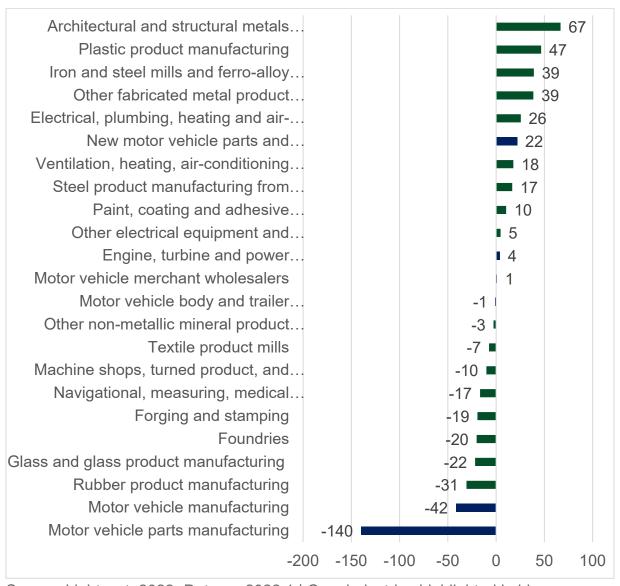
| Description | Employm ent 2022 | % |
|---|---------------------|---------------|
| Total Manufacturing and EV Related Employment | 5,923 | 100% |
| Motor vehicle manufacturing | 917 | 15% |
| Architectural and structural metals manufacturing | 820 | 14% |
| Plastic product manufacturing | 649 | 11% |
| Electrical, plumbing, heating and air-conditioning equipment | FGF | 10% |
| and supplies merchant wholesalers | 565 | 10% |
| Machine shops, turned product, and screw, nut, and bolt manufacturing | 563 | 9% |
| Iron and steel mills and ferro-alloy manufacturing | 368 | 6% |
| Other fabricated metal product manufacturing | 241 | 4% |
| Steel product manufacturing from purchased steel | 229 | 4% |
| New motor vehicle parts and accessories merchant wholesalers | 228 | 4% |
| Foundries | 183 | 3% |
| Motor vehicle parts manufacturing | 158 | 3% |
| Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing | 150 | 3% |
| Paint, coating, and adhesive manufacturing | 138 | 2% |
| Other non-metallic mineral product manufacturing | 134 | 2% |
| Navigational, measuring, medical and control instruments manufacturing | 108 | 2% |
| Motor vehicle merchant wholesalers | 92 | 2% |
| Engine, turbine, and power transmission equipment manufacturing | 92 | 2% |
| Forging and stamping | 67 | 1% |
| Glass and glass product manufacturing | 58 | 1% |
| Rubber product manufacturing | 57 | 1% |
| Textile product mills | 45 | 1% |
| Other electrical equipment and component manufacturing | 38 | 1% |
| Motor vehicle body and trailer manufacturing | 25 | 0% |
| Hardware manufacturing | <10 | Insf. Data |
| Leather and hide tanning and finish | 0 | 0% |

Source: Lightcast, 2022 - Datarun 2022.1

The projections presented below are based on regressions and utilize historic data 3, 5, and 10 years into the past²¹. The EV and supply chain related subsectors are expected to see some employment declines by 2028. Overall, the sector is expected to remain flat (-18 jobs: a 0.3% decline), compared to 2022. These losses will be driven by employment declines in key core sectors such as motor vehicle part manufacturing (-140 jobs or 89% decline), and motor vehicle manufacturing (-42 jobs or 5% decline). On the other hand, some employment gains are expected in sectors such as architectural and structural metals manufacturing (+67 jobs or 8% growth), and plastic product manufacturing (+47 jobs or 7% growth). The manufacturing sector is a leader in technology adoption industry, particularly automation and robotics technologies. Some of these declines could be the result of automation processes. Also, as production is moving towards light manufacturing – that, by nature, means smaller, tighter production processes with fewer people.

²¹ Lighcast, 2022. Datarun 2022.1

Figure 4 – Employment Change, Manufacturing and EV Related Sectors, Niagara Region, 2022-2028



Source: Lightcast, 2022- Datarun 2022.1 | Core industries highlighted in blue

382 businesses related to EV manufacturing and its supply chain were identified in Niagara region in June 2022. Most of these businesses (226), or 59%, had employees.

Industry sectors (core EV industries) with the largest number of businesses included new motor vehicle parts and accessories merchant wholesalers (29 businesses or 8% of businesses in the sector), and motor vehicle parts manufacturing (14/4%). Similar to the trend we saw with employment, the businesses with the largest number of establishments were in subsectors that are related to the sector's broader supply chain.

Figure 5 – Business Counts, Manufacturing and EV Related Sectors, Niagara Region, June 2022

| Description | With Employees | Without Employees | Total |
|---|-------------------|----------------------|-------|
| Total EV and Supply Chain | 226 | 156 | 382 |
| Machine shops, turned product, and screw, nut, and bolt manufacturing | 39 | 21 | 60 |
| Electrical, plumbing, heating and air- conditioning equipment and supplies merchant wholesalers | 33 | 13 | 46 |
| Architectural and structural metals manufacturing | 32 | 9 | 41 |
| Other fabricated metal product manufacturing | 12 | 19 | 31 |
| Motor vehicle merchant wholesalers | 6 | 23 | 29 |
| New motor vehicle parts and accessories merchant wholesalers | 15 | 13 | 28 |
| Plastic product manufacturing | 13 | 7 | 20 |
| Textile product mills | 9 | 8 | 17 |
| Motor vehicle parts manufacturing | 10 | 4 | 14 |
| Other non-metallic mineral product manufacturing | 7 | 4 | 11 |
| Other electrical equipment and component manufacturing | 6 | 5 | 11 |
| Paint, coating, and adhesive manufacturing | 7 | 2 | 9 |
| Navigational, measuring, medical and control instruments manufacturing | 6 | 3 | 9 |
| Foundries | 8 | 0 | 8 |
| Forging and stamping | 4 | 3 | 7 |
| Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing | 6 | 1 | 7 |
| Motor vehicle body and trailer manufacturing | 3 | 4 | 7 |
| Rubber product manufacturing | 4 | 2 | 6 |
| Iron and steel mills and ferro-alloy manufacturing | 2 | 4 | 6 |
| Glass and glass product manufacturing | 0 | 5 | 5 |
| Engine, turbine, and power transmission equipment manufacturing | 1 | 3 | 4 |

| Description | With Employees | Without Employees | Total |
|--|-------------------|----------------------|-------|
| Steel product manufacturing from purchased steel | 2 | 1 | 3 |
| Hardware manufacturing | 1 | 1 | 2 |
| Motor vehicle manufacturing | 0 | 1 | 1 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region | Core industries highlighted in blue

Location Quotient

As part of the economic baseline analysis, a Location Quotient (LQ) Analysis was completed to determine the concentration of employment in the EV battery manufacturing sector, in the Niagara region and relative to the rest of Ontario. The location quotient reveals what makes a region unique, in this case in comparison with other communities in Ontario. The following chart shows common LQ Classifications to interpret the figures in Figure 5.



The Niagara region shows a slightly above average concentration of EV and supply chain related businesses relative to Ontario. However, there is no evidence of a high concentration of businesses in any of the core vehicle and vehicle parts manufacturing except for engine, turbine, and power transmission equipment manufacturing (4 businesses – LQ 1.60). The Region displays a high concentration of businesses in some of the supply chain industry subsectors.

Figure 6 – Business Concentrations (Location Quotients), Manufacturing and EV Related Sectors, Niagara Region, June 2022

| Description | LQs Total |
|--|--------------|
| Total EV and Supply Chain | 1.05 |
| Textile product mills | 2.91 |
| Iron and steel mills and ferro-alloy manufacturing | 3.78 |
| Foundries | 2.93 |

| Description | LQs |
|---|-------|
| Description | Total |
| Forging and stamping | 1.72 |
| Paint, coating, and adhesive manufacturing | 1.70 |
| Engine, turbine, and power transmission equipment manufacturing | 1.60 |
| Rubber product manufacturing | 1.51 |
| Other non-metallic mineral product manufacturing | 1.45 |
| Architectural and structural metals manufacturing | 1.30 |
| Machine shops, turned product, and screw, nut, and bolt manufacturing | 1.27 |
| Motor vehicle body and trailer manufacturing | 1.21 |
| Other fabricated metal product manufacturing | 1.06 |
| Glass and glass product manufacturing | 0.89 |
| Motor vehicle merchant wholesalers | 0.89 |
| Motor vehicle parts manufacturing | 0.88 |
| New motor vehicle parts and accessories merchant wholesalers | 0.88 |
| Navigational, measuring, medical and control instruments manufacturing | 0.82 |
| Other electrical equipment and component manufacturing | 0.81 |
| Electrical, plumbing, heating and air-conditioning equipment and supplies | 0.81 |
| merchant wholesalers | 0.61 |
| Steel product manufacturing from purchased steel | 0.76 |
| Ventilation, heating, air-conditioning and commercial refrigeration | 0.76 |
| equipment manufacturing | 0.70 |
| Hardware manufacturing | 0.68 |
| Plastic product manufacturing | 0.66 |
| Motor vehicle manufacturing | 0.37 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region

Job Demand

Between January 1, 2020, to November 30, 2022, a total of 547 job postings in industries related to the EV manufacturing sector and supply chain were recorded in the Niagara region. Most of these job postings were in the other fabricated metal product manufacturing (167 job postings), and other non-metallic mineral product manufacturing (75 job postings). Most of these job postings were advertised in 2022.

Figure 7 – Job Demand (Job Postings) by Industry Sector (Manufacturing and EV Related Sectors), Niagara Region, January 1, 2020, to November 30, 2022

| NAICS | 2020 | 2021 | 2022 | Total Postings | % |
|-------------------------------------|------|------|------|-------------------|---------|
| Total | 107 | 156 | 284 | 547 | 100% |
| 3329 - Other Fabricated Metal | 20 | F.C. | 00 | 167 | 30.5% |
| Product Manufacturing | 29 | 56 | 82 | 167 | 30.5% |
| 3279 - Other Non-Metallic Mineral | 9 | 11 | 55 | 75 | 13.7% |
| Product Manufacturing | 9 | '' | 33 | 75 | 13.7 /0 |
| 3362 - Motor Vehicle Body and | 9 | 26 | 10 | 45 | 8.2% |
| Trailer Manufacturing | 9 | 20 | 10 | 43 | 0.2 /0 |
| 3255 - Paint, Coating and Adhesive | 11 | 9 | 19 | 39 | 7.1% |
| Manufacturing | 11 | 3 | 13 | 33 | 7.170 |
| 3315 - Foundries | 11 | 6 | 22 | 39 | 7.1% |
| 3327 - Machine Shops, Turned | | | | | |
| Product, and Screw, Nut and Bolt | 11 | 9 | 7 | 27 | 4.9% |
| Manufacturing | | | | | |
| 4161 - Electrical, Plumbing, | | | | | |
| Heating and Air-Conditioning | 5 | 5 | 14 | 24 | 4.4% |
| Equipment and Supplies | O | | 14 | 24 | 4.470 |
| Wholesaler-Distributors | | | | | |
| 3312 - Steel Product Manufacturing | 2 | 4 | 13 | 19 | 3.5% |
| from Purchased Steel | | | | | 0.070 |
| 3261 - Plastic Product | 4 | 11 | 3 | 18 | 3.3% |
| Manufacturing | • | | | | 0.070 |
| 3323 - Architectural and Structural | 2 | 4 | 10 | 16 | 2.9% |
| Metals Manufacturing | | | | | 2.070 |
| 4152 - New Motor Vehicle Parts | | | | | |
| and Accessories Wholesaler- | 0 | 1 | 13 | 14 | 2.6% |
| Distributors | | | | | |
| 4151 - Motor Vehicle Wholesaler- | 0 | 5 | 5 | 10 | 1.8% |
| Distributors | | | | | |
| 3361 - Motor Vehicle | 6 | 0 | 3 | 9 | 1.6% |
| Manufacturing | | | | | |
| 3272 - Glass and Glass Product | 1 | 0 | 7 | 8 | 1.5% |
| Manufacturing | | | | | |
| 3336 - Engine, Turbine and Power | 4 | | _ | | 4.50/ |
| Transmission Equipment | 1 | 3 | 4 | 8 | 1.5% |
| Manufacturing | | | | | |
| 3345 - Navigational, Measuring, | • | _ | _ | _ | 4.007 |
| Medical and Control Instruments | 2 | 1 | 4 | 7 | 1.3% |
| Manufacturing | | | | | |

| NAICS | 2020 | 2021 | 2022 | Total Postings | % |
|---|------|------|------|-------------------|-------|
| 3363 - Motor Vehicle Parts | 1 | 1 | 4 | 6 | 1.1% |
| Manufacturing | | | | | |
| 3114 - Fruit and Vegetable | | | | | |
| Preserving and Specialty Food | 0 | 3 | 2 | 5 | 0.9% |
| Manufacturing | | | | | |
| 3334 - Ventilation, Heating, Air- | | | | | |
| Conditioning, and Commercial | 2 | 0 | 3 | 5 | 0.9% |
| Refrigeration Equipment | | 0 | 3 | 5 | 0.970 |
| Manufacturing | | | | | |
| 3262 - Rubber Product | 0 | 0 | 3 | 3 | 0.5% |
| Manufacturing | 0 | 0 | 3 | 3 | 0.5% |
| 3321 - Forging and Stamping | 1 | 0 | 1 | 2 | 0.4% |
| 3359 - Other Electrical Equipment and Component Manufacturing | 0 | 1 | 0 | 1 | 0.2% |

Source: Vicinity Jobs

Sector Development

Federal Government Initiatives

The Canadian Federal Government has committed to achieving net-zero emissions by 2050 through the Canadian Net-Zero Emissions Accountability Act. Due to this legislation, there has been a shift in the types of vehicle manufacturing taking place in the Country and the government has committed to investing in this industry through programs such as the Net Zero Accelerator.

The Federal Economic Development Agency for Southern Ontario (FedDev Ontario) is investing in the electric vehicle supply chain and has invested more than \$47 million in 12 EV related projects, creating and maintaining more than 700 jobs since 2015.²² Furthermore, Canada's Critical Minerals Strategy (backed by up to \$3.8 billion in federal support), proposed funding for critical minerals supply chain, from geoscience and exploration to mineral processing, manufacturing, and recycling applications, including

²² Government of Canada, Government of Canada invests in an end-to-end electric vehicle supply chain, Feb 16, 2023, retrieved from < https://www.canada.ca/en/economic-development-southern-ontario/news/2023/02/government-of-canada-invests-in-an-end-to-end-electric-vehicle-supply-chain.html>

support for research, development, and technological deployment, all relevant to EV battery manufacturing and its supply chain²³.

Provincial Government Initiatives

The Ontario Vehicle Innovation Network (OVIN) is a provincial initiative that looks to accelerate the development and commercialization of next generation electric and autonomous vehicles to support Ontario's role as the manufacturing hub of Canada, while leveraging the natural resources of Northern Ontario. A program that is offered through this initiative relevant to EV Battery Manufacturing is the Research and Development Partnership Fund – Electric Vehicle. This program helps small and medium businesses that require co-investments, and the support of other partners to develop, test, validate, and commercialize EV and battery focused technologies. OVIN also supports the talent development in the automotive sector in the province and has support for both internships for college and university students and fellowships for PhD graduates and post-doctoral fellows.

In 2019, the Government of Ontario launched "Driving Prosperity: The Future of Ontario's Automotive Sector" program. The two-phased initiative envisions to strengthen and build on Ontario's North American leadership in automotive assembly and part production, as well as position the province to be a leader in the development and commercialization and adoption of advanced manufacturing and mobility technologies²⁴.

Recent EV Investments in Ontario

As mentioned earlier in this report, some of the key investments in the EV sector in Ontario include:

- Stellantis announced it will invest up to \$1.5 billion to upgrade its assembly plant in Windsor to build new electrified vehicles.
- GM announced it would invest \$1 billion in its plant in Ingersoll to produce their BrightDrop EV delivery van – the first all-electric vehicle produced by a mainstream automaker in Canada. With the recent announcement of potential invest, the drive units built at St. Catharines will be used in vehicles built on GM's flexible EV architecture, called Ultium. 2023 will be a breakout year for Ultium vehicles with the electric Cadillac LYRIQ the affordable Chevrolet Equinox EV, Chevrolet Blazer EV,

²³ Government of Canada, Prime Minister Office. Retrieved from

https://pm.gc.ca/en/news/news-releases/2023/01/16/strengthening-global-electric-vehicle-supply-chains-

canadian#:~:text=Permanent%20magnets%20and%20rare%20earth,support%2C%20announced%20in%20Budget%202022.>

²⁴ Government of Ontario, Driving Prosperity: The Future of Ontario's Automotive Sector.

- Chevrolet Silverado EV, GMC Sierra EV, and GMC HUMMER SUV EV all entering the North American market.
- In November 2021, Tesla announced that they were opening a battery manufacturing facility in Markham.
- A \$4.9 billion investment is being made by LG Energy Solutions and Stellantis in Windsor, to produce lithium-based batteries for electric vehicles. This is the largest single investment in manufacturing to be made in Ontario and will serve as a catalyst for the establishment of a strong battery supply chain.
- In 2023, the governments of Canada and Ontario announced an additional \$50 million in funding for the Oneida Energy Storage Project. This project is a 250-megawatt battery storage facility in Haldimand County and will support the operation of Ontario's clean electricity grid and has received \$170 million in funding from the Canada Infrastructure Bank. The project is expected to be operational in 2025 and will provide enough power to meet the peak demand of a city the size of Oshawa.²⁵
- In mid-February 2023, Magna, one of the world's largest suppliers in the automotive industry, announced that it is expanding its operation across six locations in Ontario with a \$471 million investment. The vision for this investment is to expand and strengthen its electric vehicle parts production to meet the growing demand within the industry.²⁶
- On July 20202, Umicore and the Government of Canada signed a Memorandum of Understanding (MoU) to finalize the support application of the project under the Strategic Innovation Fund. This MoU follows a signed agreement with Loyalist Township to secure a plot of land of about 350 acres in Loyalist, Ontario. Umicore is targeting to start construction in 2023 and operations at the end of 2025 with the potential to reach by the end of the decade an annual production capacity capable of powering approximately one million EVs²⁷.
- On March 13, 2023, Volkswagen selected St. Thomas, Ontario for first overseas battery plant. The company's battery subsidiary will build what it calls a gigafactory in the community and intends to start production in 2027²⁸.

²⁵ Government of Ontario, Governments of Canada and Ontario Working Together to Build Largest Electricity Battery Storage Project in Canada, 2023.

²⁶ Invest Ontario, Magna Expands Ontario EV Operations with Brampton Plant and Five Upgraded Facilities, 2023.

²⁷ Umicore, New Release (July 13, 2022). Retrieved fromhttps://www.umicore.com/en/newsroom/umicore-prepares-to-construct-battery-materials-production-plant-in-canada/

²⁸ Volkswagen to open its first North American EV battery plant in St. Thomas, Ont. | CBC News

Global Market Drivers

Key subsectors: automotive chassis, electric motors, automotive textiles supply chain

As the electric vehicle industry becomes a driving force in the automotive industry, the entirety of the automotive supply chain will be implicated from the materials used to supply automotive production to propulsion technology. In the United States, new federal targets to grow the electrification market through investments into charging infrastructure and other regulations bodes well for the potential in the American market. There are opportunities for electrification of vehicles over the coming decade even in modes where emissions are hard to abate such as for heavy-duty trucks, aviation, and shipping. As Niagara region is close to a strong steel production region (e.g., Hamilton is home to the world's largest integrated steel producer), automotive chassis derived from green steel is a key subsector worthy of note. Electrification in the automotive segment goes beyond materials used in the manufacturing process. Electric propulsion technology that enables the electrification of vehicles is growing. Implementation of stringent environmental policies and government regulations to control climate change across the globe has led to restrictions on the usage of traditional IC engines. This has propelled growth in clean technologies, including the electric battery and propulsion technology market (e.g., Government of Canada to require 100% of car and passenger truck sales be zero-emission by 2035 in Canada).

Investment Trends & Location Factors

At least 10 projects were recorded in the electric vehicle market and its supply chain in Ontario from 2018 – 2022. Some of the most noteworthy projects include:

- In May 2022, Spain-based Wallbox, which develops electric vehicle charging equipment, opened a new warehouse in Mississauga, Canada. When complete, the warehouse will provide full logistics services, including warehousing, inventory management, and transportation to the local market
- In April 2022, Netherlands-based Stellantis, a multinational automotive manufacturing corporation, announced plans to establish a new battery R&D facility in Windsor, Canada. The 9,290 square meter facility, which will be located beside its existing manufacturing site, is expected to create 650 jobs. It will be dedicated to electric vehicle platform and battery research and is the company's first such lab in North America. The lab forms part of a \$2.8 billion investment plan announced by the company to ramp up its electric vehicle manufacturing and research operations in Canada. This will see two of its manufacturing sites, located in Windsor and Brampton, retooled to produce electric vehicles.
- In March 2022, Netherlands-based Stellantis invested \$4.1 billion to establish a large-scale electric vehicle battery manufacturing facility through a joint venture

with South Korea-based LG Energy Solution in Windsor, Canada by the first quarter of 2024. The JV company will produce lithium-ion battery cells and modules to serve North America. It will have an annual production capacity over 45-gigawatt hours and will create an estimated 2,500 new jobs. The new factory will be built at 9,865 Twin Oaks Drive and is supported by the City of Windsor and the Ontario government.

 In January 2021, General Motors Canada, an automotive manufacturer, and a subsidiary of US-based General Motors, invested \$800m into its manufacturing plant in Ingersoll, Canada. The investment equipped the plant, which makes Chevrolet Equinox SUVs, with the capabilities to build its EV600 electric delivery vans. The expansion is scheduled to be completed in 2023. The project created 699 jobs.

Patent activity shows that battery and rechargeable batteries have been dominating the electric vehicle patent segment and in particular R&D in batteries by big automakers. Daimler, Toyota, Volkswagen, Audi, and Ford have been a key driving force for acceleration in this segment. Trends in venture capital funding show there have been 470 investment rounds in the electric vehicle segment in 2022.²⁹ In general, venture capital firms are moving away from investment in pre-seed/seed stage and focusing on investing in existing deals³⁰.

Examining motives and determinants for projects in the electric vehicle sector shows that location requirements for foreign direct investment into North America are a skilled workforce, which accounts for 39% of projects and government support, which accounts for 31% of projects. The regulatory environment also plays a stronger role than in any of the other target sectors. Lack of serviced industrial lands have also been cited by Niagara Region as a potential barrier to investment.

Figure 8 – Investment motives into the North American electric vehicle market

| Motive | % of FDI Projects | % of Companies |
|-----------------------------------|----------------------|-------------------|
| | - | • |
| Skilled workforce availability | 39.4 | 41.1 |
| Government support | 33.8 | 33.8 |
| Proximity to markets or customers | 29.5 | 30.8 |
| Regulatory environment | 18.3 | 19.1 |
| Domestic market growth | 14.0 | 14.7 |
| Industry cluster | 14.0 | 14.7 |
| Transport infrastructure | 11.2 | 11.7 |

²⁹ Crunchbase, 2022.

³⁰ Ibid.

| Motive | % of FDI Projects | % of Companies |
|------------------------------------|----------------------|----------------|
| Suppliers & joint venture partners | 8.4 | 8.8 |
| Technology and innovation | 7.0 | 7.3 |
| Universities and research hubs | 4.2 | 4.4 |
| Quality of life | 2.8 | 2.9 |
| Sites and property | 2.8 | 2.9 |
| Taxes & incentives | 2.8 | 2.9 |

Source: fDimarkets

Outlook

Electrification has a strong growth trend within the automotive sector and EVs are expected to account for 75% of car sales by 2030.³¹ In terms of areas of growth, the revenue in the electric vehicle market in the United States will increase to US\$139.20 billion by 2027 from US\$61.30 billion in 2023 and is expected to register an annual growth rate of 22% from 2023 to 2027.³² Electric vehicle market revenue in Asia is expected to reach US\$198.20 billion in 2023 and will grow by a compound annual growth rate (CAGR) of 14% from 2023 to 2027.³³ In Europe, the electric vehicle market is projected to reach US\$181.70 billion in 2023 and will grow by a CAGR of 17% which will result in a projected market value of US\$340.90 billion by 2027.³⁴

Overall, the global automotive chassis market is valued at \$US48.37 billion and is expected to grow at a CAGR of 5% from 2022 – 2030. The property of the global street is also driven by European Union legislation requirements, for example, major car manufacturers such as Mercedes-Benz AG is investing into H2 Green Steel which is part of Mercedes-Benz's Ambition 2039, which includes a CO²-neutral vehicle fleet by 2039. Other examples include Volvo Group which has committed to using 100% green steel by 2050 as part of the global SteelZero initiative pioneered by industry leaders. A niche that is worth considering given Niagara's strengths in textile product mills is automotive textiles. The market is expected to be valued at US\$41.4 billion by 2030 and

³¹ Why the automotive future is electric? McKinsey and Company, 2021 https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/why-the-automotive-future-is-electric

³² Statista, Electric Vehicles – United States, 2023.

