OCS
Ontario Construction Secretariat

Training Investment in Ontario's Construction Industry

FEBRUARY 2022

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Prepared by Prism Economics & Analysis for the Ontario Construction Secretariat

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Executive Summary

Apprenticeship plays a critical role in sustaining and developing Ontario's skilled trades workforce, and the construction trades represent the single largest group of apprentices. Construction hiring requirements have outpaced many other industries over the last decade and unions and employers have worked together to expand the training and certification of skilled workers to keep pace. The importance of apprenticeship to Ontario's economy has been recognized in provincial policy. For example, the Ontario government is investing over $47 million as part of the province's Skilled Trades Strategy to increase the number of apprentices, improve the quality of training, and help them complete their training and increase certification.[1]

The largest investment in Ontario's skilled trades workforce comes from the industry. The unionized construction sector's annual contribution to training is estimated to be just over $146.4 million in 2019.[2] This is an increase of 261% from the annual contribution estimated by the Ontario Construction Secretariat (OCS) in 2011 and a 300% increase from 2006. This investment is dedicated to delivering apprenticeship, skills upgrading or health and safety training through approximately 100 union locals and/or joint union-employer training facilities across Ontario.[3] The total collective capital investment in these training facilities between 2013 and 2019 is estimated at $325 million. Research has demonstrated the return on this collective investment with evidence of higher rates of program completions for apprentices jointly represented by employers and trade unions than for similar apprentices sponsored unilaterally by an employer.[4]

Union and employer training centres play an integral role in the province's apprenticeship training infrastructure, delivering education to both unionized and non-unionized apprentices. According to data provided by the Ministry of Labour, Training and Skills Development (MLTSD), as of 2019 there were 40 union/employer training facilities with Training Delivery Agent (TDA) status, offering 61 programs across the province. In 2019, union/employer training centres accounted for about one-third (32%) of total in-school apprenticeship seats funded by MLTSD. This represents a significant increase from 2012, when union/employer training centres accounted for 23% of the total funded construction apprenticeship training seats.

The pandemic brought on unprecedented challenges for the construction industry, including restrictions put in place on all non-essential services in the spring of 2020. The apprenticeship system was particularly vulnerable to these restrictions, resulting in apprentices being laid off and training programs being deferred or cancelled. In 2020, the Ontario Construction Secretariat surveyed union locals across Ontario to better understand how the pandemic has impacted training capacity within the unionized sector. Key findings from the survey include:

- Most union locals reported their training capacity had declined in 2020 due to the pandemic (44% modest decline, 38% significant decline)
- Approximately one-fifth of locals expected to return to 100% of their training capacity over the next six months; approximately 30% of union locals expected to continue training at 50% of their capacity or less over the next six months
- The most prevalent barriers to training were ensuring the health and safety of students and accommodating physical distancing
- Approximately 4 in 10 locals reported moving their training to online delivery – this was more common among training delivery agents
- Unions reported investing $26,621, on average, to adapt to training and adhere to health and safety measures; the average total cost (e.g., cost of temporary closures, payroll for idle employees, etc.) incurred due to COVID-19 was $52,739

This research highlights the unionized sector's longstanding commitment to investing in the training and development of a well-educated and highly skilled workforce to meet current and future demands of the economy. This report also underscores the unionized sector's growing contribution to delivering apprenticeship training. The data on apprentice new registrations and completions presented within this report illustrates the growing number of new entrants into the industry, as well as provides a baseline for examining the impact of COVID-19 on training and apprentice supply. Findings from the OCS training survey (2020) provides an initial understanding of the barriers to training and investment undertaken by the unionized sector throughout the COVID-19 pandemic.

[1] Ontario Newsroom. https://news.ontario.ca/en/release/60571/ontario-setting-up-apprentices-and-employers-for-success

[2] Estimate is based on OCS analysis of collective agreements and ICI work hours data collected from union locals as part of this study. The estimate may include man hours from non-ICI sectors.

[3] 2020 OCS Survey of Union Locals

[4] Bilginsoy, Chris. "The Hazards of Training: Retention and Retention in Construction Industry Apprenticeship Programs", 2003.

Introduction

The Ontario Constructions Secretariat (OCS) is a joint labour-management organization, dedicated to enhancing Ontario's unionized industrial, commercial, and institutional (ICI) construction industry by developing relationships, facilitating dialogue, and providing value-added research. The OCS provides research on construction labour markets, with the strategic objective of improving labour relations, creating positive perceptions of unionized construction, and supporting public policy to build a strong skilled workforce to meet the needs of the economy. The considerable growth within the industry has required the collaboration of union and employers to expand training and increase certification to keep pace with rising employment requirements.

Apprenticeship is a critical source of the skilled trades, and the construction trades represent the single largest group of apprentices. While less structured forms of training are an accepted route of entry into the construction trades, formal training is viewed as the best method to train and maintain a labour pool of highly skilled workers.[5] Membership in a trade union has a significant impact on employee's level of participation in both formal education and informal learning, including an increased participation in registered apprenticeship training than their non-union counterparts.[6] Research has also demonstrated that apprentices jointly represented by employers and trade unions are more likely to complete the program than similar apprentices sponsored unilaterally by an employer.[7]

The OCS has extensive experience working with the unionized construction industry and preparing research to enhance stakeholder understanding of apprenticeship issues, successes, and challenges. Insights gathered through this report will provide a preliminary understanding of the barriers to training and investment undertaken by the unionized sector throughout the COVID-19 pandemic. Research presented here also demonstrates the rapid growth of the unionized construction industry and their significant contributions to training and education.

This report is organized into several sections. The first section orients the paper in the context of current trends in apprenticeship registrations and completions, as well as the demographic characteristics of the average apprentice. The second section reviews the unionized sector's contribution to training within Ontario's construction industry and their growing role in delivering apprenticeship training. The final section of this report examines the impact of COVID-19 on the unionized construction industry's training capacity. Data presented in this section is based on union feedback collected via a survey distributed by the OCS.

Photo Credit (Left & Right): Greg Bobier, Waterloo Wellington Dufferin and Grey Building and Construction Trades Council

[5] Bilginsoy, Chris. "The Hazards of Training: Retention and Retention in Construction Industry Apprenticeship Programs", 2003.
[6] Raykov & Livingstone, "Canadian Apprenticeship and Effect of Union Membership status: Trend Analysis 1991-2002", 2005.
[7] Bilginsoy, Chris. "The Hazards of Training: Retention and Retention in Construction Industry Apprenticeship Programs", 2003.

State of Apprenticeship in Ontario's Construction Industry

This section explores the state of apprenticeship in Ontario's construction industry through the lens of registrations, completions, and key demographic characteristics of construction apprentices. The following data was released in 2019 and does not capture the impact of COVID-19 on apprentice registration and completion; however, the data provides an important baseline for examining the impact of COVID-19 on construction apprenticeship programs in Ontario. The release of the 2020 RAIS data will provide a better illustration of the impact of COVID-19 on apprentice registrations and completions.

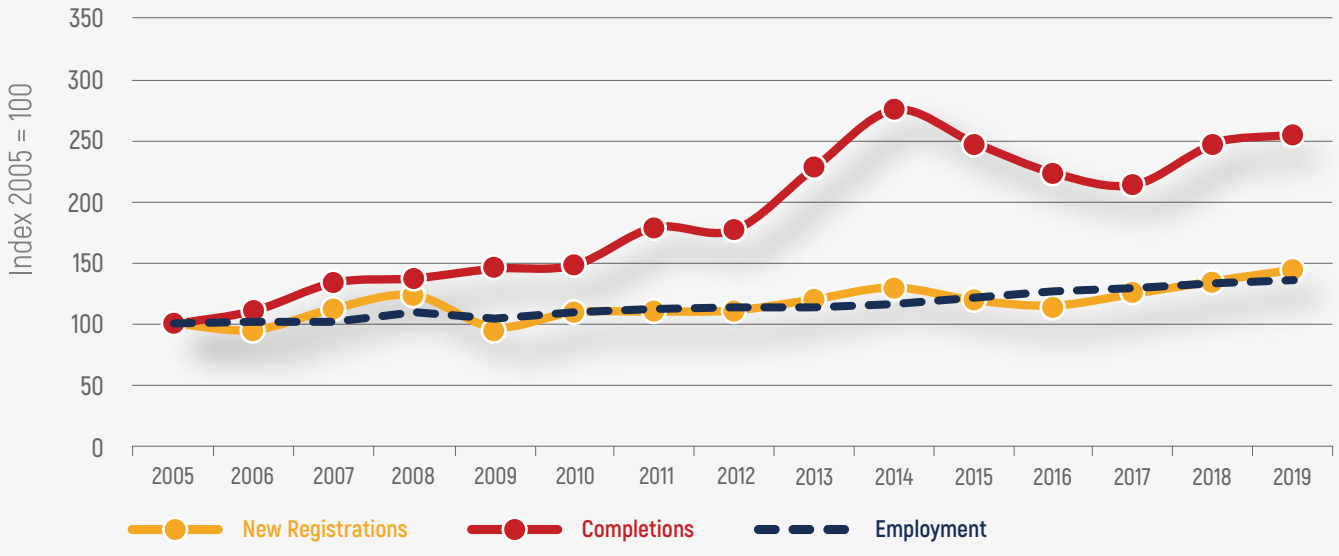
Trends in Apprenticeship Registrations and Completions

