

The Conestoga Effect

by

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CONESTOGA
Connect Life and Learning

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Table of Contents

Executive Summary	6
Introduction	10
The Demographic Challenge.....	11
Immigration.....	12
The Role of Conestoga College.....	13
This Report.....	14
Conestoga's Graduates	16
Number and Residential Location.....	17
Employment.....	18
Conestoga's Enterprising Graduates.....	19
Responding to Labour Force Shortages.....	20
Skilled Trades.....	20
International Students.....	20
Immediate Economic Contribution of International Students.....	22
Relationship to the Temporary Foreign Worker Program.....	23
Continuing Education and Micro-credentials	24
Corporate Training	28
Upgrading and Skills Development	31
Summary Contribution	34
Appendices	36
Appendix 1: Estimated Residential Location of Conestoga Graduates.....	36
TABLE 2: CONESTOGA'S GRADUATES: NUMBER AND LOCATION.....	37
TABLE 3: CONESTOGA GRADUATES BY ADDRESS AND ASSIGNED LOCATION 2022.....	37
TABLE 4: CONESTOGA GRADUATES BY ASSIGNED LOCATION AND THE SUM OF LOCATIONS OF ACTIVE AND INACTIVE GRADUATES 2022.....	38
Appendix 2: Estimated Number of Local Graduates Employed.....	38
TABLE 5: ASSIGNMENT OF CONESTOGA GRADUATES BY AGE GROUP 2022.....	39
TABLE 6: EMPLOYMENT RATES BY AGE AND LOCATION 2022 LABOUR FORCE SURVEY.....	40
TABLE 7: ONTARIO EMPLOYMENT RATE BY EDUCATION, LABOUR FORCE SURVEY (AGES 25-54).....	40
TABLE 8: GRADUATE EMPLOYMENT RATE AT SIX MONTHS AFTER GRADUATION, CONESTOGA COLLEGE.....	41
TABLE 9: LOCAL EMPLOYMENT 2022.....	41
TABLE 10: NUMBER AND PER CENT OF TOTAL COLLEGE GRADUATES (INCLUDING SKILLED TRADES).....	42
TABLE 11: CONESTOGA GRADUATES EMPLOYED, BY AGE AND LOCATION.....	43

TABLE 12: CONESTOGA GRADUATES EMPLOYED 2022	44
Appendix 3: Conestoga’s Enterprising Graduates	44
TABLE 13: ESTIMATED TOTAL NUMBER OF ALUMNI ENTREPRENEURS 2022	45
TABLE 14: EMPLOYMENT INFORMATION BY YEAR OF GRADUATION 2022	46
TABLE 14: EMPLOYMENT INFORMATION BY YEAR OF GRADUATION 2022...CONTINUED	47
Appendix 4: Labour Force Needs	48
TABLE 15: ESTIMATED TOTAL NUMBER OF LOCAL COLLEGE GRADUATES 2022	48
TABLE 16: ONTARIO JOB VACANCIES: EDUCATION LEVEL AND AVERAGE WAGE Q4 2022	48
TABLE 17: ONTARIO JOB VACANCIES: OCCUPATION TYPE AND AVERAGE WAGE Q4 2022	49
TABLE 18: ONTARIO JOB VACANCIES: OCCUPATION TYPE AND EDUCATION LEVEL Q4 2022	50
TABLE 19: ISSUED STUDY PERMITS BY PROGRAM TYPE – ONTARIO	51
TABLE 20: ISSUED STUDY PERMITS BY PROGRAM TYPE – CONESTOGA	51
TABLE 21: DISTRIBUTION OF TOTAL INTERNATIONAL STUDENTS ACROSS THE COLLEGE BY SCHOOL	52
TABLE 22: POST-GRADUATE WORK PERMIT (PGWP) APPLICATIONS – CONESTOGA	52
TABLE 23: POST-GRADUATE WORK PERMIT (PGWP) APPLICATIONS – NATIONAL	53
Appendix 5: Work-related Continuing Education	54
TABLE 24: CONESTOGA’S CONTINUING EDUCATION STUDENTS 1990-2022	54
TABLE 25: CONESTOGA’S NEW UNIQUE CONTINUING EDUCATION STUDENTS BY REGION OF RESIDENCE 1980-2022	55
TABLE 26: REASONS FOR TAKING CONTINUING EDUCATION CONESTOGA COLLEGE, 1996 TO 2023	56
TABLE 27: EMPLOYMENT AMONG 2023 CONTINUING EDUCATION SURVEY RESPONDENTS CONESTOGA COLLEGE	57
TABLE 28: CONTINUING EDUCATION SUMMARY, LOCAL AREA 2022	57
TABLE 29: CONESTOGA’S TESTING AND ASSESSMENT COURSES 2016-2022	58
Appendix 6: Corporate Training	59
TABLE 30: CONESTOGA’S CORPORATE TRAINING STUDENTS 1990-2022	59
TABLE 31: CORPORATE TRAINING OF CONESTOGA EMPLOYEES 2016-2022	60
TABLE 32: TEACHING AT CONESTOGA MICRO-CREDENTIAL REGISTRATIONS 2021-2022	60
Appendix 7: Upgrading and Skills Development	61
TABLE 33: NUMBER OF STUDENTS/CLIENTS, OFFICES OF UPGRADING AND SKILLS DEVELOPMENT AND CAREER CENTRE 2002 TO 2023	61
Appendix 8: Local Population Estimates and Domestic Enrolment	62
TABLE 34: LOCAL CMA POPULATION AND ESTIMATED ADULT POPULATION (AGE 20 YEARS AND OVER)	62
References	63

Executive Summary



The availability of labour is now the most urgent threat to the prosperity of our local communities. As long predicted, the declining birth rate, aging workforce and accelerating retirement of Baby Boomers are combining to place severe pressure on the labour supply.

Conestoga College Institute of Technology and Advanced Learning is now the predominant source of newly skilled workers to address these continuing shortages. Moreover, the college is responding to these shortages both emphatically and strategically.

The college has expanded its enrolment and attracted the level of international students necessary to compensate for the “baby deficit” that will be the hallmark of the next several decades. In 2021, Immigration, Refugees and Citizenship Canada (IRCC) granted over 4,000 work permits to Conestoga graduates, allowing them to join the Canadian labour force. It is especially important to note that the employment rate of Conestoga’s international graduates is almost identical to that of its domestic graduates.

In addition, the college has focused its efforts and resources into those areas, such as healthcare and the skilled trades, where the shortages are expected to be particularly acute. In tackling these difficult challenges,

the college builds on its past accomplishments as the principal supplier of skilled labour for the local area.

It remains remarkable that Conestoga has served more than half (53.6 per cent) of the local adult population. If we focus on workplace skills only and only those who are estimated to be working, we find that the college has trained at least 58.9 per cent of local resident employment.

Conestoga has become indispensable to the prosperity of the local community by helping both younger and older workers adapt to the changes and challenges of the economic environment. The college continues to use its predominant position as adult educator in the local region to support the health and competitiveness of the labour force. It continues to respond to the needs of the area’s most vulnerable workers and has taken a strategic role in supporting the immigration and integration of international talent. Today, no other local institution has matched the scale of Conestoga’s contribution.

CONESTOGA'S SUMMARY CONTRIBUTION TO THE LOCAL AREA

Source: Office of Institutional Research and Planning; Statistics Canada

	NUMBER	PER CENT OF ESTIMATED ADULT POPULATION
College Graduates	112,023	16.3%
Continuing Education Students	217,631	31.7%
Corporate Training Participants	38,199	5.6%
Total	367,853	53.6%
Upgrading and Skills Development	81,938	11.9%
	NUMBER	PER CENT OF ESTIMATED EMPLOYMENT
College Graduates Employed	85,123	19.9%
CE Students Employed	128,644	30.1%
Corporate Training Participants	38,199	8.9%
Total	251,966	58.9%

Here is an overview of Conestoga College's contributions to the local area defined as Waterloo Region, Guelph, Guelph/Eramosa, Puslinch, Stratford and Brantford.



Economic Contribution

- The annual employment income of local Conestoga graduates is at least \$4.1 billion. Therefore, the economic contribution to their employers and to the local community is much more than \$4.1 billion each year into the future.
- Since 2018, IRCC has issued 51,042 study permits to Conestoga students, which equals almost 8 per cent of the study permits issued to Ontario's post-secondary institutions. While studying, these students added \$1.6 billion to Ontario's GDP and sustained around 118,206 jobs in Ontario.



Employment

- Conestoga graduates who are working represent 19.9 per cent of local resident employment.
- Continuing Education (CE) students from career-related studies, who are working, represent 30.1 per cent of local resident employment; when combined with Corporate Training (CT) students, all of whom are working, they represent 39 per cent of local resident employment.
- Together, Conestoga's local graduates, CE and CT students who are working represent 58.9 per cent of local resident employment.
- Conestoga entered the Top 10 Canadian Institutions in the number of Post-Graduate Work Permit Approvals in 2017 and topped the list by the end of 2021.
- The approval rate of Work Permit Applications from Conestoga's international students is 99 per cent.
- The employment rate of Conestoga's international graduates is almost exactly the same as Conestoga's domestic graduates: 84.8 per cent and 85.9 per cent, respectively.



Serving the Local Population

- The college’s 112,023 graduates, both domestic and international who live locally, represent 16.3 per cent of the adult population.
- Since 1980, 255,830 unique individuals living in the local area, and who had no other connection to the college, took Conestoga’s CE or CT courses. These individuals represent 37.3 per cent of the local population.
- Together, Conestoga’s graduates, CE and CT students represent 53.6 per cent of the local adult population.
- Since 2002, Conestoga’s Upgrading and Skills Development Services and its Community Career Centre have served 81,938 individuals. These individuals are not included in the calculations above because it is not possible to verify if they had previous connections to the college.



Entrepreneurship

- 5,241 Conestoga graduates are local entrepreneurs.



Ontario Impact

Conestoga makes a noteworthy and increasing contribution to the provincial economy as well. With the local area included, there are now 166,673 Conestoga graduates living in Ontario, 128,455 of which are working. They add more than \$6.2 billion annually to the province’s economy.

An estimated 7,781 entrepreneurs in Ontario are Conestoga graduates.

Among the residents of Ontario who live outside the local area, 44,575 CE students saw the value in Conestoga’s offerings compared to what else is available across the province.

**Although not included in the catchment area for this report, Conestoga has expanded to Milton and opened the Milton - Parkhill Drive campus, which has capacity for 2,000 full-time students, in January 2024. The Milton - Steeles Avenue campus will welcome students in May 2024 to offer hands-on nursing and personal support worker training. Conestoga will have an even greater presence in the Town of Milton when the Milton Education Village opens in 2028. This comprehensively planned, urban neighbourhood will integrate post-secondary education, as well as residential, commercial employment and recreational uses.*

Introduction



THE DEMOGRAPHIC CHALLENGE

The challenge facing Canada, in common with almost all other developed states, is stark. The birth rates of the industrial world have been in long-term decline. They are now below the replacement rate of 2.1 children per woman of child-bearing years. Currently, the fertility rate is 1.5 in Europe, 1.2 in East Asia and 1.9 in Latin America.¹ Among the Organisation for Economic Co-operation and Development (OECD) countries, the leading industrial states, the fertility rate was 1.58 in 2021² and may well decline further.

These rates mean the global population is expected to peak by 2080.³ In the worst-case scenario where the average global fertility rate remains at 1.6 (current fertility rate in the US), the world’s population will decline to fewer than 2 billion people 300 years after its peak.⁴

The fertility rate in Canada has reached a record low level of 1.3 births per woman in 2022.⁵ As a result, Canada is expected to age faster than the US, at a rate similar to Japan, the United Kingdom, France, and Australia.⁶ By 2040, 24 per cent of Canadians will be at least 65.⁷ For reference, in 2022, those aged 65 and older represented 19 per cent of the Canadian population.

Adapting to these disruptive demographic changes will be a continuing challenge for Canada and its trading partners. There is the potential slowdown of economic growth and, in a rapidly aging world, labour shortages are likely to grow acute. Only two avenues to address the issue exist: Either the fertility rate starts to rise, or immigration serves to replace the “baby deficit.”

There is little evidence to suggest there are public policies that can reliably stimulate a sustained increase in the fertility rate. Immigration is therefore the only practical response left.



Adapting to these disruptive demographic changes will be a continuing challenge for Canada and its trading partners.

IMMIGRATION

Without immigration, Canada will be unable to replace the retiring Baby Boomers, all of whom will reach the retirement age of 65 by 2030.⁸ After 2035, deaths will begin to outnumber births⁹ and Canada’s population will start decreasing. By 2050, the share of "natural increase" in population growth will be -30 per cent.¹⁰ Effectively, this means that after 2035, "immigration will be the sole generator of Canada’s population growth."¹¹

Since most of the advanced world is aging, global competition for talent, which is already intensifying,¹² will likely be fierce. Canada’s immigration policy has therefore some very serious competition. And after the world’s population peaks in 2050, immigration becomes a "zero sum game."