³³ Statista, Electric Vehicles – Europe, 2023.

³⁴ Ibid.

³⁵ Market Research Future, Automotive Chassis Market Research Report Information by Chassis Type, 2018.

in terms of application upholstery will be the biggest segment due to the need for vehicle floor coverings and seats.³⁶

Deloitte predicts that by 2030, Battery Electronic Vehicles will account for 81% (25.3 million) of all new EVs sold.³⁷ By contrast, Plug-in Hybrid Electric Vehicles sales are expected to reach 5.8 million by 2030. The light commercial vehicle market is expected to register the highest levels of growth within the overall market due to the need for retailers and transport fleets to respond to increasing demand in the distribution market, while doing so with a smaller carbon footprint. Growth in the North American battery market is driven by increased investments and decreasing battery prices. Relatedly, the electric motor market size registered a market value of US\$18 billion. Traction motors which are further divided into AC and DC motors are expected to be the leading motor type. In particular, AC segments that are used more regularly in electric vehicle manufacturing. It is predicted that Europe will be the biggest market in traction motors and will grow by 27% in market value by 2027.

Recruitment Zones³⁸

Examining prospective growth companies in this target sector shows that 40% of high-growth companies worldwide were located in the United States and 13% in Canada. The autonomous vehicle and electrification market is clustered around traditional automotive hubs in North America. The Midwest including Detroit (MI), Chicago (IL), and Columbus (OH) stand out as the key clusters in this segment. Beyond that, growing hubs include San Antonio (TX), Athens (TN), and Los Angeles (CA). Outside of North America, major automotive hubs are in Germany such as Munich and Stuttgart. Growing automotive hubs are in Israel, United Kingdom, France, Spain, and the Netherlands.

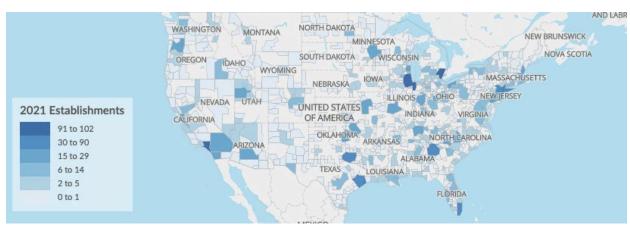
³⁶ Straits Research, Automotive Textiles Market Size is projected to reach USD 41.42 Billion by 2030, growing at a CAGR of 4.2%: Straits Research, 2022.

³⁷ Deloitte, Electric Vehicles, 2020.

³⁸ Recruitment zones refer to areas where Niagara Region can focus marketing and promotion efforts to attract potential investors.

³⁹ Gazelle.ai, 2023.

Figure 9 – Electric vehicle hubs in the United States



Source: Lightcast

SWOT Analysis

The EV battery manufacturing sector and supply chain includes industries involved in the design, manufacturing, distribution, and miscellaneous services linked to EV manufacturing (textile supply, manufacturing of electronic components, etc.). Electric vehicle manufacturing and its supply chain are critical elements for Canada's emission reduction goals, and the country is well positioned to lead across all elements from manufacturing to EV battery supply chain. Recent investments in Southern Ontario reflect potential opportunities in the sector.

The following is an overview of the strengths, weaknesses, opportunities, and threats that face the EV and supply chain in Niagara region. This SWOT analysis utilizes the background research that was completed for the sector, as well as engagement from key stakeholders from the EV battery manufacturing sector in Niagara region.

Marketing messaging is recommended to align with the opportunities and strengths statements detailed below, which were drawn from stakeholder focus group sessions and uncovered through the research.

Key subsectors: automotive chassis, electric motors, automotive textiles supply

Electric Vehicle Battery Manufacturing SWOT Strengths Weaknesses High concentration of businesses in the By June 2022, Niagara region showed a low concentration of iron and steel production and textile production mills, relative to Ontario, and businesses in the core motor these industries can support EV vehicle manufacturing businesses. manufacturing supply chains. Poor data availability at subsector Strong support organizations in place for level to measure the impact of EV specialty manufacturing including the battery manufacturing. Consider Trillium Network for Advanced renewing the sector profile using Manufacturing, Niagara College – Walker core NAICS codes at 4 and 6-digit Advanced Manufacturing and Innovation level as new industry data becomes Centre, and Brock University. available. Local manufacturers benefit from trade Skilled labour shortages were agreements including the Comprehensive reported to be affecting the Economic and Trade Agreement (CETA), manufacturing sector and affect and the Canada-USA-Mexico Agreement manufacturing. Unique location

- (CUSMA). Under the CETA, EU tariffs have been eliminated on all Canadian auto parts.
- Revised automotive rules under CUSMA have the potential to generate increased automotive production in North America, including in Canada, as well as additional sourcing opportunities for Canadian parts producers.
- Designation as a Canadian Foreign Trade Zone (FTZ) helps companies access the federal, provincial and regional programs that support Canada's export development efforts. The FTZ designation make management of vehicle production plants easier, as no duty or tax is payable if production is export oriented.
- Niagara College partners with Napa College for technician trainings and have made significant advancements in EVrelated training.

- requirements for foreign direct investment include a skilled workforce which accounts for 39% of project location decisions.
- Local businesses engaged in this study did not express strong interest in EV battery investment and were concerned with overall cost.
- Niagara's ageing demographic trends will require targeted efforts to build the labour force needed for this sector, particularly in technical professions.

Opportunities

- Unique location requirements for EV
 manufacturing foreign direct investment
 into North America include government
 support, which accounts for 31% of
 projects, and there is widespread
 government support for EV manufacturing
 to support Niagara Region's efforts.
- Automotive textiles are a related sector worth considering. The market is expected to be valued at US\$41.4 billion by 2030.
- The whole automotive supply chain will be impacted by the demand for EV automotive production, with opportunities for environmentally sustainable approaches to production.

Threats

- The EV Battery and associated supply sectors are expected to see some employment declines by 2028. Overall, the sector is projected to remain flat in the upcoming years. 40
- There are unique needs for serviced land that is specifically suited for an EV battery production facility. The region may find difficult to provide the land required for a full-scale battery manufacturing facility.
- Canada's auto manufacturing sector is reliant on trade relationships across the Americas,

⁴⁰ Lightcast, 2022. Datarun 2022.1

- Niagara is located close to strong steel production region, automotive chassis derived from green steel is a key subsector.
- Related opportunities for electrification can be seized over the coming decade as technology advances, even in heavy-duty trucks, aviation, and shipping.
- Deepen relationships with existing automotive manufacturers in Niagara region, and bigger industry players such as the automotive industry to explore interest in EV manufacturing opportunities in Niagara region on an ongoing basis.
- Niagara Region could take an active role and look to attract companies that produce goods required by other EV Battery manufacturing operations and become a bigger part of the global supply chain.
- There is an opportunity for a recycling and battery refurbishing facility in the Region.
 This would get around the regulatory export concerns for EV batteries.
- Investment by the Federal Government in the Canadian semiconductor and photonic industry will have implication for local manufacturers (semiconductors are used to power a broad range of everyday products including automobiles).
- Further explore technology adoption and commercialization opportunities with local business and post-secondary education, as related to global trends in technology.

- and competition as well as opportunity related to Mexico and the United States must be monitored. For example, the CHIPS and Science Act of 2022, a U.S. federal law offers incentives for semiconductor manufacturing and aims to increase US-based supply chain development.
- The U.S. Inflation Reduction Act will pour billions into the American manufacturing sector over the next few years and could trigger a flight of investment capital south of the border, as well as result in fewer manufacturing jobs in Canada⁴¹.

⁴¹ financialpost.com/commodities/energy/u-s-inflation-act-impact-canada

Conclusion

EV battery manufacturing and associated supply sectors in particular, present opportunities for Niagara Region's investment attraction efforts. Niagara Region has related business clusters to build a case for EV investment, and with the support of all levels of government, can offer incentives for new investment and retooling of local manufacturers to access the ripple effects of current and planned EV manufacturing investment.

Niche opportunities in green auto parts manufacturing were identified for Niagara Region to consider in an FDI approach, as well as supply chain opportunities to supply larger manufacturers who are active in EV manufacturing. Electrification is expected to continue over time and extend beyond cars to other industries, setting the stage to build regional capabilities in this emerging sector as an opportunity for economic development.

The number of employment opportunities specific to the sub sector could be evaluated and monitored to show progress. In addition, workforce constraints, the need for specific parcels of fully serviced land, and the level of interest of the regional business community in the EV battery manufacturing opportunity are key constraints to consider.

For Niagara to build a presence in EV manufacturing, the efforts of the Region can be focused on developing the investment proposition for EV, and in working with area Municipalities and local employers to identify opportunities for new business and retooling.

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Niagara Region Health Care and Life Sciences Sector Profile

MAKING AN IMPACT THAT MATTERS since 1845

March 2023

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Introduction

Heath Care and Life Sciences includes not only core health industries, but also other industries that support and are part of the health care industry supply chain including drugs and pharmaceuticals; medical devices and equipment; research, testing and medical laboratories; and health care services.

The Emerging Sector Profiles

Niagara Region Economic Development retained Deloitte LLP to produce sector profiles for five emerging sectors, including the marine sector, the health sector, film sector, active economy/sport tourism, and electric vehicle battery manufacturing. In the design of the project, the aerospace sector was added to the analysis. These sectors were initially identified in 'Niagara's 10 Year Economic Development Strategy 2022-2032'. This profile features the investment and growth potential of the health care and life sciences sectors. This sector profile was developed by defining the industries that make up and broadly support health care and life sciences. These industries were characterized using business and employment data and include support and supply businesses. From this broad overview, international, national, and local trends were considered to identify opportunities relevant to Niagara region's economy. A review of existing literature and a focus group was conducted with local partners to ground the

findings in local perspectives. The data was analyzed to show a picture of the sector's future potential. This profile does not include a benchmarking of the sector, and further research is needed to accurately identify employment directly linked to the health care and life sciences sector.

The following data sources were used in the development of this sector profile: Lightcast (formerly EMSI Economic Modeling) 2022, Vicinity Jobs 2022, FDI Markets, Statistics Canada, and Canadian Business Counts¹ June 2022.

Investment Attraction Highlights for the Health Care and Life Sciences Sector

Key Highlights

Identified high potential sub-sectors: A favorable outlook towards medical nutrition is likely to stimulate the growth of dietary supplements. Rising health care costs, coupled with the growing geriatric population across the world, are anticipated to assist the growth of the global functional food industry over the forecast period. It is also notable that Niagara has an existing strength in manufacturing and expertise in engineering and advanced components, which can be capitalized on to supply the medical equipment and device industry. With existing companies in the segment in Niagara, the prosthetics and orthotics market are a potential avenue to explore alongside the region's hospitals and overarching health care and life sciences sector.

The intersection of sports and health care is also an important space for Niagara region. Rehabilitation services and sports recovery for athletes is a potential avenue that capitalizes on Niagara's history as a host of sporting events and strengths in its health care sector. The need for rehabilitation and health care services in the sports industry also plays on the cost effectiveness of health care in Canada and the demand for niche health care services that are accessible.

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¹ The June 2022 Canadian Business Counts were used to determine the total number of registered businesses in the Niagara Region. Statistics Canada's Canadian Business Counts Data provides a record of business establishments by industry and size. This data is collected from the Canada Revenue Agency (CRA). The business data collected for Niagara Region included all local businesses that met at least one of the three following criteria: Have an employee workforce for which they submit payroll remittances to CRA, or have a minimum of \$30,000 in annual sales revenue, or are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

Key foreign direct investment (FDI) markets for attraction: Examining health care and life sciences hubs in the United States, show that Boston, San Francisco, San Diego, Washington-DC-Baltimore, Raleigh-Durham, New Jersey, and New York are key markets for FDI attraction. Emerging hubs are Houston, Austin, and Detroit. Top source countries of investment outside the United States include the United Kingdom, Switzerland, Netherlands, Germany, France, Japan, and China.

Proximity to markets and customers and infrastructure: Proximity is a key determinant for foreign direct investment in health care and life sciences projects related to device manufacturing or production and testing. Niagara Region has access to one third of North America's population within a 24-hour drive., as well as access to ports in Lake Erie, Lake Ontario and the Welland Canal. Please note Brock Bioscience Complex, Norgen and Biolyse Pharma as Champions of industry in research and development and product development, partnerships with the McMaster DeGroote School of Medicine.

The Health Care and Life Sciences Sector in Niagara Region

- Sector-related employment: Overall, a total of 30,206 people were employed in
 the health care and life sciences sector in the Niagara region in 2022.
 Approximately 6,603 of these jobs correspond to health care and life sciences
 sectors. The largest core subsectors of employment are architectural,
 engineering, and related services (6% of total sector employment), Other
 machinery, equipment and supplies merchant wholesalers (3%), and medical
 and diagnostics laboratories (1%).
- The health care and life sciences sector have a moderate concentration of businesses in Niagara region, with an LQ of 0.96(June 2022).
- Subsectors such as nursing homes display a high concentration of businesses as a direct result of the large share of older residents in the region.
- Demand for workers in the sector is expected to continue growing as
 employment is projected to grow significantly between 2022 to 2028 (+2,895 jobs
 or 10% increase). This progress will be driven mostly by employment growth in
 core health care practitioner industries such as hospitals, nursing, and residential
 care facilities.
- New investments in the sector are increasing in the region, according to the Niagara's 10 Year Economic Development Strategy, the region has seen important investments in the broad health care sector during the last decade.
 Among these investments are the New St. Catharines Hospital; the expansion of

McMaster University's School of Medicine to include a regional campus inside Brock University; the Roy and Lois Cairns Health and Biosciences Research and the project for the new South Niagara hospital (\$3.6 billion construction contract awarded on February 21, 2023). Other important investment includes the West Lincoln Memorial Hospital redevelopment project.

• Other important investments in life sciences-related industries include investments by the Ontario Government to support Norgen Biotek to scale up production of COVID-19 saliva-based test kit. These investments (more than \$13 million) took place in Norgen's Thorold facilities, equipment and production materials. Ontario made this possible through the Ontario Together Fund in 2021–22. The fund was created to support local innovators and businesses to further enhance Ontario's domestic supply chain capacity, promote Ontario's MedTech ecosystem and build up our manufacturing sector to ensure the province is well-prepared for future challenges.²

² Government of Ontario. Ontario Invests in COVID-19 Test Kits Made in Thorold. News Release.



Health Care and Life Sciences Sector Overview

Defining the Health Care and Life Sciences Sector

The 10-Year Economic Development Strategy 2022-2032 identifies health care as an emerging sector in Niagara region based on new investments in health care facilities as well as potential opportunities in life sciences. In discussion with Niagara Region, and to reflect the results of the research, the title of this sector was extended to include life sciences. Life sciences includes industries that support and are part of the health care industry supply chain. The health care and life sciences definition used in this report includes four main industry areas:

- Drugs and Pharmaceuticals includes pharmaceutical and medicine manufacturing, as well as wholesalers of pharmaceutical products.
- Medical Devices and Equipment includes manufacturers of medical instruments and equipment, electronic components, and wholesalers of medical devices and supplies.
- Research, Testing, and Medical Laboratories includes diagnosis and testing laboratories, and research and development.

 Health Care Services includes industries traditionally considered core health care, these are offices of physicians, dentist, hospitals, nursing, and residential care facilities, among others.

For this analysis, the codes shown below were used to collect employment and business counts and other numbers for the sector. In addition, and with the support of the Niagara Region's Project Team, the health care and life sciences subsectors were further classified into core and non-core subsectors. Figure 1 below identifies the core industry subsectors; these are highlighted in blue. These NAICS focus on the production, research and development of health-related products.

Figure 1 – Health Care and Life Sciences NAICS

| Industry | NAICS | Description | |
|---------------------------|-------|---|--|
| | 3254 | Pharmaceutical and medicine | |
| | 3254 | manufacturing | |
| | 3344 | Semiconductor and other electronic | |
| Manufacturing | 0044 | component manufacturing | |
| g | 3345 | Navigational, measuring, medical and | |
| | | control instruments manufacturing | |
| | 3391 | Medical equipment and supplies manufacturing | |
| | 4145 | Pharmaceuticals, toiletries, cosmetics, and sundries merchant wholesalers | |
| Wholesale trade | | | |
| | 4179 | Other machinery, equipment and supplies merchant wholesalers | |
| Retail trade | 4461 | Health and personal care stores | |
| Professional, Scientific, | 5413 | Architectural, engineering, and related services | |
| and Technical Services | | Scientific research and development | |
| | 5417 | services | |
| | 6215 | Medical and diagnostic laboratories | |
| | 6211 | Offices of physicians | |
| | 6212 | Offices of dentists | |
| | 6213 | Offices of other health practitioners | |
| Health Care and Social | 6214 | Out-patient care centres | |
| Assistance | 6216 | Home health care services | |
| | 6219 | Other ambulatory health care services | |
| | 6220 | Hospitals (6221 to 6223) | |
| | 6230 | Nursing and residential care facilities (6231 to 6239) | |

Sector Trends

The World Trade Organization (WHO) estimates a global shortage of 18 million health workers by 2030,³ in Canada, this shortage has been exacerbated by COVID-19, which contributed to the growth in job vacancies in the health care and social assistance sector (recent results on job vacancies release of the fourth quarter of 2021 show that there were 126,000 vacancies in the health care and social assistance sector, almost double the number of vacancies seen two years earlier)⁴. In addition, Statistics Canada is reporting a projected 500,000 retirees in the next decade that will add strain to the workforce.⁵ This gap will largely need to be filled through immigration, as currently, one-quarter of health care sector workers were immigrants to Canada.

The Government of Canada has been willing to support new health sector initiatives. For example, in 2020, Western Diversification invested \$5.5 million to support the development of new and improved medical products and technologies that protect the health of Canadians and advance Canadian-made health solutions.

Canada spends the fourth highest per capita on health care among the Organization for Economic Co-operation and Development (OECD) countries.⁶ In 2020, Canada spent \$305 billion on health care, which equates to \$8,021 per person.⁷ Expenditure on health care in Canada is expected to reach \$331 billion in total or \$8,563 per person in 2022.⁸ Hospitals (24.3%), physicians (13.6%), and drugs (13.6%) make up the largest share of health care spending in Canada.⁹

Canada's per capita hospital spending (\$1,785) is less than the OECD average (\$1,932). The breakdown for Canada's per capita spending in 2019-2020 is \$1,615 for

³ Clinton Foundation, clintonhealthaccess.org/there-is-a-global-shortage-of-nurses-covid-19-is-making-it-worse/

⁴ Statistics Canada, 2022. Experiences of health care workers during the COVID-19 pandemic, September to November 2021

⁵ Government of Canada, canada.ca/en/immigration-refugees-citizenship/campaigns/immigration-matters/growing-canada-future/infographic-health.html

⁶ Canadian Institute for Health Information, National health expenditure trends, 2022 – Snapshot, November 2022.

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

government and \$170 for household out-of-pocket. ¹⁰ Canada's hospitals spent more than \$55 billion in 2019-2020 (excluding Quebec and Nunavut). Compensation was the largest area of hospital spending (64%), followed by supplies (11%), sundry (6%), equipment (5%), and drugs (4.9%). ¹¹ Pre-COVID-19 spending on supplies, equipment, and drugs combined to create a national supply chain market of \$14.8 billion. Where are the trends that support the core sectors outlined in the previous page Ex. How does this translate into investment from Pharmas and research and development and or laboratory firms?

The Niagara Region Advantage

The region has access to large consumer and employment markets that include both the Greater Toronto Area and the United States. The region has access to these markets by road, rail, in addition to access to the global market via St. Lawrence Seaway. The Seaway is an important corridor for North American cargo shipments and has recently seen a boom in general cargo shipments at the end of 2021, due to the increasing demand for manufacturing and building materials. These shipping routes allow for manufacturers in the health care and life sciences sector to export their goods globally efficiently within the regional transport and logistics system.

Facilities for health care and life sciences businesses can be complex as they may require laboratory, office, and manufacturing space in the same building. This complexity may require greenfield investment or significant renovations to existing leasable space. As of 2019, the Niagara region recorded a total 1,849 ha vacant employment land in the Region, in five of the lower tier municipalities. The complete inventory includes approximately 2,300 designated employment parcel totaling 6,550 ha of land. The Greenfield and brownfield land suitable for heath care and life sciences investment will need to be identified ahead of investment attraction efforts.

¹⁰ https://www.cihi.ca/en/hospital-spending

¹¹ Canadian Institute for Health Spending, cihi.ca/en/what-are-hospitals-spending-on

¹² Niagara Region's Official Plan – Niagara's Employment Area Strategy, 2020

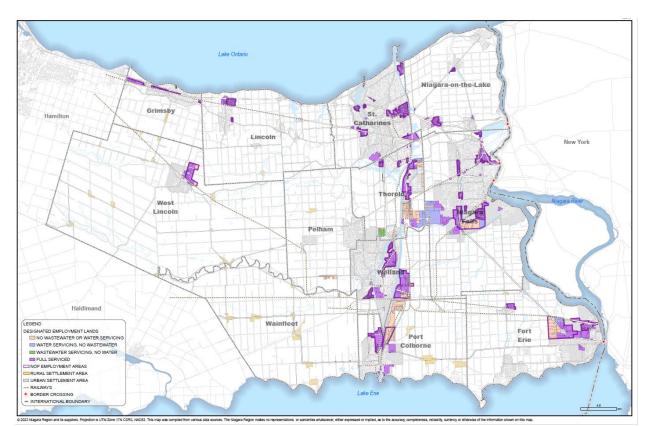


Figure 2 – Designated Employment Lands Within the Niagara Region

Source: Niagara Region

Employment and Business Structure in Niagara Region

Overall, 30,206 people were employed in the health care and life sciences sector in the Niagara Region in 2022. 13 6,603 of these jobs correspond to health care support and life sciences sectors, and 23,603 correspond to core health care practitioner industries.

Figure 3 – Employment, Health Care and Life Sciences Sector, Niagara Region, 2022

| Description | Employment 2022 | % |
|---|--------------------|------|
| Total Health Care and Life Sciences | 30,206 | 100% |
| Nursing and residential care facilities (6231 to 6239) | 6,787 | 22% |
| Hospitals (6221 to 6223) | 6,390 | 21% |
| Offices of physicians | 2,558 | 8% |
| Health and personal care stores | 2,364 | 8% |
| Offices of other health practitioners | 2,161 | 7% |
| Home health care services | 1,938 | 6% |
| Architectural, engineering, and related services | 1,760 | 6% |
| Out-patient care centres | 1,726 | 6% |
| Offices of dentists | 1,724 | 6% |
| Other machinery, equipment and supplies merchant wholesalers | 984 | 3% |
| Medical and diagnostic laboratories | 378 | 1% |
| Other ambulatory health care services | 321 | 1% |
| Pharmaceuticals, toiletries, cosmetics, and sundries merchant wholesalers | 298 | 1% |
| Scientific research and development services | 296 | 1% |
| Medical equipment and supplies manufacturing | 214 | 1% |
| Pharmaceutical and medicine manufacturing | 160 | 1% |
| Navigational, measuring, medical and control instruments manufacturing | 108 | 0.4% |
| Semiconductor and other electronic component manufacturing | 39 | 0.1% |

Source: Lightcast, 2022 - Datarun 2022.1

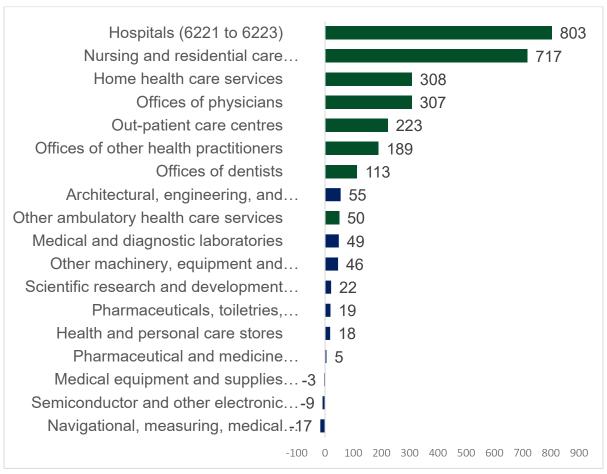
The health care and life sciences sectors are projected to grow significantly between 2022 and 2028. The sector will add 2,895 jobs; a 10% increase compared to 2022. This progress will be driven mostly by employment growth in core health care practitioner industries such as hospitals (+803 jobs or 13% increase), nursing and residential care facilities (+717/+11%), and office of physicians (+308//+16%). It is important to note that

¹³ Lightcast, 2022 - Datarun 2022.1

the core health care practitioner industries are primarily driven by population growth, while this study seeks opportunities beyond population-based service delivery. Sectors that are not population-based include architectural, engineering, and related services (+55 jobs or 3% growth), and medical and diagnostic laboratories (+49 jobs or 13% growth).