The province saw record levels of new registrations in 2019, exceeding 10,485 new entrants – an increase of 32% from 2010 levels. The province has seen strong expansion in construction activity since the last recession, evident by the rise in employment from a low of 435,900 in 2010 to 540,000 in 2019, a 24% increase, or an average annual increase of 2%.[8] The construction industry has been expanding at a faster rate compared to all industries, where employment rose by just 13% over the same period.

Although the average completion rate for construction programs is estimated around 48%, data suggests the proportion of apprentices that complete their program is rising.[9] Completion levels have been growing at a faster rate than the number new registrations in apprentice programs, signaling a rise in the completion rate over time. The number of completions has more than doubled during this period – increasing from 2,151 in 2005 to 5,478 in 2019 – while the number of new registrations has increased by only 43% from 7,308 in 2005 to 10,485 in 2019.

Apprenticeship data in 2019 provides an important baseline for the impact of COVID-19 on apprenticeship completions and registrations, which are anticipated to be significant. Figure 1 tracks the combined response of industry and government to increasing demand for skilled workers and growth in Ontario's apprenticeship system.

Figure 1 – Index of Construction Apprenticeship and Employment in Ontario[10]



Source: Source: Statistics Canada, RAIS 2019 Custom Data Request; Statistics Canada LFS

[8] Statistics Canada. Table 14-10-0023-01 Labour force characteristics by industry, annual (x 1,000)

[9] Prism Economics, 2021

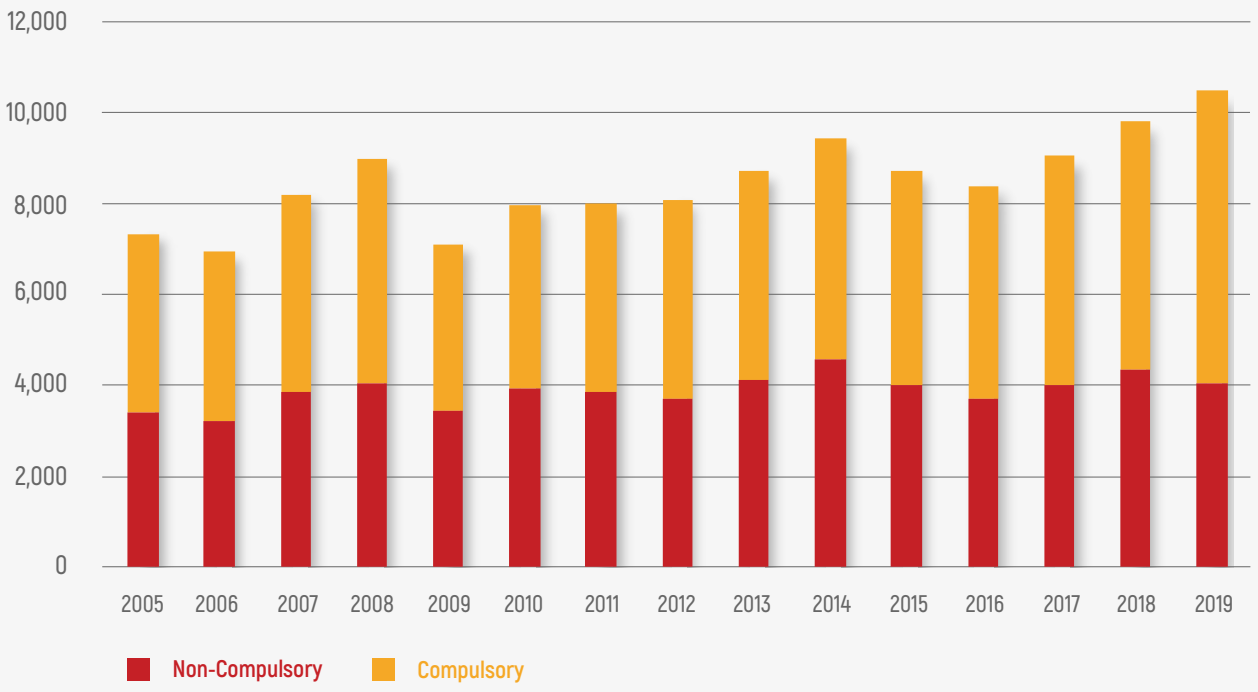
[10] Includes all 40 apprenticeable construction trades

New registrants in both compulsory and non-compulsory trade programs[11] peaked in both 2008 and 2014 during periods of heightened economic expansion, as illustrated in Figure 2. New registrations returned to pre-peak levels in 2015 and 2016, before steadily rising to a peak in 2019.

The share of new registrations in compulsory trades has been on the rise, increasing at a faster rate than non-compulsory trades. Among apprentices who had registered in a trade program in 2010, approximately half were registered in a compulsory trade. Looking ahead to 2019, registrations in compulsory trades comprised more than 60% of total new registrations in construction trade programs. Residential air conditioning systems mechanic and tower crane operator experienced considerable growth among compulsory trades, with new registrations rising 245% and 130% respectively from 2010 levels. Electrician (domestic and rural) was the only compulsory trade to experience a decline in new registrations in 2019, falling -45% from 2010 levels. It important to note the small size of this trade, making it more susceptible to fluctuation in new registrations.

Figure 3 shows the growth in the number of completions in construction apprenticeship programs for both compulsory and non-compulsory trade programs. Apprentices registered in compulsory trades have a higher probability of certification.[12] Over the near-term, completions are likely to continue to rise in-line with the upwards trend in new registrations since 2017; however, the near-term impact of COVID-19 on completions remains unclear.

Figure 2 – Total Number of New Registrations in Construction Apprenticeships, Ontario

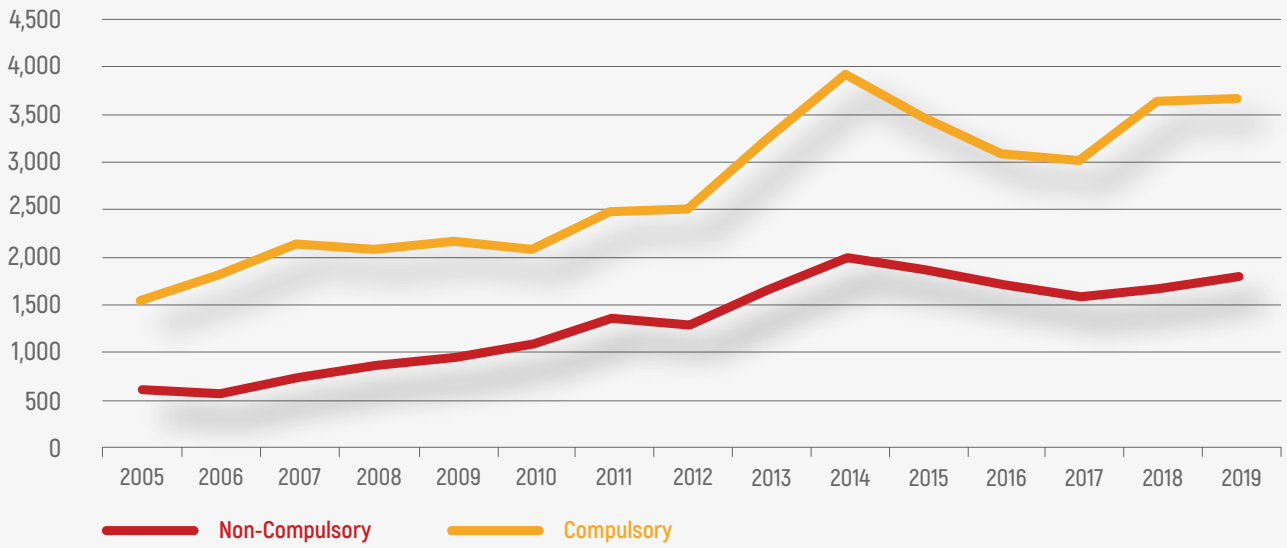


Source: Statistics Canada, RAIS 2019 Custom Data Request

[11] See Appendix A for list of compulsory and non-compulsory trades in Ontario

[12] Statistics Canada, 2020. https://www150.statcan.gc.ca/n1/pub/75-006-x/2020001/article/00008-eng.htm