There is a strong economic case for immigration. A 2022 survey of 80 member companies by the Business Council of Canada found that two-thirds of the companies recruited employees via the immigration system and plan to continue relying on immigrants to "grow their business, increase workforce diversity, and address labour shortages."¹⁴ In 2021, the immigrant contribution to the labour force rose to 26.8 per cent from 20.2 per cent in 2010.¹⁵

Of course, it is essential to ensure that the talent that immigrates to Canada is used to its full potential and is effectively integrated into society. Recently, we have seen evidence of the improved integration of immigrant talent. For example, there was a decrease in the "gap in the employment rate between landed immigrants and those born in Canada from 7 per cent in 2010 to 0.2 per cent in 2021."¹⁶

[We acknowledge the long-term effect of declining population could ease the environmental pressure of human activity. That positive attribute does not however by itself mitigate the immediate challenges of an aging and then declining population.]

Without immigration, Canada will be unable to replace the retiring Baby Boomers, all of whom will reach the retirement age of 65 by 2030



THE ROLE OF CONESTOGA COLLEGE

Conestoga plays a key role in the integration of immigrants into the local economy, helping them make a vital and positive contribution to the well-being of the community.

While economic growth is driven by population growth, there is also an important relationship between growth and the development of human capital, represented by the workers' expertise and knowledge. Nobel Prize laureate Paul Romer's analysis demonstrates that growth is driven by the "stock of human capital" rather than population increase per se.¹⁷ In other words, Romer shows how population growth cannot sufficiently drive economic growth without an increase in the human capital via

education and training. Since Canada's reliance on immigration to sustain its economy will only increase, Conestoga will play an increasingly critical role in adding to the quality of the human capital in the population entrusted to us. The college thereby contributes to the economic growth *and* better living standards.



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THIS REPORT

Conestoga commissions periodic research reports to better understand its evolving contribution to developing human capital and, by implication, the local and provincial economy. The last 2016 report was preceded by reports in 2011 and 2002. The present report continues to follow the precedent of the earlier documents and concentrates on how the college has been responding to the needs of the labour market.

The approach of the report differs from some that have been used elsewhere. Here, we do not document the value of Conestoga's injection of spending into the local economy through employee salaries and other expenditures because the college is different from a private enterprise. Conestoga is an educational institution with the primary mandate to serve the needs of the labour market. Therefore, the present and previous reports directly addressed these needs.

The present report updates the earlier reports based on the college's database (as of December 31, 2022) and the updated data from Statistics Canada, particularly the 2021 Census of Population. Given the increase in complexity and competition driven by technological advancements and new challenges, this updated study maintains its focus on the strengthening and adaptation of the labour force. The college's transformation into a polytechnic institution since 2001 and the expansion of its

campuses into new territory have extended the impact of its contributions from the local area - now defined to include Waterloo Region, City of Guelph, Guelph/Eramosa Township, Puslinch Township, City of Stratford, and the City of Brantford - to the province more strongly.

The methodology is straightforward. We document the number of people who have been trained by the college and set this number into the context of the overall supply of labour. In other words, we describe how many people have taken advantage of Conestoga's training programs and what proportion of local employment they represent. This approach provides clear, intelligible, and reliable measurements.

The principal challenge to the methodology involves the great variety of ways in which Conestoga offers training. There are full-time programs, continuing education programs, micro-credentials, academic upgrading services, and custom training contracted directly with employers. Some students are young and



early in their careers; others are older and looking for upskilling or changing their careers. Some programs lead to a certificate, diploma, degree or graduate certificates; others do not. Whatever their difference, all of them serve the development of the labour market. All of them must be measured.

Furthermore, the adaptation of Conestoga's training services to the changing needs of the economy further adds to the measurement challenges. Wherever these challenges impose limitations on the data, we always adopt a conservative stance, believing it is better to underestimate Conestoga's contribution than to risk exaggerating it.

The quality and detail of the data continues to improve from the previous report. This allows us to distinguish between Continuing Education students who took testing and assessment courses to validate their existing skills from those who took courses to improve their skills. We can also distinguish between Corporate Training students who are Conestoga employees and those that are sponsored by other employers.

These improvements have not decreased the comparability of results to the previous reports. Where comparisons are appropriate, they are included in the body of the report.

The strong growth documented in 2016 has continued into 2022. Conestoga continues to provide its training services to a disproportionately large proportion of the local labour force. Since 2017, the college also became a dominant educational destination for international students and has topped the list of Top 10 Canadian Institutions for the number of work permits that were issued to the international talent it has attracted. The present report also reflects the contribution this achievement has made to the local and provincial economy. The college continues to uphold one of its most defining attributes: it serves many people in many different ways.



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Conestoga's Graduates



NUMBER AND RESIDENTIAL LOCATION

Conestoga continues to expand to meet the growing needs of the local economy. By the end of 2022, there were 172,745 graduates of Conestoga's certificate, diploma, degree, and graduate certificate programs recorded in the Alumni Services' database. This represents a 52 per cent increase since January 2016 and a 107 per cent increase since January 2011.¹⁸

A small number of graduates are missing from the above count because Conestoga offers a wide and changing array of training services and designations (e.g., certificates of achievement, micro-credentials, etc.) that are not captured by Alumni Services. Preferring to underestimate, we will use the above number going forward.

Conestoga's graduates, who represent the highest expression of the college's training and educational programs, are found in all of Canada's major cities and many of its smaller communities. Yet, 166,673 (96 per cent) live in Ontario and 112,023 (64.8 per cent) are estimated to live in the college's local area, defined to include Waterloo Region, City of Guelph, Guelph/Eramosa Township, Puslinch Township, City

of Stratford, and the City of Brantford. Conestoga's Brantford campus opened in 2012 with 21 students and now services 2,500 students each year. Thus, Conestoga's "local" area was expanded to include the City of Brantford. Remarkably, the proportion of graduates who live in the local area remains consistent since 2011: 64.6 per cent in 2011 and 64.8 per cent in 2016. This consistency is a testament to the sense of community the college has helped foster.¹⁹ Conestoga graduates are clearly expressing their confidence in the economic potential of the local area, and they are contributing to its strength by remaining.

Please see details in Appendix 1: Estimated Residential Location of Conestoga Graduates.



The proportion of graduates who live in the local area remains consistent since 2011: 64.6 per cent in 2011 and 64.8 per cent in 2016. This consistency is a testament to the sense of community the college has helped foster.

EMPLOYMENT

The scale of Conestoga's contribution to the local economy can be documented by estimating the number of employed Conestoga graduates who reside in the local area.

Table 2 demonstrates that 112,023 Conestoga graduates are residents in our local region. Although we cannot make the case that all the graduates are employed, we can make assumptions based on the demographic profile of the graduates and their graduate status. These two variables allow us to apply the employment rate at their location as estimated by the 2022 Labour Force Survey (LFS).

Thus, by applying the employment rates from the 2022 LFS in Ontario, Kitchener CMA, Brantford, and Guelph, we can estimate that Conestoga graduates who are employed equal 20 per cent of the total employment of local residents. In 2016, using similar methods of estimation, we calculated that Conestoga graduates constituted 13.6 per cent of the employed local residents. This clearly indicates that Conestoga is a significant and growing part of local employment (see Table 12).

In estimating the economic contribution of Conestoga's working graduates, we assume that the contribution to their employers is greater than their total employment compensation. As we demonstrate in Appendix 2: Estimated Number of Local Graduates Employed, the economic contribution of Conestoga's working graduates to their employers and, by extension, to the local community must be much more than their annual employment income, which

we estimated to be at least \$4.1 billion in 2022 alone. This means they add the equivalent value to the local economy each year, indefinitely into the future. The same approach also allows us to determine that Conestoga's employed graduates living in Ontario will contribute over \$6.2 billion to the provincial economy each year.

While Table 12 demonstrates that Conestoga's graduates represent a significant share of local employment, it is especially relevant to note the college's contribution to the pool of local college graduates, including the skilled trades (as reported through the 2021 Census).

As demonstrated in Table 10, almost 60 per cent (59.5 per cent) of the 188,180 college graduates living in the local area graduated from Conestoga. In 2016 and 2011, this figure was 46.6 per cent and 34.6 per cent respectively. Evidently, Conestoga serves an important local need by supplying an increasing number of well-trained individuals to the community. The college also saves an increasing number of employers the expenses of recruiting from outside the local economy.

Please see details in Appendix 2: Estimated Number of Local Graduates Employed.

CONESTOGA'S ENTERPRISING GRADUATES

Enterprising people represent the lifeblood of a local economy. They nurture and renew existing economic activity and adaptively explore new avenues of opportunity.

Conestoga's alumni database enables us to estimate the scale of enterprising activity by its graduates. The database has employment information for 38,585 alumni, which is 22.34 per cent of all alumni. This sample size is sufficient for a broader representation of the total alumni.

We identified 1,801 entrepreneurs or equivalent from the alumni database. In other words, 4.7 per cent of alumni with employment information are entrepreneurs. Assuming these alumni are representative of the entire alumni pool, we estimate that there are 8,063 entrepreneurs among Conestoga's total alumni, 7,781 of which live in Ontario and 5,241 of which live in the local area (see Appendix 3: Conestoga's Enterprising Graduates). Compared to our report in 2016,²⁰ we have almost 69 per cent more alumni with employment information in 2022. Nevertheless, the proportions have remained

remarkably consistent. Namely, in 2016, 4.8 per cent of alumni with employment information were entrepreneurs.

Based on the available information in the alumni database, we can celebrate the fact that businesses operated by enterprising Conestoga graduates vary in size and industry types. They range from single proprietorships to enterprises with a 1,000 employees (e.g., ApplyBoard, which reached 1,000 employees in 2021), and from professional health services to construction services. Together, Conestoga's enterprising graduates make a vital *and* major contribution to the prosperity and adaptation of the local economy.

Please see details in Appendix 3: Conestoga's Enterprising Graduates.



Conestoga's enterprising graduates make a vital and major contribution to the prosperity and adaptation of the local economy.

RESPONDING TO LABOUR FORCE SHORTAGES

Labour shortages touch Canada²¹ and nearly every advanced economy in the world.²² Against the inevitable pressure caused by Canada's demographic challenges, strong economic growth has caused the business community to face labour shortages across multiple areas. Multiple labour market indicators unambiguously reveal a tight labour market. Employment is at record highs and has consistently risen at one of the fastest rates in the industrial world. As of September 2023, the employment rate was 62.0 per cent, with the unemployment rate relatively low at 5.5 per cent. In the first quarter of 2022, there were 1.5 unemployed people per job vacancy in Ontario, a historical low that reflects a workers' market.²³

Mindful of these shortages, actual and imminent, Conestoga continues to address the strategic labour force needs in our local community and the province. Most prominently, Conestoga's efforts are directed toward two key issues: the supply of the skilled trades, and the attraction and training of international students.

Conestoga is prioritizing investments in skilled trades in response to the declining interest in these professions, even as retirements of tradespeople accelerate.²⁴

Meanwhile, immigration and international students are significant sources of labour supply in the face of threatening population decline.²⁵

■ Skilled Trades

In section 3.2 *Employment* we demonstrated how Conestoga supplies an increasing number of skilled workers to the local community. In fact, almost 60 per cent of all local college graduates in 2021, including skilled trades, were Conestoga graduates.

Table 15 reveals that graduates from skilled trades programs, living in our local area, are declining. In 2021, there were 20 per cent fewer graduates from skilled trades programs than in 2006. Meanwhile, the demand for skilled trades is rising and is acute not only in Ontario but the whole country.²⁶

Conestoga is directly responding to this alarming

trend in skilled trades. The college retrofitted a building previously owned by Erwin Hymer Group North America in Cambridge and opened it in fall 2022.²⁷ It is known as the Conestoga Skilled Trades Campus. The campus was opened with the aim to increase the college's training capacity by 40 per cent. So far, Conestoga has invested upwards of \$110 million into the development of this campus, which can be considered an investment to address the shortage of skilled trades workers in the local labour market.

■ International Students

International students are a particularly valuable pool of skilled workers that can help address labour force needs. A 2021 study done by Statistics Canada and IRCC found that, nationally, three in 10 first-time study permit holders became permanent residents within 10 years.²⁸

The reason our province and the country are looking at immigration and international students to alleviate the problem of labour shortage is evident in the latest estimates provided by the Labour Force Survey: Ontario alone had 323,105 job vacancies in the last quarter of 2022 (see Table 16). In the same period, the top industries where workforce shortage was most acute were sales and service (33 per cent of all vacancies), trades, transport and equipment operators (15 per cent), business, finance and administration



International students are a particularly valuable pool of skilled workers that can help address labour force needs.

(13 per cent), and health (11 per cent) (see Table 17). Furthermore, as Table 18 demonstrates, 54 per cent of vacancies in health, 31 per cent of vacancies in trades, transport and equipment operators, 28 per cent of vacancies in business, finance and administration, and 42 per cent of vacancies in education, law and social, community and government services require a college certificate or diploma. Overall, almost a quarter of vacancies in all occupations in 2022 required college education.

Conestoga plays a strategic role in ensuring the international students who decide to join the pool of skilled workers in the community have the knowledge and skills to match the demands of the contemporary job market. The rapid expansion of the college since 2016 has allowed Conestoga to play the main role in supplying the local labour market with a competent workforce.

In 2018, almost 6 per cent of study permits issued to colleges in Ontario were issued to Conestoga students. By 2022, Conestoga's share of study permits in the province was 8 per cent. In total, almost 8 per cent of all study permits between 2018 and 2022

were issued to Conestoga students (see Table 19 and Table 20).

Moreover, as Table 21 demonstrates, international students study in Conestoga programs that broadly align with the industries where labour shortage is most acute. For example, in 2022, 35 per cent of international students studied programs related to Business, around 36 per cent studied in Conestoga's Workforce Development programs, 9 per cent studied in IT programs, and around 3 per cent were in Health and Life Sciences.