In terms of health care support and life sciences sectors, some will experience job declines or small employment growth, particularly those related to manufacturing (e.g., semiconductors and electronics, medical equipment, pharmaceuticals).

Figure 4 – Employment Change, Health Care and Life Sciences, Niagara Region, 2022-2028



Source: Lightcast, 2022 - Datarun 2022.1 | Core subsectors highlighted in blue

3,260 businesses in the health care and life sciences sector were recorded in the Niagara Region by June 2022, most of these were businesses with employees (1,692 businesses fall under this category). Most of the businesses in the Region are core health care practitioner industries (69% of all businesses). The largest business sector

are offices of other health practitioners (841 businesses or 26% of all businesses in the sector) followed by offices of physicians (774/24%).

Figure 5 – Business Counts, Active Economy Sector, Niagara Region, June 2022

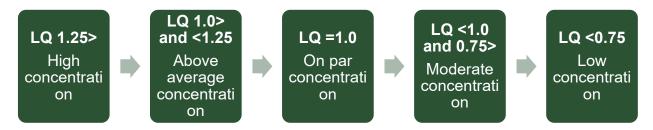
| Description | With Employees | Without Employees | Total |
|---|-------------------|----------------------|-------|
| Total Health Care and Life Sciences | 1,692 | 1,568 | 3,260 |
| Offices of other health practitioners | 267 | 574 | 841 |
| Offices of physicians | 491 | 283 | 774 |
| Health and personal care stores | 261 | 146 | 407 |
| Architectural, engineering, and related services | 144 | 237 | 381 |
| Offices of dentists | 170 | 86 | 256 |
| Nursing and residential care facilities (6231 to 6239) | 168 | 23 | 191 |
| Out-patient care centres | 33 | 66 | 99 |
| Other machinery, equipment and supplies merchant wholesalers | 42 | 31 | 73 |
| Home health care services | 21 | 40 | 61 |
| Medical and diagnostic laboratories | 30 | 21 | 51 |
| Scientific research and development services | 17 | 14 | 31 |
| Medical equipment and supplies manufacturing | 16 | 11 | 27 |
| Other ambulatory health care services | 6 | 17 | 23 |
| Pharmaceuticals, toiletries, cosmetics, and sundries merchant wholesalers | 7 | 11 | 18 |
| Hospitals (6221 to 6223) | 10 | 1 | 11 |
| Navigational, measuring, medical and control instruments manufacturing | 6 | 3 | 9 |
| Pharmaceutical and medicine manufacturing | 2 | 2 | 4 |
| Semiconductor and other electronic component manufacturing | 1 | 2 | 3 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region

Location Quotient

As part of the economic baseline analysis, a Location Quotient (LQ) Analysis was completed to determine the concentration of employment in the health care and life sciences sector, in Niagara region and relative to the province. The location quotient

reveals what makes a region unique, in this case in comparison with other communities in Ontario. The following chart shows common LQ Classifications to interpret the figures in Figure 6.



Overall, the health care and life sciences sector has a moderate concentration of businesses in the Niagara region (relative to Ontario). The only sector showing a high concentration of businesses in the Region are nursing and residential care facilities.

Figure 6 – Business Concentration, Health Care and Life Sciences, Niagara Region, June 2022

| Description | Location Quotients (LQ) Total |
|---|-------------------------------------|
| Total Health Care and Life Sciences | 0.96 |
| Nursing and residential care facilities (6231 to 6239) | 1.43 |
| Out-patient care centres | 1.22 |
| Home health care services | 1.14 |
| Health and personal care stores | 1.13 |
| Offices of other health practitioners | 1.08 |
| Hospitals (6221 to 6223) | 1.02 |
| Medical equipment and supplies manufacturing | 0.98 |
| Medical and diagnostic laboratories | 0.94 |
| Other ambulatory health care services | 0.94 |
| Architectural, engineering, and related services | 0.87 |
| Offices of physicians | 0.87 |
| Navigational, measuring, medical and control instruments manufacturing | 0.82 |
| Other machinery, equipment and supplies merchant wholesalers | 0.8 |
| Offices of dentists | 0.79 |
| Pharmaceutical and medicine manufacturing | 0.54 |
| Pharmaceuticals, toiletries, cosmetics, and sundries merchant wholesalers | 0.53 |
| Semiconductor and other electronic component manufacturing | 0.49 |

| | Location |
|--|------------|
| Description | Quotients |
| | (LQ) Total |
| Scientific research and development services | 0.47 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region

Job Demand

Between January 1, 2020, to November 30, 2022, a total of 1,811 job postings in industries related to the health care and life sciences sector were recorded in the Niagara region. Most of these job postings were in home health care services (970 job postings), health and personal care stores (429 job postings), and offices of other health practitioners (134 job postings). Overall, most of the job postings were advertised in 2022, showing a slight increase from 2021, and evidencing a significant recovery from 2020.

Figure 7 – Job Demand (Job Postings) by Industry Sector (Health Care and Life Sciences), Niagara Region, January 1, 2020, to November 30, 2022

| NAICS | 2020 | 2021 | 2022 | Total Postings | % |
|---------------------------------|------|------|------|-------------------|-------|
| Total* | 334 | 721 | 756 | 1,811 | 100% |
| Home health care services | 165 | 410 | 395 | 970 | 53.6% |
| Health and personal care stores | 84 | 181 | 164 | 429 | 23.7% |
| Offices of other health | 13 | 33 | 88 | 134 | 7.4% |
| practitioners | | | | | |
| Architectural, engineering | 19 | 23 | 33 | 75 | 4.1% |
| and related services | | | | | |
| Medical and diagnostic | 12 | 27 | 33 | 72 | 4.0% |
| laboratories | | | | | |
| Other machinery, equipment | 16 | 22 | 22 | 60 | 3.3% |
| and supplies wholesaler- | | | | | |
| distributors | | | | | |
| Scientific research and | 7 | 1 | 12 | 20 | 1.1% |
| development services | | | | | |
| Pharmaceutical and medicine | 8 | 6 | 0 | 14 | 0.8% |
| manufacturing | | | | | |
| Other ambulatory health care | 4 | 8 | 0 | 12 | 0.7% |
| services | | | | | |

| Medical equipment and supplies manufacturing | 0 | 6 | 2 | 8 | 0.4% |
|--|---|---|---|---|------|
| Navigational, measuring, medical and control instruments manufacturing | 2 | 1 | 4 | 7 | 0.4% |
| Semiconductor and other electronic component manufacturing | 4 | 2 | 0 | 6 | 0.3% |
| Out-patient care centres | 0 | 1 | 3 | 4 | 0.2% |

Source: Vicinity Jobs

Sector Development

The Province of Ontario is supporting critical upgrades and repairs at hospitals and community health service providers around Niagara with a \$2,012,386 investment through the Health Infrastructure Renewal Fund and Community Infrastructure Renewal Fund. Niagara Health, which operates five sites around the region in St. Catharines, Niagara Falls, Welland, Fort Erie, and Port Colborne, will receive \$1,308,967 for the 2022-23 fiscal year. This funding is a part of the over \$1.2 billion investment previously announced to help hospitals recover from financial pressures created and worsened by the COVID-19 pandemic, while ensuring they can continue providing the high-quality care Ontarians expect. This funding will also help to ensure that Ontario's hospitals are able to respond to any scenario as the COVID-19 pandemic evolves. 15

Global Market Drivers

Niagara's health care segment is the region's biggest sector and is made up of a robust ecosystem of offices of physicians, dentists, health care practitioners as well as outpatient care centers. Niagara's emerging sector analysis emphasizes biotechnology, pharmaceutical manufacturing, and medical devices. Niagara has growing scientific research and development services and medical and diagnostic laboratories. The health care market is driven by the projection of global revenues for health care increasing over the next few years. In particular, the development of pharmaceuticals is expected to grow as the demand for drugs increases.

^{*} Number of Postings applicable to the reporting period but excluded from this report's grand total due to lack of reliable and relevant information: 2.

¹⁴ FDIMarkets

¹⁵ Niagara Health. Retrieved from

https://www.niagarahealth.on.ca/site/news/2021/09/29/ontario-investing-in-hospitals-in-niagara>

Niagara's pharmaceutical industry does not have a strong ecosystem to support business attraction efforts, this might change as the region has increasingly received investment for new hospitals and health care facilities, which could improve the region's profile for the life sciences field. A potential means to capitalize on the health care market is to examine the intersection between personal care industry (LQ 1.22) and trends in functional food and plant-based nutrition. A favourable outlook towards medical nutrition considering the increasing application for the treatment of cardiovascular disorders and malnutrition is likely to stimulate the growth of dietary supplements. Rising health care costs, coupled with the growing geriatric population across the world, are anticipated to assist the growth of the global functional food industry over the forecast period.

It is also notable that Niagara has an existing strength in manufacturing and expertise in engineering and advanced components which can be capitalized on to supply the medical equipment and device industry. With existing companies in the segment in Niagara, the prosthetics and orthotics market are a potential avenue to explore alongside the region's hospitals and overarching life sciences sector. The need for prosthetics and orthotics is increasing due to demand driven by sports injuries, diabetes-related amputations, and other accidents. Growth in this segment is being propelled forward by the need to respond to specific injuries and respond to niche patient needs. The potential for Niagara to capitalize on these trends stems from its strong health care ecosystem and further ties into the region's potential to position itself as a rehabilitation hub for sports injuries and connects with the region's active economy sector.

In terms of regions, North America is the strongest market in the advancement of prosthetic technology, which is important to note given that research and development (R&D) is clustered in the United States. Investment in this segment is usually coupled with a research institute or university supporting industry. For example, Liberating Technologies, a company that produces intuitive control technology for advanced prosthetic upper limbs located in Massachusetts is supported by the U.S. Department of Defense, National Institutes of Health, Department of Education, Veteran's Administration and National Institutes on Disability, Independent Living, and Rehabilitation Research.

Investment Trends & Location Factors

At least 8 major FDI projects were recorded in the health care and life sciences research and development sector and its supply chain in Ontario from 2018 to 2022. 50% of the projects were established in the pharmaceutical sector. Some of the most noteworthy projects include:

- In December 2021, the Ontario government supported Norgen Biotek to scale up production of COVID-19 saliva-based test kit. This investment (more than \$13 million) funded the upgrade of Norgen's Thorold facilities, equipment and production materials. Ontario made this possible through the Ontario Together Fund in 2021–22. The fund was created to support local innovators and businesses to further enhance Ontario's domestic supply chain capacity, promote Ontario's MedTech ecosystem and build up our manufacturing sector to ensure the province is well-prepared for future challenges.¹⁶
- In May 2021, the federal government announced a \$200-million investment to help a Mississauga-based company build a plant that can churn out millions of mRNA vaccines. This investment was used to expand an existing site owned by Resilience Biotechnologies Inc. to provide made-in-Canada solutions such as vaccines and treatments for future pandemics. The funds are expected to expand Resilience's manufacturing and fill-finish capacity for a number of vaccines and therapeutics, including mRNA shots like the ones now being used to fight COVID-19.¹⁷
- In October 2020, Roche Canada, which develops medicines and diagnostic tests and is a subsidiary of Switzerland-based Roche Group, established Roche's Global Pharma Technical Operations site at its headquarters in Mississauga. The firm will invest \$500 million into the project through 2025. It has created 200 jobs and will create a further 300 jobs by 2023.
- In 2018, United States-based Alnylam Pharmaceuticals, a pharmaceutical manufacturer, opened a new facility in Mississauga. The facility houses the company's centralized commercialization and medical functions. Its medical function educates doctors about the diseases and treatment options and connects with patient networks.

In the life sciences cluster more generally, Ontario reported 40 projects. 45% of these projects were in the pharmaceutical subsector, 15% of total projects were in medical devices and an additional 15% were in business services. Examining motives and determinants for projects in the health care sector shows that the most important unique location requirements for foreign direct investment into North America are a strong industry cluster and skilled workforce. As these factors are more or less equally considered by investors in the health care sector, it is important to consider the wider ecosystem when highlighting Niagara's assets and regional strengths. Compared to the

¹⁶ Government of Ontario. Ontario Invests in COVID-19 Test Kits Made in Thorold. News Release.

¹⁷ CBC News, retrieved from < https://www.cbc.ca/news/politics/federal-government-200-million-mrna-1.6031024>

other target sectors, innovation and research also plays a much stronger role in site selection.

Figure 8 – Investment motives into the North American health care and life sciences market

| Motive | % of FDI Projects | % of Companies |
|-----------------------------------|----------------------|----------------|
| Industry cluster | 42.6 | 44.4 |
| Skilled workforce availability | 41.1 | 42.8 |
| Technology and innovation | 25.0 | 26.9 |
| Universities and research hubs | 23.5 | 23.8 |
| Proximity to markets or customers | 23.5 | 25.3 |
| Government support | 10.2 | 11.1 |
| Quality of life | 2.9 | 3.1 |
| Sites & property | 2.9 | 3.1 |
| Taxes & incentives | 1.4 | 1.5 |
| Transport infrastructure | 1.4 | 1.5 |
| Lower costs | 1.4 | 1.5 |
| Regulatory environment | 1.4 | 1.5 |

Source: fDimarkets

Outlook

Revenue in the United States' health care and life sciences sector is expected to reach US\$17.7 billion in 2023 and will grow by a compound annual growth rate (CAGR) of 12% from 2027 and will result in a predicted market value of US\$28.7 billion. 18 The health care and life sciences sector in Asia represents a bigger market value and is projected to reach US\$26.8 billion in 2023 and will grow by a CAGR of 6% from 2023 to 2027. 19 The health care and life sciences market in Europe is the smallest out of the target regions representing US\$12.1 billion in 2023, the segment is expected to grow by a CAGR of 11% by 2027. 20 The global market for prosthetics and orthotics was valued

¹⁸ Statista. Retrieved from https://www.statista.com/outlook/dmo/ecommerce/beauty-health-personal-household-care/health-care/united-states

¹⁹ Statista. Retrieved from https://www.statista.com/outlook/dmo/ecommerce/beauty-health-personal-household-care/health-care/asia

²⁰ Statista. Retrieved from health-personal-household-care/health-care/europe

at \$US 6.39 billion in 2021 and is expected to grow at a CAGR of 4.3% from 2022 to 2030.²¹

The Pharma R&D Annual Review 2022²² shows that the United States is the biggest home to research and development in pharmaceuticals accounting for over 10,700 drugs, which represent 53% of the pipeline. The second biggest market is China (over 4,100 drugs) and the United Kingdom (over 2,800). It is notable that the United States also represents the biggest market for research and development companies by HQ representing 46% of the market followed by Europe, which accounts for 14% of the market and the Asia Pacific (excluding China), which represents 13% of the market.

The global nutraceutical ingredients market size was valued at US\$176.84 billion in 2021 and functional food trends. In terms of research and development areas in the market, biotechnology, anticancer and neurobiological drugs have been the most sought-after therapies and have all consistently been growing since 2021. ²³ Based on functional food products, prebiotics and probiotics are projected to expand at a CAGR of 10.1% over the forecast period owing to increasing usage of probiotics as a primary ingredient among the majority of food manufacturing companies to provide better nourishment and reduce health problems caused by harmful bacteria. ²⁴ Vitamins and minerals as products stood out to increasing consumer interest in the relationship between diet and health increasing demand for nutraceuticals. ²⁵

It is notable that medical laboratories are in growing demand in Ontario. CBRE estimates that demand for laboratory space exceeds what is currently available by a factor of 141, particularly in Toronto.²⁶ The demand for medical laboratories and wet labs where drugs, chemicals and other liquids can be analyzed are needed to respond if the pharmaceutical industry is to grow in the region. For now, Niagara is yet to establish itself in this segment, but is a potential avenue worth exploring alongside the health care and life sciences sector.

²¹ Grand View Research. Retrieved from

https://www.grandviewresearch.com/industry-analysis/prosthetics-orthotics-market

²² Pharma R&D Annual Review, 2022.

²³ Ibid.

²⁴ Grande View Research. Retrieved from

https://www.grandviewresearch.com/industry-analysis/nutraceuticals-market lbid.

²⁶ CBRE. Retrieved from https://www.cbre.com/press-releases/greater-toronto-area-is-missing-out-on-opportunities-as-demand-for-laboratory-space-balloons
23

Recruitment Zones

Examining prospective growth companies in health care and life sciences shows that 52% are located in the United States, 15% in Germany, and 4% in Canada.²⁷ Based on real estate and employment growth as well as concentrations of life sciences companies, hubs in the United States are Boston, San Francisco, San Diego, Washington-DC-Baltimore-Maryland, Raleigh-Durham, New Jersey, and New York. Emerging hubs are Houston, Austin and Detroit. Top source countries outside the United States include United Kingdom, Switzerland, the Netherlands, Germany, France, Japan, and China.²⁸

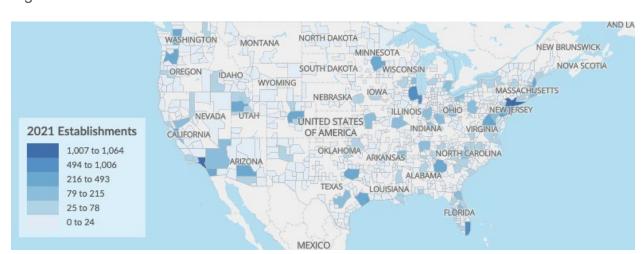


Figure 9 - Health care and life sciences hubs in the United States

Source: Lightcast

²⁷ Gazelle Al

²⁸ Percent of companies in each country that are predicted to be high growth is based on Gazelle.ai's Al-generated G-score that indicates likely expansion of companies in the next 18-24 months (https://gazelle.ai/our-data/)

SWOT Analysis

The following is an overview of the strengths, weaknesses, opportunities, and threats that face the health care and life sciences sector in the Niagara region. This SWOT analysis utilizes the background research that was completed for the sector, as well as engagement from key stakeholders from the heath care and life sciences sector in Niagara region.

Marketing messaging is recommended to align with the opportunities and strengths statements detailed below, which were drawn from stakeholder focus group sessions and uncovered through the research.

Key subsectors: medical nutrition, medical equipment, and devices

| Sector SWOT | |
|---|--|
| Strengths | Weaknesses |
| Niagara's health care segment is the region's biggest sector and is made up of a robust ecosystem of offices of physicians, dentists, health care practitioners as well as outpatient care centres. Niagara has growing scientific research and development services as well as medical and diagnostic laboratories, such as Biosafety level 3 lab at Brock University and other research assets that can be used to attract research and development in the health care sector. Niagara has an existing strength in manufacturing and expertise in engineering and advanced components, which can be capitalized | Overall, the health care and life sciences sector show a moderate concentration of businesses in the Niagara region (relative to Ontario), and the existence of a cluster is the leading motivator for foreign direct investment, motivating 42.6% of FDI projects. Niagara's pharmaceutical industry ecosystem could be strengthened to support business attraction efforts. Staffing in the health care field is reported to be difficult, including recruiting and retaining medical staff to the region. |

- on to supply the medical equipment and device industry.
- The health care and life sciences sectors are projected to grow significantly between 2022 to 2028.
 The sector will add 2,895 jobs; a 10% increase compared to 2022.
- Demand for workers in the sector have increased more than 100% between 2020 and 2022.

 There is a lack of collaboration across the region in the health care and life sciences sectors.

Opportunities

- Examine the intersection between Niagara's strengths in the personal care industry and trends in functional food and plant-based nutrition.
- Attract ventures in the life sciences and help support researchers to expand and create businesses in the region.
- Work to establish medical laboratories, which are in growing demand in Ontario.
- Opportunities to connect component, textile, and plastics manufacturing with the health and life sciences sector, in growth areas such as prosthetics and orthotics.
- Explore facilitation of research between private clinics and postsecondary institutions with the goal of commercialization and the start-up of new businesses, drawing connections with global trends where there is interest. At this time, rehabilitation, pharmaceuticals, and nutraceuticals are identified in the research as relevant global trends.
- Develop workforce attraction and retention programming in relation to target subsectors within the sector.

Threats

- Health care funding is largely Provincially controlled, and research funding is competitive. Partners report the region has seen cuts to services.
- Health Canada approvals for labs and research projects can create delays and a longer timeframe for investment.
- High costs of equipment in the life sciences sector can deter initial investment.
- Access to specialized testing and labs for health care are essential to support investment and labs are underdeveloped across the province.
- The differences between the Canadian and United States health care systems can create challenges for local service development. Some residents are choosing to access health service from Buffalo, New York, due to wait times in the regional health care system.

Conclusion

The Health Care and Life Sciences Sector is at an early stage of development in Niagara region, and investment attraction efforts will require a long-term approach including building private sector and research partnerships, increasing the presence of a business cluster, developing related workforce strengths, and navigating the regulatory approval of support facilities such as labs.

Niagara is relatively distant from some competitive jurisdictions in Canada's life sciences corridor from Hamilton to Québec City. Improving transportation linkages with major centres is important for the region's competitive position in the health care and life sciences sector and other emerging sectors.

To move into a leadership position in the health and life sciences sectors, global trends point to opportunities in pharmaceuticals, prosthetics and orthotics, and nutraceuticals. The strength of Niagara region's health care sector is currently centered on population-based businesses, including outpatient care and residential care services. Connecting the existing business community with these areas of opportunity and building momentum for business development in health care and the life sciences will create the building blocks to position the sector for growth.

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Niagara Region
Active Economy / Sport Tourism
Sector Profile



March 2023

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Disclaimer

This report has been provided for the purpose of informing and assisting the Regional Municipality of Niagara ("Niagara Region") to produce sector profiles for five emerging sectors, with this profile featuring the investment and growth potential of the Active Economy / Sport Tourism sector. Sector definitions were created with the input of Niagara Region, and research provided is secondary. Deloitte did not develop any independent forecasts or analysis of the sectors.

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Amendment of any of the assumptions identified throughout this report could have a material impact on our analysis contained herein. Should any of the major assumptions not be accurate or should any of the information provided to us not be factual or correct, our analyses, as expressed in this report, could be significantly different.



Introduction

Tourism is an important industry in Canada, and to the Niagara region. With over 13 million visitors annually, the Niagara region is a preeminent tourism destination in North America. Sport Tourism is a growing sector worldwide, and the Niagara region would like to explore the potential to increase the number of tourists by attracting additional investment in sport tourism infrastructure. With infrastructure improvements, the increased opportunity to host international competitions is expected to spur the local sport tourism sector to grow.

The Emerging Sector Profiles

Niagara Region Economic Development retained Deloitte LLP to produce sector profiles for five emerging sectors, including the marine sector, the health sector, film sector, and active economy/sport tourism, and electric vehicle battery industry. In the design of the project, the aerospace sector was added to the analysis. These sectors were initially identified in 'Niagara's 10 Year Economic Development Strategy 2022-2032'. This profile features the investment and growth potential of the Sport Tourism / Active Economy sector. This profile was developed by defining the industries that make up and broadly support the Sport Tourism / Active Economy sector. These industries were

characterized using business and employment data and include support and supply businesses. From this broad overview, international, national, and local trends were considered to identify high potential areas relevant to Niagara's economy. The research also included a focus group to ground the findings in the perspectives of local stakeholders, as well as a review of existing literature. The data were pulled together to show a picture of the sector's future potential. This profile does not include a benchmarking of the Sport Tourism / Active Economy sector, and further research is needed to accurately identify employment directly linked to this sector.

The following data sources were used in the development of this sector profile: Lightcast (formerly EMSI Economic Modeling) 2022, Vicinity Jobs 2022, FDI Markets, Statistics Canada, and Canadian Business Counts¹ June 2022.

Key Observations

- Well-established tourism sector: Over 13 million tourists visit Niagara each year, primarily to see Niagara Falls, but also to Niagara's wine region, historic Niagara-on-the-Lake, beaches, trails, and events and amenities. Visitor spending in the region totals over \$2 billion annually and has a significant impact on the regional economy, employing more than 40,000 people.^{2,3}
- Experience hosting international sports events: Niagara Region has hosted and co-hosted important international events in sports such as hockey, basketball, sailing, rowing, dragon boat racing, and multidisciplinary competitions such as the Pan American Games and more recently the Canada Games.
- Absence of a Sport Tourism department: Unlike other large municipalities such as Hamilton or London, the Niagara Region does not have a Sport Tourism

¹ The June 2022 Canadian Business Counts were used to determine the total number of registered businesses in the Niagara Region. Statistics Canada's Canadian Business Counts Data provides a record of business establishments by industry and size. This data is collected from the Canada Revenue Agency (CRA). The business data collected for Niagara Region included all local businesses that met at least one of the three following criteria: Have an employee workforce for which they submit payroll remittances to CRA, or have a minimum of \$30,000 in annual sales revenue, or are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

² Niagara Region, https://niagaracanada.com/key-sectors/tourism/

³ These figures have not been produced by Deloitte. Deloitte has not independently verified these figures.

department or official lead agency funded and mandated to bid on and coordinate sporting events.

