REPORT ON IN-DEMAND SKILLED TRADES

In Simcoe County and The District Of Muskoka

working together

Simcoe Muskoka
Workforce Development Board

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EXECUTIVE SUMMARY

This report is in response to a Ministry of Labour, Training and Skills Development requirement that all Local Employment Planning Councils and Workforce Development Boards consult with their local employers regarding in-demand skilled trades and their views on the apprenticeship system.

The findings of this report are based on data analysis, employer interviews, key informant interviews, employer focus groups and an employer survey.

Employers like the apprenticeship approach in principle, namely the combination of training in the workplace and periodic classroom instruction. Overall, 42% of employers felt that the apprenticeship system is extremely effective or effective in meeting the skill needs of their business, while 21% gave it a negative rating (not so effective or not at all effective). Employers have a number of concerns, however, including the shortage of experienced journeypersons, fewer youth joining the trades, the financial cost to employers of providing the training, and the complexity of the apprenticeship process, among other issues.

61% of employers said it was very difficult to hire a journeyperson, while only 26% said it was very difficult to hire an apprentice. While a clear majority of employers expect that the demand for skilled tradespersons will increase over the next few years, they are divided as to whether the supply of skilled tradespersons will increase or decrease. The biggest concern for employers is the retirement of the baby-boom generation and the resulting shortage of skilled tradespersons brought about by declining enrollments over the decades in apprenticeship programs.

From the data analysis, the following trades would appear to be facing potential shortages:

In both Simcoe and Muskoka: Hairstylists; Truck and Coach Technicians; Automotive Service Technicians; Auto Body and Collision Damage Repairers;
In Simcoe: General Machinists
In Muskoka: Refrigeration and Air Conditioning Systems Mechanics;

In addition to these trades, during consultations employers also added the following trades as occupations for which it was difficult to recruit:

Carpenters; Industrial Electricians; Industrial Mechanic Millwrights; CNC Programmers; Tool and Die Makers.

Employers are also feeling the impact of technological change, resulting in higher skill levels required of new workers, and in the need for constant upgrading of equipment, work processes and the skills of incumbent workers.

Despite the fact that there are 144 skilled trades in Ontario, the following five trades account for at least three-quarters of the registered journeypersons in each of Simcoe and Muskoka: Electrician (Construction and Maintenance); Automotive Service Technician; Hairstylist; Plumber; and Truck and Coach Technician.

Among actions which employers suggested could make the apprenticeship system better were:

- Promote the trades more through high schools, targeting not just youth but also their parents and guidance counsellors;
- Make the apprenticeship process easier to navigate;
- Bring back the personal connection which used to be provided by the Ministry to support apprentices should they encounter challenges;
- Provide more financial incentives to employers and more financial support to apprentices.

Introduction

The Government of Ontario has made a clear commitment to attract more people to the skilled trades and to encourage more employers to hire apprentices. As part of this goal, in the late spring of 2019, the Ministry of Labour, Training and Skills Development directed all Local Employment Planning Councils and Workforce Planning Boards to undertake an In-Demand Skilled Trades Project to provide local insights on labour market conditions for skilled trades and to obtain employer perspectives on the operations of the apprenticeship system.

To carry out this project, the Simcoe Muskoka Workforce Development Board (SMWDB) undertook a literature review, analyzed local labour market data, interviewed employers and key informants, conducted employer focus groups and an employer survey, all for the purpose of gathering as much evidence as possible on which to base its findings. This report provides a summary of what we learned and includes data analysis, an overview of responses to the specific questions for which the Ministry sought answers, as well as additional insights we gained from our investigation.

Through the latter half of 2019, SMWDB undertook 38 employer interviews, two interviews with key informants, and held three employer focus groups with a total of 21 participants. The employer survey attracted 109 employers who hire skilled tradespersons. In short, the project reflects 170 engagements with employers and other stakeholders.

The result of this work has been communicated to the Ministry of Labour, Training and Skills Development. This report is intended to provide our local community with the benefits of this research, so that all stakeholders can better understand and engage with the apprenticeship system and the skilled trades labour market.

Insights from the data analysis

Context. Currently, there are 144 skilled trades in Ontario (12 trades were de-prescribed or removed from the list on July 1, 2019). There are 23 compulsory trades, meaning that a person cannot work in such a trade without being a journeyperson and without being registered with the Ontario College of Trades. No certificate is required to work in a voluntary trade, but employers may prefer someone who can demonstrate skills proficiency obtained by way of an apprenticeship.