Importantly, in 2021, Conestoga launched a new program for internationally trained nurses to help accelerate the transition of healthcare workers from abroad into the Canadian healthcare system.²⁹ In 2022, there were 180 students enrolled in the program offered on campuses in Kitchener and Guelph.³⁰ In 2023, the program grew to over 300 students per year. In 2024, the program will also be offered on campuses in Milton and Brantford. This development will increase the program's capacity to accept 600 new students every year.

Conestoga continues to play a vital role in attracting and preparing international talent to join the Canadian workforce. The college joined the Top 10 Canadian Institutions in the number of Post-Graduate Work Permit (PGWP) approvals issued to international students in late 2017 and topped the list by the end of 2021 (see Table 22).³¹ As the 99 per cent approval rate of Post-Graduate Work Permit applications from Conestoga graduates demonstrates (see Table 22), Conestoga is seen as a respected educational institution that supplies highly qualified labour locally and nationally (cf. Table 23).

In 2022, Conestoga's KPIs showed that 84.8 per cent of international graduates found employment.³² This rate is remarkably close to the 85.9 per cent employment rate of domestic students in the same year (see Table 8). The fact that there is no gap between the employment of domestic and international students demonstrates once more the quality of the international talent that the college attracts and of the training it offers.

Using the data in Table 22, we can estimate that around 85 per cent of Conestoga's international graduates applied and were approved for work permits between 2017-2021 (and, presumably, remained in Canada), and around 15 per cent of international students chose to leverage their education outside of Canada.

■ Immediate Economic Contribution of International Students

In addition to their talent, international students also contribute over \$22.3 billion per year to the Canadian economy.³³ This economic effect represents the export of educational services and makes Conestoga, remarkably enough, a significant regional exporter.

The most recent reliable data shows that in 2018, Ontario had the largest share of international students in the country (48 per cent, or 329,657 students). The second largest was British Columbia with 26 per cent of international students choosing to study there.³⁴ International students spent over \$12.3 billion in Ontario and, for reference, over \$4.7 billion in British Columbia.³⁵ The combined direct and indirect GDP contribution of all student expenditures in Ontario was \$10.8 billion, while their contribution to the national GDP was \$19.7 billion.³⁶ This also means that international students sustained around 118,206 jobs in Ontario.³⁷

In simple terms, we can calculate that, in 2018, international students added around \$32,927 per student to Ontario's GDP. Further, if we multiply the estimate of individual contribution from 2018 to the total number of study permits issued to Conestoga students since 2018, we can estimate that the college has added over \$1.6 billion to Ontario's GDP in the past five years.

Please see details in Appendix 4: Labour Force Needs

Conestoga is seen as a respected educational institution that supplies highly qualified labour locally and nationally.





In addition to their talent, international students also contribute over \$22.3 billion per year to the Canadian economy.³³

The evidence in this report supports the view that Conestoga's international students, when they choose to remain as permanent residents, make a positive contribution to the economic well-being of our community.

■ Relationship to the Temporary Foreign Worker Program

The Conference Board of Canada rightly raises concerns over the recent expansion of the Temporary Foreign Worker program (TFW).³⁸ The residential status of TFWs in Canada is often tied to their employer, which means a TFW depends on their employer. By implication, this dependence “creates a power imbalance that leaves TFWs vulnerable to exploitation, including a heightened risk of being overworked or housed in unsafe conditions.”³⁹ Unlike TFWs, international students attending Canadian colleges and universities have no such dependence on their employer and are therefore less vulnerable to exploitation when they seek work permitted by their student visa, not to mention the support that is provided by their host institution. Conestoga provides such vital support.⁴⁰

Then there is concern about the impact that TFWs make on the local economies. Specifically, “access to low-wage TFWs risks undermining real wage growth and worsening income inequality” because “most TFWs are recruited to fill low-wage job vacancies that tend to require little or no training.”⁴¹ Indeed,

Cardoso et al. recently found that every low-skilled TFW correlates with a 0.57 per cent decrease in the wages of the lowest-wage workers in the same firm.⁴² [The discussion of the incentives that drive the hiring decisions at the expense of the lowest-wage earners is beyond the scope of this report.]

The evidence in this report supports the view that Conestoga's international students, when they choose to remain as permanent residents, make a positive contribution to the economic well-being of our community. We believe that education and training provided at Conestoga and other colleges in the country are the most effective means to support wage growth and income equality. This report presents evidence of how the college supports the vulnerable members of our community through investments into the new skilled trades campus in Cambridge, Continuing Education, expansion of Corporate Training, Upgrading and Skills Development as well as career advising at the Community Career Centre. These developments would not have been possible without the provision of competitive education and training for international talent.

Continuing Education and Micro-credentials



Conestoga's Continuing Education program began in 1968 at the Doon campus.⁴³ In 2016, we noted the importance of Conestoga's Continuing Education to be on par with the regular certificate, diploma, degree and graduate certificate programs. In the last decade, the labour force in the region has had to account for emerging occupations and the rapid advances in technology. In other words, today's economy makes the need for re-training and up-skilling even more acute. As a result, we believe that the importance of Conestoga's Continuing Education programs will only grow. One of Conestoga's most vital roles is to ensure the economy can continue to adapt by making sure the local labour force is able to respond to the needs of emerging jobs and changing demands for knowledge and skills.

We know that economic prosperity is directly related to the quantity *and* quality of human capital, understood as skills, knowledge, and experience, and that existing workers can increase their potential for productivity and earnings through education and skills training. Through this development of human capital, Continuing Education at Conestoga makes a strong ongoing contribution to the adaptability of the labour force.

As demonstrated in Table 24, the college had 993,555 course registrations by 602,387 individuals between 1990 and 2022. Considering many CE students take multiple courses over a number of years, counting each of these students only once shows that 256,114 unique individuals have taken at least one CE course during this 32-year period with the average of four courses per student.

Among these students are 24,532 individuals who were awarded a certificate or diploma through

Continuing Education and became CE graduates, 19,887 of which are first-time graduates of Conestoga while the remaining 4,645 recognized the benefits of Conestoga training and have come for an additional credential. These certificate or diploma graduates were counted in the previous total of graduates in Table 2.

The increasing number of online offerings has allowed the college to attract students from beyond the local area. Out of the 256,114 new unique CE students between 1990 and 2022, 250,405 (98 per cent) had addresses in Ontario, of which 169,829 (66 per cent) had addresses in the college's local region. The proportion of new CE students from outside the region rose from 20 per cent in 1990 to 31 per cent in 2022.

Given that Conestoga's CE activity began in 1968, it is difficult to count accurately the local CE participation levels before 1990. In 2016, we conservatively



One of Conestoga's most vital roles is to ensure the economy can continue to adapt by making sure the local labour force is able to respond to the needs of emerging jobs and changing demands for knowledge and skills.

estimated earlier participation levels by using about half of the participation counts for the earliest year of data (5,000 new students per year) to project back the counts for the decade between 1980 and 1990.⁴⁴ Adopting the same approach, we have estimated that a total of 219,829 local unique individuals have enrolled in Conestoga CE courses since 1980. This is a conservative estimate given the population of Waterloo Region rose as a proportion of the Ontario population during that period. Thus, since CE courses were offered before 1980, we are certain that *at least* 219,829 local individuals took advantage of Conestoga's Continuing Education.

The details of the locations from which Conestoga's CE students take courses are presented in Table 25.

As in our previous reports, we have continued our effort to understand why so many members of the community are involved with Conestoga. In 2023, we conducted a survey of Conestoga's CE students where they chose from two sets of reasons for furthering their education: advancing their career or personal fulfilment.

A survey of CE students administered in summer 2023 concluded that 22 per cent pursued a personal interest or sought personal development and fulfilment. Meanwhile, 77 per cent took courses for career-related reasons. Effectively, this means that 185,177 local individuals took CE courses to advance their career or employability and 48,362 local individuals took CE courses related to their personal interests.

Furthermore, we are assuming that the 24,532 CE students who are also graduates earned their certificate or diploma for career-related purposes. Also, we assume the proportion of CE graduates who live in the local region is similar to that of the Conestoga graduates overall. Thus, we estimate that 15,909 CE graduates live in the local region and include them in the total of 185,177 local career-related CE students.⁴⁵

As in the case with Conestoga's graduates, we cannot assume that all career-related CE students are employed. However, we can assume the proportion

of CE graduates who are employed is similar to that of Conestoga graduates. Therefore, we estimate that 12,091 local CE graduates and 128,644 local CE students are employed.⁴⁶ Effectively, this means that 33 per cent of local residents who are employed relied on Conestoga's Continuing Education to advance their careers or workplace skills. The fact that a single institution has served a third of the area's employed population is remarkable. It is a testament to Conestoga's central role in the community's economic life.

Undoubtedly, a healthy and dynamic economy requires ongoing renewal in the labour market, which in turn requires individuals to retrain repeatedly. The total number of career-related course registrations draws the scale of retraining activity at Conestoga: since 1990, Conestoga has delivered an estimated 765,000 separate training experiences. Each one adds to the adaptability of the local economy and its long-term potential.

The sheer scale of the training provided at the college makes it clear that continuing education courses are essential means for workers' adaptation to the changing economy. In modern economy, the simple truth is that the older worker either adapts or faces the risks of economic insecurity. For those who lack the appropriate educational background, Conestoga offers to help them prepare for further studies. Through the provision of this minimum condition for economic success, Conestoga makes a vital contribution to those who would otherwise be disadvantaged.

Serving the economic interests of the population, however, is not the only factor that adds value to Conestoga's role in the community. Although often used as a critical insight on immigration, the quote from Swiss author Max Frisch "we wanted workers... but we got people instead" also draws attention to the importance of personal development and self-fulfilment outside one's role as a participant in the economy.⁴⁷ Continuing Education at Conestoga is aware of the significance of offering courses that serve

the needs of a human being, not just a worker. By 2023, about 7 per cent of the local adult population pursued their personal interests at Conestoga (see Table 28). This means that Conestoga is also making a major contribution to the local community's well-being and intangible quality of life. There is no doubt that access to a facility that contributes to personal fulfilment directly contributes to a community's quality of life.

In addition to courses, Continuing Education at Conestoga offers skills testing and apprenticeship exemption tests, which are available for students and non-students alike (see Table 29). Skills and apprenticeship exemption tests serve an essential step in the mobilization of human capital because undocumented skill can limit its use unnecessarily. Workers must not only have the requisite skills; they need to be *seen* to have them. Moreover, this formal recognition of skill can facilitate the ability of workers to change employers, adding mobility to the labour force.

Please see details in Appendix 5: Work-related Continuing Education.

■ Micro-credentials

Continuing Education at Conestoga is evolving in response to the demands in the local community. One of the more recent demands have been micro-credentials, which are growing as means for individuals to keep up with the rapidly changing

labour market. As with testing services, micro-credentials are another important way to document and recognize the attainment of a skill.

This growth in micro-credentials is unsurprising given that the technological advancements have increased the degree of "skills-bias"⁴⁸ in the labour market. Moreover, the recent advancements in Artificial Intelligence (AI) and IT in general have only intensified the need for skills training because, without any adaptation in post-secondary education, the technological bias towards skills will likely exacerbate economic inequality in our community.⁴⁹

The demand for rapid and flexible skills-based training is evident in the growing number of micro-credentials offered at the college. In 2021, Conestoga offered 51 micro-credentials. By 2022, the number rose to 61 and by the end of 2022, the college was offering 75 micro-credentials that cover 11 areas of interest including business, IT, creative industries, health and life sciences, teaching and education, as well as technology and trades.⁵⁰

Micro-credentials are gaining prominence not only in Continuing Education, but also in corporate training as employers begin appreciating the efficiency with which rapid skills training satisfies the demands of a competitive and dynamic economy. Conestoga's role in making micro-credentials available for employers is presented in the following section.



The sheer scale of the training provided at the college makes it clear that continuing education courses are essential means for workers' adaptation to the changing economy.

Corporate Training



Conestoga also contributes to labour force renewal by directly serving the specific training needs of employers in the region. Corporate Training offered at Conestoga consists of educational programs designed to equip professionals with knowledge and skills relevant to their industry or occupation. Often, students who attend Corporate Training services are sponsored by their employer. Our available records show that Conestoga has served at least 429 employers since 2005.

Taken broadly, Corporate Training services at Conestoga can be categorized into pre-hire assessments, workshop training, course training, micro-credential training, and programs such as Supportive Care. The training sessions can be as short as a few hours or as long an intensive 44-week course. Often, Corporate Training courses are short-term and focus on (practical) training aimed at enhancing performance, productivity, technical skills, and workplace culture. They cover a wide range of topics from leadership to specific technical skills in a wide range of industries. The courses are often tailored to the specific needs and objectives of the corporate client. Also, like many other students at Conestoga, corporate-sponsored students can attend their training online, in Conestoga's facilities, or at the employer's workplace. The needs of shift workers are also accommodated.

Regional employers also use the full suite of available training via the college's Continuing Education. For example, it is possible to find a corporate-sponsored student in a Food Safety Certification course. The fact that the corporate-sponsored students take courses outside the specifically designed Corporate Training offerings poses a methodological challenge. Namely, it is hard to precisely count the total number of corporate-sponsored students who were served by Conestoga in the last six years. Here, we shall remain consistent with our conservative approach that prefers under-representation to over-representation. Therefore, the data provided below is based on the information that we can confirm in the college's Student Information System as directly associated with Corporate Training services.

