

EMPLOYMENT PROSPECTS 2023-31

LONDON REGION'S ADVANCED MANUFACTURING SECTOR OCTOBER 2023





About Smart Prosperity Institute

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About the London Economic Development Corporation

The London Economic Development Corporation (LEDC) is the lead economic development agency for London, Canada. Established in 1998, LEDC is a not-for-profit organization that is funded by the City of London through a Purchase of Service Agreement.

Working with business, government, academic institutions, and industry partners, LEDC supports the growth of existing businesses, attracts new businesses to London, and strives to ensure companies have the talent, resources, and business conditions they need to continue scaling.

LEDC focuses on growing London's primary economic sectors – Agri-Food, Advanced Manufacturing, Digital Media and Tech, Health, and Professional Services. Growth in these sectors creates additional jobs through supply chains, service, retail industries, and more.

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ADVANCED MANUFACTURING DRAFT

Executive Summary

Like many other sectors of the economy, advanced manufacturing is experiencing a wave of retirements as Baby Boomers age into their 60s and 70s. In occupations where demand is growing, this combination of projected retirements and growth will lead to thousands of job openings in advanced manufacturing over the next six years.

Although domestic sources of recruits, including graduates of our postsecondary institutions, will meet some of this need, many new jobs must be filled through immigration. Making sure that federal immigration targets and provincial priorities are aligned with the labour market needs of advanced manufacturers in the London economic region will be critical to the sector's economic growth.

Employers in the London economic region are preparing for this wave of retirements, focusing resources on internal training and development and recruiting far and wide to fill positions. To successfully manage this transition, advanced manufacturers need help from all levels of government and postsecondary institutions.

Programs like those offered at local colleges, such as Fanshawe, not just in terms of the curriculum but in terms of enrolment, need to continue to meet the needs of these employers. The work of the provincial government to highlight the value of skilled trade in general and manufacturing, in particular, is helping, but a focus on reaching Ontario kids in late elementary and secondary school would aid in bringing outdated perceptions of manufacturing closer to the reality of advanced manufacturing in the London region.

To increase the talent pool from outside Canada, the province should consider expanding the list of eligible occupations to meet a broader range of needs in advanced manufacturing. Variation between provinces when it comes to critical occupations is a concern that may cause recruiting challenges for advanced manufacturers. Similarly, the federal list of global talent occupations (category B) is too limited to be useful for many occupations in advanced manufacturing. Generally, speeding up the immigration process would help advanced manufacturers as they manage through this transition.

Finally, to attract and retain workers in the London region, a focus must be placed on increasing the supply of attainable housing and transit options. The better public transit services these workplaces, the broader the range of places future (and existing) workers can live without the additional expense of owning a personal vehicle.

Employment Projections at a Glance

The London-St. Thomas area is projected to need thousands of additional manufacturing workers over the next six years to replace retiring workers and to keep pace with projected levels of employment growth based on past growth of those respective occupations. These projections do not consider the rapid rate of new manufacturing investments made in the area, including Volkswagen's announced electric battery manufacturing plant in St. Thomas and all the spinoff jobs it will create in the sector.



2023 to 2031

ADVANCED MANUFACTURING DRAFT

Five Key Points From This Report

- Over the next six years, more than half of the projected thousands of job openings in crucial manufacturing occupations in the London economic region will open because of retirements. This turnover is a tremendous opportunity for mid-career workers and new grads entering manufacturing and a considerable challenge for advanced manufacturers. And these statistical projections do not include announced or anticipated investments made by manufacturers in recent months.
- 2. In combination with new positions needed to support growth, the domestic labour supply will be insufficient to fill all of these positions, meaning that skilled people worldwide will be needed in even greater numbers than they are today.
- 3. Immigration is likely to be a key recruitment source in most advanced manufacturing occupations but will be especially important in some occupations, particularly in food processing.
- 4. Further reforms to the immigration system are needed, particularly around the treatment of occupation classifications and skill levels.
- 5. Ensuring that we have housing and mobility options that are affordable and work for people who will be filling these jobs over the next six years is critical. A lack of housing and transit options is a barrier to attracting and retaining employees, particularly at the entry-level. Advanced manufacturers need all levels of government and postsecondary institutions to work together in new ways to ensure that the education system, housing, transit and immigration are aligned.