• Numerous sporting venues: Owned by the individual cities and towns across the Niagara Region, there are more than 15 major sporting venues, some of which are of national and international caliber (e.g., Canada Games Park, Meridian Centre, Welland International Flatwater Centre, etc.), which support the Sport Tourism Economy. There are also many other community facilities that support the Active Economy. To stay competitive in a national and global context of Sport Tourism, continuing financial investment will be needed to maintain existing facilities and build new ones. Currently there is no region-wide sporting facility master plan, nor any collaborative effort to attract investment or explore private-public funding models.

Sport Tourism / Active Economy in Niagara Region

Sport Tourism

Several large international sports events have been hosted in Niagara, according to Brock University's Centre for Sport Capacity, including the Royal Canadian Henly Regatta, the Lightning North American Sailing Championships, the Pan American Games, World Dragonboat Championships, IIHF Ice Hockey Women's U18 World Championship and FIBA U18 Americas Basketball Championships. In 2017, approximately 259,000 sport tourists visited Niagara and spent over \$45 million in the regional economy. Despite these important figures, the Region is said to have limited institutional capacity to promote itself as a sporting event host, according to Brock University's Centre for Sport Capacity. Sport tourism stakeholders feel Niagara is losing out on business and should develop a sport tourism plan and partnership. The creation of a central, region-wide sport event office with stable operational funding would position Niagara Region as an active partner among sport tourism stakeholders, and as a champion for economic development.

Sport-related Visitation

Data from Statistics Canada does not include detailed visitor expenditures specifically for domestic or international guests who attend sports events. Only person-visit numbers are available for sports-related visitors from Canada, and that data is classified as "use with caution" by Statistics Canada due to high coefficients of variation. No person-visit data is available for sports-related visitors from the U.S. or overseas.

According to the National Travel Survey, in 2019, 43,000 person-visits from Canada were recorded as attending a sports event in St. Catharines-Niagara Census Metropolitan Area (CMA), or 0.56% of all domestic person-visits (7.6 million). Of that total of domestic person-visits, 88% were residents of Ontario and 37% stayed overnight.⁶

Data presented for 2017 indicated that 170,000 visits by residents of Canada were attributed to "attending a sports event as a spectator", of which 84% were from Ontario. The data is sourced from Statistics Canada, Travel Survey of the Residents of Canada,

Stevens, J (Toward a "Made-in-Niagara" Sport Tourism Model: The Case for a Sport Event Office. Centre for Sport Capacity, Brock University
 Ibid.

⁶ Number of Person-Visits to St. Catherines-Niagara CMA, 2019, National Travel Survey, Statistics Canada. Special note: This data had a coefficient of variation greater than 35% and was flagged by Statistics Canada with an E, which means "use with caution"

Custom Tabulation, 2017. The 2019 dataset stated that the two years cannot be compared. If an average visitor expenditure of \$157.64 is applied, the total estimated visitor expenditure was \$26.8 million.

Deloitte has calculated visitor spending potentially attributable to sports-related events, but these numbers should be used with caution.

- Calculated at an average expenditure per person of \$196.95, domestic spend on sports events totaled \$8.4 million, or 0.6% of all visitor expenditures (\$1.375 billion).
- The 2019 International Travel Survey recorded 3.2 million person-visits by U.S. residents visiting the St. Catharines-Niagara CMA.⁸ If the same share of domestic visitors who attended a sports event (0.56%) is applied to U.S. visitors, then about 18,000 Americans are estimated to have attended a sports event during their visit. At \$204.19 per person spending, U.S. visitors attending sports events are estimated to have contributed \$3.6 million in expenditures.
- About 1.1 million overseas residents visiting the St. Catharines-Niagara CMA in 2019.⁹ If the same share of domestic visitors who attended a sports event (0.56%) is applied to overseas visitors, then about 6,100 international guests are estimated to have attended a sports event during their visit. At \$208.17 per person spending, overseas visitors attending sports events are estimated to have contributed \$1.27 million in expenditures.

Spectator Sports

There were 54 businesses involved in spectator sports in Niagara Region in 2018, of which 11 were employers. The majority of those (8) had one to 19 employees. ¹⁰ Employment in spectator sports decreased 7.9% from 593 jobs in 2011 to 546 in 2018, the second largest decline in Niagara Region after gambling industries. Spectators' sports maintained a location quotient of 2.5.

⁷ Niagara Tourism Profile, https://brocku.ca/niagara-community-observatory/wp-content/uploads/sites/117/NCO-Archives-2018-NiagaraRegion-Niagara-Tourism-Profile.pdf

⁸ United States Residents Visiting Canada (Inbound), International Travel Survey, Statistics Canada, 2019.

⁹ Overseas Residents Visiting Canada (Inbound), International Travel Survey, Statistics Canada, 2019.

¹⁰ Niagara Tourism Profile, Arts, Entertainment, and Recreation Business Counts, Employers and Non-Employers, Niagara Region, 2018.

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Active Economy / Sport Tourism Overview

Niagara's 10 Year Economic Development Strategy (2022-2032) encouraged a broader perspective that positioned sport as an economic driver as part of the "active economy." The Strategy stated that the active economy incorporates all enterprises improving individual or community prosperity through active living, organized sports, active recreation, and health and wellness experiences.

The Sport Tourism sector is considered to be a component of the "Regional Active Economy" cluster. The Active Economy cluster is a conceptual economic framework pioneered by two professors at Mount Royal University in Calgary: David Finch and

David Legg. Finch, Legg and others formed the Active City Collective in Calgary, Alberta,¹¹ the concepts for which are modelled on New Zealand's Living Standards Framework and Richard Florida's Creative Class theory.¹²

Defining Active Economy

The Active Economy cluster and supply chain includes commercial entities, nonprofit organizations, and the public sector. 13 According to a presentation to the Goodman School of Business by Julie Stevens, Special Advisor to the Brock University President for Canada Summer Games, the Active Economy is called a cluster because it can be geographically defined, possesses complementary expertise, includes a range of traditional sectors, involves collaboration, and provides competitive advantage. The Active Economy comprises 11 nominal sectors (see Figure 1): a "delivery cluster" (Organized Sport, Active Recreation, Active Life, Active Tourism, and Sport Betting) and an "enabling cluster" (Active Products and Gear, Active Technology and Accessories, Design and Infrastructure, Health and Wellness, Media and Content, and Professional Services).

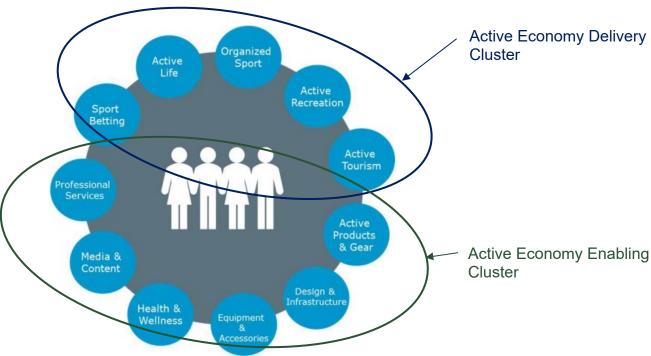
¹¹ Active City, CityXLab, learningcity.ca/active-economy

¹² Sport Information Resource Centre, sirc.ca/blog/evolution-of-the-active-economy/

¹³ Presentation by Julie Stevens, Goodman Group Business Breather Series, Brock University, https://youtu.be/-NAQeZ9KpQw

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Figure 1: The Active Economy



Source: ActiveCity Collective, Playbook 2030¹⁴

The Ontario Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI), consistent with Statistics Canada's Provincial and Territorial Tourism Satellite Account, classifies specific industries at NAICS (North American Industry Classification System) as the tourism-related industries. ¹⁵ For the purpose of this analysis, in consultation with Niagara Region, the following codes were used to collect employment and business counts numbers for the Active Economy / Sport Tourism sector. In addition, and with the support of Niagara Region's project team, the Active Economy / Sport Tourism industry subsectors were further classified into core, and support/supply chain subcategories. In Figure 2, core industry subsectors are highlighted in blue:

Figure 2 – Active Economy / Sport Tourism Sector NAICS

¹⁴ ActiveCity Collective, Playbook 2030, activecitycollective.ca/playbook2030

¹⁵ MHSTCI Concepts and Definitions, https://www.ontario.ca/page/tourism-research-statistics#section-6

[©] Deloitte LLP and Affiliates

| Industry | NAICS | Description |
|-------------------|---------|---|
| , | | (Core Industry Subsectors highlighted in blue) |
| Agriculture, | 1141 | Fishing |
| Forestry, Fishing | 1142 | Hunting and trapping |
| and Hunting | | 3 11 3 |
| Construction | 2379 | Other heavy and civil engineering construction |
| Manufacturing | 3231 | Printing and related support activities |
| Manufacturing | 3399 | Other miscellaneous manufacturing |
| | 4141 | Textile, clothing and footwear merchant wholesalers |
| | 4144 | Personal goods merchant wholesalers |
| Wholesale trade | 4151 | Motor vehicle merchant wholesalers |
| | 4191 | Business-to-business electronic markets, and agents |
| | | and brokers |
| | 4461 | Health and personal care stores |
| | 4481 | Clothing stores |
| Retail Trade | 4482 | Shoe stores |
| | 4511 | Sporting goods, hobby and musical instrument stores |
| | 4533 | Used merchandise stores |
| Information and | 5151 | Broadcasting (except internet) |
| cultural | 5152 | Pay and specialty television |
| industries | 5191 | Other information services |
| Real Estate and | 5321 | Automotive equipment rental and leasing |
| Rental and | 5322 | Consumer goods rental |
| Leasing | | |
| Professional, | 5414 | Specialized design services |
| Scientific, and | | |
| Technical | | |
| Services | | |
| Admin. & | 5615 | Travel arrangement and reservation services |
| Support and | | |
| Waste | | |
| Management | 0.4.4.0 | |
| Educational | 6116 | Other schools and instruction |
| Services | 0040 | Office and address to a little constation |
| Health Care and | 6213 | Offices of other health practitioners |
| Social | 6216 | Home health care services |
| Assistance | 6219 | Other ambulatory health care services |
| | 7111 | Performing arts companies |
| | 7112 | Spectator sports |

| Industry | NAICS | Description |
|------------------------|-------|--|
| | | (Core Industry Subsectors highlighted in blue) |
| | 7113 | Promoters (presenters) of performing arts, sports and |
| Arto | | similar events |
| Arts, entertainment | 7114 | Agents and managers for artists, athletes, entertainers, |
| and recreation | | and other public figures |
| and recreation | 7132 | Gambling industries |
| | 7139 | Other amusement and recreation industries |
| | 7211 | Traveller accommodation |
| Accommodation | 7212 | Recreational vehicle (RV) parks and recreational camps |
| and Food | 7223 | Special food services |
| Services | 7224 | Drinking places (alcoholic beverages) |
| Oct vices | 7225 | Full-service restaurants and limited-service eating |
| | | places |
| | 8121 | Personal care services |
| Other Services | 8134 | Civic and social organizations |
| Other Dervices | 8139 | Business, professional, labour and other membership |
| | | organizations |

Active life and active recreation are components of the Active Economy. The Conference Board of Canada estimated the total "economic footprint" of angling, hunting, trapping and sport shooting activities in Canada to be \$13.2 billion, supporting just under 107,000 jobs and \$6.4 billion in labour income. ¹⁶

The Active Economy Cluster within the "delivery sectors" of Organized Sport, Active Recreation, Active Tourism, Active Life, and Sport Betting can be measured using several metrics, such as:¹⁷

- Number of participants
- Total hours of engagement
- Total number of volunteers
- Total hours volunteering
- Fan attendance
- Ticket sales
- Broadcast ratings

¹⁶ Ontario Federation of Anglers and Hunters, ofah.org/wp-content/uploads/2019/09/Economic-Footprint-Analysis-of-AHTS.pdf

¹⁷ Understanding the Active Economy, igi-global.com/chapter/mapping-the-active-economy-to-community-value/279874

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- Social media engagement
- Total number of major active economy events hosted in jurisdiction

To assist in measuring Niagara Region's Active Economy, Julie Stevens of Brock University reported that a Niagara Sport Database ¹⁸ is being developed with the assistance of the Digital Scholarship Lab, since the current inventory is out of date. ¹⁹ The database would include events, facilities, and organizations. Mapping of stakeholders would also be a key first step in mobilizing the Active Economy, according to the ActiveCity Collective's Playbook 2030. ²⁰ Stevens contends that evidence provided through measurement of the Active Economy can support decision makers and other leaders who have a role to play in driving Niagara's economic strategy.

A list of sports clubs and facilities in Niagara Region has been prepared by Rel8ed, a provider of commercial and specialty data. The map includes golf (150 assets), ice hockey (58), martial arts (49), soccer (39), baseball (36), and many other sports.²¹

¹⁸ Niagara Sport Database, brocku.ca/sport-capacity/research-projects/descriptions/#1646245919249-08c6b6d5-0f2e

¹⁹ Presentation to Goodman School of Business, 2022, youtu.be/-NAQeZ9KpQw

²⁰ Playbook 2030, Active City Collective, activecitycollective.ca/playbook2030

²¹ Sports Clubs and Facilities in Niagara Region, Rel8ed, public.tableau.com/app/profile/rel8ed.to/viz/openRaspberry_v4_0/ClubsFacilities © Deloitte LLP and Affiliates

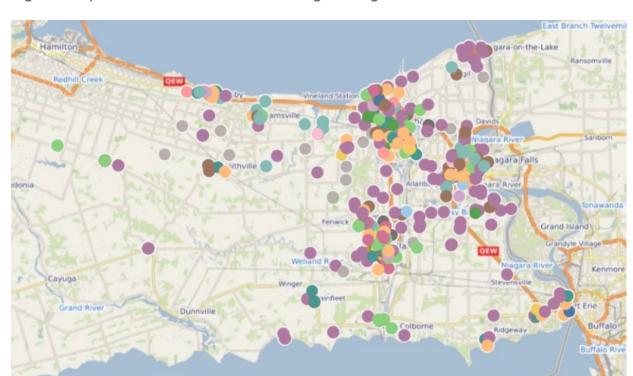


Figure 3: Sports Clubs and Facilities in Niagara Region

Defining Sport Tourism within the Active Economy

When studying the Active Economy cluster, it is Deloitte's observation that it would be difficult to focus, resource, and measure any efforts to attract investment to such a broad sector of the economy that is comprised primarily of non-profit organizations, municipal agencies, and small businesses. Within the Active Economy cluster, the Sport Tourism sector has a more tangible definition, as well as a worldwide organization behind it. According to the United Nations World Tourism Organization:²²

- Sports Tourism is one of the fastest growing sectors in tourism. More and more tourists are interested in sport activities during their trips whether sports are the main objective of travel or not.
- Sport events of various kinds and sizes attract tourists as participants or spectators and destinations try to add local flavours to them to distinguish themselves and provide authentic local experiences.
- Sports events can be a catalyst for tourism development if successfully leveraged in terms of destination branding, infrastructure development and other economic and social benefits.

International Landscape

The global sports industry was valued at US\$620 billion in 2011, with projected growth of 4% to 6% per year. ²³ The industry's economic features include infrastructure construction, the sale of sporting goods, licensed products, and spending associated with live sports events. In terms of the shares of the worldwide sports event market by sport, soccer remains king, with three times as much share as the next largest sports: U.S. football, baseball, Formula 1, basketball, hockey, tennis, and golf. As a result of the COVID-19 pandemic, the tourism industry, including the sport tourism segment, witnessed a catastrophic downturn. International events were postponed or cancelled, and spectators were not allowed inside the venues at events that proceeded.

There are many recent examples of investments in sport venue development around the world:

- UBS Arena, New York, US\$1.5 billion (opened 2021);
- SoFi Stadium, California, US\$5.5 billion (2020)
- Allegiant Stadium, Las Vegas, US\$1.9 billion (2020)
- Globe Life Field, Texas, US\$1.1 billion (2020)
- Tottenham Hotspur Stadium, London, US\$1.32 billion (2019)
- Merdedes-Benz Stadium, Atlanta, US\$1.5 billion (2017)

²² UNWTO Sports Tourism Congress, unwto.org/world-sports-tourism-congress

²³ Kearney, < https://www.kearney.com/media/article/-/insights/the-sports-market>

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- Optus Stadium, Australia, US\$1.27 billion (2017)
- Krestovsky Stadium, Russia, US\$1.17 billion (2017)
- Little Caesars Arena, Detroit, US\$730 million (2017)
- SunTrust Park, Atlanta, US\$710 million (2017)²⁴

According to the European Tourism Futures Institute, there are many niche markets within sports tourism in Europe. European tour operators offer trips within the following niches: water sports, diving, fishing, golf, adrenaline activities, cycling, spectator-based sports tourism trips, skiing, and running.²⁵ Germany, France, the U.K., Denmark, Finland, and Austria are the largest markets for sport tourism in Europe.²⁶

Sports travellers, event organizers and venues in the U.S. spent a total of US\$39.7 billion in 2021, generating US\$91.8 billion in total economic impact, supporting 635,000 full and part-time jobs, and generating US\$12.9 billion in taxes, according to a report prepared by Tourism Economics for the Sports Events and Tourism Association.²⁷

Sport Tourism in Canada

International sport tourism in Canada was valued at \$7.4 billion in 2019, according to an economic impact study prepared by Sport Tourism Canada.²⁸ Ontario had the largest value of international sport tourism in the country at nearly \$2.5 billion.²⁹ Toronto was estimated to have the highest international value at almost \$1.1 billion. No data was calculated specifically for Niagara Region. Like the rest of the tourism industry, sports tourism was negatively impacted by the COVID-19 pandemic and was estimated to suffer an economic loss of over \$5.4 billion in 2020.³⁰

A 2015 report commissioned by Scotiabank and Canadian Tire estimated the annual impacts of hockey-related tourism to be \$2.6 billion in direct hockey-related impact, and \$5.1 billion in direct-plus-indirect multiplier effects between Canadian communities.³¹

²⁷ Sports Events and Tourism Association, sportseta.org/blog/2022/05/04/state-of-the-industry-reportfor-the-918-billion-sport-tourism-industry

²⁴ Construction Disputes, constructiondisputes.com/the-30-most-expensive-sports-stadiums-ever-built/

²⁵ Centre for Promotion of Imports, cbi.eu/market-information/tourism/sport-tourism/market-potential

²⁶ Ibid.

²⁸ Sport Tourism Canada, *2019 Sport Tourism Impact by Province/City*, 2020.

²⁹ Ibid.

³⁰ Sports Tourism Canada, *Bouncing Back Preparing for a Sport Hosting and Economic Reboot Part 2: International*, June 2021.

 ³¹ Ice Hockey in Canada, 2015 Impact Study Summary,
 scotiabank.com/ca/common/pdf/Ice-Hockey-in-Canada-Summary-and-Infographic.pdf
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Statistics Canada, in 2015, reported five years of economic indicators of the sporting and athletic goods industry, comprised of establishments primarily engaged in manufacturing sporting and athletic goods, except clothing and footwear. The domestic market for these goods totaled \$2.543 billion in 2015, an increase of 8.3% since 2011.³²

The Canadian Gaming Association reported in 2020 that Canadians are wagering approximately \$10 billion annually through illegal bookmaking operations in Canada, usually operated by organized crime. Additionally, more than \$4 billion is wagered through offshore online sports wagering sites. Currently, only \$500 million is wagered through legal provincial sports lottery products.³³

Sport Tourism in Ontario

MHSTCI has a stated as part of its annual plan that it supports national and international amateur sport events hosted in Ontario. MHSTCI announced an investment of almost \$1.5 million through its 2022-23 Sport Hosting Program, with its first intake supporting 15 national and five international amateur sport events in Ontario. The Expected outcomes from the Ministry's Strategic Plan include building resilience and maintaining capacity in the ministry's sectors, positioning ministry sectors for sustainable economic and social recovery, helping ministry sectors to increase their competitiveness and to deliver new, innovative, modernized and inclusive experiences. In the 2022-2023 fiscal year, the MHSTCI budgeted \$57.6 million for sport, recreation, and community programs.

The rise in Sports Tourism spending is not only occurring in larger metropolitan areas but also in smaller communities. As such, there is increasing support for sport tourism as a legitimate way to boost the number of visitors and visitor spending. Sport tourism indirectly attracts visitors for other travel purposes and promotes the profile and reputation of a community as a destination and a place to live. These economic impacts are complemented by various community benefits, including a better quality of life, a stronger sport community and the legacy of sport tourism events – from new or upgraded equipment and facilities to the "soft" legacies of improved volunteer capacity,

³² Sporting and athletic goods industry profile, 2011-2015, Statistics Canada, ised-isde.canada.ca/site/consumer-products/en/industry-profiles/sporting-and-athletic-goods ³³ Canadian Gaming Association, February 2020, canadiangaming.ca/canadiangaming-association-welcomes-the-introduction-of-the-safe-and-regualted-sports-betting-act/

 ³⁴ Government of Ontario, *Published plans and annual reports 2022-2023: Heritage, Sport, Tourism and Culture Industries*, 2022
 ³⁵ Ibid.

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| expertise and motivation, improved marketing profile/reputation, expanded contacts and enhanced sustainability. |
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Sector Trends

The Niagara Region Advantage

- Many national and international sports events have been hosted in Niagara region and some of the infrastructure and venues are the legacy of previous events: Canada Games Park, Eleanor Misener Aquatic Centre, Jack Gatecliffe Arena, Meridian Centre (5,300-seat capacity), Niagara-on-the-Lake Sailing Club, Niagara-on-the-Lake Tennis Club, Oakes Park, Royal Canadian Henley Rowing Course, Southward Park, Welland Baseball Stadium, Welland International Flatwater Centre, Welland Tennis Club, Youngs Sportplex, as well as Brock University's pool, gymnasium, and tennis courts; Niagara College's gymnasiums and fitness centres; and Ridley College's fields for soccer, rugby, and football and the Iggulden Building and Athletic Complex (under construction).
- Niagara Region's emerging economic sectors complement the Active Economy / Sport Tourism cluster, including Computer Systems Design (Active Products); Other Professional, Scientific and Technical Services (Professional Services, Media and Content); Architectural, Engineering and Related Services (Professional Services, Design and Infrastructure); Scientific Research and Development (Design and

- Infrastructure); Information and Technology (Professional Services); and Digital Media (Media and Content).³⁶
- Niagara's tourism sector is well-established and one of the top sectors in the region.
 The region is within driving distance of the Greater Toronto Area and Western New York.

Major Sport Teams in Niagara Region

There are a number of major sport teams in Niagara Region that attract thousands of visitors annually:

- Niagara IceDogs, Meridian Centre, St. Catharines: As part of the Ontario
 Hockey League, the Niagara IceDogs have seen attendance at home games
 grow steadily since the club's first season in 2007-08. In 2018-19, per-game
 yearly average attendance was 5,035, the fourth-highest attendance in the
 league that season.³⁷ There are 20 teams in the OHL, which stretches across the
 Great Lakes region from Niagara to Sault Ste. Marie and Ottawa to Erie,
 Pennsylvania.
- **Welland Jackfish, Welland Stadium, Welland:** Since starting play in Niagara Region in 2019 as part of the Intercounty Baseball League, per-game attendance at Jackfish games grew to 1,120 in 2022, up 32% over 2019.³⁸ There are nine teams in the IBL, stretching from Welland to Chatham-Kent and north to Barrie.
- Niagara River Lions, Meridian Centre, St. Catharines: As part of the Canadian Elite Basketball League, the Niagara River Lions play at the Meridian Centre. Average attendance at games in 2019 was 2,237.³⁹ There are seven teams in the CEBL across Canada.
- St. Catharines Roma Wolves, Roma Fields, St. Catharines: Part of League 1 Ontario (L1O), the St. Catharines Roma Wolves⁴⁰ have a Women's and Men's Premier teams that play in tournaments sanctioned through FIFA, Canada Soccer Association and Ontario Soccer. L1O boasts 118 teams across Ontario.⁴¹ The Tiamo Festival Cup is a soccer tournament and festival scheduled for July 2023 at Club Roma in St. Catharines.
- Greater Niagara Baseball Association: Minor league baseball teams in the Greater Niagara Baseball Association play in the Niagara District Baseball

³⁶ Presentation by Julie Stevens to Goodman School of Business, 2022, youtu.be/-NAQeZ9KpQw

³⁷ Internet Hockey Database, hockeydb.com/nhl-attendance/att_graph.php?tmi=7121

³⁸ Welland Jackfish, wellandjackfish.com/history

³⁹ Niagara River Lions, 2019 Q1 Report, riverlions.ca/river-lions-2019-quarter-season-report-1

⁴⁰ St. Catharines Club Roma Soccer, romasoccer.com

⁴¹ League1 Ontario, league1ontario.com/league1

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Association (NDBA, and official affiliate of the Ontario Baseball Association (OBA). Tournaments for the league are periodically hosted in Niagara, and teams include Niagara Falls Falcons, Welland Junior Jackfish, and St. Catharines Cobras.