An ***apprentice*** is someone who enters into a Registered Training Agreement with the Ministry and who then registers with the Ontario College of Trades. Most apprentices spend 80-90% of their time learning their skill in the workplace and around 10-20% of their time learning in a classroom. Depending on the program, an apprenticeship program can last one to five years.

A ***Certificate of Apprenticeship*** is issued when the apprenticeship training is completed. There are 75 trades that also require passing an exam, which results in a ***Certificate of Qualification***. Some trades have a ***Red Seal*** exam, which provides certification for every province in Canada.

An ***occupation*** is defined by the National Occupational Classification and does not distinguish between whether a job is a skilled trade or not.

Limitations of the data. Data analysis of skilled trades occupations is made more challenging because of how the data is reported. The Ontario College of Trades and the Ministry of Labour, Training and Skills Development collects registration data for journeypersons and apprentices by skilled trades program, while labour market data such as is collected through the Census by Statistics Canada is categorized by occupation. One can match skilled trades programs to occupations, however, there is not always a perfect match. For example, registrants in the Hairstylist skilled trades program are found in the occupation of Hairstylists and Barbers, yet barbers are not a skilled trade. As well, while all apprentices are registered, only journeypersons in compulsory trades are required to be registered and so occupations representing voluntary trades will number far more employed residents than there are registrations in the corresponding skilled trade program.

Indeed, for certain occupations, skilled trades workers can make up a very small percentage of all persons employed in that occupation, because that broad occupation may represent a wide range of sub-occupations,[1] and because the skilled trade may be a voluntary trade, so that it is not necessary to obtain a certificate to work in that occupation.

Numbers for apprentices, journeypersons, occupations. This section illustrates the size of the skilled trades labour force in Simcoe and Muskoka. Table 1 shows the figures for the top five trades by registered journeypersons. It is noteworthy that it is the same trades in both areas, only that their order is different. In addition, these top five trades alone account for a significant majority of all registered journeypersons, in Simcoe – 75%, and in Muskoka – 77%.

Table 1: Top Five Trades by Registered Journeypersons, Simcoe and Muskoka, October 2019[2]

SIMCOE		MUSKOKA	
Electrician — Construction and Maintenance	2326	327	**Automotive Service Technician**
Automotive Service Technician	2292	320	**Electrician — Construction and Maintenance**
Hairstylist	1575	234	**Truck and Coach Technician**
Truck and Coach Technician	1484	184	**Hairstylist**
Plumber	922	120	**Plumber**

Bolded entries are compulsory trades

There is some difference when one lists the top five trades by apprentices (Table 2). Even so, four of the top five trades are common to both areas. It is also the case that registered apprentices are less concentrated in fewer trades. In Muskoka, these top five trades account for 57% of all apprentices, while in Simcoe their top five account for 47% of all apprentices.

[1] A good example is the occupation of Transport Truck Driver, which includes anyone who drives a heavy truck, such as a tractor-trailer truck, a dump truck, a moving van, and so on. There exists an apprentice program for a Tractor-Trailer Commercial Driver. Tractor-trailer trucks make up just one portion of the Transport Truck Driver occupation, and there are very few registered journeypersons for this trade.

[2] This data was made available through the helpful assistance of Ontario College of Trades staff.

Table 2: Top Five Trades by Registered Apprentices, Simcoe and Muskoka, October 2019

SIMCOE		MUSKOKA	
Electrician — Construction and Maintenance	506	76	**Electrician — Construction and Maintenance**
Automotive Service Technician	341	53	General Carpenter
General Carpenter	220	37	**Automotive Service Technician**
Plumber	211	30	**Plumber**
Truck and Coach Technician	168	20	Powerline Technician

Bolded entries are compulsory trades

Over the last six years, new apprentice registrations in Simcoe and Muskoka increased from around 760 in 2013-14 to almost 1100 in 2018-19 (Table 3). Taking the top seven trades by new apprentice registrations over that time, the trend line has shown an increase in registrations for each of them, except for Child Development Practitioner, which has a slightly negative trend line.