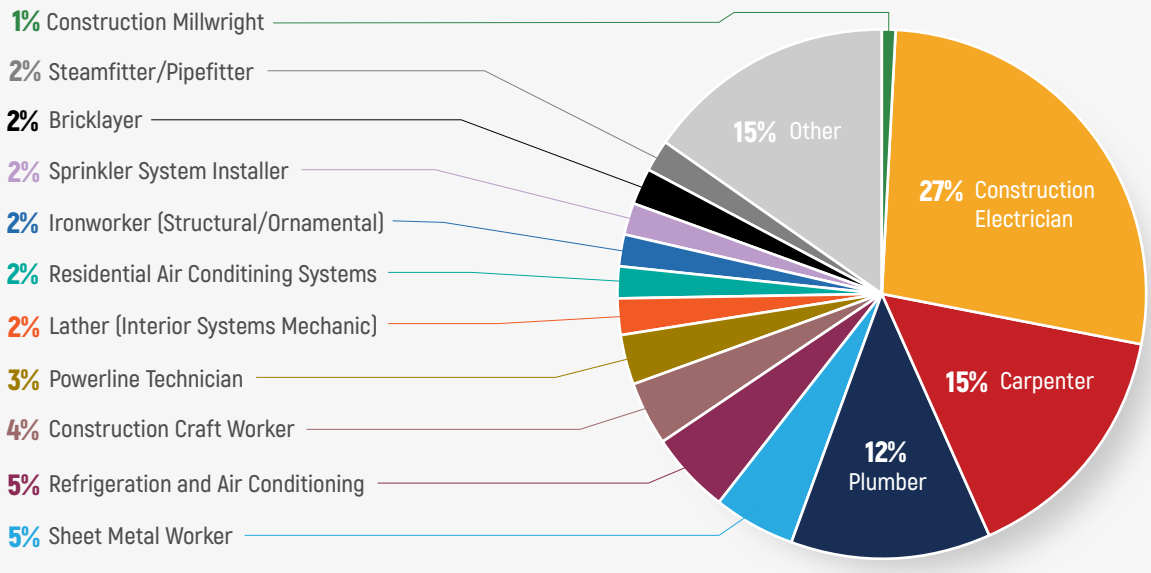
Figure 3 – Total Number of Completions in Construction Apprenticeships, Ontario



Source: Statistics Canada, RAIS 2019 Custom Data Request

There are 40 apprenticeable construction trades in Ontario.[13] Most apprentices are concentrated in only a handful of trades. Construction electricians, carpenters, and plumbers comprise more than half (54%) of all new entrants. Figure 4 illustrates the average distribution of total new registrations between 2015 and 2019 by trade. Not surprisingly, most program completions (56%) are concentrated in the trades with the highest number of new registrations – construction electrician, carpenter, and plumber trade programs.

Figure 4 – Average Distribution of New Registrations, 2015 to 2019



Source: Statistics Canada, RAIS 2019 Custom Data Request

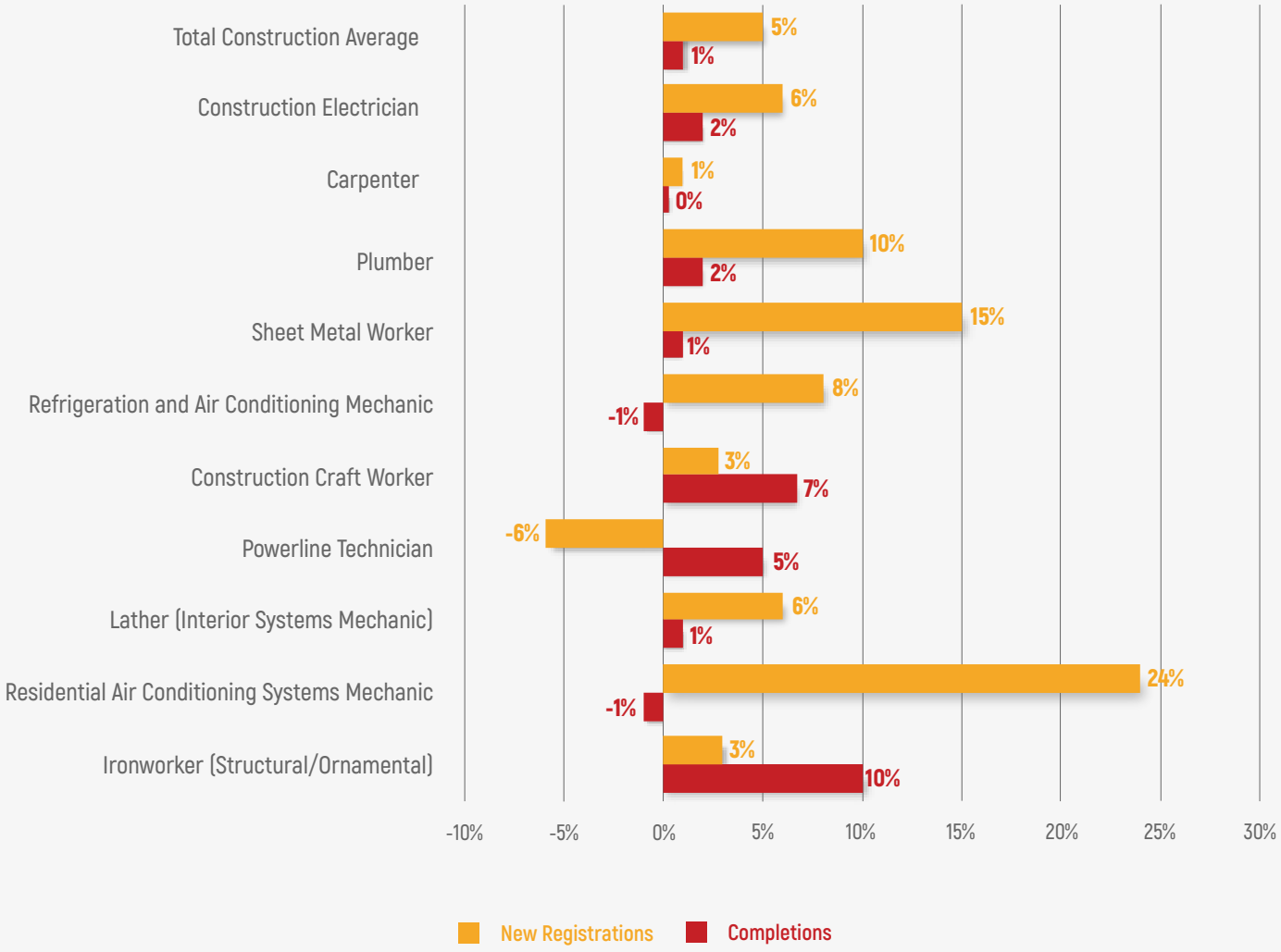
[13] Ontario College of Trades, 2019

Most of the top construction trade programs have experienced considerable growth over the past five years. On average, the construction industry experienced an annual increase of 5% in new registrations over the five-year period. As seen in Figure 5, residential air conditioning systems mechanic and sheet metal worker trade programs saw notable annual increases in new registrations over recent years, on average. The powerline technician program has seen a decline in new registrations, resulting from new registrations receding from a peak in 2017.

Program completions experienced slower average annual growth, capturing the slowdown in new registrations following the 2008 peak. Completions in construction trade programs saw an average annual increase of 1%. Ironworker (structural/ornamental), construction craft worker and powerline technician programs saw a more notable rise in completions over the five-year period.

Refer to Appendix B for the average annual growth for all apprenticeable trades.