 Niagara District Hockey League (NDHL): There are several Minor A hockey teams across Niagara Region that are members of the Ontario Minor Hockey Association: Fort Erie Meteors, Niagara Falls Flyers, Niagara-on-the-Lake Wolves, Pelham Panthers, Port Colborne Sailors, Thorold Blackhawks, Wainfleet Wild, Welland Tigers, and West Niagara Flying Aces.⁴²

Employment and Business Structure in Niagara Region

The Active Economy / Sport Tourism sector and its supporting industries employed 42,549 people in the Niagara Region. There are 27,997 workers employed in the core industry sectors.

The largest Active Economy / Sport Tourism sectors (core industries) are traveller accommodations (4,976 jobs or 12% of sector jobs), other amusements and recreation industries (2,688/6%), and health and personal care stores (2,364/6%).

Figure 4 – Employment in Active Economy / Sport Tourism, Niagara Region, 2022

| Sub-Sectors | Employment 2022 | % |
|---|--------------------|------|
| Total Active Economy / Sport Tourism Sector | 42,549 | 100% |
| Full-service restaurants and limited-service eating places | 14,552 | 34% |
| Traveller accommodation | 4,976 | 12% |
| Other amusement and recreation industries | 2,688 | 6% |
| Health and personal care stores | 2,364 | 6% |
| Clothing stores | 2,277 | 5% |
| Offices of other health practitioners | 2,161 | 5% |
| Home health care services | 1,938 | 5% |
| Personal care services | 1,687 | 4% |
| Other schools and instruction | 1,586 | 4% |
| Gambling industries | 892 | 2% |
| Sporting goods, hobby and musical instrument stores | 780 | 2% |
| Special food services | 626 | 1% |
| Used merchandise stores | 537 | 1% |
| Business, professional, labour and other membership organizations | 534 | 1% |

⁴² Niagara District Hockey League, hockeyniagara.com/

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| Sub-Sectors | Employment 2022 | % |
|---|--------------------|----|
| Other miscellaneous manufacturing | 488 | 1% |
| Other information services | 390 | 1% |
| Other heavy and civil engineering construction | 382 | 1% |
| Performing arts companies | 374 | 1% |
| Shoe stores | 327 | 1% |
| Printing and related support activities | 325 | 1% |
| Other ambulatory health care services | 321 | 1% |
| Travel arrangement and reservation services | 319 | 1% |
| Civic and social organizations | 293 | 1% |
| Recreational vehicle (RV) parks and recreational camps | 244 | 1% |
| Business-to-business electronic markets, and agents and brokers | 240 | 1% |
| Specialized design services | 213 | 1% |
| Personal goods merchant wholesalers | 204 | 0% |
| Textile, clothing and footwear merchant wholesalers | 156 | 0% |
| Promoters (presenters) of performing arts, sports and similar events | 140 | 0% |
| Drinking places (alcoholic beverages) | 129 | 0% |
| Automotive equipment rental and leasing | 110 | 0% |
| Motor vehicle merchant wholesalers | 92 | 0% |
| Broadcasting (except internet) | 72 | 0% |
| Consumer goods rental | 58 | 0% |
| Spectator sports | 35 | 0% |
| Pay and specialty television | 25 | 0% |
| Agents and managers for artists, athletes, entertainers, and other public figures | 14 | 0% |
| Fishing | 0 | 0% |
| Hunting and trapping | 0 | 0% |

Source: Lightcast, 2022- Datarun 2022.1 | Core sectors highlighted in blue

Overall, the Active Economy / Sport Tourism sector is expected to decline by 605 jobs (-1%) between 2022 and 2028; these declines, led by employment losses in traveller accommodation (-841 jobs or 17% decline)⁴³. The tourism sector in general was severely impacted by the COVID-19 Pandemic. Despite some sign of recovery taking place in the sector, Ontario's tourism industry is not expected to fully recover from the

⁴³ Lightcast, 2022, Datarun 2022.1

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pandemic until 2025.⁴⁴ The projected job declines may be influenced as well by the labour shortages experienced by the hospitality sector. According to the Hotel Association of Canada, two thirds of accommodation businesses see labour issues as a significant business impediment, and if the labour shortage is not addressed nationwide, the accommodation industry could experience a labour shortfall of 10,000 people during the next decade.⁴⁵

Other core Active / Economy Sport Tourism industries expected to see declines in employment during the same period are spectator sports (-35/-100%), and personal goods merchant wholesalers (-28 jobs or 14% decline). Meanwhile, other core sectors are expected to see significant employment growth to balance out the losses. Most of these gains will occur in other amusement and recreation industries (+219 jobs or 8% growth), other schools and instruction (+163/+10%), and recreation vehicle (RV) parks and recreational camps (+51/+21%).

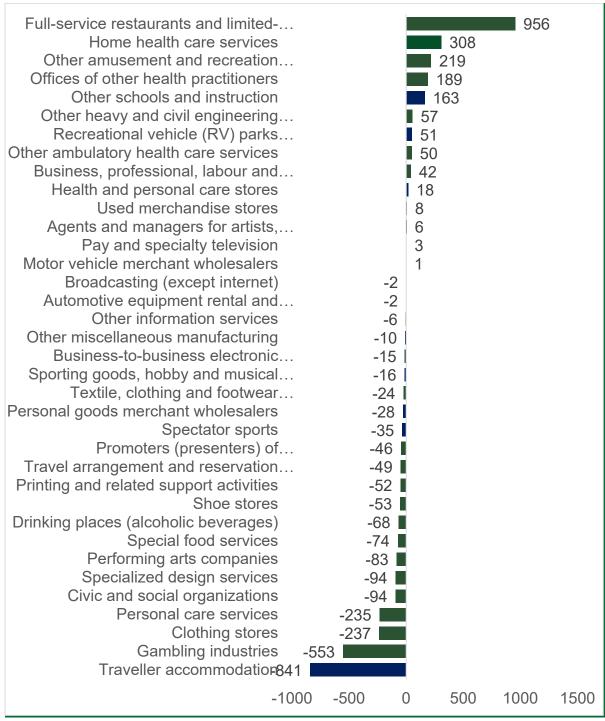
⁴⁴ CBC News. Ontario's tourism sector won't fully recover from pandemic until 2025, report says. Posted December 12, 2022

⁴⁵ Hotel Association of Canada. Labour Shortage. Retrieved from

http://www.hotelassociation.ca/labour/

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Figure 5 – Employment Change, Active Economy / Sport Tourism, Niagara Region, 2022-2028



Source: Lightcast, 2022- Datarun 2022.1

Niagara Region had 6,107 businesses with at least \$30,000 in revenue in the Active Economy / Sport Tourism sector in June 2022. Most were businesses without employees (3,196 businesses fall under this category), this may suggest this sector has

a high share of individual entrepreneurs or self-employed people. The largest core Active Economy / Sport Tourism sectors were health and personal care stores (407 businesses or 7% of sector businesses), traveller accommodations (325/5%), and other amusement and recreation industries (286/5%). The larger proportion of businesses in the Active Economy / Sport Tourism sector were in businesses that support the broader active economy, rather than core industries.

Figure 6 – Business Counts, Active Economy / Sport Tourism Economic Sector, Niagara Region, June 2022

| Sub-Sectors | With Employees | Without Employees | Total |
|---|-------------------|----------------------|-------|
| Total Sport Tourism Businesses | 2,911 | 3,196 | 6,107 |
| Full-service restaurants and limited- | 887 | 293 | 1,180 |
| service eating places | | | |
| Offices of other health practitioners | 267 | 574 | 841 |
| Personal care services | 243 | 347 | 590 |
| Health and personal care stores | 261 | 146 | 407 |
| Traveller accommodation | 118 | 207 | 325 |
| Business, professional, labour and other membership organizations | 95 | 195 | 290 |
| Other amusement and recreation industries | 148 | 138 | 286 |
| Other schools and instruction | 77 | 174 | 251 |
| Clothing stores | 178 | 63 | 241 |
| Civic and social organizations | 57 | 124 | 181 |
| Specialized design services | 31 | 141 | 172 |
| Special food services | 54 | 72 | 126 |
| Sporting goods, hobby and musical instrument stores | 61 | 59 | 120 |
| Travel arrangement and reservation services | 42 | 75 | 117 |
| Business-to-business electronic markets, and agents and brokers | 38 | 61 | 99 |
| Other miscellaneous manufacturing | 34 | 61 | 95 |
| Performing arts companies | 11 | 65 | 76 |
| Printing and related support activities | 38 | 37 | 75 |
| Other information services | 15 | 49 | 64 |
| Home health care services | 21 | 40 | 61 |
| Used merchandise stores | 25 | 21 | 46 |
| Drinking places (alcoholic beverages) | 28 | 17 | 45 |

| Sub-Sectors | With Employees | Without Employees | Total |
|--|-------------------|----------------------|-------|
| Promoters (presenters) of performing arts, | 12 | 30 | 42 |
| sports and similar events | | | |
| Automotive equipment rental and leasing | 19 | 22 | 41 |
| Shoe stores | 36 | 3 | 39 |
| Spectator sports | 11 | 27 | 38 |
| Textile, clothing and footwear merchant | 16 | 19 | 35 |
| wholesalers | | | |
| Recreational vehicle (RV) parks and | 15 | 19 | 34 |
| recreational camps | | | |
| Personal goods merchant wholesalers | 12 | 21 | 33 |
| Motor vehicle merchant wholesalers | 6 | 23 | 29 |
| Other heavy and civil engineering | 13 | 13 | 26 |
| construction | | | |
| Consumer goods rental | 14 | 12 | 26 |
| Other ambulatory health care services | 6 | 17 | 23 |
| Gambling industries | 9 | 10 | 19 |
| Broadcasting (except internet) | 8 | 7 | 15 |
| Agents and managers for artists, athletes, | 3 | 8 | 11 |
| entertainers and other public figures | | | |
| Fishing | 2 | 2 | 4 |
| Hunting and trapping | 0 | 3 | 3 |
| Pay and specialty television | 0 | 1 | 1 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region | Core sectors highlighted in blue

Location Quotient

As part of the economic baseline analysis, a Location Quotient (LQ) Analysis was completed to determine the concentration of employment in the Active Economy / Sport Tourism sector, in Niagara region and relative to the province. The location quotient reveals what makes a region unique, in this case in comparison with other communities in Ontario. The following chart shows common LQ Classifications to interpret the figures in Figure 5.



Overall, the Active Economy / Sport Tourism sector shows an above average concentration of businesses in the Niagara Region compared to Ontario. Core sectors with a high concentration of businesses in the area include traveller accommodation, spectator sports, other amusement and recreation industries, and sporting goods, hobby and musical instrument stores.

Figure 7 – Business Concentration, Active Economy / Sport Tourism Sector, Niagara Region, June 2022

| Description | Business Location Quotient (LQ) |
|--|------------------------------------|
| Total Sport Tourism Economy | 1.19 |
| Traveller accommodation | 2.92 |
| Gambling industries | 2.52 |
| Spectator sports | 2.36 |
| Drinking places (alcoholic beverages) | 1.92 |
| Used merchandise stores | 1.80 |
| Travel arrangement and reservation services | 1.52 |
| Other heavy and civil engineering construction | 1.50 |
| Promoters (presenters) of performing arts, sports and | 1.49 |
| similar events | |
| Other amusement and recreation industries | 1.47 |
| Civic and social organizations | 1.45 |
| Full-service restaurants and limited-service eating places | 1.35 |
| Sporting goods, hobby and musical instrument stores | 1.33 |
| Shoe stores | 1.31 |
| Special food services | 1.30 |
| Consumer goods rental | 1.28 |
| Personal care services | 1.27 |
| Fishing | 1.23 |
| Clothing stores | 1.23 |
| Home health care services | 1.14 |
| Health and personal care stores | 1.13 |
| Offices of other health practitioners | 1.08 |

| Description | Business Location Quotient (LQ) |
|---|------------------------------------|
| Printing and related support activities | 1.02 |
| Other miscellaneous manufacturing | 1.02 |
| Other schools and instruction | 0.94 |
| Other ambulatory health care services | 0.94 |
| Personal goods merchant wholesalers | 0.92 |
| Business-to-business electronic markets, and agents and brokers | 0.92 |
| Motor vehicle merchant wholesalers | 0.89 |
| Performing arts companies | 0.88 |
| Business, professional, labour and other membership | 0.88 |
| organizations | |
| Other information services | 0.86 |
| Automotive equipment rental and leasing | 0.84 |
| Recreational vehicle (RV) parks and recreational camps | 0.78 |
| Textile, clothing and footwear merchant wholesalers | 0.73 |
| Broadcasting (except internet) | 0.73 |
| Specialized design services | 0.68 |
| Agents and managers for artists, athletes, entertainers | 0.66 |
| and other public figures | |
| Hunting and trapping | 0.55 |
| Pay and specialty television | 0.36 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region

Job Demand

There is not a significant demand for workers (job postings) in the core Active Economy / Sport Tourism sectors in Niagara region. Between January 1, 2020, to November 30 2022 1,306 job postings in industries related to Active Economy / Sport Tourism were recorded in the Niagara region. 60% of these job postings were in non-core sectors such clothing stores (515 job postings) and automotive equipment rental and leasing (114 job postings). On the other hand, core sectors with the largest demand included health and personal care stores (429 job postings), and sporting goods, hobby and musical instrument stores (64 job postings)⁴⁶.

⁴⁶ Vicinity Jobs. Data corresponds to newly published job postings between January 1, 2020, to November 30, 2022. These figures have not been independently verified by Deloitte.

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Most of the job postings were published in 2022; more than a 350% growth from 2020 (it is important to note that data for 2022 is only available up to November 30, and this number is likely to have increased by the end of 2022.

Figure 6 – Job Demand (Job Postings) by Industry Sector (Active Economy / Sport Tourism), Niagara Region, Jan 1, 2020, to Nov 30, 2022

| NAICS | 2020 | 2021 | 2022 | Total Postings | % |
|--|------|------|------|-------------------|-------|
| Total* | 170 | 370 | 766 | 1,306 | 100% |
| 4481 - Clothing Stores | 55 | 105 | 355 | 515 | 39.4% |
| 4461 - Health and Personal Care Stores | 84 | 181 | 164 | 429 | 32.8% |
| 5321 - Automotive Equipment Rental and Leasing | 12 | 16 | 86 | 114 | 8.7% |
| 4511 - Sporting Goods, Hobby and Musical Instrument Stores | 1 | 5 | 58 | 64 | 4.9% |
| 4533 - Used Merchandise Stores | 1 | 5 | 24 | 30 | 2.3% |
| 5152 - Pay and Specialty Television | 5 | 10 | 15 | 30 | 2.3% |
| 4482 - Shoe Stores | 5 | 4 | 18 | 27 | 2.1% |
| 4191 - Wholesale Agents and Brokers | 0 | 2 | 19 | 21 | 1.6% |
| 2379 - Other Heavy and Civil Engineering Construction | 1 | 18 | 0 | 19 | 1.5% |
| 3399 - Other Miscellaneous Manufacturing | 1 | 7 | 9 | 17 | 1.3% |
| 3231 - Printing and Related Support Activities | 1 | 5 | 10 | 16 | 1.2% |
| 4144 - Personal Goods Wholesaler-Distributors | 4 | 7 | 0 | 11 | 0.8% |
| 4151 - Motor Vehicle Wholesaler-Distributors | 0 | 5 | 5 | 10 | 0.8% |
| 4141 - Textile, Clothing and Footwear Wholesaler-Distributors | 0 | 0 | 2 | 2 | 0.2% |
| 5151 - Radio and Television Broadcasting | 0 | 0 | 1 | 1 | 0.1% |

Source: Vicinity Jobs * Number of Postings applicable to the reporting period but excluded from this report's grand total due to lack of reliable and relevant information

Sector Development

There are no known incentives for private lenders to invest in the Active Economy / Sport Tourism sector. Senior levels of government provide funding for sport hosting and, until recently, funded tourism sector programs:

Canada's Hosting Program: The federal government's Hosting Program assists sport organizations to host the Canada Games and international sport events in Canada. It received over \$118 million in funding between 2015-16 and 2019-20⁴⁷ and is delivered through the following components: International Major Multisport Games (supports large, multisport games that are governed by an international sport franchise holder with links to international sport federations), International Single Sport Events (assists national sport organizations (NSOs) in hosting international single sport events in Canada, such as World Championships, Olympic or Paralympic qualification events and World Cups), International Multisport Games for Aboriginal Peoples and Persons with a Disability (provides competitive opportunities for designated, under-represented groups in Canada that face systemic barriers to sport participation), and Canada Games (provides funding to organizations that are duly incorporated for the staging of the country's largest domestic multisport event).⁴⁸

Ontario Sport Hosting Program (closed): The Ontario Sport Hosting Program provided project-based funding to help applicants deliver national and international amateur sport events in Ontario. The province's annual investment of \$3 million supported 134 events between 2013 and 2022. The program funded a variety of winter and summer sports, contributed to athlete development, and encouraged the development of legacies for amateur sport and local communities. 49 Current funding intakes are available through the Reconnect Ontario Marquee Event Fund but any amateur sporting event that is receiving funding from the Ontario Sport Hosting Program is ineligible. 50

forms.mgcs.gov.on.ca/en/dataset/on00419

⁴⁷ Grouped Evaluation, canada.ca/en/canadianheritage/corporate/publications/evaluations/grouped-evaluation-sport-canadaprogram.html

⁴⁸ Canada Hosting Program, canada.ca/en/canadian-heritage/services/funding/hosting-program.html

⁴⁹ Ontario Sport Hosting Program, ontario.ca/page/ontario-sport-hosting-program

⁵⁰ Reconnect Ontario – Marquee Event Funding,

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Tourism Relief Fund (closed):⁵¹ With a budget of \$500 million over two years (ending March 31, 2023), including \$485 million in regional priorities funding administered by Canada's regional development agencies, with \$50 million specifically dedicated to Indigenous tourism initiatives, and the \$15 million National Priorities Stream administered by Innovation, Science and Economic Development Canada (ISED), this fund is expected to position Canada as a destination of choice as domestic and international travel rebounds by:

- empowering tourism businesses to create new or enhance existing tourism experiences and products to attract more local and domestic visitors; And,
- helping the sector reposition itself to welcome international visitors by providing the best Canadian tourism experiences we have to offer the world.

⁵¹ Innovation, Science and Economic Development Canada (ISED)

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Global Market Drivers

A key potential driver of further investment in Sport Tourism, is sports technology. The sports technology market is growing with a range of applications driven largely by the demand for technological solutions post-pandemic.⁵² Sporting events globally are expected to grow at a marginal rate from US\$27.4 billion in 2023 to US\$30.5 billion in 2027, representing a compound annual growth rate CAGR of 3%.⁵³ A key driver of the sporting events market is the sports technology market which has been driven by increased investment into the digital technologies that support the proliferation of this segment. 2021 saw peak investment into the sport technology sector globally representing US\$10 billion which signifies an increase of 161% from 2020.⁵⁴ The value of the North American sports technology market is US\$6.5 billion followed by the Asia Pacific which represents US\$3.2 billion and Europe which accounts for US\$1.9 billion.⁵⁵

Looking at supporting wider Active Economy / Sport Tourism sector, rehabilitation services and sports recovery for athletes is a potential avenue that capitalizes on Niagara's history as a sporting event host and strengths in its healthcare sector. Economic drivers propelling the sector forward include the need for rehabilitation goods and an increasing patient population.⁵⁶ The need for rehabilitation and healthcare services in the sports industry also plays on the cost effectiveness of healthcare in Canada and the demand for niche healthcare services that are accessible. While this is a niche subsector and does not reflect the scale and magnitude of the other sectors explored in this report, it is because the Sport Tourism economy in Niagara is not competitive in the main driver of FDI projects.⁵⁷

⁵² Global News Wire. Retrieved from

⁵³ Statista. Retrieved from https://www.statista.com/outlook/dmo/eservices/event-tickets/sport-events/worldwide

⁵⁴ Sports Pro Media. Retrieved from https://www.sportspromedia.com/analysis/sports-tech-investment-dream11-fanatics-dapper-labs-nfts-connected-fitness/>
55 Ibid.

⁵⁶ In-Depth Analysis of Five Emerging Sectors, Research on Investment (ROI), January 2023.

⁵⁷ Given that sports tourism is not a traditional investment category, investment trends can be understood through the rehabilitation and medical device subsections that go some way to show how this segment overall is performing. Venture capital trends show that 37 investment rounds were recorded for innovations in rehabilitation services and

An example of investments at the intersection of sport and healthcare includes a project established in 2022 by Illinois-based Athletico Psychical Therapy in Allen (Texas) which provides orthopedic rehabilitation services. Going beyond North America, investments in this niche have come from Hong Kong for example, in 2018, Hocoma, a developer of automated therapy equipment for the rehabilitation of patients with neurological movement disorders opened a new branch in Cologne, Germany.

Venture capital trends show that 37 investment rounds were recorded for innovations in rehabilitation services and 1,335 investment rounds were recorded for medical devices. ⁵⁸ Unique location assets that are essential for investment in this segment are a strong proximity to the existing sports tourism and Sport Tourism economy market and customers.

Investment Trends & Location Factors

The 2023 Deloitte Sports Industry Outlook⁵⁹ reports that private equity has taken an increasingly active role in sports in general globally over the past few years, with firms establishing funds and new entities being created to invest solely in sports. In the U.S., major sports leagues generally have a higher rate of return than the S&P 500, with some leagues significantly higher. With expectations of reliable revenue streams and solid return on investment, private equity firm are buying shares of teams, leagues, and broadcast rights. Nearly US\$60 billion in private equity was invested in sports in 2021 and more than US\$30 billion in 2022 through August. In Europe, the rules are fairly relaxed for private equity involvement. In North America, the NBA, MLB, NHL, and MLS have encouraged private equity, with guardrails. These can include setting minimum investment levels, controlling the individual and total percentages that private equity firms and other institutional investors can own, and limiting the number of teams a single firm can invest in.

Other nations have taken a keen interest in financial investments in sport infrastructure, notably the Saudi Event Investment Fund (EIF).⁶⁰ The EIF will have an initial capitalization of CAD\$3.7 billion, aiming to develop a sustainable infrastructure for the culture, tourism, entertainment, and sports sectors. EIF will conceptualize, finance and

^{1,335} investment rounds were recorded for medical devices (Crunchbase). Location assets that have been identified as crucial for companies investing in these sectors are a strong proximity to the existing sports tourism and Sport Tourism economy market and customers (fDimarkets).

⁵⁸ Crunchbase

⁵⁹ Deloitte, deloitte.com/us/en/pages/technology-media-and-telecommunications/articles/sports-business-trends-disruption.html

⁶⁰ Saudi Event Investment Fund, < https://eif.gov.sa/en/sports/ >

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oversee the development of more than 35 venues by 2030, including indoor arenas, horse racetracks, state-of-the-art shooting ranges, and international motorsports facilities designed to accommodate international events. EIF will develop multiple assets to position Saudi Arabia as a global hub for a wide range of sports. The fund's activities will directly contribute to strengthening and enhancing the sector's infrastructure, promoting sports activities within the community and achieving excellence in sports both regionally and internationally.

Major projects that were recorded in the sport technology sector and its supply chain in Ontario from 2018 to 2022 include:

- In July 2022, the sports analytics company NBN23 opened its new North American headquarters in Toronto, Canada; an investment worth \$9.3 million. The project has received support by Toronto Global as well as the Embassy of Canada and created 72 jobs. NBN23 recently announced its partnership with North Pole Hoops, a multi-layered pathway targeted to student athletes starting at 10 years old guiding them all the way to the professional level of basketball in Canada.⁶¹
- In June 2022, US-based Oak View Group, an entertainment and sports facilities company, opened a new office in Toronto, Canada. The project was worth \$1.9 million and created 26 jobs. In the past, t

The company is focused particularly on mid-size Canadian cities that don't have major-league sports anchor tenants for its business. The company launched OVG360, a full-service venue management and event programming company in 2022, which manages, operates and provides hospitality services for over 400 venues on four continents.⁶²

• In November 2019, Italy-based Stone Island, a sportswear retailer, opened a new store on Yorkville Avenue in Toronto, Canada. The \$44 million investment was said to employ 34 people.