ADVANCED MANUFACTURING DRAFT

Table of Contents

Acknowledgements	1
Executive Summary	2
Employment Projections at a Glance	3
Five Key Points From This Report	4
Introduction	7
London's Booming Advanced Manufacturing Sector	8
The London Region's Advanced Manufacturing Advantage	9
Employment Opportunities in London's Advanced Manufacturing Sector	10
Figure 3: Projected job openings in select manufacturing occupations in Elgin-Middlesex-Oxford, 20 to 2028	022 11
Figure 4: Number of Jobs in Select manufacturing occupations, Elgin-Middlesex-Oxford	12
Retirements will drive most of the job openings	13
Expansion demand varies significantly	13
New employees will be a mix of new graduates and skilled immigrants, but the mix varies considerably by occupation	14
The View From Employers - Labour Market Challenges	14
Hiring for senior positions, many of which will be opening because of retirements, is challenging	14
Supporting immigrants so they can succeed	15
Turnover is high in some junior positions, in part due to a lack of transit	15
Perceptions of manufacturing	15
The View From Employers – How to Solve Labour Market Challenges	15
The provincial nominee program needs to work well for manufacturing	16
Global Talent Stream Category B should be expanded	16
More flexible approach to classification of skill level by NOC	16
Final Thoughts	17
Data Appendix	18
Method of calculating forecasts at the Elgin-Middlesex-Oxford level	18
Table 1: Expansion demand (new jobs) 2023 to 2031, Elgin Middlesex Oxford economic region	18
Table 2: Composite projection of job openings, 2023 to 2031, Elgin Middlesex Oxford economic reg	gion 19

Table 3: Recruitment sources, 2023 to 2031, Advanced Manufacturing Sector in Elgin Middlesex Oxford economic region

ADVANCED MANUFACTURING DRAFT

Introduction

Advanced manufacturing is a critical sector in the London economic region, accounting for more than 34,000 jobs.¹ More than 500 companies employ people in this sector, which includes manufacturers in aerospace, materials, automotive, transportation, defense and building products.

Like many other sectors of the economy, advanced manufacturers are grappling with the demographic wave of Baby Boomers, only half of whom have aged into retirement as of 2021. Retirement rates are generally expected to increase over the next decade, with fewer working-age people for each retirement-age adult nationwide, reaching a historic low ratio of two working-age people for each retiree in 2035.² To increase the size of the Canadian labour force, the federal government has increased its targets for admitting new permanent residents, which will reach 500,000 per year by 2025.

These two general trends of an aging population and increasing working-age immigrants are well understood. But how do they vary at the local level and by occupation? Building on the Canadian Occupational Projection System (COPS) for 2022-2031, this report forecasts the expected number of job openings for critical occupations in advanced manufacturing in the London region until 2031.

To explore what employers are experiencing right now in terms of attracting and retaining talent, we facilitated a roundtable discussion with leading employers in the advanced manufacturing sector about these region-specific and occupation-specific forecasts for job openings and opportunities for public policy changes that would help in meeting expected demands for labour over the next six years.

¹ Source: LEDC, <u>https://www.ledc.com/advanced-manufacturing</u>. 2021 Census reports 17,220 jobs in London CMA in manufacturing and utilities; 2006 Census reports 19,980.

² Source: <u>https://www.canada.ca/en/immigration-refugees-citizenship/news/2022/11/an-immigration-plan-to-grow-the-economy.html</u>

London's Booming Advanced Manufacturing Sector

Spanning both sides of the 401 corridor and located halfway between the Greater Toronto and Hamilton region to the East and Windsor / Detroit to the West, the region has a strong network of suppliers in these industries.