Figure 5 – Average Annual Growth in New Registrations and Completions, 2015 to 2019



Source: Statistics Canada, RAIS 2019 Custom Data Request

Demographic Profile of Apprentices

The demographic profile of apprentices provides important insights for governments and apprenticeship stakeholders to better support apprentices and increase the likelihood of their success.

According to the Registered Apprenticeship Information System (RAIS) data, male apprentices account for 97% of total registered apprentices, on average. The share of women varies by trade, as seen in Table 1. Among the largest construction trades,[14] construction craft worker and carpenter programs reported slightly higher shares of female apprentices than the industry average – 5% and 4% respectively. An examination of all apprenticeable construction trades shows that the painter and decorator program have a notably higher representation of women, reporting an average share of 14% over the five year-period (see Table 9, Appendix A).

Table 1 – Gender Representation of Apprentices in Major Construction Trades, Average 2015 to 2019

Construction Trade	Males	Females
Bricklayer	99%	1%
Carpenter	96%	4%
Construction Craft Worker	95%	5%
Construction Electrician	97%	3%
Ironworker (Structural/Ornamental)	98%	2%
Lather (Interior Systems Mechanic)	99%	1%
Plumber	98%	2%
Powerline Technician	99%	1%
Refrigeration and Air Conditioning Mechanic	99%	1%
Sheet Metal Worker	98%	2%
Total	97%	3%

Source: Statistics Canada, RAIS 2019 Custom Data Request

The strong bias towards higher post-secondary education has resulted in the skilled trades being viewed as a "fall back" option for youth, often shaped by preconceived misconceptions about the trades.[15] This mindset has increased the share of youth perusing college and university and reduced the proportion of youth pursuing vocational forms of postsecondary education right after high school. Based on the latest RAIS (2019) data, construction apprentices are entering the skilled trades at an older age, suggesting a transition from post-secondary education or a previous career path. Data from the National Apprenticeship Survey (2015) reinforces this notion, where 76.5% of individuals entered a construction apprenticeship from the workforce, while only 23.5% entered an apprenticeship directly from high school.[16]

In 2019, 64% of construction apprentices in construction trades were aged 25 and above. This represents an increase of 4% when compared to 2010. As exhibited in Table 2, only 6% of apprentices in major construction trades are under the age of 20, with most apprentices (60%) concentrated in the 20 to 29 age cohort. The share of apprentices aged 30 to 34 has also risen, reaching 17% in 2019 up from 15% in 2010.

A comparison of 2001, 2006 and 2016 Census data shows evidence of a decline in the share of the construction workers with a certification of qualification as their highest form of education.[17] In 2016, 14% of construction workers held a certification of qualification, compared to 23% of construction workers in 2001. This decline could be the result of apprentices opting for higher forms of education before pursing an apprenticeship with the skilled trades. For example, 34% of the construction labour force reported a college diploma or higher in 2016, up from 26% in 2001.[18]

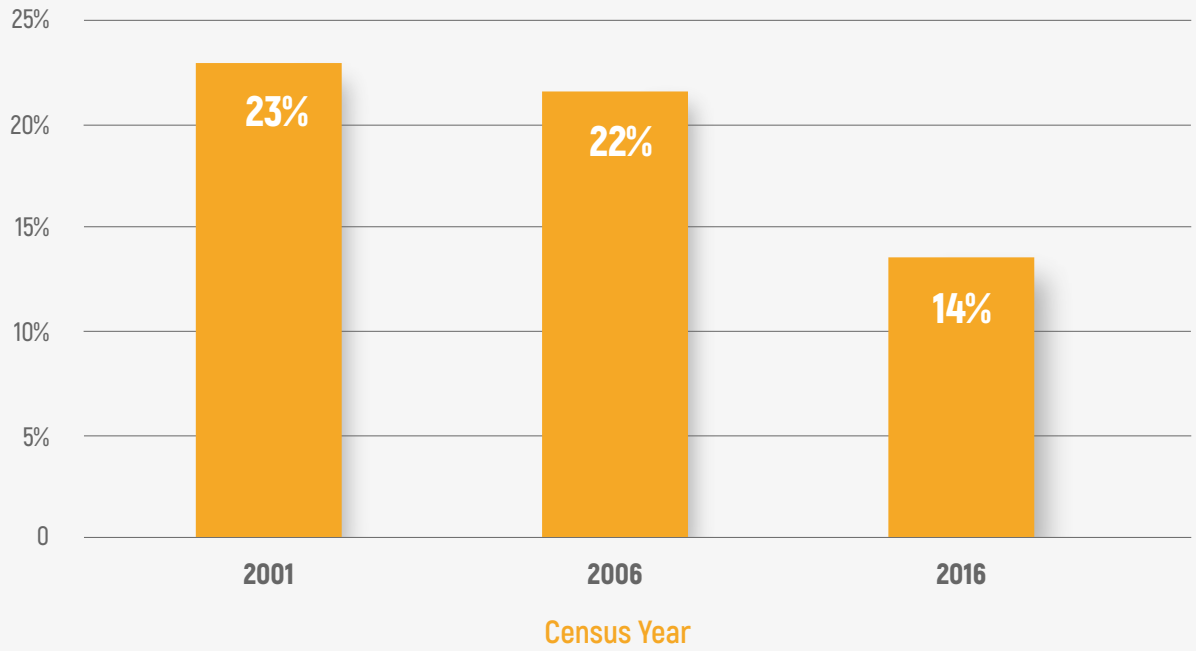
Table 2 – Age Distribution Apprentices in Construction Trades

Age Group	Age Distribution	
	2010	2019
Under 20	7%	6%
20 to 24	32%	29%
25 to 29	26%	31%
30 to 34	15%	17%
35 to 39	9%	8%
40 to 44	5%	4%
45 to 49	3%	2%
50 and over	2%	2%

Source: Statistics Canada, RAIS 2019 Custom Data Request

[14] For the purpose of this report, major construction trades refer to the 10 trades with the largest number of registered apprentices in 2019.
[15] Canadian Apprenticeship Forum, 2016. https://caf-fca.org/wp-content/uploads/2017/09/Apprenticeship-in-Canada_2016.pdf
[16] Chatoor, K. & Kaufman, A. (2020) The Journey of Ontario Apprentices: From High School to the Workforce. Toronto: Higher Education Quality Council of Ontario.
[17] This share may be higher as census data does not indicate what share of the workforce holds both a CofQ and a college or university degree.
[18] Statistics Canada, 2001 Census of Population, Statistics Canada Catalogue no. 97F0012XCB2001046.

Figure 6 – Share of Construction Labour Force with Trades Certificate, highest level of education attainment in 2001, 2006 and 2016



Source: Statistics Canada, 2001, 2006, 2016 Census

Photo Credit: Nole Coutrouzas, Millwright Local 1916

Training and Skills Development – The Role of the Union

The Ontario Government continues to invest in the development and success of the skilled trades. Ontario is investing a total of $288.2 million in its Skilled Trades Strategy. The strategy aims to modernize and evolve the skilled trades and apprenticeship system by reducing the stigma related to a trades career, simplifying the apprenticeship system, and encouraging business participation.

On June 3, 2021, the government passed the *Building Opportunities in the Skilled Trades Act, 2021* which seeks to modernize the skilled trades and transform the system and make it more efficient and easier to navigate. This modernization includes the winding down of the Ontario College of Trades and the establishment of a new crown agency named Skilled Trades Ontario. Until the new agency is in place (anticipated in January 2022), the Ontario College of Trades will continue to provide services under the *Ontario College of Trades and Apprenticeship Act, 2009*.[19]

As part of the Skilled Trades Strategy, the Ontario government is investing $47 million in 2021-2022 to hire more apprentices, improve the quality of training and increase the rate of program completion and certification through the new Achievement Incentive Program and the expanded Apprenticeship Capital Grant. These programs are designed to support those who train apprentices, providing more young people with high quality training that will lead to successful careers. Additionally, these programs aim to help colleges, unions and apprentice training providers upgrade their equipment and facilities to ensure apprentices are learning and using state-of-the-art infrastructure during their in-class training.[20]

Commitment To Funding

Unions and their employer partners are an essential part of Ontario's apprenticeship system, providing training and mentorship to the next generation of skilled workers. The substantial investments in training made by the unionized industry are primarily funded through the hourly based employer and Union member financial contributions to training trusts and local education funds. The unionized construction sector's annual contribution to training is estimated to be just over $146.4 million in 2019.[21] This is an increase of 261% from the annual contribution estimated by the OCS in 2011 and a 300% increase from 2006.