⁶¹ NBN23, https://www.nbn23.com/north-pole-hoops-and-nbn23-paving-the-way-for-adigital-basketball-revolution-in-canada/

⁶² Oak View Group, https://www.oakviewgroup.com/>

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Figure 8 – Investment motives into the North American rehabilitation and sport recovery market

| Motive | % of FDI Projects | % of Companies |
|-----------------------------------|-------------------|----------------|
| Proximity to markets or customers | 57.1 | 66.6 |
| Domestic market growth | 28.5 | 25.0 |
| Transport infrastructure | 9.5 | 16.6 |
| Government support | 9.5 | 16.6 |
| Skilled workforce availability | 9.5 | 16.6 |
| Quality of life | 4.7 | 8.3 |
| Sites & property | 4.7 | 8.3 |
| Industry cluster | 4.7 | 8.3 |

Source: fDimarkets

Globally, the wellness economy is forecast to record 9.9% of average annual growth accounting for a market revenue of \$7 trillion in 2025.⁶³ Within this overall market, the global sports recovery market is expected to reach US\$15.2 billion by 2027 and is projected to grow by 8.2% from 2020 to 2030.⁶⁴ It is notable that sporting organizations and athletes require niche needs and the more a region can shape their healthcare facilities around these (e.g., sports cardiology, physical rehabilitation, rheumatology, orthopedic sport medicine, occupational medicine), , the more likely they are to capitalize on these trends. North America is expected to register the strongest growth in the forecast period and the potential for Niagara to position itself as an affordable healthcare rehabilitation space is strong given its proximity to the United States.

From an FDI perspective, to fully capitalize on the trends in Sport Tourism, event attraction technology and e-Sports requires a strong labour force in software as well as a notable sporting team linked to the existing ecosystem. Outside of sports technology, business consulting services that support sport the organizing and planning of sport events could be a potential avenue to explore but the workforce considerations and existing ecosystem are an important consideration.

Recruitment Zones

The United States is the most likely recruitment zone for the rehabilitation and sports recovery segment of Sport Tourism. Hubs for this market are big metropolitan cities with

⁶³ Global News Institute. Retrieved from https://globalwellnessinstitute.org/press-room/statistics-and-facts/

⁶⁴ Global View Research. Retrieved from

https://www.grandviewresearch.com/industry-analysis/sports-medicine-industry>

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a strong healthcare segment and sporting ecosystem. New York City, Los Angeles, Boston, Chicago, and Miami stand out in terms of establishment numbers for this sector. Sports technology is clustered around traditional tech hubs such as San Francisco and the Bay Area. Outside of the United States, top European cities for sports tech investment are Paris, London and Berlin.

NORTH DAKOTA MONTANA NEW BRUNSWICK MINNESOTA NOVA SCOTIA SOUTH DAKOTA WISCONSIN OREGON WYOMING NEBRASKA ILLINOIS UTAH NEVADA UNITED STATES 2021 Establishments OF AMERICA CALIFORNIA 332 to 385 OKLAHOMA NORTH CAROLINA 153 to 331 81 to 152 ALABAI 38 to 80 LOUISIANA 12 to 37 FLORIDA 0 to 11

Figure 9 – Rehabilitation and sports recovery hubs in the United States

Source: Lightcast

SWOT Analysis

The following is an overview of the strengths, weaknesses, opportunities, and threats that face the Active Economy / Sport Tourism sector in the Niagara Region. This SWOT analysis utilizes the background research that was completed for the sector, as well as engagement from key stakeholders from Niagara Region. Marketing messaging is recommended to align with the opportunities and strengths statements detailed below, which were drawn from stakeholder focus group sessions and uncovered through the research.

| Sport Tourism Sector SWOT | |
|--|---|
| Strengths | Weaknesses |
| The Niagara region is already a top tourism destination in Canada and North America. The region receives over 13 million tourists each year. Over 4 million of these are international tourist⁶⁵. North America is expected to register growth in the sector, and the research identifies the potential for Niagara to position itself as an affordable healthcare rehabilitation space. The Niagara region has a high concentration of spectator sports, promoter of performing arts, sports and similar events, traveller accommodation, and other amusement and recreation industries that support sport tourism. The presence of physical and natural assets for sport tourism events and facilities such as the Canada Games Park, Meridian Centre, and Welland International Flatwater Centre. | Lack of mapping of the Active Economy and Sport Tourism Lack of performance measurement of the Active Economy and Sport Tourism Closure of the Niagara Sports Commission: there is no longer a central office to bid on events available in the Canadian sports tourism market. This translates into less sport events being attracted to Niagara, and therefore, less interest from an investor perspective to invest in sports-related businesses in the region. No dedicated resources in the Region for sports tourism. Governance of facilities is fragmented. Bureaucracy becomes a burden when looking at attracting multi-facility events. Poor air transportation connectivity to attract international events to the region. |

⁶⁵ Niagara Economic Development

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 Niagara was able to effectively mobilize volunteers. As evidence, there was a strong volunteer network for the 2022 Canada Summer Games.

Opportunities

- A big driver of the sporting events market is the sports technology market which has been driven by increased investment into the digital technologies that support the proliferation of this segment.
- Opportunities for rehabilitation and healthcare services in the sports industry also plays on the cost effectiveness of healthcare in Canada and the demand for niche healthcare services that are accessible.
- Existing venues can support provincial and national tournaments for a variety of amateur sports such as volleyball, badminton, basketball, and others.
- Capitalize on the success of the 2022
 Canada Summer Games and build from the achievement to attract additional events to the region such as provincial or national tournaments.
- Bring partners together to develop a sports tourism strategy and align efforts among the ecosystems.
- Protect green space and maintain fundamental infrastructure for biking, hiking, and other active recreational activities.
- Promote longer term stays in the region.
 This could be through events and attract individuals to come before the event or stay after the event.

Threats

- Staffing challenges are beginning to emerge in the sector.
- Ontario's tourism sector is not expected to fully recover from the pandemic until 2025.
- According to Lightcast projections, employment in the sector is expected to decline by 1% by 2028; loses will be more significant in core active sports businesses.
- A sport tourism office requires sustained operational and bid funding.⁶⁶
- International visitation has not rebounded as strongly as anticipated since the COVID-19 pandemic.
- Need for leadership and coordination among stakeholder to bring suitable sport events to the region.

⁶⁶ Global View Research. Retrieved from

https://www.grandviewresearch.com/industry-analysis/sports-medicine-industry>

- Support the development of a sports tourism body for future development of the sector in Niagara region.
- Support the development of sports professionals such as umpires so that external resources do not need to be imported for major events.
- Build from events to promote the region more holistically with artistic events to keep visitors in the region and provide additional activities.

Conclusion

Niagara Region's successful hosting of the 2022 Canada Summer Games proves its ability to compete for national events and the region has earned status as a recognized hosting location.

The Games also built sports facilities and infrastructure for the benefit of the community and towards hosting other events in the future. To realize sport tourism event attraction requires the coordination of diverse partners, volunteer recruitment, funds to support bids, and staff time to prepare event bids. Stakeholders reported a need for leadership in the network and support for a strategic process to align the region's efforts in event attraction to follow on this success. Air transportation is preferred to move people and staff for large events, and more regular air service would be an asset for the sector.

The business investment opportunities associated with the Active Economy / Sport Tourism sector are found in infrastructure for sport event hosting, sports technology, rehabilitation, and wellness industries, which can offer some potential alignment with the emerging heath care and life sciences sector.

To become a leader in the Active Economy / Sport Tourism sector, a strong coordination of diverse stakeholders and intentional efforts to support recovery of the tourism sector post-pandemic will assist in increasing the impact and presence of major sporting events and business investment.

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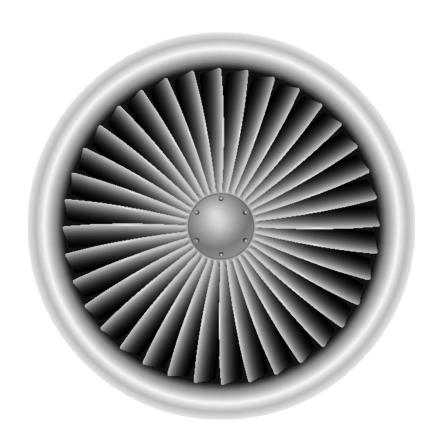
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Niagara Region Aerospace Sector Profile March 2023



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Introduction

The global aerospace market was valued at US\$712 billion in 2021¹, and when it comes to aerospace materials, the market reached US\$36.4 billion in 2021 and is predicted to grow to US\$67.2 billion by 2030.² The aerospace sector is an important sector for Ontario and Canada. In Ontario, the sector represents over \$6 billion in annual sales, a direct GDP impact of \$4.4 billion, and an annual expenditure of \$500 million in research and development (R&D). Niagara region is home to a number of aerospace companies including Airbus Helicopters, Fleet Canada, Genaire Limited and a number of non-scheduled air transportation companies

¹ PWC, PwC's Global Aerospace and Defense: Annual Performance Look, 2022. Retrieved from https://www.pwc.com/us/en/industries/industrial-products/library/aerospace-defense-review-and-forecast.html

² Global News Wire. Retrieved from https://www.globenewswire.com/news-release/2022/09/12/2514458/0/en/Aerospace-Materials-Market-Size-to-Surpass-Around-USD-67-42-BN-by-2030.html

(sightseeing). Considering the importance of this sector and its projected global growth, interest in continuing to develop the sector has increased.

The Emerging Sector Profiles

Niagara Region Economic Development retained Deloitte LLP to produce sector profiles for five emerging sectors, including the marine sector, the health sector, film sector, and active economy/sport tourism, and electric vehicle battery industry. In the design of the project, the aerospace sector was added to the analysis. These sectors were initially identified in 'Niagara's 10 Year Economic Development Strategy 2022-2032'. This profile features the investment and growth potential of the aerospace sector. This aerospace sector profile was developed by defining the industries that are core to the sector as well as those that broadly support the aerospace sector and may provide opportunities for value chain development. These industries were characterized using business and employment data and include support and supply businesses. From this broad overview, international, national, and local trends were considered to identify high potential areas relevant to Niagara's economy. The research also includes the perspectives of local stakeholders, as well as a review of existing literature. The data were pulled together to show a picture of the sector's future potential. This profile does not include a benchmarking of the aerospace sector, and further research is needed to accurately identify employment directly linked to the aerospace sector.

The following data sources were used in the development of this sector profile: Lightcast (formerly EMSI Economic Modeling) 2022, Vicinity Jobs 2022, FDI Markets, Statistics Canada, and Canadian Business Counts³ June 2022.

Investment Attraction Highlights

 Niagara region's aerospace industry is supported by a strong architectural and engineering services, aerospace parts manufacturing, support activities for air transportation, and composite component manufacturing. Emerging trends in aerospace have been in applying aerospace technology to drones and logistics

³ The June 2022 Canadian Business Counts were used to determine the total number of registered businesses in the Niagara Region. Statistics Canada's Canadian Business Counts Data provides a record of business establishments by industry and size. This data is collected from the Canada Revenue Agency (CRA). The business data collected for Niagara Region included all local businesses that met at least one of the three following criteria: Have an employee workforce for which they submit payroll remittances to CRA, or have a minimum of \$30,000 in annual sales revenue, or are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

- subsectors. A major application, unmanned aerial and vehicle systems, have high potential to translate to a variety of mobility-related sectors.
- In Ontario, the aerospace sector generates annual R&D spending of \$500 million, and exports over 75% of its finished products.
- Determinants for projects in the aerospace sector show the most important unique location requirement for foreign direct investment into North America is access to a skilled workforce (39% of projects).
- Increasing interest from both the Provincial and Federal Government to support the sector have funneled important public investments; \$158 million since 2015 and an additional \$250 million during the next three years. This investment will fund six projects within Ontario's aerospace sector and will support businesses and organization in the province's aerospace supply chain to increase manufacturing and productivity capabilities.
- Niagara Region has the potential to capitalize in aerospace trends when it comes to the manufacturing and development of drones, logistics technology, electric propulsion technology, radar systems, and electric vertical take-off and landing aircrafts (VTOLs) and radar systems.
- Synergies between the EV and battery manufacturing sector and the aerospace sector present potential connections in terms of a value proposition that can target both sectors (e.g., manufacturing of electrical components for both EVs and battery powered aerospace equipment including electric and hybrid powered planes, drones and other VTOLs).

The Aerospace Sector in Niagara Region

- **Sector related employment:** Employment in the aerospace sector and support industries in the Niagara region reached 6,460 jobs in 2022. A large proportion of jobs in the aerospace sector come from non-core industries (may support various industries but are important for aerospace).
- Concentration of businesses: Lightcast input-output model estimates that the
 core aerospace sector (see Figure 1) supply chain value in Niagara region
 reached \$23 million in 2020. Important suppliers for the sector include petroleum
 and coal product manufacturing; machine shops, turned product, and screw, nut,
 and bolt manufacturing; and electrical equipment manufacturing.
- **Employment demand trends:** The overall aerospace sector will grow by 228 jobs by 2028: a 4% increase, compared to 2022; mostly driven by growth in the support industries to aerospace.

- **Business concentration:** A total of 803 businesses related to the aerospace sector were recorded in Niagara Region in June 2022. Most of these businesses were businesses with employees (421 businesses).
- Core aerospace industries with the largest number of businesses: include support activities for air transportation (20 businesses or 2% of businesses in the sector), non-scheduled air transportation (18/2%), and aerospace product and parts manufacturing (7/1%).
- According to Statistics Canada International Accounts and Trade Division,
 the Niagara region recorded a total of 5 exporting establishments in 2020 in the
 aircraft, spacecraft and parts thereof. These businesses exported an estimated
 \$33.3 million in aerospace products. On the other hand, a total of 15
 establishment recorded the import of aerospace products; these establishments
 imported more than \$60.3 million in aerospace products.



Aerospace Sector Overview

Defining the Aerospace Sector

Aerospace in Canada is primarily defined by aerospace manufacturing and maintenance, repair, and overhaul (MRO). The aerospace industry in Canada contributed over \$24 billion to GDP and over 200,000 jobs in 2021.⁴ In 2021, aerospace manufacturing made up 68% of total Canadian aerospace industry employment, while MRO made up 32%.⁵ The vast majority of manufacturing employment is located in Quebec (62% of total aerospace manufacturing employment), while Western Canada has the highest percentage of MRO employment (39% of total MRO employment).⁶ Ontario's share of aerospace manufacturing and MRO employment is 22% and 34% respectively (both are second highest in their class in Canada).⁷ Over 90% of the aerospace sector's revenues are export-oriented.⁸

Due to the COVID-19 pandemic in 2020, the global aerospace industry saw a major contraction of aerospace manufacturing and MRO operations. This was primarily due to

⁴ Innovation, Science and Economic Development Canada and Aerospace Industries Association of Canada, *State of Canada's Aerospace Industry Report Summer 2022*, July 2022.

⁵ Ibid.

⁶ Ibid.

⁷ State of Canada's Aerospace Industry Report Summer 2022, July 2022.

⁸ https://ised-isde.canada.ca/site/aerospace-defence/en/trade-and-exporting/aerospace-and-defence-canada

the sudden and sharp decline in commercial flights, which was down 90% in April 2020 and 75% in August 2020. In Canada between 2019 and 2021, revenues of Canada's aerospace manufacturing firms decreased at a similar rate to the global market and are not expected to rebound to pre-pandemic levels until 2024. The Aerospace Industries Association of Canada (AIAC) has called on the federal government to establish a national aerospace strategy to provide clarity on domestic production over the long-term and strengthen Canada's leadership in this sector. In the commercial flights, which was down 90% in April 2020 and 75% in April 2020.

For this analysis, the codes shown below were used to collect employment and business counts and other numbers for the sector. These numbers were collected by Deloitte using Lightcast Economic Modeling ¹². In addition, and with the support of the Niagara Region's Project Team, the aerospace industry subsectors were further classified into core, and support/supply chain subsectors. In the figure below, core industry subsectors are highlighted in blue.

Figure 1 – Aerospace Sector NAICS

| Industry | NAICS | Description |
|--------------------|-------|--|
| | 3241 | Petroleum and coal product manufacturing |
| | 3313 | Alumina and aluminum production and |
| | | processing |
| | 3314 | Non-ferrous metal (except aluminum) |
| | 0011 | production and processing |
| | 3327 | Machine shops, turned product, and screw, |
| Manufacturing | 0021 | nut and bolt manufacturing |
| Manaractaring | 3329 | Other Fabricated Metal Product |
| | 3329 | Manufacturing |
| | 3345 | Navigational, measuring, medical and control |
| | 0040 | instruments manufacturing |
| | 3353 | Electrical equipment manufacturing |
| | 3364 | Aerospace product and parts |
| | 3304 | manufacturing |
| Transportation and | 4811 | Scheduled air transportation |
| Warehousing | 4812 | Non-scheduled air transportation |
| Wai ellousing | 4881 | Support activities for air transportation |

⁹ OECD, COVID-19 and the aviation industry: Impact and policy responses, October 2020.

¹⁰ State of Canada's Aerospace Industry Report Summer 2022, July 2022.

¹¹ The Conference Board of Canada, Shaken by Turbulence, Aerospace Manufacturing Is Recovering, December 2021.

¹² Employment figures have not been independently verified by Deloitte.

| Industry | NAICS | Description |
|--|-------|--|
| | 4884 | Support activities for road transportation |
| | 4885 | Freight transportation arrangement |
| Finance and Insurance | 5221 | Depository credit intermediation |
| Professional, Scientific, and Technical Services | 5413 | Architectural, engineering, and related services |

Sector Trends

During the last decade, the Federal Government, through FedDev Ontario, has invested over \$158 million in aerospace projects across southern Ontario, creating over 900 jobs.¹³

The Niagara Region Advantage

- The region plays a critical role in the successful flow of goods, services and people between Canada and the United States. Over \$100 billion worth of trade make its way through the region each year. Niagara is also Ontario's first designated Foreign Trade Zone (FTZ). The FTZ offers businesses the opportunity to work with a dedicated team of public and private sector experts to access information, programs and incentives that have been specifically developed to help companies initiate and improve their international trade efforts.¹⁴
- Niagara region is located 122 km west of Toronto, 565 km from Columbus (Ohio), 650 km from New York and Philadelphia, among other major U.S. markets. With half of North America's population located within a one-day drive, Niagara location offers easy access to both customers and suppliers.

Employment and Business Structure in Niagara Region

Overall, the employment in the aerospace sector and support industries in the Niagara region reached 6,460 jobs in 2022. Most of the jobs in the core industries were in

¹³ Federal Economic Development Agency for Southern Ontario (FedDev Ontario). Retrieved from < https://www.canada.ca/en/economic-development-southern-ontario/news/2023/02/government-of-canada-supports-economic-growth-and-job-creation-in-ontarios-aerospace-sector.html>

Niagara Economic Development. Retrieved from
https://niagaracanada.com/incentives-and-programs/niagara-foreign-trade-zone/>

aerospace product manufacturing (214 jobs or 3% of employment in the sector), non-scheduled air transportation (81 jobs or 1% employment in the sector), and support activities for air transportation (56 jobs or 1% of job in the sector).

A large proportion of jobs in the aerospace sector come from non-core industries (may support various industries but are important for aerospace), this includes freight transportation arrangement, and several manufacturing areas related to the aerospace product and parts manufacturing supply chain. The largest of these support sectors is depository credit intermediation; this sector is engaged in accepting deposits and lending funds (include banks and credit unions). This sector is relevant for the aerospace sector in general as it has become more common the investments from sovereign wealth funds, insurance companies, pension funds and certain private equity funds in investing in aircraft assets.¹⁵

Figure 2 – Employment Aerospace Sector and Supply Chain, Niagara Region, 2022

| Description | Employment 2022 | % |
|--|-----------------|------------|
| Total Aerospace | 6,460 | 100% |
| Depository credit intermediation | 2,145 | 33% |
| Architectural, engineering, and related services | 1,760 | 27% |
| Freight transportation arrangement | 703 | 11% |
| Machine shops, turned product, and screw, nut and bolt manufacturing | 563 | 9% |
| Support activities for road transportation | 276 | 4% |
| Other Fabricated Metal Product Manufacturing | 241 | 4% |
| Non-ferrous metal (except aluminum) production and processing | 217 | 3% |
| Aerospace product and parts manufacturing | 214 | 3% |
| Navigational, measuring, medical and control instruments manufacturing | 108 | 2% |
| Non-scheduled air transportation | 81 | 1% |
| Electrical equipment manufacturing | 58 | 1% |
| Support activities for air transportation | 56 | 1% |
| Petroleum and coal product manufacturing | 38 | 1% |
| Alumina and aluminum production and processing | 0 | 0% |
| Scheduled air transportation | <10 | Insf. Data |

Source: Lightcast, 2022 - Datarun 2022.1 | Core industry subsectors are highlighted in blue

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¹⁵ PWC. Aviation Finance. 2013

The overall aerospace sector will grow by 228 jobs by 2028: a 4% increase, compared to 2022; mostly driven by growth in the support industries to aerospace (highlighted in green in the Figure below). Meanwhile, the core aerospace industries are expected to see declines in employment during the same period, aerospace product and part manufacturing will decrease by 17 jobs (15% decline), and support activities for transportation will decrease by 10 jobs (2% decline). Non-scheduled air transportation will experience a small growth of 4 jobs (6% growth).

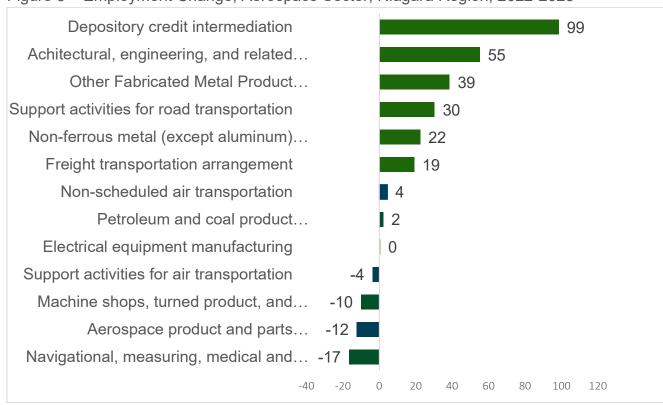


Figure 3 - Employment Change, Aerospace Sector, Niagara Region, 2022-2028

Source: Lightcast, 2022- Datarun 2022.1 | Core industry subsectors are highlighted in blue

803 businesses related to the aerospace sector were recorded in Niagara Region in June 2022. Most of these businesses were businesses with employees (421 businesses).

Industry sectors (core aerospace industries) with the largest number of businesses include support activities for air transportation (20 businesses or 2% of businesses in the sector), non-scheduled air transportation (18/2%), and aerospace product and parts manufacturing (7/1%).

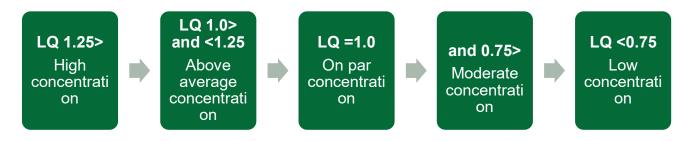
Figure 4 – Business Counts, Aerospace Sector, Niagara Region, June 2022

| Description | With Employees | Without Employees | Total |
|------------------------------------|----------------|-------------------|-------|
| Total Aerospace | 421 | 382 | 803 |
| Architectural, engineering, and | 144 | 237 | 381 |
| related services | 144 | 231 | 301 |
| Depository credit intermediation | 118 | 3 | 121 |
| Support activities for road | 38 | 42 | 80 |
| transportation | 30 | 42 | 00 |
| Freight transportation arrangement | 41 | 24 | 65 |
| Machine shops, turned product, and | 39 | 21 | 60 |
| screw, nut and bolt manufacturing | 39 | 21 | 60 |
| Other Fabricated Metal Product | 12 | 19 | 31 |
| Manufacturing | 12 | 19 | 31 |
| Support activities for air | 6 | 14 | 20 |
| transportation | O . | 17 | 20 |
| Non-scheduled air transportation | 2 | 16 | 18 |
| Navigational, measuring, medical | | | |
| and control instruments | 6 | 3 | 9 |
| manufacturing | | | |
| Aerospace product and parts | 7 | 0 | 7 |
| manufacturing | | | |
| Electrical equipment manufacturing | 4 | 2 | 6 |
| Petroleum and coal product | 3 1 | 1 | 4 |
| manufacturing | Ŭ | ı ı | |
| Non-ferrous metal (except | | | |
| aluminum) production and | 1 | 0 | 1 |
| processing | | | |
| Alumina and aluminum production | 0 | 0 | 0 |
| and processing | | | |
| Scheduled air transportation | 0 | 0 | 0 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region | Core industry subsectors are highlighted in blue

Location Quotient

As part of the economic baseline analysis, a Location Quotient (LQ) Analysis was completed to determine the concentration of employment in the aerospace sector, in Niagara region and relative to the province. The location quotient reveals what makes a region unique, in this case in comparison with other communities in Ontario. The following chart shows common LQ Classifications to interpret the figures in Figure 5.