As shown in Figure 1, employees of these companies, classified as occupations in manufacturing or utilities, live throughout the London economic region with relatively higher concentrations in the East and Southeast parts of the City of London and the core and Northern parts of the City of St. Thomas (orange and yellow on the map), close to major transportation corridors where significant clusters of manufacturers are located.

Like many other areas in the broader Great Lakes region, the manufacturing sector in the London CMA was heavily impacted by the 2009 recession – employment in the sector has declined by almost 14% from 2006 levels even as the overall population has increased by 19%.



Figure 1: Employment in manufacturing and utilities occupations, London Economic Region

The London Region's Advanced Manufacturing Advantage

Volkswagen chose St. Thomas for their new "gigafactory" EV battery manufacturing facility, and it's not difficult to understand why the London area is so attractive to advanced manufacturers. In the words of the London Economic Development Corporation, the region has many advantages, including:

- Shovel-ready, fully serviced industrial lands
- Within two hours of three major U.S. border crossings Sarnia / Port Huron, Windsor / Detroit, and Niagara / Buffalo
- Access to a manufacturing supply chain of Original Equipment Manufacturers (OEMs), Tiers 1-3, logistics, distribution, and warehousing
- Access to the North American railway system through CN and CP rail
- Talented workforce specializing in engineering, production, electrical, and quality assurance

Figure 2 shows the percentage of employment in manufacturing by Census Division. The eastern half of London, along with St. Thomas and Perth, Oxford, and Brant counties, have some of the highest concentrations of manufacturing in Canada.



Figure 2: Employment in manufacturing and utilities occupations, Southern Ontario

Employment Opportunities in London's Advanced Manufacturing Sector

The Elgin-Middlesex-Oxford area will need thousands of advanced manufacturing workers to replace retiring workers and keep up with projected expected demand. The Institutional Research team at Fanshawe College has developed employment projections at the occupational level for 2022-28; see Appendix B for details. The occupations include supervisors, operators and labourers across several different kinds of manufacturing;³ see Appendix A for more information.

These projections, while vital, cannot capture the whole story. In particular, projecting expansion demand is particularly challenging, as models can only project forward past trends. They lack on-theground knowledge of upcoming investments and plant openings. Given the renewed interest in onshoring manufacturing and producing the technologies needed to hit net-zero emissions, these are almost certainly underestimates of future employment growth.

Figure 3 provides projected job openings in manufacturing for the years 2022 to 2031 for the Elgin-Middlesex-Oxford region. The projections are broken down into three components: those that will occur due to retirement, those that will occur due to projected expansions, and those which occur for other reasons, which can include workers switching industries. Detailed breakdowns for each of the 18 occupations can be found in Appendix A.

An example will illustrate the general method of how the projections in Figure 3 were estimated. NOC 9221 is Supervisors in Motor Vehicle Assembling. At the national level, 28% of workers in NOC 9221 are expected to retire between 2022 and 2031. That translates to 166 forecasted retirements over the same period in EMO. Another 30 jobs in that same occupation are expected to open for other reasons. Combined with the estimate of expansion demand at the EMO level of 40 net new jobs, that results in a total of 236 total job openings between 2022 and 2031.

To put these projections into perspective, Figure 4 shows the number of people working in these occupations in Elgin-Middlesex-Oxford in 2022. In total, these 18 occupation codes include 19,513 jobs, with over 10,000 of those jobs in four NOC codes: 9522 (Motor Vehicle Assemblers, Inspectors and Testers), 9418 (Other Metal Products Machine Operators), 9461 (Process Control and Machine Operators, Food and Beverage Processing), and 9416 (Metalworking and Forging Machine Operators).

³ Among the 18 NOCs, supervisory occupation NOCs start with 92; operator NOCs start with 94; assembler NOCs start with 95; and labourer NOCs start with 96.