Conestoga's Corporate Training services maintain pace with the changes in the labour market by virtue of their continuous efforts in ensuring that the approaches are custom-designed and highly flexible. Given the range of demands in the labour market, the college is also sensitive to how every approach depends on context. For example, the facilitation of either social or economic change can be as effective via a small impact on many people as it is via a major impact on few. Thus, it is critical not to undervalue the contributions made by short training sessions. The active involvement of many employers as partners validates Conestoga's approach. Furthermore, their continued willingness to sponsor the training of their employees at Conestoga is testament to the value that is being added to the local economy.

The college's records from 1990 to 2022 show a total of 107,365 corporate training registrations by 65,683 individuals. Of these individuals, 38,199 are new unique students with no previous student record at Conestoga. Since corporate training is organized for employers, we proceed with the assumption that all 38,199 of these individuals are employed and work in the local labour force (see Table 30).

In 2021 and 2022, there was a sharp rise in total course registrations as a result of a new development at Conestoga. Recently, the college started offering over 90 courses that are associated with 24 Teaching and Learning micro-credentials.⁵¹ Most notably, they are available free of charge to all Conestoga employees, including part-time staff. This can be considered Corporate Training because the college, as an employer, sponsors the participation of its

employees in training activities to improve the quality of teaching. Furthermore, Teaching and Learning offerings for part-time faculty enables them to contribute outside Conestoga and take part in the labour market with a competitive advantage.

If we compare Table 30 and Table 31, we see that 71 per cent of total CT course registrations in 2021 and 2022 were by Conestoga employees sponsored by the college. Shifting our attention to comparing the number of individual CT students in both tables, we see that Conestoga’s employees made up 59 per cent of individual CT students in the same period.

Note that the majority of the 38,199 Corporate Training students in Table 30 are not Conestoga employees. The sharp spike in Corporate Training

students is only observed in 2021 and 2022, when in order to support quality and adjustment to hybrid teaching, the college implemented a requirement for all faculty to take four Teaching and Learning courses as part of the Teaching at Conestoga micro-credential. The number of individual employees who took the Teaching at Conestoga micro-credential courses was equal to 74 per cent of the total individual college employees who took CT courses at Conestoga between 2016 and 2022. Table 31 and Table 32 provide the details of these spikes which are not expected to repeat.

Please see the details in Appendix 6:
Corporate Training



Conestoga’s Corporate Training services maintain pace with the changes in the labour market by virtue of their continuous efforts in ensuring that the approaches are custom-designed and highly flexible.

Upgrading and Skills Development



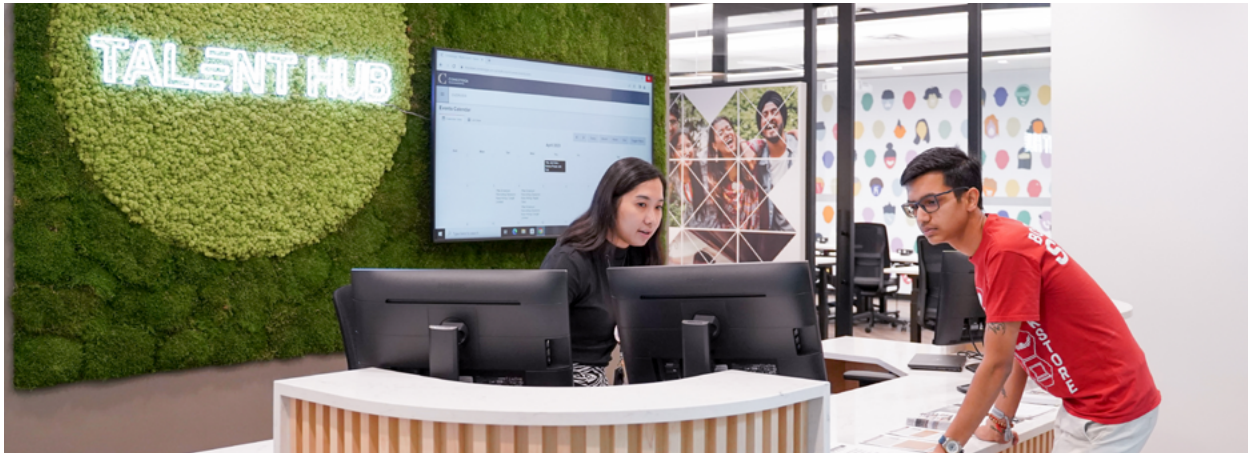


Conestoga's Upgrading and Skills Development⁵² as well as its Community Career Centre continue to play a vital role in the economic and social health of the local area. Beside their contributions to helping the local labour force adapt to the changing demands of the job market, we would like to highlight the role these Conestoga services have in helping the most at-risk people facing the challenges of changing times. Particularly, they offer services for the unemployed and underemployed youth and adults who require retraining or employment supports. They also help people who want to change careers and high school graduates who wish to upgrade or address deficiencies.

The college's Upgrading and Skills Development area aims to make upgrading one's education easy through four core services: Academic Upgrading, College Bound, Academic and Career Entrance (ACE), and General Education Development (GED). Academic Upgrading and College Bound are part of the Employment Ontario program, which is partly funded by the federal and provincial governments. The former allows individuals to prepare for future learning or employment while the latter offers a six-week program aimed at helping people discover their interests, explore the possibilities to attend a college, and learn how to start their post-secondary journey. ACE is a tuition-free program that helps adults prepare for college by helping them obtain Grade 12 equivalency. The GED is an Ontario high school equivalent certificate that is recognized by

the Ontario government, employers, and educational institutions. All the Upgrading and Skills Development services can be customized to fit individual needs with dedicated staff available to assist at every step.

The Community Career Centre under the Talent Hub⁵³ offers three main services to the local community: the Better Jobs Ontario program, newcomer advising, and job search support including employer services. Better Jobs Ontario is partly funded by the governments of Canada and Ontario. It helps individuals who have been laid off or come from a low-income household organize their learning path towards employment or a second career. Meanwhile, newcomer advising plays a critical role in helping internationally trained newcomers adapt to the demands of the local labour market. Arguably, given the current trends and




emphasis on the role of immigration in economic development, the college has been making critical impact on the local economy by helping accelerate newcomers' settlement in the local community. Job search support services offer customized assistance to improve access to employment opportunities, reduce the length of time that people are out of the workforce, and support employers recruit and train staff. Furthermore, the Community Career Centre helps employers invest in their workforce via the Canada-Ontario Job Grant, for which Conestoga is the local western region service provider. The Community Career Centre is part of the Talent Hub at Conestoga College.

Conestoga's Talent Hub is a one-stop talent development hub providing virtual and in-person support for career and employment advising, co-op

and work-integrated learning services and supports, as well as employer services. The Talent Hub services students, alumni, and community job seekers at every step of their career and employment journey.

Since 2002, the college's Upgrading and Skills Development and the Career Centre have served 81,938 students or clients. Some of those who used these services have entered the college's regular programs. Although we do not have information on how many of the students and clients are employed, we can argue that this scale of activity has benefitted many who would otherwise be unemployed or underemployed.

Please see details in Appendix 7: Upgrading and Skills Development



Given the current trends and emphasis on the role of immigration in economic development, the college has been making critical impact on the local economy by helping accelerate newcomers' settlement in the local community.

Summary Contribution



The above information has demonstrated that Conestoga continues to make a major and indispensable contribution to the adaptability of the local economy and the community’s intangible well-being. The evidence shows the college is the primary adult educator in the local area with an immense scale and diversity of activity. It serves the widest range of community members starting from high school graduates to university graduates to older workers, from individuals who are academically well-prepared and those who have not yet had a chance to engage in sophisticated academic training, from those who face few barriers to employment to those who face more obstacles.

We have found that Conestoga has served more than half (53.6 per cent) of the local adult population. If we focus on workplace skills only and only those who are estimated to be working, we find that the college has trained at least 58.9 per cent of local resident employment. Please see the summary in Table 1 below.

Conestoga College remains without a rival in terms of its contribution to the economic and social success of the local area.

TABLE 1: CONESTOGA’S SUMMARY CONTRIBUTION TO THE LOCAL AREA⁵⁴
 Source: Office of Institutional Research and Planning; Statistics Canada

	NUMBER	PER CENT OF ESTIMATED ADULT POPULATION
College Graduates ⁵⁵	112,023	16.3%
Continuing Education Students ⁵⁶	217,631	31.7%
Corporate Training Participants	38,199	5.6%
Total	367,853	53.6%
Upgrading and Skills Development ⁵⁷	81,938	11.9%
	NUMBER	PER CENT OF ESTIMATED EMPLOYMENT
College Graduates Employed ⁵⁸	85,123	19.9%
CE Students Employed	128,644	30.1%
Corporate Training Participants ⁵⁹	38,199	8.9%
Total	251,966	58.9%



Conestoga College remains without a rival in terms of its contribution to the economic and social success of the local area.

Appendices

APPENDIX 1: ESTIMATED RESIDENTIAL LOCATION OF CONESTOGA GRADUATES

Alumni Services at Conestoga maintains a record of contact and location information of certificate, diploma, degree, and graduate certificate holders. The information is first collected after graduation and via periodic update surveys. Alumni Services also maintains a relationship with the alumni community via the Conestoga Community Portal, where graduates can start a Conestoga Alumni Account with access to numerous benefits and discounts for various services at the college.⁶⁰

According to the most recent updated data, 93% of alumni are listed as “active” by the end of 2022. In other words, out of 172,745 graduates, 161,470 have not unsubscribed from communications. This significant proportion of active alumni ought to be celebrated as a success in maintaining contact between Conestoga and its alumni. This success is also reflected in the improving trend: in 2022, the proportion of active alumni increased by 9.5 per cent since 2016.

It is safe to assume that our graduate count underrepresents the actual number of Conestoga graduates. The college offers a wide range of evolving training services and designations (e.g., certificates of achievement, micro-credentials, etc.), the graduates of which are not included in the alumni data. Since our preferred method is to underestimate, we will proceed with the numbers above.

Graduates are listed as “inactive” when they express a wish not to be contacted by Alumni Services. Alumni have an opportunity to make that choice in every outreach activity such as graduate surveys, newsletters, and targeted emails about offerings and opportunities for alumni. Also, they can contact the Alumni Office directly and express their wish not to be contacted by the college. So far, about 7 percent of the graduates are inactive. In 2016, we reported 21 per cent of graduates as inactive. The trends clearly indicate a positive relationship between the college and its alumni. We have attempted to accurately reflect the residential location of Conestoga’s graduates by assigning the inactive graduates to various locations proportionally. In other words, we assume that the distribution of inactive graduates reflects similar residential choices as do the active graduates.

Given the number of active graduates is a sufficiently large proportion of the total, we are convinced that assigning locations in the manner described above is realistic. Furthermore, in our analysis, we have not identified a good reason to believe the inactive graduates have significantly different residential preferences from the active graduates.

In fact, alumni records keep the last known address of the graduates who are inactive. We treated it as an opportunity to validate our assignment method by comparing the last known address of inactive graduates with the current address of active graduates. When expressed as the proportion of the total, the distribution of last known postal codes of residential locations is similar to the distribution of current postal codes. For example, 52.6 per cent of the active graduates live in Waterloo Region and 52.7 per cent of the inactive graduates’ locations were in Waterloo Region. Looking beyond the region, we see that 65 per cent of the active graduates live in the local area⁶¹ while 67 per cent of the inactive locations were in the same local area.

The similarity between the distributions of the locations of active and inactive graduates suggests that the two groups are alike in terms of their residential whereabouts. Thus, our assignment method represents a realistic estimate of the location of Conestoga’s graduates (see Table 3 details).

TABLE 2: CONESTOGA'S GRADUATES: NUMBER AND LOCATION⁶²

LOCATION	TOTAL NUMBER OF GRADUATES DECEMBER, 2022	PER CENT OF TOTAL GRADUATES
Total	172,745	
Canada	170,843	98.9%
Ontario	166,673	96.5%
Local Area	112,023	64.8%
Waterloo Region	90,965	52.7%
Kitchener CMA ⁶³	87,240	50.5%
Guelph	13,913	8.1%
Guelph/Eramosa	787	0.5%
Puslinch	333	0.2%
Stratford	2,539	1.5%
Brantford	3,486	2.0%

TABLE 3: CONESTOGA GRADUATES BY ADDRESS AND ASSIGNED LOCATION 2022

Source: Conestoga College Alumni Services and Office of Institutional Research and Planning

LOCATION	ACTIVE ADDRESSES	PER CENT OF TOTAL ACTIVE ADDRESSES	LAST KNOWN ADDRESSES OF INACTIVE GRADUATES	PER CENT OF TOTAL LAST KNOWN ADDRESSES OF INACTIVE GRADUATES	LAST KNOWN ADDRESSES OF INACTIVE GRADUATES ASSIGNED BY ACTIVE PER CENT	GRADUATES BY ASSIGNED LOCATION
Total	147,421	100%	25,328	100%	25,328	172,749
Canada	145,657	98.8%	25,186	99.4%	25,025	170,495
Ontario	141,850	96.2%	24,782	97.8%	24,371	165,752
Waterloo Region	77,606	52.6%	13,359	52.7%	13,333	84,908
Kitchener CMA	74,430	50.5%	12,810	50.6%	12,788	81,164
Guelph	11,615	7.9%	2,298	9.1%	1,996	11,824
Guelph/Eramosa	647	0.4%	140	0.6%	111	649
Puslinch	282	0.2%	51	0.2%	48	281
Brantford	3,136	2.1%	350	1.4%	539	3,148
Stratford	1,849	1.3%	690	2.7%	318	1,852
Local Area	95,135	65%	16,888	67%	16,345	111,480

Another way to look at the validity of the number of assigned locations is to compare 'Graduates by Assigned Location' column against the result of adding together the 'Active Addresses' and the 'Inactive Addresses' by each location. Although the difference is larger where there is a smaller base, for example in Stratford, the important point is that our methodology underestimates, which is our preferred intention throughout the methodology of this report (see Table 4).