Table 3: Apprentice registrations, top six new registrations for Simcoe and Muskoka, 2013-2014 to 2018-2019

	13-14	14-15	15-16	16-17	17-18	18-19
Auto Service Technician	116	158	157	152	176	176
Electrician - Construction and Maintenance	114	126	151	150	143	210
Hairstylist	85	100	100	109	100	113
Truck and Coach Technician	42	45	69	52	82	71
General Carpenter	37	56	49	44	68	72
Child Development Practitioner	46	66	49	46	35	51
Plumber	21	42	37	49	42	77
ALL NEW REGISTRATIONS	761	908	867	906	938	1089

Bolded entries are compulsory trades

Occupations. When it comes to providing data relating to the actual occupations, the presentation can become more complicated. For one, as noted earlier, some broad occupations include more sub-occupations than what is represented by a single skilled trades program. In addition, in the case of voluntary trades, there can be far more individuals working in that occupation as skilled tradespersons than would be registered with the Ontario College of Trades.

There is a further challenge because the occupation data does not quite reflect the actual jobs in a given locality. Most labour market data is expressed in terms of residents. However, the number of employed residents in an area does not mean they all work in that area. Some commute to other locations for work, just as residents from outside commute into the local area for work. Some data is available which counts the actual jobs present in an area, but here a different challenge arises. Jobs can only be counted for a local area if they have a fixed location for work. A number of skilled trades occupations move from job site to job site, such as when a carpenter goes to different construction sites or when a plumber attends to different locations to fix a leak.

To see how these issues play out, Table 4 presents the number of registered apprentices and journeypersons by occupation in October 2019, as well as the number of employed residents in that same occupation. However, the employed resident occupation data is from the 2016 Census. To see how these figures compare, we express the comparison in terms of a percentage of registered tradespersons to employed residents. Given the time lag, we would expect the ratio to be greater than 100%, as there should be more workers in these occupations after three years, given the growth in employment generally.

On the other hand, where an occupation involves a voluntary trade, we would expect the ratio to be less than 100%, because fewer journeypersons may go to the trouble and expense of being registered.

In order to capture these differences, Table 4 presents three types of examples:[3] (i) compulsory trades; (ii) voluntary trades which have a higher number of registrations; and (iii) voluntary trades with a small number of registrations.

Table 4: Comparison of registered tradespersons (2019) and employed residents (2016) figures, select trades, Simcoe County and District of Muskoka

Occupation	Registered tradespersons		Employed residents		Registered trades as % of employed residents	
	SIMCOE	MUSKOKA	SIMCOE	MUSKOKA	SIMCOE	MUSKOKA
COMPULSORY TRADES						
6341 Hairstylists and barbers	1728	197	1475	185	117%	107%
7241 Electricians (except industrial & power system)	2913	431	1395	255	209%	169%
7251 Plumbers	1133	150	790	140	143%	107%
7321 Automotive service technicians and others	4406	622	2625	330	168%	189%
VOLUNTARY TRADES WITH HIGHER REGISTRATION NUMBERS						
7271 Carpenters	271	97	2400	890	11%	11%
7311 Construction millwrights and industrial mechanics	223	29	985	105	23%	28%
VOLUNTARY TRADES WITH LOWER REGISTRATION NUMBERS						
6322 Cooks	72	15	2395	315	3.0%	4.8%

[3] There are more examples in the data appendix to this report.

7237 Welders and related machine operators	37	7	1245	115	3.0%	6.1%
7611 Construction trades helpers and labourers	47	4	3385	575	1.4%	0.7%

Bolded entries are compulsory trades
The number preceding each occupation refers to the National Occupational Classification code (NOC)

Essentially, among compulsory trades, the figures for registered tradespersons and employed residents are roughly in the same range, usually 100% and 200%, the latter being higher than one would expect. Some of the compulsory trades have ratios lower than 100% (appendix data tables), which would indicate workers employed in these occupations who are not registered journeypersons. Among voluntary trades with higher registration numbers, the registered tradespersons are roughly 10%-30% of employed residents in that occupation, except in the case of Electrical Power Line and Cable Workers in Muskoka (appendix data tables), where the proportion is 60%. Among voluntary trades with low registration numbers, the proportion of registered tradespersons to the entire occupation can be very low, under 6% and often 3% or less.