Figure 3: Projected job openings in select manufacturing occupations in Elgin-Middlesex-Oxford, 2022 to 2028



2023 to 2031

11

Figure 4: Number of Jobs in Select manufacturing occupations, Elgin-Middlesex-Oxford



2023

Number of jobs

The number of job openings and their cause differ substantially between occupations. However, we can identify a few general trends:

Retirements will drive most of the job openings

Across the 18 occupations, as Baby Boomers reach retirement age between now and 2031, retirements are projected to account for between 39.2% and 70.3% of all job openings in EMO. In total numbers, retirements are projected to be particularly significant in terms of overall job openings for the following occupations:

- Labourers in food and beverage processing (95106): 309 projected retirements
- Motor vehicle assemblers, inspectors and testers (94200): 457 projected retirements
- Metalworking and forging machine operators (94105): 441 projected retirements
- Labourers in metal fabrication (95101): 182 projected retirements
- Machine operators of other metal products (94107): 583 projected retirements

Almost **3,900 people in these occupations are projected to retire over the next eight years**, representing a significant loss of experienced supervisors and workers.

The highest *rates* of retirement are in supervisory occupations (ranging from 24%-26%). Supervisors in five different industries are projected to have the highest retirement rates of the 18 occupations – one in four supervisors are expected to retire over the next eight years.

Expansion demand varies significantly

In addition to the job openings created through retirements, the expansion demand estimates calculated by Fanshawe College's institutional research team indicate that growing demand will drive additional job openings. The five highest areas of growth in terms of total job openings include:

- Labourers in food and beverage processing (95106): 331 new jobs
- Motor vehicle assemblers, inspectors and testers (94200): 171 new jobs
- Metalworking and forging machine operators (94105): 165 new jobs
- Labourers in metal fabrication (95101): 156 new jobs
- Machine operators of other metal products (94107): 145 new jobs.

New employees will be a mix of new graduates and skilled immigrants, but the mix varies considerably by occupation

There are three general sources to fill these job openings: new graduates, immigrants, and people already working in other occupations.⁴

Supervisory occupations are the most likely to be filled by people working in other occupations (including more junior roles within the same organization), accounting for at least two-thirds of job openings. This statistic may be unsurprising because employers focus on internal development and training.

New graduates are projected to account for between one-quarter and four-fifths of all job seekers, depending on the occupation. New graduates are expected to account for a very high proportion of labourers. Besides motor vehicle assemblers, new graduates are expected to fill less than half of all remaining job openings.

Outside supervisory occupations, immigrants are projected to be a significant recruitment source. This is especially true in some occupations, like labourers in food and beverage processing, where immigrants are projected to fill the vast majority of positions. A detailed breakdown for each occupation can be found in the Data Appendix.

The View From Employers - Labour Market Challenges

LEDC convened a roundtable discussion facilitated by Smart Prosperity Institute at Fanshawe College's South Campus in London to understand advanced manufacturers' labour market challenges. Over a dozen people from different kinds of advanced manufacturers participated, and staff from LEDC, Elgin Middlesex Oxford Workforce Development Board and Fanshawe College participated.

Hiring for senior positions, many of which will be opening because of retirements, is challenging

The challenge of directly hiring a new person into a senior position is typical in different kinds of companies. Companies are hiring more junior employees and investing in training their existing employees to be ready to take on more senior positions. The upcoming retirement of many long-serving employees is recognized as a significant challenge over the next 5-10 years, putting pressure on internal training and development.

⁴ Details of the projected breakdown of recruitment sources are provided in the Table 3 of the Data Appendix. Negative values indicate a net negative contribution – more people who are currently in the occupation leaving it than people who are in another occupation joining it – which puts the combined contribution of the other two sources – new graduates or immigrants – above 100%.