Table 3 shows the comparison of the unionized construction sector's estimated annual investment in training trust funds and education funds in 2006, 2011 and 2019. The table also provides a breakdown of annual industry work hours and the average hourly training contribution rate.

The annual investment estimate is based on the training contribution rates defined in ICI agreements and work hours data collected by local unions. Training contributions are not limited to the ICI sector; however, work hour contributions to sectors such as engineering and residential were not included in this analysis. Therefore, the estimated annual investment in training should be viewed as a lower boundary of the unionized construction sector's investment in training in 2019.

Table 3 – Annual Union Contributions to Training and Education Funds

Year	Estimated Union Work Hours		Hourly Training Contribution		Estimated Annual Investment in Training
2006	101,896,225	X	$0.36/hour	=	$ 36.6 million
2011	103,733,615	X	$0.40/hour	=	$40.6 million
2019	251,406,546	X	$0.58/hour	=	$146.4 million

Source: OCS Survey, 2020

[19] Skilled trades and apprenticeship system changes | Ontario.ca

[20] Ontario Newsroom. https://news.ontario.ca/en/release/60571/ontario-setting-up-apprentices-and-employers-for-success

[21] Estimate is based on OCS analysis of collective agreements and ICI work hours data collected from union locals as part of this study. The estimate may include man hours from non-ICI sectors.

Investment in Unionized Training Facilities

There are approximately 100 training facilities across Ontario, including facilities accredited by MLTSD as Training Delivery Agents (TDAs) that deliver the formal in-school portion of apprenticeship training, and non-TDA facilities, delivering skills and health and safety training. These facilities range from multi-million-dollar state-of-the-art training centres, delivering apprenticeship programs for union and non-union apprentices, to union locals with designated space for delivering an array of specialized in-house skills, safety training and certification courses.

Based on a survey of training facilities, the total collective capital investment in training facilities between 2013 and 2019 is estimated at **$325 million**,[22] with an average capital investment of $3.57 million.

A Growing Role in Delivering Apprenticeship Training

Ontario's union/employer training centres are an integral part of the province's apprenticeship trades training infrastructure.

According to data provided by MLTSD, as of 2019 there were 40 union/employer training facilities with Training Delivery Agent (TDA) status, offering 61 programs across the province. While there has not been a notable rise in the number of TDAs since 2012, numerous facilities have either expanded or consolidated to increase training capacity and training contributions.

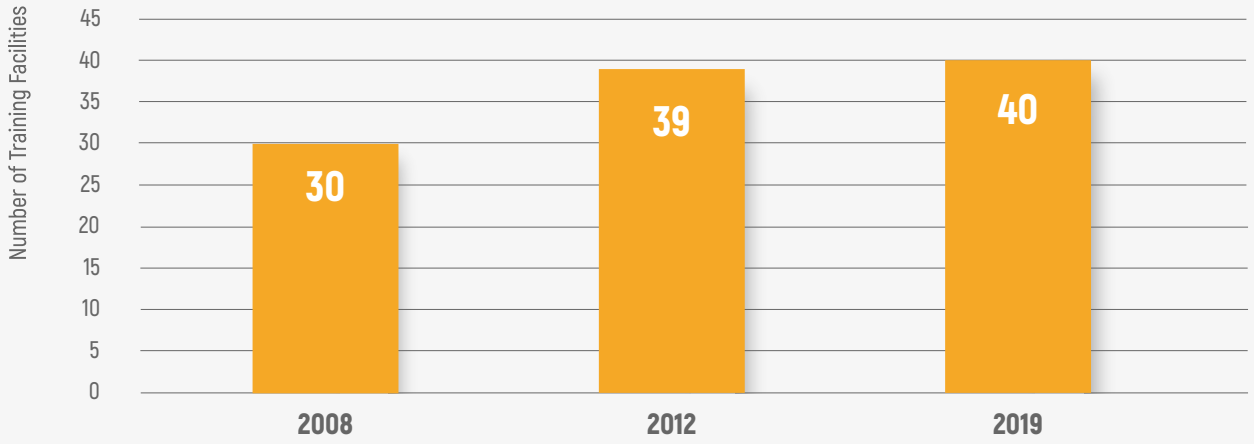
Union/employer training centres account for about one-third (32%) of total in-school apprenticeship seats funded by MLTSD. This represents a significant increase from 2012, when union/employer training centres accounted for 23% of the total funded construction apprenticeship training seats. This increased training capacity has supported the significant expansion in new registrations over the past decade and has been critical to meeting provincial employment demands. Table 5 provides a summary of construction apprentice enrollments in 2019/2020 by program and delivery agent type; college versus union/employer training centre. The total number of apprentice enrollments in 2012 is also included, as well as the percent change in total seats (for both college and union/employer facilities) from 2012 to 2019.

Table 4 - Capital Investment in Union/Employer Training Facilities and Equipment

Total ($) 2013 to 2019	Capital Investment in Building	Capital Investment in Training	Total Capital Investment
	$240 million	$84.9 million	$325 million

Source: OCS Survey, 2020

Figure 7: Expanding Role of Union/Employer Training Delivery Agents



Source: MLTSD, 2019

[22] The estimate of training institutions is based on size and facility value data gathered through a combination of interviews and surveys.

Table 5 – Apprenticeship In-Class Seats, Construction Trades in 2019/2020 Fiscal Year

Apprenticeship Program	College	Union/Employer	Total (2019)	Total (2012)	% Change (2012-2019)
Architectural Glass and Metal Technician	0	134	134	155	-14%
Brick and Stone Mason	142	95	237	424	-44%
Cement (Concrete) Finisher	0	70	70	45	56%
Concrete Pump Operator	0	16	16	0	0
Construction Boilermaker	172	0	172	225	-24%
Construction Craft Worker	0	524	524	433	21%
Construction Millwright	268	0	268	173	55%
Drywall Finisher and Plasterer	0	56	56	37	51%
Drywall, Acoustic and Lathing Applicator	0	268	268	273	-2%
Electrician - Construction and Maintenance	5,426	0	5,426	4,841	12%
Exterior Insulated Finish Systems Mechanic	0	7	7	0	0
Floor Covering Installer	0	40	40	54	-26%
General Carpenter	1,517	530	2,047	2,513	-19%
Hazardous Materials Worker	0	91	91	102	-11%
Heat and Frost Insulator	0	144	144	269	-46%
Heavy Equipment Operator - Dozer	0	104	104	65	60%
Heavy Equipment Operator - Excavator	0	106	106	77	38%
Heavy Equipment Operator - Tractor Loader Backhoe	0	193	193	200	-4%
Hoisting Engineer - Mobile Crane Operator 1	54	277	331	227	46%
Hoisting Engineer - Tower Crane Operator	0	78	78	38	105%
Ironworker - Structural and Ornamental	46	376	422	314	34%
Painter and Decorator - Commercial and Residential	0	32	32	46	-30%
Painter and Decorator - Industrial	0	24	24	18	33%
Plumber	2,141	93	2,234	2,026	10%
Powerline Technician	15	840	855	0	0
Precast Concrete Erector	0	2	2	0	0
Refrigeration and Air Conditioning Systems Mechanic	840	240	1,080	806	34%
Reinforcing Rodworker	0	104	104	121	-14%
Residential (Low-Rise) Sheet Metal Installer	18	0	18	0	0
Residential Air Conditioning Systems Mechanic	52	0	52	38	37%
Roofer	14	0	14	47	-70%
Sheet Metal Worker	437	380	817	715	14%
Sprinkler and Fire Protection Installer	0	268	268	160	68%
Steamfitter	142	152	294	325	-10%
Terrazzo, Tile and Marble Setter	0	34	34	32	6%
Grand Total	**11,284**	**5,278**	**16,562**	**14,799**	**12%**

The Impact of COVID-19 on the Training System

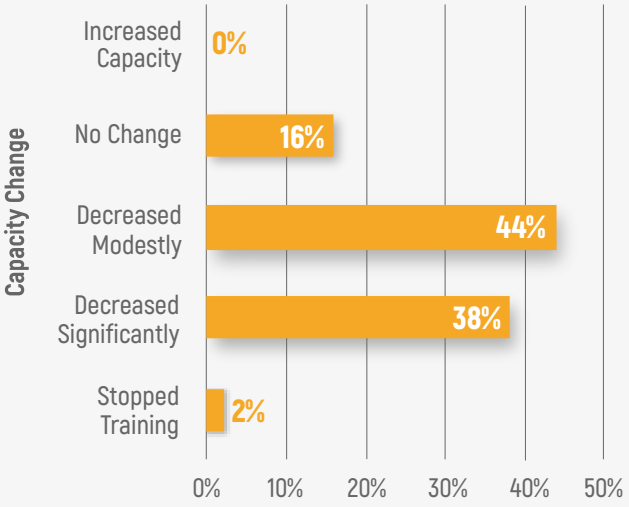
Restrictions were put in place in Ontario on all non-essential services in the spring of 2020. The pause of technical training as a result, led to many apprentices having their training postponed or cancelled altogether. Some apprentices reported the ability to access training online via hybrid learning systems;[23] these options were limited for construction trades, which require a large segment of learning requirements to be practical and hands-on.