Overall, the aerospace sector shows a moderate concentration of businesses in the Niagara region relative to Ontario. The only core aerospace sector with a high concentration of businesses in the area is non-schedule air transportation; these are mostly sightseeing companies that provide plane tours in the region. Support sectors for the aerospace sector with a high concentration of businesses include machine shops, turned product, and screw, nut and bolt manufacturing, and depository credit intermediation.

Figure 5 – Business Concentrations (Location Quotients), Aerospace Sector, Niagara Region, June 2022

| Description | LQs Total |
|--|-----------|
| Total Aerospace | 0.94 |
| Depository credit intermediation | 1.45 |
| Non-scheduled air transportation | 1.38 |
| Machine shops, turned product, and screw, nut and bolt | 1.27 |
| manufacturing | |
| Other Fabricated Metal Product Manufacturing | 1.06 |
| Freight transportation arrangement | 1.05 |
| Aerospace product and parts manufacturing | 1.04 |
| Electrical equipment manufacturing | 1.02 |
| Support activities for air transportation | 0.92 |
| Non-ferrous metal (except aluminium) production and | 0.91 |
| processing | |
| Architectural, engineering, and related services | 0.87 |
| Petroleum and coal product manufacturing | 0.85 |
| Navigational, measuring, medical and control instruments | 0.82 |
| manufacturing | |
| Support activities for road transportation | 0.65 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region | Core industry subsectors are highlighted in blue

Job Demand

Between January 1, 2020, to November 30, 2022, a total of 1,136 job postings in industries related to the aerospace sector were recorded in the Niagara Region. Most of

these job postings were in the depository credit intermediation (591 job postings), and freight transportation arrangement (192 job postings). Core aerospace industries such as aerospace products and parts manufacturing advertised 46 job postings between 2020 and 2022. Overall, most of the job postings were advertised in 2022.

Figure 6 – Job Demand (Job Postings) by Industry Sector (Aerospace Sector), Niagara Region, January 1, 2020, to November 30, 2022

| NAICS | 2020 | 2021 | 2022 | Total | % |
|------------------------------------|------|------|------|----------|-------|
| | | | | Postings | |
| Total Aerospace | 236 | 365 | 535 | 1,136 | 100% |
| Depository Credit Intermediation | 129 | 216 | 246 | 591 | 52.0% |
| Freight Transportation Arrangement | 33 | 48 | 111 | 192 | 16.9% |
| Other Fabricated Metal Product | 29 | 56 | 82 | 167 | 14.7% |
| Manufacturing | | | | | |
| Architectural, Engineering and | 19 | 23 | 33 | 75 | 6.6% |
| Related Services | | | | | |
| Aerospace Product and Parts | 2 | 3 | 41 | 46 | 4.0% |
| Manufacturing | | | | | |
| Machine Shops, Turned Product, and | 11 | 9 | 7 | 27 | 2.4% |
| Screw, Nut and Bolt Manufacturing | | | | | |
| Electrical Equipment Manufacturing | 10 | 5 | 2 | 17 | 1.5% |
| Non-Ferrous Metal (except | 1 | 0 | 6 | 7 | 0.6% |
| Aluminum) Production and | | | | | |
| Processing | | | | | |
| Navigational, Measuring, Medical | 2 | 1 | 4 | 7 | 0.6% |
| and Control Instruments | | | | | |
| Manufacturing | | | | | |
| Support Activities for Air | 0 | 4 | 0 | 4 | 0.4% |
| Transportation | | | | | |
| Petroleum and Coal Products | 0 | 0 | 3 | 3 | 0.3% |
| Manufacturing | | | | | |

Source: Vicinity Jobs | Core industry subsectors are highlighted in blue

Sector Development

The aerospace sector in Canada is primarily defined by aerospace equipment manufacturing and maintenance, repair, and overhaul (MRO). The aerospace industry in Canada contributed over \$24 billion and over 200,000 jobs in 2021. Most of the aerospace industry in Canada in clustered in Quebec (62% of total aerospace manufacturing employment), while Western Canada has the highest percentage of

MRO employment.¹⁶ Ontario's share of aerospace manufacturing and MRO employment is 22% and 34% respectively (Both are second highest in their class in Canada).¹⁷

In the province of Ontario, this sector represents over \$6 billion in annual sales, in addition to a direct GDP impact of \$4.4 billion, and an indirect impact of over \$6.4 billion. The sector also generates annual R&D spending of \$500 million, and exports over 75% of its finished products. According to the Ontario Aerospace Council (OAC), Canada's aerospace manufacturing sector outpaces the total manufacturing sector in terms of research and development intensity, and 25% of this aerospace manufacturing R&D is done in Ontario. The province is also a leader in several areas including turboprop aircraft, business jets, turbine engines, landing gear systems, avionics, environmental systems and space robotics. 20

Important developments in this sector in Niagara region include the potential investment by Airbus, as the company looks to increase the production of its A220 aircraft. This investment will create an additional 500 jobs in Canada, some of which will be at its Airbus Helicopters Canada site in Fort Erie. 21,22

The Federal Government has also created the Aerospace Regional Recovery Initiative (ARRI); this is a national program that will provide \$250 million over three years to help the Canadian aerospace sector emerge from the pandemic and continue to compete. The program will support businesses operating in the aerospace industry, and the organizations that support them through supply chains.²³

¹⁶ PWC. Aviation Finance. 2013

¹⁷ State of Canada's Aerospace Industry Report Summer 2022, July 2022.

¹⁸ Ontario Aerospace Council. Retrieved from <

https://theoac.ca/page/AerospaceQuickFacts>

¹⁹ Invest Ontario. Retrieved from < https://www.investontario.ca/aerospace#by-the-numbers>

²⁰ Invest Ontario. Retrieved from < https://www.investontario.ca/aerospace#by-the-numbers>

²¹ Niagara Falls Review. Retrieved from < https://www.niagarafallsreview.ca/business/2023/02/24/airbus-creating-500-new-jobs-in-canada-this-year-some-at-its-fort-erie-facility.html>

²² This number has not been independently confirmed by Deloitte.

²³ Innovation, Science and Economic Development Canada (ISED). Retrieved from < https://ised-isde.canada.ca/site/ised/en/about-us/our-organization/canadas-regional-development-agencies/regional-relief-and-recovery-fund-rrrf/aerospace-regional-recovery-initiative>

Global Market Drivers

Niagara region's aerospace industry is supported by a strong architectural and engineering services, aerospace parts manufacturing segment and support activities for air transportation. Emerging trends in aerospace have centered around applying aerospace technology to the drones and logistics segments. A major application of this is unmanned aerial and vehicle systems as they have high pollination potential in a variety of mobility-related sectors.

The growth of the drone market can be attributed to the growth in the e-commerce industry, multichannel distribution channels, globalization of supply chain networks, emergence of autonomous mobile robots and rising need for same-day delivery in the logistics segment. Defense related drivers are also important to note here with increased interest in patrolling the Arctic and defense budgets in North America expected to increase over the next 5 years including due to the Ukrainian conflict.²⁴ With Ontario's (and Quebec's) defense industry more focused around aerospace, these trends would have the most impact on this industry in Ontario and relative to for example the marine sector.

Automated guided vehicle technology is becoming increasingly relevant as COVID-19 places increased pressure on hands-free factory operations. Drones also have applications in the agricultural industry due to increased demand for efficient farming practices, in addition to synergies with the marine industry specifically developing the drone rescue service segment. Furthermore, drones geared towards agriculture usage have been gaining popularity and can be used to gather comprehensive data about crop conditions more efficiently than ground-based inspections. In particular, tooled drones can be used to remotely apply fertilizers, pesticides, and water, allowing for higher efficiencies within process automation; this kind of development could have potential in Niagara region considering its benefits for the agricultural sector in Niagara. This type of development will also require new policy development that reflects and supports the use of UAVs/Drones for farming activities.

Investment Trends & Location Factors

A thriving drone company in Ontario includes SkyX which relocated most of its employees to Ontario in 2016 due to more supportive regulations and access to the labor pools in Ontario's universities. An example of a major project in the aerospace market and its supply chain in Ontario from 2018 to 2022 includes General Atomics Aeronautical Systems, a subsidiary of US-based General aircraft specialist Atomics, opened a new office near Confederation Park in Ottawa in May 2022. The project was worth \$18.5 million and follows the Canadian government's recent announcement of a

²⁴ Global Data. Retrieved from https://www.globaldata.com/store/report/canada-defense-market-analysis/

request for proposal for the company's Remotely Piloted Aircraft System (RPAS) project. It will serve the domestic market. The project created 55 jobs.

A niche project in a growing eVTOL segment in Ontario is also notable; eVTOL aircraft operate on electric power. In May 2022, Horizon Aircraft partnered with Fleming College and Ontario Tech University to design and prototype ways of rendering aircraft more efficient and allow them to take on a higher load. Horizon noted their need for research partners that have an expertise in additive manufacturing, topology optimization and modelling. Examining motives and determinants for projects in the aerospace sector shows that the most important unique location requirement for foreign direct investment into North America is access to a skilled workforce, which represents 39% of projects. Data show that it has historically been important for aerospace investments to have proximity to markets or customers.

Figure 7 – Investment motives into the North American aerospace market

| Motive | % of FDI | % of |
|--------------------------------------|----------|------|
| Skilled workforce availability | 44.2 | 43.7 |
| Proximity to markets or customers | 34.2 | 35.9 |
| Government support | 32.8 | 34.3 |
| Industry cluster | 17.1 | 18.7 |
| Domestic market growth | 14.2 | 14.0 |
| Universities and research hubs | 8.5 | 9.3 |
| Suppliers and joint venture partners | 7.1 | 7.8 |
| Regulatory environment | 7.1 | 7.8 |
| Transport infrastructure | 5.7 | 6.2 |
| Quality of life | 2.8 | 3.1 |
| Natural resources | 1.4 | 1.5 |
| Technology and innovation | 1.4 | 1.5 |

Source: fDimarkets

Outlook

Overall, the global aerospace market was valued at US\$712 billion²⁵, and for aerospace materials this value reached US\$36.4 billion in 2021 and is predicted to grow to

²⁵ PWC, PwC's Global Aerospace and Defense: Annual Performance Look, 2022. Retrieved from https://www.pwc.com/us/en/industries/industrial-products/library/aerospace-defense-review-and-forecast.html>

US\$67.2 billion by 2030 which represents a CAGR growth of 7% from 2022 to 2030.²⁶ In terms of the biggest aerospace export markets, the United States represents US\$ 89.1 billion followed by France at US\$31 billion in exports.²⁷ The European aerospace market overall experienced a decline from 2016 to 2020, but is poised for moderate growth, a CAGR of 2.4%, by 2027.²⁸

Drones are expected to grow at a CAGR of 12% from 2020 to 2025 though the industry is in a nascent phase in terms of adoption in the commercial sector. However, grants in the United States have been made for industries like infrastructure, agriculture, transport, entertainment and security. Parallel to trends in the drone segment, eVTOL aircraft are expected to grow by a CAGR of 15% by 2030 representing a global market value of US\$30.8 billion. PVTOL technology instrumentalizes electric power to take off, hover, and land vertically and has been driven by the need for the electrification of the aerospace industry as well as a growing transportation demand. The electric propulsion technology that the eVTOL market is catalyzing is expected to be a major innovator of the aerospace segment. In particular, it is predicted that the hydrogen electric segment that generates electricity from hydrogen and oxygen fuel cells that is vibration-free will witness strong growth. The Dorothy Rungeling Airport in Niagara region could serve a a potential hub for drone testing, research, and development. A challenge for this emerging sector is the regulatory and certification requirements needed for this technology to go to market. In the commercial sector.

A niche that aligns with electrification trends in the electric vehicle market is electric propulsion systems which enable higher power and more efficient propulsion through enhanced aerodynamics. The global electric aircraft propulsion market is predicted to reach US\$74.9 billion by 2035, which represents a CAGR of 18% from 2025 to 2035. The electric propulsion market has cross-pollination potential in the unmanned aerial

²⁶ Global News Wire. Retrieved from https://www.globenewswire.com/news-release/2022/09/12/2514458/0/en/Aerospace-Materials-Market-Size-to-Surpass-Around-USD-67-42-BN-by-2030.html

²⁷ Statista. Retrieved from https://www.statista.com/statistics/263290/aerospace-industry-revenue-breakdown/>

²⁸ Modor Intelligence. Retrieved from https://www.mordorintelligence.com/industry-reports/europe-aerospace-and-defense-market

²⁹ Modor Intelligence. Retrieved from https://www.mordorintelligence.com/industry-reports/north-america-drones-market

³⁰ Markets and Markets. Retrieved from https://www.marketsandmarkets.com/Market-Reports/evtol-aircraft-market-28054110.html

³¹ Baker Mackenzie. Retrieved from https://www.bakermckenzie.com/en/insight/publications/2022/01/regulation-certification-evtol-aircraft

vehicle market and, given Niagara's strong marine industry, specifically developing the drone rescue service segment. Applying drone rescue as part of marine safety is a segment that is expected to reach US\$547.6 million in 2023 and grow by 15% by 2033.³² In terms of regional growth, the European drone market will grow by 34%, while the North American market will grow by 30%. Asia will experience moderate growth with China representing one of the larger markets.

Recruitment Zones

Examining prospective growth companies shows that of the companies projected to grow, 58% are based in the United States, 10% in the United Kingdom (Gazelle.ai). Overall, the US aircraft and parts manufacturing industry, as ranked by total value of shipments (US Census Bureau), is strongest in California, Texas, Connecticut, Kansas, and Arizona. Based on the number of establishments, the metropolitan areas of Los Angeles, New York, Boston, Seattle, Chicago, and Dallas are major centers. Outside of the United States, the Netherlands, France, and United Kingdom rank as key recruitment zones³³ based on foreign direct investment trends. In particular, Leiden (Netherlands), Paris, and London are key investment destinations. While Canada overall does not rank as an aerospace hub, Montreal is an important recruitment zone.

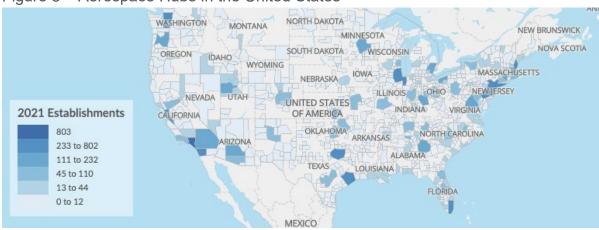


Figure 8 - Aerospace Hubs in the United States

Source: Lightcast

³² Fact MR. Retrieved from https://www.factmr.com/report/drones-rescue-service-market

³³ Recruitment zones refer to areas where Niagara Region can focus marketing and promotion efforts to attract potential investors.

SWOT Analysis

The following is an overview of the strengths, weaknesses, opportunities, and threats that face the aerospace Sector in Niagara. This SWOT analysis utilizes the background research that was completed for the sector, as well as engagement from key stakeholders from the aerospace sector in Niagara region.

Niagara's aerospace industry is supported by a strong architectural and engineering services, aerospace parts manufacturing segment and support activities for air transportation. Emerging trends in aerospace have been in applying aerospace technology to drones and logistics segments. A major application includes aerial and vehicle systems have high pollination potential in a variety of mobility-related sectors.

Marketing messaging is recommended to align with the opportunities and strengths statements detailed below, which were drawn from stakeholder focus group sessions and uncovered through the research.

Key subsectors: drones, logistics technology, electric propulsion technology, eVTOLs

| Sector SWOT | |
|---|--|
| Strengths | Weaknesses |
| The aerospace sector is experiencing growth in the region. By 2028, The overall aerospace sector will grow by 228 jobs: a 4% increase, compared to 2022. Nigrana Danathy Dynastics Aims at is. | The region has only moderate concentration of overall businesses in the aerospace sector compared to Ontario (LQ 0.94). Niagara would have to compete for |
| Niagara Dorothy Rungeling Airport is home to Accipiter's hangar which provides a safe space to fly drones for enthusiasts. The region provides an end-to-end ecosystem for drones (safe location and a class G airspace) to develop technology locally.³⁴ | aerospace investment against nearby communities with a higher degree of specialization and a higher concentration of aerospace businesses. Among these are Toronto with four airports (Toronto-Pearson International Airport, Billy Bishop Toronto City Airport, Downsview |

³⁴ Class G airspace is uncontrolled and is considered the basic operating environment for remotely piloted aircraft system (RPAS), assuming the conditions regarding

22

- Increasing interest from both the Provincial and Federal Government to support the sector, have funnelled important public investments; \$158 million since 2015, and an additional \$250 during the next three years to growth the sector.
- Assets for the sector include postsecondary education institutions in the region. These can play an important role for a potential pipeline of workers for the sector, especially in areas such as software, hardware, and control systems.
- Airport, Toronto Buttonville Municipal Airport), Hamilton with its international airport (fifth busiest airport in Ontario and third largest in cargo freight airport in Canada). Niagara region may also compete with other international locations including Niagara Falls and Buffalo in New York State.
- Promotion of local aerospace businesses and education.
- Lack of tailored training for the needs of the aerospace sector in the region.
- Long procurement processes for federal aerospace contracts.
- There are significant barriers to entry in the aerospace sector, including cost, money, and time and expertise to navigate stringent regulations and certifications.

Opportunities

- Growing opportunities in the drone industry – especially in key areas such as e-commerce and defence, agriculture, and the marine sector.
- Opportunity subsectors for aerospace include inspection infrastructure, training and testing, small aircraft manufacturing operations, software development for navigational systems, robotics, and artificial intelligence signal processing.
- Leverage Class G airport to facilitate attracting air/drone development centre in Niagara region.

Threats

- Determinants for projects in the aerospace sector shows that the most important unique location requirement for foreign direct investment into North America is access to a skilled workforce. Population trends in Niagara region position it as one of the most rapidly ageing areas in Canada. The decrease in working age population in the region could create important labour shortages.
- The high degree of regulation for materials and processes for the aerospace industry, create barriers to

proximity to people, airports, and heliport are met. You don't need to get permission from Nav Canada (Nav Drone) to operate in class G.

- Aerospace manufacturing sector outpaces the total manufacturing sector in terms of research and development intensity, and 25% of this aerospace manufacturing R&D is done in Ontario. The province is also a leader in several areas including turboprop aircraft, business jets, turbine engines, landing gear systems, avionics, environmental systems, and space robotics.
- The electric propulsion market has cross-pollination potential in the unmanned aerial vehicle market and given Niagara's strong marine industry specifically developing the drone rescue service segment.
- There is a local need for need for research partners that have an expertise in additive manufacturing, topology optimization, and modelling.
- According to the Niagara Airport
 Feasibility Study and Business
 Case, 35 identified high potential
 opportunities for airport facilities in
 Niagara include general aviation
 commercial activities related to
 scheduled and charter air passenger
 services.
- Niagara District Airport as a hub for commercial air traffic with runway expansion, and accommodation of Maintenance and Repair Organizations
- Warehousing and storage facilities for aerospace manufacturing operations.

- entry and will continue to create challenges for start-ups in the region.
- Need for implementation of a unified vision for the Dorothy Rungeling Airport; the future development and operation of the airport is challenged by the current governance model, whereby all major decision must be agreed upon by elected officials of the three funding municipalities.³⁶

³⁵ Niagara Airports Feasibility Study and Business Case (2020)

³⁶ Niagara Airports Feasibility Study and Business Case (2020)

Conclusion

Niagara region has airport infrastructure and associated manufacturing industries that can provide a foundation for further business investment. Employment in the aerospace sector is projected to grow, and there are potential connections to other emerging and established sectors such as drone involvement in the agriculture and marine sectors, and electric powered aircraft (eVTOL) connection with the exploration of EV battery opportunities.

The extent to which these potential connections can be leveraged relies on the interest and engagement of local businesses and prospective investors, as well as research commercialization. Stakeholders are seeking increased leadership in the Dorothy Rungeling Airport for drone testing, research and development, and the desire for increased air passenger traffic at the Niagara District Airport.

Key opportunities identified through the research include general aviation commercial activities, drone research and development, component manufacturing, and associated technology development, such as machine learning and autonomous navigation technologies.

To become a leader in aerospace, Niagara Region will need to care for and develop it's airport facilities, build and maintain a strong skilled workforce, build awareness ad connections with emerging opportunities, navigating regulatory barriers, and build a business cluster to create momentum for increased investment in the sector.

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Niagara Region Film Sector Profile June 2023



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Introduction

According to Profile 2022¹, a report produced by the screen-based media production industry in Canada, the country's film and television production industry experienced a robust rebound in 2021/22, after the effects of the COVID-19 pandemic. The total volume of film and television production increased by 28% in 2021/22 to reach an all-time high of \$11.69 billion. The industry added over \$2.56 billion in production spending, taking it 21.8% higher than the previous high of \$9.60 billion in 2019/20. Every segment of Canada's film and television production industry contributed to this growth, although the biggest inputs came from the sub-sector of foreign location and service production and Canadian television production. Production cost inflation – including costs from mitigating the effects of COVID-19 – plus wage and price inflation across the Canadian economy contributed, in part, to the increased production volume; although the statistics for the number of projects indicates that the increased volume in 2021/22 was also very much linked to increased production activity.

¹ Annual report published by the Canadian Media Producers Association in collaboration with the Association Québécoise de la production médiatique, the Department of Canadian Heritage and Telefilm Canada.

The Emerging Sector Profiles

Niagara Region Economic Development retained Deloitte LLP to produce a sector profile for the film sector. This sector was one of a few key sectors identified in 'Niagara's 10 Year Economic Development Strategy 2022-2032'. This profile features the investment and growth potential of the film sector. This film sector profile was developed by defining the industries within the film industry including motion picture, sound recording, and artist and promoters. These industries were characterized using business and employment data and include support and supply businesses. From this broad overview, international, national, and local trends were considered to identify high potential areas relevant to Niagara's economy. The research also includes the perspectives of local stakeholders, as well as a review of existing literature. The data was pulled together to show a picture of the sector's future potential. This profile does not include a benchmarking of the film sector, and further research is needed to accurately identify employment directly linked to the film sector.

The following data sources were used in the development of this sector profile: Lightcast (formerly EMSI Economic Modeling) 2022, Vicinity Jobs 2022, FDI Markets, Statistics Canada, the Canadian Business Counts² June 2022, and data from IBIS World, Ontario Creates, the Canadian Motion Picture Association (MPA), and the Canadian Media Producers Association (CMPA)

Investment Attraction Highlights

- According to Ontario Creates, the province's film and TV contributed more than \$3.15 billion to Ontario's economy in 2022, creating 45,891 high-value full-time equivalent direct and indirect jobs. The data tracked by Ontario Creates does not include commercial production or broadcaster in-house production, which was estimated at over \$1.4 billion in 2022, bringing Ontario's total production activity over \$4.5 billion for the year.³
- Ontario accounts for an estimated 42.5% of total industry establishments in 2021.
 Since the province implemented a tax credit in 2009, Ontario has become a hub for film and TV production in Canada and Globally.⁴
- Ontario Creates highlights the concerns about access to studio space and increased workforce pressures are key considerations in ensuring Ontario remains an attractive production location (e.g., Toronto is increasing its studio space by 65%

² The June 2022 Canadian Business Counts were used to determine the total number of registered businesses in the Niagara Region. Statistics Canada's Canadian Business Counts Data provides a record of business establishments by industry and size. This data is collected from the Canada Revenue Agency (CRA). The business data collected for Niagara Region included all local businesses that met at least one of the three following criteria: Have an employee workforce for which they submit payroll remittances to CRA, or have a minimum of \$30,000 in annual sales revenue, or are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

³ Ontario Creates, 2022 Film and Television Production Statistics by Format

⁴ IBIS World. Movie, TV and Video Production in Canada – Industry Report 51211CA

- over the next five years), and other communities such as Sudbury, Timmins and Salt Ste. Marie are developing studio spaces.⁵
- In 2022, a total of 419 film and TV project were produced in Ontario, 316 of these were domestic productions, and 103 were foreign productions. Most of these productions were television series, and television movies, mini-series, specials, and pilots.⁶
- Domestic production represents 38% of total Film and TV spending in Ontario, up from 34% in 2021⁷.
- The video production in Canada is expected to grow 4.5% by 2026 (compared to 2021). Key trends for the sector include the rapidly growth of digital format productions (streaming services), high international competition, and the decline in viewership for live TV.8

Incentives

- Ontario offers a Film and Television Tax Credit (OFTTC). The OFTTC is a refundable tax credit based upon eligible Ontario labour expenditures incurred by a qualifying production company with respect to an eligible Ontario production. This tax credit is generally harmonized with the Canadian Film and Video Production Tax Credit. The OFTTC is generally calculated as 35% of the eligible Ontario labour expenditures. An enhanced credit rate of 40% on the first \$240,000 of qualifying labour expenditure is available for first-time producers. Productions that are shot in Ontario entirely outside of the Greater Toronto Area (GTA), or that have at least five location days in Ontario (in the case of a television series, the number of location days is at least equal to the number of episodes), and at least 85% of the location days in Ontario are outside the GTA, receive a 10% bonus on all Ontario labour expenditures incurred for the production. Wholly animated productions which create at least 85% of key animation in Ontario outside of the GTA qualify for the regional bonus.⁹
- Ontario Production Services Tax Credit (OPSTC). The OPSTC is a refundable tax credit based upon Ontario qualifying production expenditures (labour, service contracts and tangible property expenditures) incurred by a qualifying corporation with respect to an eligible film or television production. The OPSTC requirements are generally "harmonized" with the federal Film or Video Production Services Tax Credit administered by the Canadian Audio-Visual Certification Office of the Department of Canadian Heritage (CAVCO) and Canada Revenue Agency (CRA). The OPSTC is calculated as 21.5% of all qualifying production expenditures incurred

⁵ Ontario Creates Data represents expenditures of all productions using Ontario Creates-administered incentives and services. Data does not include television commercials, corporate videos, music videos, or broadcaster in-house production.