Supporting immigrants so they can succeed

"It's not as simple as just heading to Mexico and hiring some welders." Participants saw immigration as critical to meeting their labour market needs but also recognized that a lot needs to be done to ensure that immigrants are supported and successful when they settle in the London economic region. Employers are helping with many aspects of the immigration and settlement process, including finding housing, but the process can be slow. The rapid settlement of Ukrainian refugees came up as something that is working reasonably well.

Turnover is high in some junior positions, in part due to a lack of transit

Employers experiencing relatively high turnover in junior positions are concerned about mobility options for their workforce, especially public transit. Outside of London, the lack of public transit was mentioned as a competitive disadvantage that puts upward pressure on wages. Within the City of London, the lack of frequency of industrial transit routes and long walking distances from public transit stops on roads without sidewalks was highlighted for the same reason – it's hard to attract (and especially retain) workers when getting to work reliably and conveniently often requires the additional expense of owning a car.

Perceptions of manufacturing

Several participants identified perceptions of younger people about manufacturing as a career path – at the grade school level – as an essential challenge for recruiting in the medium term and expressed a desire to see the education system, not just colleges and apprenticeships but elementary schools and high schools, connecting young people with fulfilling careers in manufacturing at a time when so many people are projected to be retiring.

The View From Employers – How to Solve Labour Market Challenges

Participants shared positive stories of recruiting both domestic and international workers. Several participants mentioned hiring "farm grads" (young people who grew up on farms) who are optimistic, hard-working and have a general mechanical aptitude, making them very trainable on the job. Other participants shared successes recruiting recent international student graduates from Fanshawe College, several of whom already had experience working in their industry and have moved into more senior positions. One participant shared a success story of recently hiring seven Ukrainian refugees (representing just over 10% of its workforce).

Employers are investing in their people, marketing to potential future employees and using existing government programs. Participants firmly focused on investing in internal training and development of workers and cross-training people, so crucial positions are covered. Another mentioned dividing its marketing budget into campaigns focused on customers and campaigns focused on future workers – showing just how intense hiring is for some manufacturing occupations and how employers aim to shift perceptions of manufacturing amongst their target populations for recruiting. One participant found the STEM-focused young graduates program offered through the National Research Council of Canada Industrial Research Assistance Program (NRC IRAP) particularly helpful during the pandemic and made good use of the program.

However, employers identified several areas governments could focus on and where changes would benefit manufacturing in the region.

The provincial nominee program needs to work well for manufacturing

One employer shared a frustrating story of recruiting a very talented embedded firmware developer who was an international student and recent grad from Fanshawe College. The employer lost this employee to another province that was more welcoming to the employee's brother, who had the same skills. Instead of gaining another much-needed skilled worker, the employer lost the person they had already onboarded. Making sure that the <u>Ontario Immigrant Nominee Program</u> (OINP) is meeting the needs of the London region's manufacturers were identified as critically important.

Global Talent Stream Category B should be expanded

Innovations like the global talent stream are not helping address the labour market challenges many of these employers face. Participants highlighted that the relatively short list of global talent occupations is making it not beneficial for them as employers. Adding manufacturing occupations that are projected to be in high demand and where the domestic labour supply is projected to be insufficient to the list of Category B occupations would help.

More flexible approach to classification of skill level by NOC

The approach to classifying occupations into skill levels – with 0, A and B counting as "skilled" – has created friction at the employer level for job descriptions that could be classified as B or C. A broader or more permissive approach to classifying job descriptions into occupations and skill levels would help to make the process smoother for employers and employees.

Final Thoughts

Advanced manufacturers in the London economic region are managing a significant transition in their workforce. In addition to the opportunities created by growing demand, they are losing experienced, skilled personnel in various occupations. Many employers are investing in their existing workforce, cross-training and creating pathways for advancement within the company to bridge the gap between their most experienced and mid-career workers.