The pandemic has taken a toll on the apprenticeship system, heightening the risk of future supply challenges. In the summer of 2020, the Canadian Apprenticeship Forum (CAF) conducted a survey to assess how apprentices have been impacted by the COVID-19 pandemic. Analysis of approximately 650 respondents indicate there has been a 18% decline in full-time apprentices and journeypersons in Ontario as a result of COVID-19. The Ministry of Labour has calculated that about 9,000 apprentices, 300 pre-apprentices, 148,000 workers taking Working at Heights programs and over 8,000 workers taking Joint Health and Safety Committee certification training programs had training cut short by the COVID-19 emergency orders shutting down much of the province in March.[24]

The Ontario Construction Secretariat conducted a survey to gauge the impact of COVID-19 on the training capacity of Ontario's unionized construction sector.[25] The OCS surveyed over 100 locals and affiliated training centres from November 2020 to February 2021. The survey garnered a 63% response rate; half of the respondents were locals designated as training delivery agents, 37.5% of responding locals were non-TDAs, and 12.5% of respondents did not report their status.

Based on the results of this survey, 44% of locals surveyed reported their training capacity had declined modestly, while a further 38% reported their training capacity had declined significantly (see Figure 8). There were varied views among unions on the future training capacity for their local. Approximately one-fifth of locals surveyed expected to return to 100% of their training capacity over the next six months. A considerable number of locals (30%) had a less optimistic outlook, anticipating training to continue at 50% or lower over the next six months (see Figure 9).

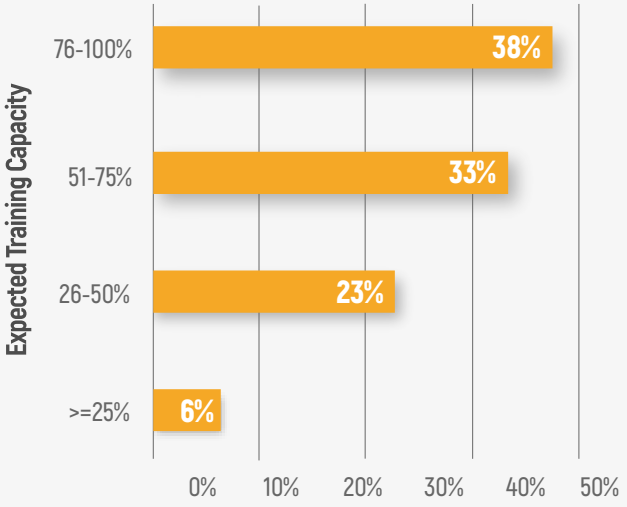
Figure 8 – Impact of COVID-19 on Training Capacity (N=50)



Q: How has your capacity for training been impacted by COVID-19?

Source: OCS Survey, 2020

Figure 9 – Future Training Capacity (N=48)



Q: At what level of capacity do you anticipate to be training over the next 6 months? (i.e., 100%, 50%, etc.)

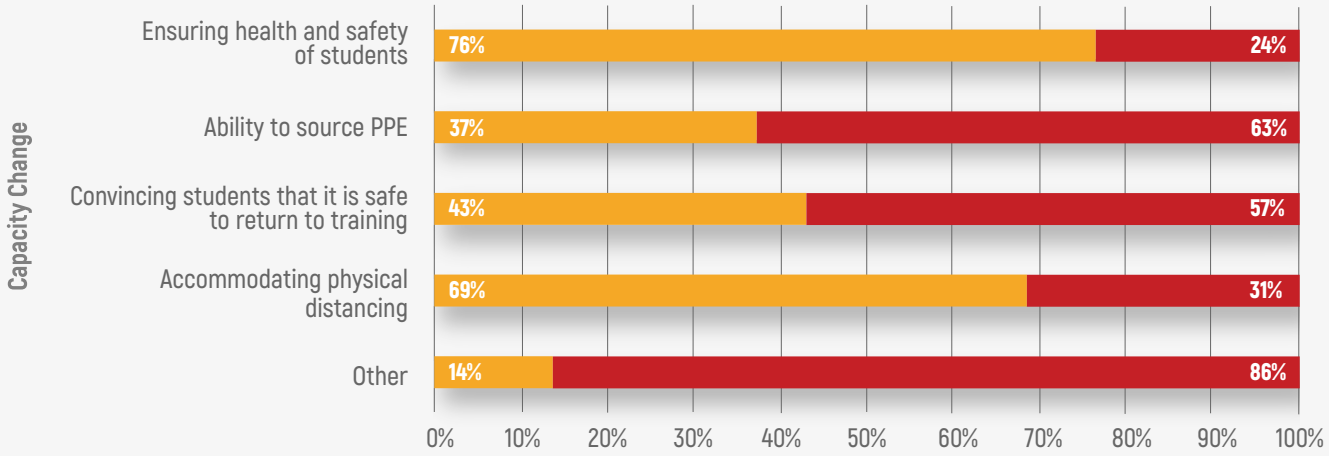
Source: OCS Survey, 2020

[23] Canadian Apprenticeship Forum. 'Apprentices in Canada Epanel', 2020.
[24] Daily Commercial News, 2020. https://canada.constructconnect.com/dcn/news/government/2020/06/non-college-training-agents-get-early-mol-go-ahead
[25] 64 union locals/training centre responded to the survey; 32 respondents were TDAs, 24 were Non-TDAs, and 8 were unknown status.

The pandemic required employers and institutions to adapt their facilities and practices to abide by the health and safety restrictions, which manufactured unprecedented challenges for training. Ensuring the health and safety of students and accommodating physical distancing were identified as barriers to delivering training by most locals. Fewer locals reported challenges associated with sourcing personal protective equipment (PPE) and assuring students it was safe to return to training as barriers. 'Other' barriers reported by locals included access to public Covid tests and the inability to conduct training virtually.

In response to the barriers imposed by COVID-19, union locals took measures to continue to train apprentices. Most locals continued to train in-person but took measures to ensure health and safety guidelines were adhered to. There were a considerable number of locals (43%) that reported moving their training to online delivery; however, this was more common among locals designated as training deliver agents. Most locals also reported limiting class size, limiting training intake and creating physical barriers to maintain social distancing. 'Other' measures reported included daily sanitization of the training centre and addition of sanitization stations, mandatory mask policy, temperature checks, COVID-19 screening form, and staggering start dates and times.