TABLE 4: CONESTOGA GRADUATES BY ASSIGNED LOCATION AND THE SUM OF LOCATIONS OF ACTIVE AND INACTIVE GRADUATES 2022

Source: Conestoga College Alumni Services and Office of Institutional Research and Planning

LOCATION	ACTIVE ADDRESSES	LAST KNOWN ADDRESSES OF INACTIVE GRADUATES	TOTAL ACTIVE AND INACTIVE	GRADUATES BY ASSIGNED LOCATION
Total	147,421	25,328	172,749	172,749
Canada	145,657	25,186	170,843	170,682
Ontario	141,850	24,782	166,632	166,221
Waterloo Region	77,606	13,359	90,965	90,939
Kitchener CMA	74,430	12,810	87,240	87,218
Guelph	11,615	2,298	13,913	13,611
Guelph/Eramosa	647	140	787	758
Puslinch	282	51	333	330
Brantford	3,136	350	3,486	3,675
Stratford	1,849	690	2,539	2,167
Local Area	95,135	16,888	112,023	111,480

APPENDIX 2: ESTIMATED NUMBER OF LOCAL GRADUATES EMPLOYED

While we know how many Conestoga graduates live in the local area, we need to estimate how many are employed. The fact is that not everyone living in the area is working or working locally.

An estimation of the number of graduates working can be made by assuming that the ratio of Conestoga graduates who are working is equal to the employment ratio in their respective locations. Our estimation adopts the method of applying the employment ratio at each relevant location based on the 2022 Labour Force Survey (LFS), where the employment rates can be parsed according to age and location. As Table 6, Table 7, and Table 8 demonstrate, the employment rate for college graduates aged 25-54 reported in the 2022 LFS coincides with Conestoga’s reported graduate employment rate.

Given the demographic profile of Conestoga graduates, we have no reason to assume the percentages for Conestoga graduates are significantly different from the rates of where they are located.

Our confidence in the demographic profile of Conestoga graduates stems from the age distribution we are able to calculate based on the alumni database. We have age information for the 92 per cent (158,689) of graduates. Where age information is missing, the known average age of graduates by graduating year was applied in order to accurately reflect the probable age distribution. This is a sound approach given the number of graduates with age information represents such a large proportion of the total and therefore provides us with a reliable sample. The assignment of average age procedure should therefore represent a realistic estimate of the age distribution of all Conestoga graduates (see Table 5).

TABLE 5: ASSIGNMENT OF CONESTOGA GRADUATES BY AGE GROUP 2022

Source: Conestoga Alumni Office and Office of Institutional Research and Planning

GRADUATING YEAR	# OF GRADUATES VALID AGE = YES	# OF GRADUATES VALID AGE = NO	AVERAGE AGE OF VALID YEARS AS OF 2022	# OF GRADUATES ASSIGNED TO 15-24 YRS.	# OF GRADUATES ASSIGNED TO 25-54 YRS.	# OF GRADUATES ASSIGNED TO 55-64 YRS.	# OF GRADUATES ASSIGNED TO 65+ YRS.	GRAND TOTAL
1969	11	66	78				77	77
1970	23	170	75				193	193
1971	29	237	72			2	264	266
1972	56	309	72			2	363	365
1973	46	319	71			1	364	365
1974	59	294	71			1	352	353
1975	117	548	70			1	664	665
1976	125	572	69			1	696	697
1977	142	531	68			6	667	673
1978	118	498	67			17	599	616
1979	134	522	65			58	598	656
1980	188	596	65			93	691	784
1981	190	576	65			126	640	766
1982	298	1474	64			1,687	85	1,772
1983	367	1268	64			1,545	90	1,635
1984	927	650	62			1,412	165	1,577
1985	1310	608	61			1,709	209	1,918
1986	1281	558	61			1,598	241	1,839
1987	1201	727	60		22	1,706	200	1,928
1988	1074	575	60		66	1,392	191	1,649
1989	1212	614	60		193	1,362	271	1,826
1990	1295	673	59		438	1,269	261	1,968
1991	1252	797	59		541	1,263	245	2,049
1992	1567	99	58		761	661	244	1,666
1993	2238	7	59		979	703	563	2,245
1994	2295	15	59		1,081	654	575	2,310
1995	2517	10	58		1,216	684	627	2,527
1996	2297	22	57		1,221	565	533	2,319
1997	2154	11	56		1,272	461	432	2,165
1998	2426	12	55		1,471	530	437	2,438
1999	2372	8	54		1,534	465	381	2,380
2000	2196	11	52		1,518	380	309	2,207
2001	2685	6	52		1,763	561	367	2,691
2002	2694	3	50		1,951	477	269	2,697
2003	2976	20	49		2,211	523	262	2,996
2004	3010	12	47		2,416	425	181	3,022
2005	2912	50	46		2,405	364	193	2,962
2006	2694	55	45		2,259	345	145	2,749
2007	3328	99	44		2,875	372	180	3,427
2008	3980	70	43		3,461	416	173	4,050
2009	4422	2	43		3,727	499	198	4,424
2010	4757	2	42		3,984	519	254	4,757
2011	4843	4	40		4,315	380	150	4,845
2012	5106	4	39		4,604	397	109	5,110
2013	5112	0	37		4,781	245	86	5,112
2014	5384	0	36		5,029	282	73	5,384
2015	5610	0	35	1	5,262	284	63	5,610
2016	6041	0	35	45	5,635	309	52	6,041
2017	6005	0	33	163	5,606	199	37	6,005
2018	6685	0	32	468	6,037	153	27	6,685
2019	8669	0	30	1,066	7,473	116	14	8,669
2020	11197	0	29	2,092	9,001	100	4	11,197
2021	10418	1	28	3,160	7,132	121	6	10,419
2022	18644	0	28	5,052	13,442	142	8	18,644
Grand Total	158,689	13,705		12,047	117,682	27,583	15,078	172,390
% of Total	92%	8%		7%	68%	16%	9%	

TABLE 6: EMPLOYMENT RATES BY AGE AND LOCATION 2022 LABOUR FORCE SURVEY

Source: Statistics Canada

AGE GROUP	2022 ONTARIO EMPLOYMENT RATE OF COLLEGE GRADUATES (%) ⁶⁴	2022 KITCHENER CMA EMPLOYMENT RATE, ALL EDUCATION LEVELS (%) ⁶⁵	2022 BRANTFORD EMPLOYMENT RATE, ALL EDUCATION LEVELS (%) ⁶⁶	2022 GUELPH EMPLOYMENT RATE, ALL EDUCATION LEVELS (%) ⁶⁷
15+	67	65.5	64.4	67.6
15-24	76.8	55.7	64.5	66.1
25+	66.3	67.4	64.4	67.9
25-44	86.8	85.2	84.9	85.4
45+	53.7	53.2	48.6	56
25-54	86.3	85	84.3	86.1
55+	40.1	37.5	35.6	41.1
55-64	66.4	65.6	67.4	74.3
65+	16	14.5	11.4	15.4

TABLE 7: ONTARIO EMPLOYMENT RATE BY EDUCATION, LABOUR FORCE SURVEY (AGES 25-54)

Source: Statistics Canada⁶⁸

	2016	2017	2018	2019	2020	2021	2022
Total, all education levels	80.8	81.4	81.8	82.4	78.4	81.3	83.9
0 to 8 years	47.5	53.5	49.5	48.5	46.1	46.5	55.3
Some high school	58.4	57.9	60.1	58.4	56.2	59.4	60.7
High school graduate	74.4	75.3	73.5	74.6	69.9	71.8	75.9
Some post-secondary	73	74.8	76.1	72.9	68.9	69.9	77.8
Post-secondary certificate or diploma	84.8	84.6	86	86.7	81	83.3	86.3
University degree	86	86.7	86.3	86.8	83.8	87.2	87.9
Bachelor's degree	85.5	86.6	86	86.5	83.2	86.2	87.3
Above bachelor's degree	86.9	87	86.9	87.3	85	89.1	89.2

TABLE 8: GRADUATE EMPLOYMENT RATE AT SIX MONTHS AFTER GRADUATION, CONESTOGA COLLEGE

Source: Ontario Ministry of Colleges and Universities⁶⁹ ; Conestoga College, Office of Institutional Research and Planning

	2016-17 KPI (2015-16 GRADS)	2017-18 KPI (2016-17 GRADS)	2018-19 KPI (2017-18 GRADS)	2019-20 KPI (2018-19 GRADS)	2020-21 KPI (2019-20 GRADS)	2021-22 KPI (2020-21 GRADS)
Official KPI ⁷⁰	86.4%	89.3%	88.3%	86.9%	83.2%	86.2%
Domestic	85.8%	88.7%	89.2%	87.2%	82.0%	85.9%
International	68.8%	84.4%	84.7%	82.0%	76.7%	84.8%

TABLE 9: LOCAL EMPLOYMENT 2022

LOCATION	2016 CENSUS ⁷¹	2021 CENSUS ⁷²
Waterloo Region	277,785	283,810
City of Guelph	71,070	71,280
Guelph/Eramosa	7,240	7,170
Puslinch	4,020	4,010
Stratford	16,345	15,465
City of Brantford	46,540	45,825
Total Local	423,000	427,560

TABLE 10: NUMBER AND PER CENT OF TOTAL COLLEGE GRADUATES (INCLUDING SKILLED TRADES)

2022	TOTAL NUMBER OF COLLEGE GRADUATES (2021 CENSUS) ⁷³	NUMBER OF CONESTOGA GRADUATES LIVING IN LOCAL AREA ⁷⁴	CONESTOGA GRADUATES AS PERCENT OF TOTAL
Waterloo Region	121,565	90,965	74.8%
Guelph	27,445	13,913	50.7%
Guelph/Eramosa	3,565	787	22.1%
Puslinch	1,915	333	17.4%
Stratford	7,745	2,539	32.9%
Brantford	25,945	3,486	13.4%
Local Area	188,180	112,023	59.5%

Applying the employment rates based on age and location,⁷⁵ we can estimate that of the 112,022 graduates living in the local area, 85,123 are presently employed (see Table 11 below). Thus, we estimate that 76 per cent of the graduates living locally are employed, which is also consistent with the employment rate we reported in 2016 (73.3 per cent).

Note that at the time of this report, employment rates by age and education level were only available at the provincial level (see Table 6). Employment rates of Kitchener CMA, Brantford, and Guelph include all educational levels and are lower than the provincial employment rate of college graduates. Preferring to underestimate and apply specific employment rates by age and location wherever possible, the employment of graduates in Kitchener CMA, Brantford, and Guelph is estimated using the employment rate of respective populations that include all education levels in Table 6. We applied the provincial employment rates of college graduates to estimate graduate employment at locations such as Puslinch, the labour data for which is not broken down into the details that fit our purpose. The provincial employment rate of college graduates also serves as a benchmark for ensuring we are true to our conservative method. Thus, our estimated graduate employment rate of 76 per cent is an underestimation compared to the estimated 86.3 per cent employment rate among college graduates in Ontario. In other words, our graduates are likelier to be employed than our estimation (also see Table 8).

TABLE 11: CONESTOGA GRADUATES EMPLOYED, BY AGE AND LOCATION

LOCATION OF RESIDENCE	AGE GROUP	NUMBER OF GRADUATES	APPLICABLE RATIO (LFS 2022 RATE)	NUMBER EMPLOYED
Brantford	15-24	441	0.843	372
	25-54	2446	0.843	2,062
	55-64	385	0.674	259
	65+	214	0.114	24
Total		3,486		2,718
Guelph	15-24	625	0.861	538
	25-54	8630	0.861	7,430
	55-64	3,085	0.664	2,048
	65+	1573	0.154	242
Total		13,913		10,259
Guelph/Eramosa	15-24	36	0.861	31
	25-54	469	0.861	404
	55-64	181	0.743	134
	65+	101	0.154	16
Total		787		585
Puslinch	15-24	19	0.863	16
	25-54	212	0.863	183
	55-64	64	0.664	42
	65+	37	0.16	6
Total		332		248
Stratford	15-24	69	0.863	60
	25-54	1,265	0.863	1,092
	55-64	784	0.664	521
	65+	421	0.16	67
Total		2,539		1,739
Waterloo Region	15-24	6,089	0.85	5,176
	25-54	63,896	0.85	54,312
	55-64	13,786	0.656	9,044
	65+	7,194	0.145	1,043
Total		90,965		69,574
Total Local Area		112,022	NA	85,123
Ontario	15-24	11,779	0.863	10,165
	25-54	113,901	0.863	98,297
	55-64	26,658	0.664	17,701
	65+	14,328	0.16	2,292
Total Ontario		166,666		128,455

TABLE 12: CONESTOGA GRADUATES⁷⁶ EMPLOYED 2022

LOCATION	ESTIMATED NUMBER OF GRADUATES EMPLOYED ⁷⁷	TOTAL EMPLOYMENT ⁷⁸	CONESTOGA GRADUATES AS PERCENT OF EMPLOYMENT
Local Area ⁷⁹	85,123	427,560	20%
Ontario (inc. Local area)	128,455	6,492,890	2%

To estimate the economic contribution of Conestoga’s working graduates, we assume that the contribution to their employers is greater than their total employment compensation. Our estimate is based on the average employment income of Ontario college graduates (post-secondary certificate or diploma below bachelor, including the skilled trades) multiplied by the number of local working graduates. Thus, if the average employment income of Ontario college graduates in 2020 was \$48,680,⁸⁰ which is the most recent reliable figure for our purposes, we can estimate that the total annual income of Conestoga’s graduates living locally is at least \$4.1 billion today.