To successfully manage this transition, advanced manufacturers need help from all levels of government and postsecondary institutions. On the new graduates front, programs like those offered at colleges across Southwestern Ontario, not just in terms of the curriculum but in terms of enrolment, need to continue to meet the needs of these employers. The work of the provincial government to highlight the value of skilled trade in general and manufacturing, in particular, is helping, but a focus on reaching Ontario kids in late elementary and secondary school would aid in bringing outdated perceptions of manufacturing closer to the reality of advanced manufacturing in the London region.

On immigration, the priorities of the provincial nominee program are headed in the right direction. Still, the province should consider expanding the occupations to meet a broader range of needs in advanced manufacturing. Variation between provinces when it comes to critical occupations is a concern that may cause recruiting challenges for advanced manufacturers. Similarly, the federal list of global talent occupations (category B) is too limited to be useful for many occupations in advanced manufacturing. Generally, speeding up the immigration process would help advanced manufacturers as they manage through this transition.

On housing and mobility, advanced manufacturers need municipal governments to develop land use regulations that support new housing construction that is affordable and convenient for people working in advanced manufacturing. The better public transit services these workplaces, the broader the range of places future (and existing) workers can live without the additional expense of owning a personal vehicle.

By working together, the three levels of government can significantly help advanced manufacturers and drive local economic growth.

Data Appendix

Method of calculating forecasts at the Elgin-Middlesex-Oxford level

COPS provides national-level projections for 293 occupational groupings covering the more than 500 specific NOC codes. Using EMSI Lightcast Analyst software, Fanshawe College's Institutional Research team has estimated expansion demand at the EMO for each occupation. These estimates represent the number of new jobs required to meet expected changes in overall demand in the industry – in most cases, it is positive, but expansion demand could be negative. Overall, at the EMO level, expansion demand for these case occupations ranges from 3.3% at the low end to 22.4% at the high end from 2023 to 2031.

To estimate the number of job openings arising from retirements and other replacement demand, the rate of change for each component at the national level (2022 to 2031) has been applied to the baseline number of jobs in each occupation at the EMO level. Essentially, locally estimated expansion demand is added to estimates of the rates of retirements and other job openings at the national level to develop a composite projection of job openings at the EMO level. Although it would be preferable to develop EMO-level estimates of retirements and job openings for other reasons, data are not available.

An example will illustrate the general method. NOC 92020 is Supervisors in Motor Vehicle Assembling. At the national level, 24% of workers in NOC 92020 are expected to retire between 2023 and 2031. That translates to 157 forecasted retirements over the same period in EMO. Another 29 jobs in that same occupation are expected to open for other reasons. Combined with the estimate of expansion demand at the EMO level of 58 net new jobs, that results in a total of 244 total job openings between 2023 and 2031.

Table 1: Expansion demand (new jobs) 2023 to 2031, Elgin Middlesex Oxford economic region

Occupation (NOC Code)	Net New Jobs	% Change from 2023
Labourers in food and beverage processing (95106)	331	21.5
Motor vehicle assemblers, inspectors and testers (94200)	171	4.5
Metalworking and forging machine operators (94105)	165	7.7
Labourers in metal fabrication (95101)	156	12.6
Machine operators of other metal products (94107)	145	5.1
Supervisors, other mechanical and metal products manufacturing (92023)	115	11.8
Industrial butchers and meat cutters, poultry preparers and related workers (94141)	91	14.3

Occupation (NOC Code)	Net New Jobs	% Change from 2023
Process control and machine operators, food and beverage processing (94140)	85	3.3
Electronics assemblers, fabricators, inspectors and testers (94201)	81	18.5
Labourers in rubber and plastic products manufacturing (95104)	66	22.4
Supervisors, forest products processing (92014)	63	16.6
Other products assemblers, finishers and inspectors (94219)	63	4.4
Supervisors, motor vehicle assembling (92020)	58	9.0
Plastics processing machine operators (94111)	56	10.4
Supervisors, mineral and metal processing (92010)	43	11.6
Machining tool operators (94106)	36	7.1
Supervisors, petroleum, gas and chemical processing and utilities (92011)	35	7.3
Machine operators, mineral and metal processing (94100)	32	9.1