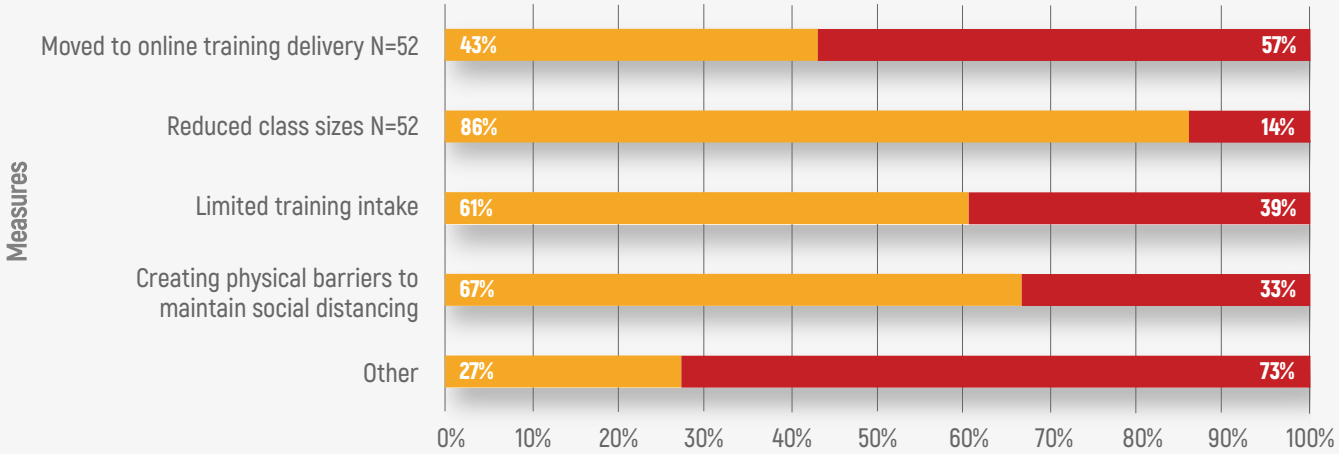
Figure 10 – Barriers to Delivering Training (N=51)



Q: What barriers to delivering training have you encountered as a result of COVID-19?

Source: OCS Survey, 2020

Figure 11 – Measures Taken to Sustain Training Capacity (N=51)



Q: What measures have you taken to sustain a capacity to deliver training during COVID-19?

Source: OCS Survey, 2020

Unions reported investing $26,621, on average, to adapt to training and adhere to health and safety measures; the largest investment reported was $299,000 and the smallest investment reported was $250. The average total cost incurred due to COVID-19 – which could include the cost of temporary closures or payroll for idle employees – was $52,739, the largest total cost reported was $350,000 and the smallest was $250. There were also some unions who reported incurring no additional cost/investment stemming from COVID-19.

Table 6 – Financial Implications of COVID-19 on Training

Estimate of financial IImplications of COVID-19	Average	Median
Total costs incurred	$52,739	$11,000
Investment made to adapt to training	$26,621	$9,000

Q: Please provide an estimate of the financial implications as a result of COVID-19?

Source: OCS Survey, 2020

Conclusions and Implications of Study Findings

The province saw record levels of new apprentice registrations in construction programs leading into the pandemic. The influx in registrations follows the continual growth in industry employment over the past decade. The demand for new skilled workers is not expected to ease in the near-term, as planned major projects and aging demographics continue to tighten the labour market.

Over the past decade, the unionized construction sector has increased their capacity and contribution to training to keep pace with the increasing number of apprentices entering the construction skilled trades. The unionized construction sector's annual contribution to training is estimated to be just over $146.4 million in 2019. This is an increase of 261% from the annual contribution estimated by the OCS in 2011 and a 300% increase from 2006. Based on a survey of training facilities, the total collective capital investment in training facilities between 2013 and 2019 is estimated at $325 million,[26] with an average capital investment of $3.57 million. According to data provided by MLTSD, as of 2019, there were 40 union/employer training facilities with Training Delivery Agent (TDA) status, offering 61 programs across the province. Union/employer training centres account for about one-third (32%) of total in-school apprenticeship seats funded by MLTSD. This represents a significant increase from 2012, when union/employer training centres accounted for 23% of the total funded construction apprenticeship training seats. This increased training capacity has supported the significant expansion in new registrations over the past decade and has been critical to meeting provincial employment demands.

The Ontario Government has made several notable organizational changes, and considerable investments in the skilled trades in recent years. Government's enhanced attention to the skilled trades is warranted given the significant demographic pressure and industry expansion. Based on the findings of this study, Government should continue to invest in the infrastructure of unionized training facilities across Ontario to enable the unionized industry to keep pace with the rise in registrations to ensure a highly skilled workforce. The recruitment and training of new entrants into the skilled trades will require the collective efforts of Government and industry organizations, employers, and labour unions, in order to sustain the market and adequately meet project demands. This will be crucial in light of the reduced training capacity during covid-19, and the implications of this on the future supply of skilled workers.

[26] The estimate of training institutions is based on size and facility value data gathered through a combination of interviews and surveys.

Appendix A: Construction Trades in Ontario

Compulsory Trade: A trade in which registration as an apprentice, journeyperson candidate or certification as a journeyperson is mandatory. There are currently 23 skilled trades that are designated "compulsory".

Voluntary/Non-compulsory Trade: A trade in which certification and College membership are not legally required to practice the trade.

▲ Indicates a designated compulsory trade.

Architectural Glass and Metal Technician	
Brick and Stone Mason	
Cement (Concrete) Finisher	
Concrete Pump Operator	
Construction Boilermaker	
Construction Craft Worker	
Construction Millwright	
Drywall Finisher and Plasterer	
Drywall, Acoustic and Lathing Applicator	
Electrician – Construction and Maintenance	▲
Electrician – Domestic and Rural	▲
Exterior Insulated Finish Systems Mechanic	
Floor Covering Installer	
General Carpenter	
Hazardous Materials Worker	
Heat and Frost Insulator	
Heavy Equipment Operator – Dozer	
Heavy Equipment Operator – Excavator	
Heavy Equipment Operator –Tractor Loader Backhoe	
Hoisting Engineer – Mobile Crane Operator 1	▲
Hoisting Engineer – Mobile Crane Operator 2	▲
Hoisting Engineer – Tower Crane Operator	▲
Ironworker – Generalist	
Ironworker – Structural and Ornamental	
Native Residential Construction Worker	
Painter and Decorator – Commercial and Residential	
Painter and Decorator – Industrial	
Plumber	▲
Powerline Technician	
Precast Concrete Erector	
Precast Concrete Finisher	
Refrigeration and Air Conditioning Systems Mechanic	▲
Reinforcing Rodworker	
Residential (Low Rise) Sheet Metal Installer	▲
Residential Air Conditioning Systems Mechanic	▲
Roofer	
Sheet Metal Worker	▲
Sprinkler and Fire Protection Installer	▲
Steamfitter	▲
Terrazzo, Tile and Marble Setter	

Appendix B: Trade Specific Apprentice Tables

Table 7 - Average Distribution of New Registrations, 2015 to 2019

Note: Trades comprising less than 1% of the total share are not shown and are grouped in 'other'.

Trade	Average Distribution
Construction Electrician	27%
Carpenter	15%
Plumber	12%
Sheet Metal Worker	5%
Refrigeration and Air Conditioning Mechanic	5%
Construction Craft Worker	4%
Powerline Technician	3%
Heavy Duty Equipment Technician	2%
Lather (Interior Systems Mechanic)	2%
Residential Air Conditioning Systems Mechanic	2%
Ironworker (Structural/Ornamental)	2%
Sprinkler System Installer	2%
Bricklayer	2%
Steamfitter/Pipefitter	2%
Construction Millwright	1%
Insulator (Heat and Frost)	1%
Heavy Equipment Operator (Dozer)	1%
Heavy Equipment Operator (Excavator)	1%
Mobile Crane Operator	1%
Glazier	1%
Heavy Equipment Operator (Tractor Loader Backhoe)	1%
Hazardous Materials Worker	1%
Ironworker (Reinforcing)	1%
Drywall Finisher and Plasterer	1%
Residential (Low-Rise) Sheet Metal Installer	1%
Boilermaker	1%
Other	3%

Table 8 - Average Annual Growth in New Registrations and Completions, 2015 to 2019

Note: Trades with fewer than 10 annual new registrations on average were not included.

Trade	New Registrations	Completions
Drywall Finisher and Plasterer	53%	9%
Ironworker (Reinforcing)	46%	-22%
Painter and Decorator	25%	-35%
Ironworker (Structural/Ornamental)	24%	10%
Floorcovering Installer	24%	-8%
Bricklayer	17%	-5%
Refrigeration and Air Conditioning Mechanic	15%	-1%
Steamfitter/Pipefitter	11%	5%
Sheet Metal Worker	10%	1%
Insulator (Heat and Frost)	9%	16%
Lather (Interior Systems Mechanic)	9%	1%
Construction Craft Worker	8%	7%
Hoist Operator (Tower Crane)	8%	21%
Residential Air Conditioning Systems Mechanic	6%	21%
Carpenter	6%	0.3%
Construction Electrician	5%	2%
Heavy Equipment Operator (Tractor Loader Backhoe)	5%	-36%
Construction Millwright	4%	8%
Sprinkler System Installer	3%	-7%
Boilermaker	3%	21%
Powerline Technician	3%	5%
Glazier	2%	3%
Plumber	1%	2%
Electrician (Domestic and Rural)	-4%	8%
Painter and Decorator (Industrial)	-15%	13%
Hazardous Materials Worker	-16%	-8%
Mobile Crane Operator	-27%	3%
Heavy Equipment Operator (Excavator)	-27%	-11%

Table 9 - Gender Representation of Apprentices, Construction Trades, Average 2015 to 2019

Note: Several trades were excluded due to incomplete or missing data.