As a result, we can argue that the economic contribution of Conestoga’s working graduates to their employers and, by extension, to the local community is much more than \$4.1 billion each year since 2022.

Using the same approach, we can make a case that out of the 166,666 Conestoga graduates living in the province of Ontario, 128,455 have been employed and contributing over \$6.2 billion annually to Ontario’s economy since 2022.

APPENDIX 3: CONESTOGA’S ENTERPRISING GRADUATES

Conestoga’s alumni database has the employment information for 38,585 alumni, which makes up 22.34 per cent of the total alumni who graduated by December 2022. In 2016, we reported having the employment information of 20.1 per cent of total alumni. As in the previous report, the sample is broadly representative for our purpose. We will employ the sample to make assumptions about characteristics that are present in it.

In the alumni database, 1,801 (4.67 per cent of the sample) graduates described themselves as "owner", "founder", "employer", "partner", "freelancer", "independent", "co-owner", or "creator". We interpreted these descriptions as equivalent to entrepreneurship and applied the proportion to the total alumni population. As a result, we estimated that there must be approximately 8,063 entrepreneurs among the Conestoga graduates, 5,241 of whom live in the local area and 7,781 live in Ontario (see Table 13).

To validate our estimation, we tested the existing employment information in the alumni database for bias. Namely, we examined whether the employment information is abnormally clustered by reviewing the distribution of employment information by year of graduation. This technique allows us to address both the evolution of the college’s programs over time and the ages of the graduates. The conclusion is that the employment information is distributed broadly across the range of years of graduation.

As Table 14 demonstrates, the proportion of alumni with employment information ranges from 7.5 per cent to 42 per cent between 1969 and 2022. Assuming that our earliest graduates have not updated their employment information at the college and that our most recent graduates in the last four years only recently entered the

labour market, and therefore both groups have lower number of graduates with employment information, the distribution observed in Table 14 allows us to conclude that our estimates are based on a sample that is highly representative.

A further noteworthy discovery in our analysis presented in Table 14 is the number of graduates who have returned to Conestoga to enrol in a new program. Calculation of the difference between the number of graduations and the number of new alumni per year shows that, on average, around 1,985 alumni have returned to study at Conestoga in the last 10 years. Such record of returning alumni is a flattering indicator of the high quality and value of offerings at the college.

TABLE 13: ESTIMATED TOTAL NUMBER OF ALUMNI ENTREPRENEURS 2022

Source: Conestoga College Alumni Services and the Office of Institutional Research and Planning

	ALUMNI WITH EMPLOYMENT INFORMATION
Total	38,585
Entrepreneurs	1,801
Per cent entrepreneurs	4.67%
	Total
Conestoga graduates	172,745
Estimated Conestoga graduates who are entrepreneurs	8,063
Per cent of graduates in local area	64.8%
Estimated entrepreneurs in local area	5,241
Per cent of graduates in Ontario	96.5%
Estimated entrepreneurs in Ontario	7,781

TABLE 14: EMPLOYMENT INFORMATION BY YEAR OF GRADUATION 2022

Source: Conestoga College Alumni Services and the Office of Institutional Research and Planning

YEARS	TOTAL GRADUATIONS	TOTAL NEW ALUMNI (FIRST GRADUATION)	ALUMNI WITH EMPLOYMENT INFORMATION (COUNTS BASED ON FIRST GRADUATION)	PERCENTAGE OF YEAR
1969	81	80	6	7.5%
1970	197	196	22	11.2%
1971	271	270	28	10.4%
1972	372	369	44	11.9%
1973	373	371	49	13.2%
1974	368	367	59	16.1%
1975	689	687	100	14.6%
1976	718	715	107	15.0%
1977	697	694	122	17.6%
1978	640	631	124	19.7%
1979	670	667	150	22.5%
1980	812	811	184	22.7%
1981	797	794	211	26.6%
1982	1,913	1,872	315	16.8%
1983	1,730	1,700	258	15.2%
1984	1,713	1,659	272	16.4%
1985	2,071	2,023	308	15.2%
1986	1,979	1,923	350	18.2%
1987	2,090	2,030	368	18.1%
1988	1,796	1,722	698	40.5%
1989	1,988	1,924	572	29.7%
1990	2,221	2,130	589	27.7%
1991	2,374	2,225	384	17.3%
1992	1,918	1,809	352	19.5%
1993	2,636	2,446	478	19.5%
1994	2,736	2,494	730	29.3%
1995	2,947	2,675	521	19.5%
1996	2,768	2,438	942	38.6%
1997	2,577	2,246	943	42.0%
1998	2,830	2,526	622	24.6%
1999	2,756	2,413	560	23.2%
2000	2,594	2,199	547	24.9%
2001	3,225	2,697	610	22.6%
2002	3,091	2,709	632	23.3%
2003	3,446	3,072	673	21.9%
2004	3,508	3,179	737	23.2%
2005	3,340	2,995	739	24.7%
2006	3,233	2,904	775	26.7%

CONTINUED...

TABLE 14: EMPLOYMENT INFORMATION BY YEAR OF GRADUATION 2022...CONTINUED

Source: Conestoga College Alumni Services and the Office of Institutional Research and Planning

YEARS	TOTAL GRADUATIONS	TOTAL NEW ALUMNI (FIRST GRADUATION)	ALUMNI WITH EMPLOYMENT INFORMATION (COUNTS BASED ON FIRST GRADUATION)	PERCENTAGE OF YEAR
2007	4,015	3,568	878	24.6%
2008	4,801	4,193	1,041	24.8%
2009	5,330	4,592	1,230	26.8%
2010	5,740	4,892	1,281	26.2%
2011	5,847	4,958	1,465	29.5%
2012	6,226	5,252	1,739	33.1%
2013	6,113	5,123	1,535	30.0%
2014	6,676	5,533	1,833	33.1%
2015	6,833	5,581	1,552	27.8%
2016	7,294	6,049	1,538	25.4%
2017	7,196	5,887	1,414	24.0%
2018	8,409	6,867	1,508	22.0%
2019	11,113	8,992	1,369	15.2%
2020	13,530	10,739	1,630	15.2%
2021	13,847	10,869	1,566	14.4%
2022	19,159	14,678	1,801	12.3%

APPENDIX 4: LABOUR FORCE NEEDS

TABLE 15: ESTIMATED TOTAL NUMBER OF LOCAL COLLEGE GRADUATES 2022

Source: Statistics Canada

LOCATION	Census 2006		Census/NHS 2011 ⁸¹		2016 Census ⁸²		2021 Census ⁸³		TOTAL IN 2021 INCLUDING SKILLED TRADES
	COLLEGE GRADUATES EXCLUDING TRADES	TRADES	COLLEGE GRADUATES EXCLUDING TRADES	TRADES	COLLEGE GRADUATES EXCLUDING TRADES	TRADES	COLLEGE GRADUATES EXCLUDING TRADES	TRADES	
Waterloo Region	70,465	30,920	76,870	28,830	91,075	27,410	96,815	24,750	121,565
Guelph	15,860	6,725	22,075	8,180	21,210	5,440	22,585	4,860	27,445
Guelph/ Eramosa	NA	NA	NA	NA	2,405	845	2,815	750	3,565
Puslinch	NA	NA	NA	NA	1,340	495	1,465	450	1,915
Stratford	5,160	1,990	4,960	2,105	5,705	1,800	6,105	1,640	7,745
Brantford	NA	NA	NA	NA	19,040	5,695	20,690	5,255	25,945
Local Area	91,485	39,635	103,905	39,115	140,775	41,685	150,475	37,705	188,180

TABLE 16: ONTARIO JOB VACANCIES: EDUCATION LEVEL AND AVERAGE WAGE Q4 2022

Source: Statistics Canada⁸⁴

EDUCATION	JOB VACANCIES	PROPORTION OF JOB VACANCIES ⁸⁵	AVERAGE OFFERED HOURLY WAGE
No minimum level of education required	100,940	31.2%	\$18.75
High school diploma or equivalent	79,755	24.7%	\$20.35
Non-university certificate or diploma	78,305	24.2%	\$27.4
University certificate or diploma below bachelor's level	13,800	4.3%	\$35.2
Bachelor's degree	41,115	12.7%	\$40.95
University certificate, diploma or degree above the bachelor's level	9,190	2.8%	\$45.95
Total	323,105	100	

TABLE 17: ONTARIO JOB VACANCIES: OCCUPATION TYPE AND AVERAGE WAGE Q4 2022

Source: Statistics Canada⁸⁶

NATIONAL OCCUPATIONAL CLASSIFICATION	JOB VACANCIES	PROPORTION OF ALL OCCUPATIONS	AVERAGE OFFERED HOURLY WAGE	FULL-TIME VACANCIES ⁸⁷	PART-TIME VACANCIES ⁸⁸
Total, all occupations	323,100	100%	\$25.55	68.6%	31.4%
Sales and service	106,155	33%	\$17.75	49.5%	50.5%
Trades, transport and equipment operators	48,120	15%	\$25.8	91.6%	8.4%
Business, finance and administration	40,910	13%	\$26.95	79.2%	20.8%
Health	35,455	11%	\$30.9	47.5%	52.5%
Natural and applied sciences	25,030	8%	\$39.4	97.7%	2.3%
Education, law and social, community and government services	24,260	8%	\$27.05	55.5%	44.5%
Management	17,450	5%	\$42.3	97.1%	NA
Manufacturing and utilities	14,610	5%	\$20.45	97.6%	2.4%
Art, culture, recreation and sport	5,800	2%	\$23.6	40.7%	59.3%
Natural resources, agriculture and related production	5,160	2%	\$20.35	83.2%	16.8%

TABLE 18: ONTARIO JOB VACANCIES: OCCUPATION TYPE AND EDUCATION LEVEL Q4 2022

Source: Statistics Canada⁸⁹

NATIONAL OCCUPATIONAL CLASSIFICATION	NO MINIMUM LEVEL OF EDUCATION REQUIRED	HIGH SCHOOL DIPLOMA OR EQUIVALENT	NON-UNIVERSITY CERTIFICATE OR DIPLOMA, COUNT AND % OF TOTAL VACANCIES		UNIVERSITY CERTIFICATE OR DIPLOMA BELOW BACHELOR'S LEVEL	BACHELOR'S DEGREE	UNIVERSITY CERTIFICATE, DIPLOMA OR DEGREE ABOVE THE BACHELOR'S LEVEL	TOTAL VACANCIES ⁹⁰
Total, all occupations	100,940	79,755	78,305	24.2%	13,800	41,115	9,190	323,105
Health	635	1,995	19,195	54.1%	4,325	6,880	2,425	35,455
Trades, transport and equipment operators	19,250	13,590	15,080	31.4%	NA	45	NA	47,965
Business, finance and administration	5,235	11,860	11,690	28.6%	2,790	8,460	875	40,910
Education, law and social, community and government services	1,685	3,905	10,290	42.4%	1,525	4,190	2,670	24,265
Sales and service	57,925	35,920	9,920	9.3%	730	1,570	95	106,160
Natural and applied sciences	955	1,725	5,880	23.5%	2,405	12,695	1,370	25,030
Management	2,020	2,545	2,870	16.4%	1,745	6,605	1,665	17,450
Art, culture, recreation and sport	2,180	965	2,020	34.9%	95	460	75	5,795
Manufacturing and utilities	7,115	6,315	950	6.5%	25	205	NA	14,610
Natural resources, agriculture and related production	3,940	880	335	6.5%	NA	0	0	5,155

TABLE 19: ISSUED STUDY PERMITS BY PROGRAM TYPE – ONTARIO

Source: IRCC, data extends to September 30, 2022

YEAR	BACHELOR'S	APPLIED DEGREE	DIPLOMA	CERTIFICATE	COLLEGE - ESL/FSL	TOTAL
2018	27,586	1,775	54,999	21,155	4,381	109,896
2019	31,559	1,743	63,635	25,734	3,596	126,267
2020	22,509	1,255	36,571	18,283	1,580	80,198
2021	36,032	3,312	78,517	43,274	2,595	163,730
2022	35,499	3,104	87,882	53,654	2,446	182,585
Total	153,185	11,189	321,604	162,100	14,598	662,676

TABLE 20: ISSUED STUDY PERMITS BY PROGRAM TYPE – CONESTOGA

Source: IRCC, data extends to September 30, 2022

YEAR	BACHELOR'S	APPLIED DEGREE	DIPLOMA	CERTIFICATE	COLLEGE - ESL/FSL	TOTAL
2018	55	106	3,380	2,828	209	6,578
2019	68	90	4,605	4,374	220	9,357
2020	29	87	2,502	2,952	95	5,665
2021	62	443	6,284	7,402	156	14,347
2022	70	303	5,864	8,767	91	15,095
Total	284	1,029	22,635	26,323	771	51,042