Table 2: Composite projection of job openings, 2023 to 2031, Elgin Middlesex Oxford economic region

· · ·	Reason for job opening				
Occupation (NOC Code)	Expansion demand	Retirements	Other	Total	As % of 2023 Jobs
Labourers in food and beverage processing (95106)	331	309	79	719	46.8
Motor vehicle assemblers, inspectors and testers (94200)	171	457	152	780	20.7
Metalworking and forging machine operators (94105)	165	441	100	706	32.9

Reason for job opening					
Occupation (NOC Code)	Expansion demand	Retirements	Other	Total	As % of 2023 Jobs
Labourers in metal fabrication (95101)	156	182	40	378	30.4
Machine operators of other metal products (94107)	145	583	133	861	30.3
Supervisors, other mechanical and metal products manufacturing (92023)	115	239	43	397	40.6
Industrial butchers and meat cutters, poultry preparers and related workers (94141)	91	146	30	267	42.0
Process control and machine operators, food and beverage processing (94140)	85	303	101	489	19.1
Electronics assemblers, fabricators, inspectors and testers (94201)	81	107	20	208	47.6
Labourers in rubber and plastic products manufacturing (95104)	66	51	13	130	44.1
Supervisors, forest products processing (92014)	63	102	23	188	49.6
Other products assemblers, finishers and inspectors (94219)	63	279	60	402	28.3
Supervisors, motor vehicle assembling (92020)	58	157	29	244	37.9
Plastics processing machine operators (94111)	56	121	24	201	37.2
Supervisors, mineral and metal processing (92010)	43	94	13	150	40.4
Machining tool operators (94106)	36	104	24	164	32.3
Supervisors, petroleum, gas and chemical processing and utilities (92011)	35	121	16	172	36.1

	Reason for job opening				
Occupation (NOC Code)	Expansion demand	Retirements	Other	Total	As % of 2023 Jobs
Machine operators, mineral and metal processing (94100)	32	72	16	120	34.3

Table 3: Recruitment sources, 2023 to 2031, Advanced Manufacturing Sector in Elgin Middlesex Oxford economic region

	Recruitment source		
Occupation (NOC Code)	New Graduates	Immigrants	Other
Labourers in food and beverage processing (95106)	55.1%	210.8%	- 177.3%
Motor vehicle assemblers, inspectors and testers (94200)	61.7%	158.3%	- 143.3%
Metalworking and forging machine operators (94105)	54.2%	33%	-3.6%
Labourers in metal fabrication (95101)	93.6%	44.7%	-4.3%
Machine operators of other metal products (94107)	54.2%	33%	-3.6%
Supervisors, other mechanical and metal products manufacturing (92023)	30%	5.3%	48.4%
Industrial butchers and meat cutters, poultry preparers and related workers (94141)	67.4%	73.7%	-81.7%
Process control and machine operators, food and beverage processing (94140)	72.9%	56.4%	-38.5%
Electronics assemblers, fabricators, inspectors and testers (94201)	35.1%	55.8%	6.5%
Labourers in rubber and plastic products manufacturing (95104)	81.2%	68.8%	-26.6%

	Recruitment source			
Occupation (NOC Code)	New Graduates	Immigrants	Other	
Supervisors, forest products processing (92014)	23.1%	6.7%	69.4%	
Other products assemblers, finishers and inspectors (94219)	43.2%	50.4%	-3.4%	
Supervisors, motor vehicle assembling (92020)	30%	5.3%	48.4%	
Plastics processing machine operators (94111)	44.4%	38.6%	5.3%	
Supervisors, mineral and metal processing (92010)	29.6%	12%	75.2%	
Machining tool operators (94106)	54.2%	33%	-3.6%	
Supervisors, petroleum, gas and chemical processing and utilities (92011)	29.6%	12%	75.2%	
Machine operators, mineral and metal processing (94100)	54.2%	33%	-3.6%	



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