Construction Trade	Males	Females
Boilermaker	96%	4%
Bricklayer	99%	1%
Carpenter	96%	4%
Concrete Finisher	99%	1%
Concrete Pump Operator	100%	0%
Construction Craft Worker	95%	5%
Construction Electrician	97%	3%
Construction Millwright	97%	3%
Drywall Finisher and Plasterer	95%	5%
Electrician (Domestic and Rural)	97%	3%
Exterior Insulated Finishing Systems Mechanic	100%	0%
Floorcovering Installer	97%	3%
Glazier	96%	4%
Hazardous Materials Worker	96%	4%
Heavy-Duty Equipment Operator (Dozer)	96%	4%
Heavy-Duty Equipment Operator (Excavator)	96%	4%
Heavy-Duty Equipment Technician	98%	2%
Insulator (Heat and Frost)	98%	2%
Ironworker (Reinforcing)	99%	1%
Ironworker (Structural/Ornamental)	98%	2%
Lather (Interior Systems Mechanic)	99%	1%
Mobile Crane Operator	98%	2%
Painter and Decorator	86%	14%
Painter and Decorator (Industrial)	97%	3%
Plumber	98%	2%
Powerline Technician	99%	1%
Refrigeration and Air Conditioning Mechanic	99%	1%
Residential (Low-Rise) Sheet Metal Installer	98%	2%
Residential Air Conditioning Systems Mechanic	99%	1%
Roofer	97%	3%
Sheet Metal Worker	98%	2%
Sprinkler Fitter	99%	1%
Steamfitter/Pipefitter	97%	3%
Tilesetter	95%	5%
Tower Crane Operator	98%	2%

Appendix C: Union/Employer Training Facilities

Union/Employer Training Delivery Agents	Apprenticeship Program
Canadian Elevator Industry Educational Program 1815 Ironstone Manor, Unit 7, Pickering, ON L1W 3W9	Elevating Devices Mechanic
Carpenters Local 1669 1306 Capital Way, Innova Park, Thunder Bay, ON P7B 0A3	General Carpenter
Carpenters Local 18 Drywall Trade School 1342 Stone Church East, Hamilton, ON L8W 2C8	Drywall, Acoustic and Lathing Applicator
College of Carpenters and Allied Trades – Central 420 Rowntree Dairy Rd, Woodbridge, Ontario L4L 8H2	Floor Covering Installer General Carpenter
College of Carpenters and Allied Trades – Northern	General Carpenter
Electrical Apprentice Training Alliance (IBEW 353/ECAT) Toronto Training Centre 1377 Lawrence Ave E, Toronto, ON M3A 3P8	Network Cabling Specialist
Finishing Trades Institute of Ontario – Central 130 Toro Rd, Toronto, ON M3J 2A9	Architectural Glass and Metal Technician Painter and Decorator - Commercial / Residential
Finishing Trades Institute of Ontario – East 199 Colonnade Rd South, Ottawa, Ontario K2E 7K3	Architectural Glass and Metal Technician
Finishing Trades Institute of Ontario – West 1430 Osprey Dr, Hamilton, Ontario L9G 4V5	Painter and Decorator - Industrial
Insulators Local 95 166 Newkirk Rd, Unit 5, Richmond Hill, ON	Heat and Frost Insulator
Interior Finishing Systems Training Centre – Central 60 Sharer Rd, Woodbridge, ON L4L 8P4	Drywall Finisher and Plasterer Drywall, Acoustic and Lathing Applicator Exterior Insulated Finish Systems Mechanic
Interior Finishing Systems Training Centre - East 190 Colonnade Rd South, Nepean, ON, K2E 7J5	Hazardous Materials Worker
Ironworkers Local 700 4069 Essex County Rd 46, Maidstone, ON N0R 1K0	Ironworker Reinforcing Rodworker

Union/Employer Training Delivery Agents	Apprenticeship Program
Ironworkers Local 721 909 Kipling Ave, Etobicoke, ON M8Z 5H3	Ironworker Reinforcing Rodworker
Ironworkers Local 736 1384 Osprey Dr, Ancaster, ON L9G 4V5	Ironworker Reinforcing Rodworker
Ironworkers Local 765 7771 Snake Island Rd, Metcalfe, ON K0A 2P0	Ironworker Reinforcing Rodworker
LiUNA Local 1059 56 Firestone Blvd, London, ON N5W 5L4	Cement (Concrete) Finisher Construction Craft Worker
LiUNA Local 1089 1255 Confederation St, Sarnia, ON N7S 4M7	Construction Craft Worker
LiUNA Local 183 145 Dalton Ave, Unit 1, Kingston, ON K7K 6C2 560 Dodge St, Cobourg, ON K9A 4K3 700 Huntington Rd, Woodbridge, ON L4L 1A5 431 Bayview Dr, Unit 4–6, Barrie, ON L4N 8Y2	Brick and Stone Mason Cement (Concrete) Finisher Construction Craft Worker
LiUNA Local 506 1600 Major Mackenzie Dr, Richmond Hill, ON L4S 1P4	Cement (Concrete) Finisher Construction Craft Worker Hazardous Materials Worker Precast Concrete Erector
LiUNA Local 527 6 Corvus Court, Nepean, ON K2E 7Z4	Construction Craft Worker
LiUNA Local 625 2155 Fasan Dr, Oldcastle, ON N0R 1L0	Construction Craft Worker
LiUNA Local 837 526 Winona Rd North, Stoney Creek, ON L8E 5E9	Cement (Concrete) Finisher Construction Craft Worker
LiUNA Local Union 607 730 Balmoral St, Thunder Bay, ON P7C 5V3	Cement (Concrete) Finisher Construction Craft Worker
Ontario Masonry Training Centre – East 8700 Jeanne D'Arc Blvd N, Orleans, ON K4A 0S9	Brick and Stone Mason

Union/Employer Training Delivery Agents	Apprenticeship Program
Ontario Masonry Training Centre – Central 350 Superior Blvd, Mississauga ON L5T 2N7	Brick and Stone Mason
Operating Engineers Training Institute of Ontario 12580 County Rd, Morrisburg, ON K0C 1X0	Concrete Pump Operator Heavy Equipment Operator - Dozer Heavy Equipment Operator - Excavator Heavy Equipment Operator – Tractor Loader Backhoe
Operating Engineers Training Institute of Ontario 2245 Speers Rd, Oakville, ON L6L 6X8	Hoisting Engineer - Mobile Crane Operator 1 Hoisting Engineer - Tower Crane Operator
Ottawa Walls and Ceilings – Sudbury Satellite Campus 159 Marier St, Azilda, ON P0M 1B0	Drywall, Acoustic and Lathing Applicator
Ottawa Walls and Ceilings Training Centre 104 - 5500 Canotek Rd, Ottawa, ON, K1J 1K6	Drywall, Acoustic and Lathing Applicator
Sheet Metal Workers Local 285 234 Attwell Dr, Etobicoke, ON M9W 5B3	Low-Rise Residential Sheet Metal Worker
Sheet Metal Workers Provincial Training Centre 2600 Sheridan Garden Dr, Oakville, ON L6J 5A6	Sheet Metal Worker
Terrazzo Tile & Marble Trade School 30 Capstan Gate, Units 4-5, Concord, ON L4K 3E8	Terrazzo, Tile and Marble Setter
UA Local 46 Training Centre 936 Warden Ave, Scarborough, Ontario M1L 4C9	Plumber Steamfitter
UA Local 787/ORAC Training Centre 419 Deerhurst Dr, Brampton, Ontario L6T-5K3	Refrigeration and Air Conditioning Systems Mechanic
UA Local 853 Sprinkler Fitters Training Centre 60 Performance Dr, Richmond Hill, ON L4S 0G6	Sprinkler and Fire Protection Installer

Source: Ontario Construction Secretariat and Ministry of Labour, Training and Skills Development, 2019-2020 Fiscal Year

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