⁶ Ontario Creates, 2022 Film and Television Production Statistics by Format ⁷ Ibid.

⁸ IBIS World. Movie, TV and Video Production in Canada – Industry Report 51211CA

⁹ Ontario Creates. Tax Incentives

in Ontario. A qualifying corporation's Ontario labour expenditures, including Ontario labour paid under an eligible service contract, must be at least 25% of the qualifying production expenditures claimed. The OPSTC can be combined with the federal Film or Video Production Services Tax Credit of 16% of qualified Canadian labour expenditures. There are no per-project or annual corporate tax credit limits.¹⁰

 The Ontario Creates Film Fund is intended to increase the level of domestic feature film production in Ontario. It provides support to Ontario producers for feature film projects with development and production financing. Marketing and Distribution support is also available for films that have been supported via Film Fund-Production.¹¹

The Film Sector in Niagara Region

- St. Catharines launched FilmSTC on December 6, 2022, to support the creative economy and promote the city as a destination for film, TV and streaming industries. The Organization provides concierge services and connects film makers to ideal locations, resources, cast and crew, catering, transportation and accommodations.¹²
- The region has been the location for many films and TV series, some of the most relevant include A Christmas Story (1983), The Dead Zone (1983), Blues Brothers (1998), Bride of Chucky (1998), Pirates of the Caribbean: At World's End (2006), I Now Pronounce You Chuck & Larry (2007), The Love Guru (2008), Dead Before Dawn (2012), and, Self-Made: Inspired by the Life of Madam C.J. Walker (2020), among others.¹³
- Niagara Economic Development has created a Film Site to act as a conduit for location scouts to connect with municipal representatives when looking at new geographies for consideration for production. The site has been designed to amplify traffic to municipal sites as they are the overarching issuers of permits for production. The site also highlights incentives within the film space and provides imagery that is complimentary to unique sites within the region.
- The region's network of innovation centres such as Innovate Niagara, Spark Niagara and the Linc at Brock University complement the film sector and can support its future potential growth through their technology applications and talent.
- Outside of the film sector there are other parts of the creative sector that provide a support infrastructure and enhance the region's appeal. These include performing arts space like FirstOntario Performing Arts Centre, OLG Stage and the Shaw Festival Theatre.

¹⁰ Ibid.

¹¹ Ontario Creates. Tax Incentives

¹² FilmSTC.ca

¹³ IMDb



Film Sector Overview

According to the Motion Picture Association of Canada (MPA), the film and television production industry in Canada consists of four key segments: The Canadian Television Production segment, Canadian Theatrical Feature Film Production, Foreign Location and Service Production (FLS), and Broadcaster In-house Production.¹⁴

Defining the Film Sector

The film sector in Canada is primarily defined by industries under NAICS 512 "motion picture and sound recording industries". This industry comprises establishments primarily engaged in producing and distributing video and audio recordings or providing related services, such as post-production services, exhibition services, and motion picture processing and developing services. Sound recording studios are also included.¹⁵

Other sectors included in the film sector as a direct support for film industries are promoters of performing arts, and independents artist, writers, and performers. For this

¹⁴ Canadian Motion Picture Association: Profile 2021: Economic Report on the Screen-Based Media Production Industry in Canada

¹⁵ Statistics Canada, North American Industry Classification System (NAICS) Canada 2012

analysis, the codes shown below were used to collect employment and business counts and other numbers for the sector. These numbers were collected by Deloitte using Lightcast Economic Modelling ¹⁶.

Figure 1 – Film Sector NAICS

| Industry | NAICS | Description | |
|----------------------|-------|---|--|
| Information and | 5121 | Motion picture and video industries | |
| cultural Industries | 5122 | Sound recording industries | |
| Arts, entertainment, | 7113 | 3 Promoters of performing arts, sports | |
| and recreation | 7115 | Independent artists, writers and performers | |

¹⁶ Employment figures have not been independently verified by Deloitte.

Sector Trends

The Niagara Region Advantage

- The Film sector is continuously growing in the region. For example, the City of St. Catharines says it has received about 40 film enquiries in 2021, compared to just 12 in 2019 and 10 in 2018.¹⁷
- The Niagara region has a number of assets to attract film production, these include institutional buildings, natural resources, industrial properties (operating and vacant), heritage assets, rural land and urban centres.
- The region itself has not experienced fatigue or over-used locations/areas that can often hinder attraction of productions into a jurisdiction.
- Hamilton is a hub for filming (2nd busiest city in Ontario) and with Niagara being
 right next door there are dozens of productions that could capitalize on driving a little
 further down the QEW and into Niagara.
- A 2021 study conducted by NetCredit using IMDb Advanced Search reviewed movies from 1900 to 2020 and sorted the results based on country and location.
 Niagara Falls received 142 movie credits on the platform, being Canada's leading film location. 18 19

Employment and Business Structure in Niagara Region

Overall, the employment in the film sector in the Niagara region reached 934 jobs in 2022. Most of the jobs in the core industries were in motion picture and video industries (409 jobs or 44% of industry jobs), and independent artists, writers and performers (370 jobs or 40% of industry jobs). The motion picture and video industries include business subsectors such as production, distribution, exhibition, and post-production and other motion picture and video industries; this means that employment from this sector in the region may not be directly linked to film production, but more exhibition facilities (e.g., movie theatres).

Figure 2 – Employment Film Sector and Supply Chain, Niagara Region, 2022

| Description | Employment 2022 | % |
|--------------------------|-----------------|------|
| Total Film | 934 | 100% |
| Motion picture and video | 409 | 44% |
| industries | | |
| Independent artists, | 370 | 40% |
| writers and performers | | |

¹⁷ The Standard, Niagara needs to pursue bigger role on screen, November 2021

¹⁸ InSauga, Niagara Region, Study reveals Niagara Falls is Canada's leading film location, February 2022

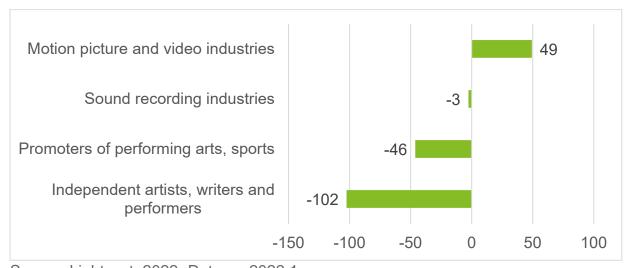
¹⁹ NetCredit, February 2021

| Description | Employment 2022 | % |
|--------------------------------------|-----------------|-----|
| Promoters of performing arts, sports | 140 | 15% |
| Sound recording industries | 15 | 2% |

Source: Lightcast, 2022 - Datarun 2022.

The overall film sector in the Niagara Region is projected to see an employment decline in three out of its four sectors. The film industry is projected to decline by 102 jobs by 2028: representing an 11% decline. The only industry subsector projected to growth is motion picture and video industries; this sector is projected to add an additional 49 jobs (a 12% growth). Figure 3, below, illustrates this.

Figure 3 – Employment Change, Film Sector, Niagara Region, 2022-2028



Source: Lightcast, 2022- Datarun 2022.1

A total of 322 businesses in the film sector were recorded in Niagara Region by June 2022. Most of these businesses were businesses without employees making more than \$30,000 in sales (263 businesses fall under this category). The largest film businesses in the Region are independent artists, writers, and performers (165 businesses or 51% of all businesses in the sector), and motion picture and video industries (98 businesses or 30% of all businesses in the sector). It is important to highlight that most of the businesses with employees in the film industries employed less than 10 people (85% of businesses with employees).

Figure 4 – Business Counts, Film Sector, Niagara Region, June 2022

| Description | 1-9 Employees | 10 or more Employees | Without Employees | Total |
|---|------------------|-------------------------|----------------------|-------|
| Total Film Sector | 50 | 9 | 263 | 322 |
| Independent artists, writers and performers | 15 | 0 | 150 | 165 |
| Motion picture and video industries | 23 | 7 | 68 | 98 |
| Promoters of performing arts, sports and similar events | 10 | 2 | 30 | 42 |
| Sound recording industries | 2 | 0 | 15 | 17 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region

Location Quotient

As part of the economic baseline analysis, a Location Quotient (LQ) Analysis was completed to determine the concentration of employment in the film sector in Niagara region and relative to the province. The location quotient reveals what makes a region unique, in this case in comparison with other communities in Ontario. The following chart shows common LQ Classifications to interpret the figures in Figure 5.



Overall, Niagara region has a low concentration of businesses in the film sector. A high concentration is seen in the promotion of performing arts, sports. The low concentration of businesses might not be a particular characteristic for Niagara region, as IBIS World states, this sector is characterized by a low level of market share concentration. The industry is largely fragmented due to many of its operators focusing on specialized markets such as TV or theatrical production.²⁰

Figure 5 – Business Concentrations (Location Quotients), Film Sector, Niagara Region, June 2022

| Description | Ontario LQ |
|---|------------|
| Total Film Sector | 0.67 |
| Promoters of performing arts, sports | 1.49 |
| Independent artists, writers and performers | 0.82 |
| Sound recording industries | 0.80 |
| Motion picture and video industries | 0.42 |

Source: Canadian Business Counts, June 2022 | Provided by Niagara Region

²⁰ IBIS World. Movie, TV and Video Production in Canada – Industry Report 51211CA

Job Demand

Between January 1, 2020, to December 31, 2022, a total of 14 job postings in industries related to the film sector were recorded in the Niagara region. Almost all job postings were in motion picture industries (12 job postings). At a more detailed look, most of these job postings were required for theatres operation (cast members and leaders), and for positions at local cinemas.

Figure 6 – Job Demand (Job Postings) by Industry Sector (Film Sector), Niagara Region, January 1, 2020, to December 31, 2022

| NAICS | 2020 | 2021 | 2022 | Total Postings | % |
|-------------------------------------|------|------|------|-------------------|------|
| Total Film Sector | 2 | 6 | 6 | 14 | 100% |
| Motion Picture and Video Industries | 0 | 6 | 6 | 12 | 86% |
| Sound Recording Industries | 2 | 0 | 0 | 2 | 14% |

Source: Vicinity Jobs

Foreign Investment in Production

Foreign investment in production (FIIP) counts the value of international financial participation in the film and television production industry in Canada. This includes presales and distribution advances, and Canadian distributors' financing of Canadian film and TV programs. FIIP excludes the amount of revenue earned from the distribution of completed Canadian films and TV programs to foreign broadcasters and distributors. According to the Canadian Motion Picture Association, the total value of foreign investment in production in Canada decreased slightly by 0.5% to \$6.05 billion. Furthermore, FIIP contributes to approximately 28% of the total financing for Canadian content production with foreign presales and advances accounting for 15% (or \$412 million).²¹

Foreign Location and Service (FLS) Production in Canada

The foreign location and service (FLS) production segment is primarily comprised of films and television programs filmed in Canada mainly by foreign producers with the involvement of Canadian-based service producers. This includes the visual effects (VFX) work done by Canadian VFX studios for foreign films and television programs. For the majority of FLS projects, the copyright is held by non-Canadian producers; however, for approximately 5% to 10% of projects, the copyright is held by Canadians. In recent years, Canada's FLS production segment has contributed to numerous films that achieved successful global box office runs. Canada has also become a destination for many television series commissioned by US networks or subscription video on demand services.²²

²¹ Canadian Motion Picture Association, Profile 2021: Economic Report on the Screen-Based Media Production Industry in Canada ²² Ibid.

Important highlights from foreign location and service production in Canada include:

- The total volume of FLS production in Canada increased slightly by 0.4% to an all-time high of \$5.27 billion, stimulating \$6.5 billion in GDP for the Canadian economy. The total volume of FLS television series production increased by 12.6% to an all-time high of \$3.45 billion. The total volume of FLS feature film production decreased by 17.4% to \$1.39 billion.
- Work in FLS production created 129,180 Canadian jobs, accounting for 60% of total jobs, and generated \$5.2 billion in labour income.
- The copyright for 79% of FLS projects was held by persons or companies based in the U.S.
- Ontario accounted for 35% of the total volume of FLS production in Canada, behind British Columbia.
- Most recent figures from the Canadian Media Producers Association (CMPA), shows that in 2022, the total sum of production budgets in Canada reached \$11.69 billion.
 \$6.71 billion of this total sum corresponded to FLS. In both cases, the figures represented more than 27% growth compared to 2021.²³

Global Market Drivers

Global expenditure on screen production reached approximately \$177 billion in 2019, and likely would have been higher in 2020 if not for COVID-19. It is estimated that the global screen sector value chain supports over 14 million jobs, and had an estimated economic impact of \$414 billion, with \$177 billion of direct output and \$237 billion of indirect and induced output.²⁴ After a hard 2020, the global entertainment and media revenue increase by 10.4% in 2021²⁵. In 2022, the industry is expected to grow 7.3%, and it should reach a 4.6% CAGR through 2026.²⁶

North America has the largest entertainment and media per capita spending at \$2,229, which is double that in Western Europe (\$1,158). On the other hand, Asia-Pacific (which has the largest entertainment and media revenue) has a per capita spend of only \$224.²⁷

Investment Trends & Location Factors

According to IBIS World, the Film, TV and Video Production industry in Canada is characterized by a low level of market share concentration. No individual company was expected to generate 5% or more of total industry revenue by 2021. The industry is

²³ Canadian Media Producers Association, Economic Report on the Screen-Based Media Production Industry in Canada, Profile 2022

Ontario Creates | Olsberg SPI, Global Screen Production – The Impact of Film and Television Production on Economic Recovery from COVID-19, June 25, 2020, pp. 5-6.
 Amount also includes music and video games development.

²⁶ PWC, Perspectives from the Global Entertainment & Media Outlook 2022–2026 ²⁷ Ibid.

largely fragmented due to many of its operators focusing on specialized markets such as TV or theatrical production. Moreover, the industry consists of many independent production companies that have a limited number of in-house operations. Further constraining market share concentration, many broadcasters, who are excluded from the scope of this industry, have included in-house production facilities in their operations, primarily to provide news, sports and current affairs programming. According to the latest data available from Statistics Canada, there are over 17,000 establishments dedicated to the industry's range of operations, with 96% of establishments employing less than five people, demonstrating the extent of fragmentation. These trends have intensified competition for the industry and limited the extent to which small production companies can enter the market.²⁸

IBIS World identifies 250 Key Success Factors for a business. The most important for the film, TV and video production sector are:²⁹

- Effective cost controls: Production companies must effectively manage costs and budgets to ensure that they meet clients' specifications and contractual arrangements.
- Access to multiskilled and flexible workforce: It is necessary to have access to the right skills across all areas, including producers, directors, actors and all support staff.
- Ability to manage external (outsourcing) contracts: Producers often outsource tasks and must be able to manage subcontractors in the film production process, including all pre and postproduction areas.
- Ability to quickly adopt new technology: Production companies must use various technologies to improve the outcome and costs where available.
- TV producers rely on distributors and an increasing variety of platform providers, such as broadcast TV, cable, on demand, websites and applications, to show content to audiences. As a result, many companies are becoming more vertically integrated i.e., well-connected from production to post-production and distribution).
- The industry will continue to need to invest in technology and services, in addition to other costs related to providing catering, make-up and production sets.

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²⁸ IBIS World. Movie, TV and Video Production in Canada – Industry Report 51211CA ²⁹ Ibid.

Outlook

According to IBIS World, the film sector (including movie, TV and video production) is going through a growing stage of its economic cycle. This is characterized by a growth in the industry participation, growth rates above the rise of the overall economy and changing products and services.³⁰

The film sector value added (IVA)³¹, will experience an annual growth of 1.6% until 2026. For instance, the Canadian GDP growth rate was estimated at 1.9% during the same time. An IVA that is growing in line with the economy is indicative of a strong sector. However, it is important to highlight that the film sector was particularly affected by the COVID-19 Pandemic. The sector is expected to grow and recover the growth rate in the upcoming years; the number of businesses is projected to rise an annualized 3.1% to 2026, further lending confidence to the industry's status as a growing sector. ³² The industry has also benefited from new digital streaming technology, services including Netflix, Amazon Prime, and Disney Plus, have provided an alternative source of revenue for the domestic industry, and also an increase in demand for new content as these services compete against each other to capture new subscribers.³³

Recruitment Zones

FDi intelligence reported that the foreign direct investment projects in the film sector reached 97 in 2020. The United States was the leading destination globally, according to greenfield investment tracker fDi Markets. Foreign companies involved in motion pictures and sound recording announced a total of 15 projects in the United States, up from 6 the previous year. The United Kingdom (12), France (6), Germany (6), Canada (5) and Australia (5).³⁴

The Massachusetts Film Office also identifies the following cities as key locations for production companies: Los Angeles (California), New York City (New York), Albuquerque (New Mexico), Atlanta (Georgia), Austin (Texas), Chicago (Illinois), Vancouver (British Columbia), Toronto (Ontario), Philadelphia (Pennsylvania), Montreal (Quebec), and Miami (Florida). Other important film hubs outside North America include London (UK), Mumbai (India), Chennai (India), Hong Kong, and Sydney (Australia).

³⁰ IBIS World. Movie, TV and Video Production in Canada – Industry Report 51211CA

³¹ The industry value added (IVA) measures an industry's contribution to the overall Canadian economy.

³² Ibid.

³³ Ibid.

³⁴ FDi intelligence. Streaming platforms drive continued global investment. March 2021

³⁵ Massachusetts Film Office, 2021

Figure 7 – Film Production Hubs



Source: Google My Maps

SWOT Analysis

The following is an overview of the strengths, weaknesses, opportunities, and threats that face the film Sector in Niagara. This SWOT analysis utilizes the background research that was completed for the sector, as well as engagement from key stakeholders from the film sector in Niagara region and industry associations.

| Sector SWOT | |
|---|---|
| Strengths | Weaknesses |
| Niagara region has a variety of locations that production companies could want including institutional, natural resources, industrial properties (operating and vacant), heritage assets, rural land and urban centres. Availability of serviced land for new film studio development. Niagara region has not experienced fatigue or over-used locations/areas that can often hinder attraction of productions into a jurisdiction. Niagara College offers the Broadcasting – Radio, Television and Film (Film Production) program; the Broadcasting – Radio, Television and Film (Television Production); and Acting for Film and Digital Media on its Welland Campus. In addition, Brock University offers programs in Film Studies. These programs prepare talent that could meet the needs of producers and filming companies in Niagara region. The region's network of innovation centres such as Innovate Niagara, Spark Niagara can support its future potential growth through their technology applications and talent. | Lack of film studio infrastructure such as studio spaces, production facilities, and post-production facilities in the region. Currently, only one Studio space is identified by Ontario Creates. Employment in the sector is low and is mostly connected to film exhibition venues (i.e., movie theatres). Currently, Niagara is comparatively unknown to producers, location scouts and location managers. There is a large capacity for the film sector, but many of the assets including workforce are in the Toronto/GTA region and it is more challenging to get those representatives down to Niagara region. Access to local talent is not necessarily readily available. Poor funding and support for the industry in the region. Despite the variety of locations on offer there are still some limitations in accessing appropriate public land for filming and private land is often inaccessible. Suitable accommodation is available in some communities in the region (e.g., Niagara Falls), but less tourismoriented communities may lack of |

quality accommodations suitable for production crews.

Opportunities

Threats

- The growth of digital streaming service has created an increasing demand for digital content; thus, opening opportunities to attract and retain film and TV production in Niagara Region.
- Cost of producing in Canada remains lower than in the U.S., this is the result of lower exchange rates and several tax incentives that allow production companies to save money on labour and production costs.
- When it comes to the film sector, Niagara Economic Development is ideally positioned to deliver services including attraction and marketing of international film production to the region.
- Niagara Region Economic
 Development should drive the coordination, promotion and marketing efforts for the region to attract film and TV production to the region.
- Growing the number of locations on the Ontario Creates Location Library is a free way to promote the viable properties for filming across the region.
- Hamilton is a hub for filming and with Niagara being right next door there are dozens of productions that could capitalize on driving a little further down the QEW and into Niagara region. Given its success Hamilton could also explored as a potential model.

 TV and video production companies rely heavily on tax credits from provincial and federal government to cover their production and labour expenditures. This may create opportunities when government expenditure and investment in the sector increases but may also create a volatile market if government

support ceases.36

- Due to a favourable tax credit system for film producers together with a weak dollar during the period that lowered the relative cost of operations, many film production companies have expanded their operations in Canada, thereby increasing the competition in the industry within the country.³⁷
- The expectations of the film industry in many cases are for short turnaround times and quick decisions to requests being made; there needs to be a commitment from relevant staff to review and provide comments/approval in a timely manner.
- Cast and crew on the majority of productions are members of the Guilds and Unions that have limitations on travel and distance from production offices (Location Zones) that can be travelled before additional costs are incurred to off-set the time/distance that cast and crew travel. Per diem, flat rate fees, accommodations, mileage, etc. are all

³⁶ IBIS World. Movie, TV and Video Production in Canada – Industry Report 51211CA
³⁷ Ibid.

- Development of policies and plans that would support the large-scale investment that might come in the longer term and support the recognized use of a film studio in Niagara.
- Develop tax incentives or grants that reduce cost for production companies to work in Niagara Region.
- Create opportunities to work with existing businesses to support the niche of the film industry. Also, to work on business and investment attraction with those existing companies in the GTA will give Niagara the pillars to provide solid support to productions across southern Ontario.
- Opportunity to explore the development of the Niagara Film Commission. Where dedicated staff can oversee the filming inquiries and promote the region as a place for filming.
- Create an inventory of locations and assets available in the region for filming.
- Integrate tourism and the film sector by attracting additional film festivals or develop film location tours throughout the region.
- Encourage networking of local film businesses.

- additional costs that productions have to incur when choosing to film at locations outside the Zones. These additional costs are a barrier to filming in Niagara because regardless of the production, if the cast and crew is unionized it is outside the Zone.
- There is not a centralized initiative around the film sector that involves all communities in the region.
- Conversations around this sector have been taking place for over a decade.
 There has been a lack of interest from some communities to pursue this sector.
- Competition from other established Canadian film hubs such as Toronto, Montreal, and Vancouver
- Complexity and time needed for permits for film can be disincentive to film in Niagara Region

Conclusion

Niagara region has a growing reputation in the film sector, particularly as a prime location for film shoots, as evidenced by the growth in the number of enquiries from production companies in recent years.

However, if the region is to build on this potential and develop the critical mass needed to attract other types of investment in the film sector then key steps need to be taken. These steps include: increasing the awareness of film location options in the region, developing closer working relationships with partners such as Ontario Creates, exploring the potential of a local film fund that could mitigate costs and offering a comprehensive concierge service that includes arranging accommodations and connections to businesses and talent in the region.

The development of a Niagara Film Commission could help promote and advocate for the region, manage a local fund and run the concierge service. Its evolution would be an indication that Niagara region is invested in this sector.

The task will be not be easy, not least because the sector is highly competitive within Ontario, Canada and internationally. However, if Niagara can build on its current success and reputation, it would allow it to also explore the potential to attract complementary investments in the film sector such as small studio spaces and technology companies that are part of the film industry.

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