TABLE 21: DISTRIBUTION OF TOTAL INTERNATIONAL STUDENTS ACROSS THE COLLEGE BY SCHOOL

Source: Conestoga Student Information System, Conestoga International Office

SCHOOL	2016	2017	2018	2019	2020	2021	2022
Applied Computer Science & IT	13.1%	11.8%	7.4%	7.5%	10.3%	8.7%	9.5%
Business	21.2%	28.3%	46.7%	38.4%	39.6%	38.9%	35.4%
Community Services	3.1%	2.4%	1.7%	2.8%	2.5%	1.8%	2.4%
Creative Industries	0.0%	0.0%	0.0%	1.8%	0.9%	1.4%	1.9%
Engineering & Technology	29.6%	24.9%	11.4%	9.2%	7.4%	4.7%	3.0%
Health & Life Sciences	13.1%	7.6%	3.7%	3.3%	2.9%	4.8%	3.2%
Hospitality & Culinary Arts	3.7%	3.2%	6.4%	6.8%	4.5%	4.5%	3.7%
Interdisciplinary Studies	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%
Liberal Studies	0.7%	1.2%	1.3%	2.0%	2.9%	2.2%	3.7%
Trades & Apprenticeship	7.5%	4.9%	1.9%	2.3%	1.4%	0.9%	0.7%
Workforce Development	0.0%	0.0%	9.3%	25.8%	23.8%	32.0%	36.6%

TABLE 22: POST-GRADUATE WORK PERMIT (PGWP) APPLICATIONS – CONESTOGA

Source: IRCC, data extends to October 31, 2021

YEAR	TOTAL NUMBER OF CONESTOGA INTERNATIONAL GRADUATES	TOTAL NUMBER OF PGWP APPLICATIONS ⁹¹	TOTAL PGWP APPLICATIONS APPROVED	TOTAL PGWP APPLICATIONS REFUSED	PER CENT OF INTERNATIONAL GRADUATES WHO APPLIED FOR PGWP	IRCC APPROVAL RATE OF PGWP APPLICATIONS FROM CONESTOGA GRADUATES
2017	908	725	717	8	80%	99%
2018	1,753	1,452	1,438	14	83%	99%
2019	3,543	2,941	2,914	27	83%	99%
2020	6,089	4,982	4,952	30	82%	99%
2021	5,173	4,675	4,645	30	90%	99%
Total	17,466	14,775	14,666	109	85%	99%

TABLE 23: POST-GRADUATE WORK PERMIT (PGWP) APPLICATIONS – NATIONAL

Source: IRCC, data extends to October 31, 2021

	TOTAL NUMBER OF PGWP APPLICATIONS ⁹²	TOTAL PGWP APPLICATIONS APPROVED	TOTAL PGWP APPLICATIONS REFUSED	IRCC APPROVAL RATE
2017	53,415	51,642	1,773	97%
2018	77,591	75,075	2,516	97%
2019	104,396	101,880	2,516	98%
2020	131,734	129,690	2,044	98%
2021	127,263	125,299	1,964	98%
Total	494,399	483,586	10,813	

APPENDIX 5: WORK-RELATED CONTINUING EDUCATION

TABLE 24: CONESTOGA'S CONTINUING EDUCATION STUDENTS 1990-2022

Source: Conestoga College Student Information Systemz

YEAR	TOTAL CE COURSE REGISTRATIONS	NUMBER OF INDIVIDUAL STUDENTS REGISTERING FOR CE COURSE(S) ⁹³	NEW UNIQUE INDIVIDUALS ⁹⁴	TOTAL CE GRADUATES	FIRST-TIME CE GRADUATES ⁹⁵
1990	24,702	17,735	12,005	232	224
1991	26,997	18,792	11,815	322	309
1992	31,286	20,724	11,880	84	79
1993	31,817	20,435	10,889	500	436
1994	31,679	20,409	9,867	631	555
1995	33,040	20,838	9,874	797	701
1996	33,148	20,037	8,875	734	612
1997	31,280	19,124	8,015	798	628
1998	32,129	19,808	8,344	752	607
1999	31,950	19,461	7,946	731	554
2000	34,764	20,341	8,113	608	420
2001	34,657	20,803	8,186	970	788
2002	35,163	20,504	7,593	863	715
2003	32,795	19,431	7,157	1,004	835
2004	31,960	19,068	6,981	836	699
2005	30,417	17,906	6,406	1,294	1,069
2006	27,581	16,303	5,388	841	638
2007	26,943	15,827	5,133	780	612
2008	27,953	16,227	5,254	772	612
2009	27,412	15,839	5,384	806	639
2010	27,093	15,423	5,223	926	749
2011	26,710	14,888	4,809	741	596
2012	26,575	15,549	5,486	816	661
2013	27,508	15,834	5,733	650	514
2014	28,060	15,902	5,809	761	658
2015	28,356	16,268	6,357	828	671
2016	34,459	19,472	7,502	1036	826
2017	28,416	16,868	6,610	886	692
2018	32,962	22,567	12,301	768	631
2019	35,232	23,212	12,031	652	486
2020	29,242	18,117	8,147	646	496
2021	29,205	15,690	6,365	859	691
2022	22,064	12,985	4,636	608	484
Total	993,555	602,387	256,114	24,532	19,887

TABLE 25: CONESTOGA'S NEW UNIQUE CONTINUING EDUCATION STUDENTS BY REGION OF RESIDENCE 1980-2022

Source: Conestoga College Student Information System

YEAR	NEW CE STUDENTS FROM THE LOCAL REGION	NEW CE STUDENTS FROM ONTARIO (EXCL. LOCAL REGION)	NEW CE STUDENTS FROM OUTSIDE ONTARIO	PER CENT FROM THE LOCAL REGION	PER CENT FROM ONTARIO (EXCL. LOCAL REGION)	PER CENT FROM OUTSIDE ONTARIO
1980-1989 Sub-total ⁹⁶	50,000					
1990	9,404	2,441	160	78.3%	20.3%	1.3%
1991	9,313	2,350	152	78.8%	19.9%	1.3%
1992	9,230	2,470	180	77.7%	20.8%	1.5%
1993	8,308	2,450	131	76.3%	22.5%	1.2%
1994	7,640	2,094	133	77.4%	21.2%	1.3%
1995	7,495	2,230	149	75.9%	22.6%	1.5%
1996	6,803	1,946	126	76.7%	21.9%	1.4%
1997	6,185	1,699	130	77.2%	21.2%	1.6%
1998	6,594	1,592	158	79.0%	19.1%	1.9%
1999	6,004	1,750	192	75.6%	22.0%	2.4%
2000	6,190	1,719	204	76.3%	21.2%	2.5%
2001	6,024	1,934	228	73.6%	23.6%	2.8%
2002	5,615	1,750	228	73.9%	23.0%	3.0%
2003	5,309	1,734	114	74.2%	24.2%	1.6%
2004	5,237	1,632	112	75.0%	23.4%	1.6%
2005	4,616	1,695	95	72.1%	26.5%	1.5%
2006	3,943	1,351	94	73.2%	25.1%	1.7%
2007	3,750	1,311	72	73.1%	25.5%	1.4%
2008	3,664	1,557	33	69.7%	29.6%	0.6%
2009	3,580	1,734	70	66.5%	32.2%	1.3%
2010	3,422	1,745	56	65.5%	33.4%	1.1%
2011	3,226	1,533	50	67.1%	31.9%	1.0%
2012	3,557	1,833	96	64.8%	33.4%	1.7%
2013	3,591	2,022	120	62.6%	35.3%	2.1%
2014	3,304	2,325	180	56.9%	40.0%	3.1%
2015	3,652	2,576	129	57.4%	40.5%	2.0%
2016	4,487	2,836	179	59.8%	37.8%	2.4%
2017	3,911	2,496	202	59.2%	37.8%	3.1%
2018	4,241	7,668	392	34.5%	62.3%	3.2%
2019	4,337	7,214	480	36.0%	60.0%	4.0%
2020	2,537	5,331	279	31.1%	65.4%	3.4%
2021	2,586	3,420	359	40.6%	53.7%	5.6%
2022	2,074	2,138	424	44.7%	46.1%	9.1%
Sub-total	169,829	80,576	5,707	66.3%	31.5%	2.2%
Total	219,829	80,576	5,707	66.3%	31.5%	2.2%

In considering the impact of Continuing Education in the local community, it is crucial to identify the people who took these courses to advance their careers or to further develop their skills.

Since 1996, Conestoga’s Continuing Education students were surveyed periodically on several matters, including their reason for taking a Continuing Education course. Until 2018, these were provincial surveys conducted by CCI Research Inc. In 2023, the college conducted its own survey of Continuing Education students and once again found a remarkable consistency with the results of the previous surveys.

In 2023, 77 per cent of respondents took courses for career-related reasons and 22 per cent for personal development. As demonstrated in Table 26, similar proportions were observed since the 1990s. By applying these proportions, we have allocated 233,539 local individual Continuing Education students. Thus, we estimated that 185,177 local CE students took career-related courses and 48,362 local CE students took courses to pursue their personal interests.

We assume the 24,532 CE students who are also graduates earned their certificate or diploma for career-related purposes and that the tendency of these graduates to live in the local region is similar to that of Conestoga graduates overall. Thus, we estimate that 15,909 CE graduates live in the local region and include them in the total of 185,177 local career-related CE students. This means that of the total career-related local CE students, 15,909 were CE graduates and 169,268 took career-related courses, but have not yet moved to a certificate or diploma.

TABLE 26: REASONS FOR TAKING CONTINUING EDUCATION CONESTOGA COLLEGE, 1996 TO 2023

	1996	1998	2000	2002	2005	2008	2012	2015	2018	2023
Looking for a job	6%	6%	5%	6%	9%	6%	9%	9%	5%	7%
Improving myself in my career	47%	48%	45%	42%	39%	39%	37%	41%	43%	37%
Preparing for a change of careers	19%	19%	22%	23%	24%	25%	25%	24%	19%	13%
Seeking a credit toward a full-time program	6%	5%	5%	5%	6%	5%	6%	4%	11%	6%
Progress to a new job at a higher level of responsibility within the same company										8%
My current employer is asking for a formal educational credential										4%
Preparing to move to a new job at a new company										2%
Personal Development and fulfilment	16%	15%	16%	16%	15%	17%	16%	15%	13%	18%
Pursuing a hobby or interest	6%	7%	7%	7%	7%	8%	7%	7%	5%	4%
Total Personal Development	22%	22%	23%	23%	22%	25%	23%	22%	18%	22%

The previous surveys did not provide us with demographic data. Therefore, we could only estimate that the employment rate among Continuing Education students and graduates was equal to the employment rate of Conestoga graduates overall (which was 73.3 per cent in 2016 and 76 per cent in 2022). Fortunately, we were able to gather demographic data in the 2023 survey of Continuing Education students. In 2023, 64 per cent of the respondents reported being employed full-time and 25 per cent as part-time. Thus, 89 per cent of the respondents are employed, which aligns with the employment rate in Conestoga’s 2021-2022 KPI report and significantly above the estimates of our approach employed above (see Table 27 below).

**TABLE 27: EMPLOYMENT AMONG 2023 CONTINUING EDUCATION SURVEY RESPONDENTS
CONESTOGA COLLEGE**
Source: Office of Institutional Research and Planning

EMPLOYMENT	COUNT	PER CENT
31 to 40 hours per week	1,326	41%
More than 41 hours per week	732	23%
Not currently working	378	12%
10 to 20 hours per week	354	11%
21 to 30 hours per week	293	9%
Less than 10 hours per week	145	4%
Total	3,228	

TABLE 28: CONTINUING EDUCATION SUMMARY, LOCAL AREA 2022
Source: Office of Institutional Research and Planning

TYPE OF CONESTOGA CONTINUING EDUCATION (CE) STUDENT	CUMULATIVE NUMBER 1980-2022	ESTIMATED NUMBER WORKING ⁹⁷	PERCENT OF ESTIMATED LOCAL EMPLOYMENT ⁹⁸	PER CENT OF ESTIMATED LOCAL ADULT POPULATION ⁹⁹
CE graduates ¹⁰⁰	15,909	12,091	2.8%	
CE students who pursued career or workplace skills courses ¹⁰¹	169,268	128,644	30.1%	
Total career-related CE students	185,177	140,735	33%	27%
CE students who pursued personal interest courses ¹⁰²	48,362	NA	NA	7%
Total career and personal interest CE students	233,539	NA	NA	34%

Our total counts of CE course registrations for the years between 2016 and 2022 also include the counts of registrations for testing and assessment courses.¹⁰³ As Table 29 demonstrates, the total registrations for testing and assessment courses accounted for 2 per cent of the total CE course registrations between 2016 and 2022. The number of individual students registering for testing and assessment courses equals 4 per cent of total individuals registered for CE courses between 2016 and 2022. Similarly, 4 per cent of new unique individuals in CE courses were registered to take the testing and assessment courses in the same time period.

TABLE 29: CONESTOGA'S TESTING AND ASSESSMENT COURSES 2016-2022

Source: Conestoga College Student Information System

YEAR	TOTAL COURSE REGISTRATIONS	NUMBER OF INDIVIDUAL STUDENTS REGISTERING FOR TESTING AND ASSESSMENT COURSE(S)	NEW UNIQUE INDIVIDUALS
2016	1,368	1,338	714
2017	996	990	515
2018	958	937	485
2019	859	840	426
2020	698	696	296
2021	127	104	60
2022	106	92	40
Total	5,112	4,997	2,536

APPENDIX 6: CORPORATE TRAINING

TABLE 30: CONESTOGA'S CORPORATE TRAINING STUDENTS 1990-2022

Source: Conestoga College Student Information System

YEAR	TOTAL CT COURSE REGISTRATIONS	NUMBER OF INDIVIDUAL STUDENTS REGISTERING FOR CT COURSE(S) ¹⁰⁴	NEW UNIQUE CT INDIVIDUALS ¹⁰⁵
1990	0	0	0
1991	652	542	449
1992	350	267	207
1993	420	306	212
1994	814	556	398
1995	788	542	353
1996	815	521	319
1997	1,154	783	477
1998	1,395	1,100	706
1999	3,090	2,466	1,584
2000	3,774	2,766	1,648
2001	3,999	2,913	1,741
2002	4,662	3,276	1,941
2003	5,277	3,881	2,338
2004	4,891	3,290	1,938
2005	5,239	3,348	1,899
2006	5,311	3,481	1,922
2007	6,325	3,888	2,109
2008	4,995	3,383	1,787
2009	3,209	2,374	1,342
2010	3,741	2,582	1,385
2011	3,688	2,425	1,240
2012	4,619	2,631	1,348
2013	3,161	2,202	1,303
2014	4,515	3,169	2,071
2015	5,415	3,611	2,484
2016	1,822	1,100	627
2017	2,074	1,206	600
2018	1,893	1,176	622
2019	3,037	1,446	884
2020	995	497	284
2021	6,908	1,770	873
2022	8,337	2,185	1,108
Total	107,365	65,683	38,199

Note that a majority of the 38,199 Corporate Training students in the table above are not Conestoga employees. The sharp spike in Corporate Training students is only observed in 2021 and 2022, when the college implemented its requirement for all faculty to undergo training by taking four Teaching and Learning courses. See details in Table 31 and Table 32.

TABLE 31: CORPORATE TRAINING OF CONESTOGA EMPLOYEES 2016-2022

Source: Conestoga College Student Information System; Human Resources Records

YEAR	TOTAL EMPLOYEE CT REGISTRATIONS	NUMBER OF INDIVIDUAL EMPLOYEES REGISTERED FOR CT COURSES	TEACHING AND LEARNING COURSE REGISTRATIONS BY EMPLOYEES	TEACHING AND LEARNING COURSE REGISTRATIONS BY NON-EMPLOYEES	NUMBER OF INDIVIDUAL EMPLOYEES REGISTERED FOR TEACHING AND LEARNING COURSES	INDIVIDUAL NON-EMPLOYEES REGISTERED FOR TEACHING AND LEARNING COURSES
2016	12	10	-	-	-	-
2017	11	9	-	-	-	-
2018	3	3	-	-	-	-
2019	14	12	-	-	-	-
2020	5	2	-	-	-	-
2021	4,829	989	4,826	632	988	157
2022	6,006	1,322	6,000	139	1,320	47
Total	10,880	2,347	10,826	771	2,308	204

TABLE 32: TEACHING AT CONESTOGA MICRO-CREDENTIAL REGISTRATIONS 2021-2022

Source: Conestoga College Student Information System; Human Resources Records

YEAR	EMPLOYEE REGISTRATIONS	NON-EMPLOYEE REGISTRATIONS	INDIVIDUAL EMPLOYEES	INDIVIDUAL NON-EMPLOYEES
2021	2,650	495	771	141
2022	3,407	73	972	26
Total	6,057	568	1,743	167

APPENDIX 7: UPGRADING AND SKILLS DEVELOPMENT

TABLE 33: NUMBER OF STUDENTS/CLIENTS, OFFICES OF UPGRADING AND SKILLS DEVELOPMENT AND CAREER CENTRE 2002 TO 2023

Source: Conestoga College, Upgrading and Skills Development, Career Centre

YEAR ¹⁰⁶	ACADEMIC UPGRADING	EMPLOYMENT AND CAREER SERVICES	TOTAL
2002	929	1,154	2,083
2003	1,043	2,472	3,515
2004	971	2,335	3,306
2005	1,078	2,497	3,575
2006	970	2,398	3,368
2007	1,051	2,587	3,638
2008	1,117	2,761	3,878
2009	1,408	4,654	6,062
2010	1,709	7,505	9,214
2011	1,541	2,218	3,759
2012	1,529	1,511	3,040
2013	898	1,768	2,666
2014	999	2,820	3,819
2015	942	3,059	4,001
2016	938	3,045	3,983
2017	971	3,564	4,535
2018	979	2,392	3,371
2019	1040	2,209	3,249
2020	1183	2,358	3,541
2021	1154	1,551	2,705
2022	1042	1,484	2,526
2023	962	1,142	2,104
Total	24,454	57,484	81,938

APPENDIX 8: LOCAL POPULATION ESTIMATES AND DOMESTIC ENROLMENT

**TABLE 34: LOCAL CMA POPULATION AND ESTIMATED ADULT POPULATION
(AGE 20 YEARS AND OVER)**

LOCATION	2011 CENSUS ¹⁰⁷	2016 CENSUS ¹⁰⁸	2021 CENSUS ¹⁰⁹	PERCENTAGE CHANGE 2011-2016	PERCENTAGE CHANGE 2016-2022
Waterloo Region	379,525	406,165	450,095	7.02%	10.82%
City of Guelph	92,155	101,070	111,815	9.67%	10.63%
City of Brantford	70,580	74,325	80,795	5.31%	8.71%
City of Stratford	24,060	24,965	26,725	6.71%	8.57%
Guelph/Eramosa	9,235	9,855	10,700	5.32%	8.65%
Puslinch	5,540	5,835	6,340	3.76%	7.05%
Total Local Area	581,095	622,215	686,470	7.08%	10.33%

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- 53 For more information, please visit <https://www.conestogac.on.ca/career-centre>
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- 55 Includes CE graduates

- 56 CE Students who pursued career or workplace skills courses and CE students who pursued personal interest courses. Excludes CE graduates. See Table 28
- 57 Starting in 2022; year running April 1st to March 31st. NB: The goal of many CAA students is further education or training, not direct employment. Counts may include individuals counted above.
- 58 Includes CE graduates
- 59 All CT participants are employed because training is arranged by their employer.
- 60 For more information, please visit www.conestogacommunity.ca; the Alumni Office also keeps the alumni updated via regular E-Connections newsletter.
- 61 Waterloo Region, Guelph, Guelph/Eramosa, Puslinch, Brantford, and Stratford
- 62 See Appendix 1: Estimated Residential Location of Conestoga Graduates
- 63 Kitchener, Waterloo, Cambridge, North Dumfries, and Woolwich
- 64 Statistics Canada. "Table 14-10-0020-01 Unemployment rate, participation rate and employment rate by educational attainment, annual." Accessed March 7, 2023. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410002001>
- 65 Statistics Canada. "Table 14-10-0385-01 Labour force characteristics, annual." Accessed March 7, 2023. <https://doi.org/10.25318/1410038501-eng>
- 66 Ibid.
- 67 Ibid.
- 68 Statistics Canada. "Table 14-10-0020-01 Unemployment rate, participation rate and employment rate by educational attainment, annual." Accessed May 24, 2023. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410002001>
- 69 Ontario Ministry of Colleges and Universities. "College Graduation Satisfaction and Job Rates." Accessed May 24, 2023. <https://www.ontario.ca/page/college-graduation-satisfaction-and-job-rates>
- 70 Official KPI Employment Rate excludes International, those that did not validate birthday, and online surveys
- 71 Statistics Canada. 2017. "Ontario". Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Accessed February 7, 2023. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- 72 Statistics Canada. 2022. "Census Profile". 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released December 15, 2022. Accessed January 18, 2023. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>
- 73 See Appendix 3: Conestoga's Enterprising Graduates
- 74 See Appendix 1: Estimated Residential Location of Conestoga Graduates
- 75 2022 Ontario employment rate was applied to graduates living in Guelph/Eramosa, Puslinch, and Stratford due to absence of employment rates for these locations in Statistics Canada. Kitchener CMA employment rate was applied to Waterloo Region.
- 76 See Appendix 1: Estimated Residential Location of Conestoga Graduates
- 77 See Table 11
- 78 Statistics Canada. 2022. "Census Profile. 2021 Census of Population." Table. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released December 15, 2022. Accessed February 7, 2023. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>
See Appendix 2: Estimated Number of Local Graduates Employed
- 79 Waterloo Region, Guelph, Guelph/Eramosa, Puslinch, Stratford, Brantford
- 80 Statistics Canada. "Table 98-10-0411-01 Employment income statistics by highest level of education: Canada, provinces and territories, census divisions and census subdivisions" Accessed October 5, 2023. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810041101>
- 81 2011 National Household Survey: Data Tables | Educational Attainment
- 82 Statistics Canada. 2017. "Waterloo, RM [Census division], Ontario and Guelph/Eramosa, TP [Census subdivision], Ontario. Census Profile. 2016 Census." Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Accessed February 7, 2023. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- 83 Statistics Canada. 2022. "Census Profile. 2021 Census of Population." Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released December 15, 2022. Accessed February 7, 2023. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>
- 84 Statistics Canada. Table 14-10-0328-01. "Job vacancies, proportion of job vacancies and average offered hourly wage by selected characteristics, quarterly, unadjusted for seasonality." Accessed July 5, 2023. DOI: <https://doi.org/10.25318/1410032801-eng>

- 85 "The proportion of job vacancies is the number of job vacancies expressed as a percentage of all vacant jobs in the quarter, except for the proportion of seasonal job vacancies, which is the number of seasonal job vacancies expressed as a percentage of temporary job vacancies in the quarter." Footnote 8 in *ibid*.
- 86 Statistics Canada. "Job vacancies, proportion of job vacancies and average offered hourly wage by selected characteristics, quarterly, unadjusted for seasonality." Table 14-10-0328-01. Accessed July 5, 2023. DOI: <https://doi.org/10.25318/1410032801-eng>
- 87 The proportion of job vacancies is the number of job vacancies expressed as a percentage of all vacant jobs in the quarter, except for the proportion of seasonal job vacancies, which is the number of seasonal job vacancies expressed as a percentage of temporary job vacancies in the quarter." Footnote 9 in Statistics Canada. "Job vacancies, proportion of job vacancies and average offered hourly wage by selected characteristics, quarterly, unadjusted for seasonality." Table 14-10-0328-01. Accessed July 5, 2023. DOI: <https://doi.org/10.25318/1410032801-eng>
- 88 "The proportion of job vacancies is the number of job vacancies expressed as a percentage of all vacant jobs in the quarter, except for the proportion of seasonal job vacancies, which is the number of seasonal job vacancies expressed as a percentage of temporary job vacancies in the quarter." Footnote 9 in *ibid*.
- 89 Statistics Canada. "Job vacancies, proportion of job vacancies and average offered hourly wage by selected characteristics, quarterly, unadjusted for seasonality." Table 14-10-0328-01. Accessed June 29, 2023. DOI: <https://doi.org/10.25318/1410032801-eng>
- 90 The difference of ± 5 in the total count of vacancies in Table 17 and Table 18 is due to the methodology used by Statistics Canada.
- 91 IRCC total includes program levels not included in this table
- 92 IRCC total includes program levels not included in this table
- 93 The number of CE Students registering for one or more courses in the particular year
- 94 Every individual CE student is counted only once over the entire 32-year period – the figure for each year represents the number of students who have no previous student record at Conestoga.
- 95 The number of students who have no previous credential from Conestoga College.
- 96 Years 1980 to 1989 are estimates: roughly half of the earliest year with good data (1990)
- 97 See Appendix 2: Estimated Number of Local Graduates Employed
- 98 See Appendix 2: Estimated Number of Local Graduates Employed
- 99 See Appendix 8: Local Population Estimates
- 100 These graduates have been included in Table 1.
- 101 See Appendix 5: Work-related Continuing Education
- 102 See Appendix 5: Work-related Continuing Education
- 103 The counts of CE course registrations before 2016 do not include the counts of registrations for testing and assessment courses for technical reasons.
- 104 The number of CT students registering for one or more courses in the particular year
- 105 Every CT student is counted only once over the entire period – the figure for each year represents the number of students who have no previous student record at Conestoga – it therefore excludes anyone already counted as a full-time or CE student or graduate
- 106 School year running from April 1st to March 31st
- 107 Statistics Canada. 2012. "Waterloo, Ontario (Code 3530) and Guelph, Ontario (Code 3523008) (table) and Brantford, Ontario (Code 3529006) and Guelph/Eramosa, Ontario (Code 3523009) and Puslinch, Ontario (Code 3523001) and Stratford, Ontario (Code 3531011). Census Profile. 2011 Census." Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. Accessed February 8, 2023. <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E>
- 108 Statistics Canada. 2017. "Waterloo, RM [Census division], Ontario and Guelph, CY [Census subdivision], Ontario (table). Census Profile. 2016 Census." Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Accessed February 8, 2023. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- 109 Statistics Canada. 2023. "(table). Census Profile. 2021 Census of Population." Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released February 8, 2023. Accessed February 8, 2023. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>