Some preliminary observations regarding these comparisons:

1) It may be, among those voluntary trades with higher registration numbers, that some employers do place a higher value on a Certificate of Apprenticeship or a Certificate of Qualification, either in terms of who they hire or what wage they offer, which then provides a reason for more workers to acquire a certificate and to become registered (the high proportion of Electrical Power Line and Cable Workers who are registered tradespersons may be an example of that);
2) In the case of those voluntary trades with lower registration numbers, it would require deeper research to understand if journeypersons are simply not registering or if completion of an apprenticeship does not typically result in better employment or wage outcomes for these occupations.

Evidence from the data for shortages or impending shortages among specific skilled trades categories. There are several ways in which one can analyze the data to produce some insights regarding where one might expect to see some skills shortages in the near future.

Firstly, based on the registration numbers for journeypersons and apprentices in compulsory trades, one can produce a figure of how many journeypersons there are for each apprentice. A high number of journeypersons would suggest that not enough apprentices are filling the training pipeline, and this could be a sign that there could be a looming shortage in the future. Table 5 lists those skilled trades in Simcoe or Muskoka where there is sufficient data to make a comparison (Where there is no sufficient data, the cell is marked by a dashed hyphens: "---").

Table 5: Ratio of One Apprentice per Journeypersons, Select Compulsory Trades, Simcoe and Muskoka, October 2019

	SIMCOE	MUSKOKA
Hoisting Engineer — Mobile Crane Operator 2	-NO APP-	----
Electrician — Domestic and Rural[4]	15.2	6.0
Hairstylist	10.3	14.2

[4] An Electrician – Construction and Maintenance works on electrical systems in various settings: residential, commercial, industrial. An Electrician – Domestic and Rural is limited to houses, small dwellings and farms.

Hoisting Engineer — Mobile Crane Operator 1	9.4	----
Truck and Coach Technician	8.8	13.0
Automotive Service Technician	6.7	8.8
Auto Body and Collision Damage Repairer	5.4	7.8
Residential Air Conditioning Systems Mechanic	5.1	----
Electrician — Construction and Maintenance[5]	4.6	4.2
Plumber	4.4	4.0
Refrigeration and Air Conditioning Systems Mechanic	4.1	11.6
Sheet Metal Worker	3.8	5.5
Steamfitter	3.6	----
Sprinkler and Fire Protection Installer	2.8	----

Bolded entries are compulsory trades

In a number of cases, because Muskoka has a smaller labour force, the figures for certain trades were not large enough to provide a robust ratio. Where there were larger numbers, in most cases the ratio for Muskoka was higher than the ratio for Simcoe, with the notable exception of Electrician – Domestic and Rural. However, this function can also be covered by Electrician – Construction and Maintenance.

In the case of Hoisting Engineer – Mobile Crane Operator 2 in Simcoe, there were 90 registered journeypersons and zero apprentices, so it was not possible to calculate a ratio, but those figures certainly indicate a potential shortage in the future.

Based on the data in Table 5, one could suggest that a number of these skilled trades may be facing a future shortage:

- For both Simcoe and Muskoka: Hairstylists; Truck and Coach Technicians; Automotive Service Technicians;
- For Simcoe: Hoisting Engineers — Mobile Crane Operators 1; and Hoisting Engineers — Mobile Crane Operators 2;
- For Muskoka: Auto Body and Collision Damage Repairers; and Refrigeration and Air Conditioning Systems Mechanics.

A second method for identifying skilled trades at risk of shortages is to look at the median age of registered journeypersons. A median age of 50 years old means that half of the registered journeypersons in that trade are 50 years of age or older. Table 6 lists those skilled trades with a larger number of registered journeypersons which have a median age of 50 years old or older, for both Simcoe and Muskoka.

Table 6: Skilled Trades where Median Age of Registered Journeypersons is 50 Years Old or More, Simcoe and Muskoka, October 2019

	MEDIAN AGE
SIMCOE	
Truck and Coach Technician	55
Auto Body and Collision Damage Repairer	55
Refrigeration & AC Systems Mechanic	50
Sheet Metal Worker	50
MUSKOKA	

Automotive Service Technician	53

Ontario College of Trades, registration data for York Region, October 2, 2019
Bolded entries are compulsory trades

Thus, in Simcoe, half of all registered journeypersons working as Truck and Coach Technicians and as Auto Body and Collision Damage Repairers are 55 years of age or older. In Muskoka, half of all Auto Service Technicians are 53 years of age or older.

Thirdly, one can also examine the data for specific occupations, comparing the proportion of workers aged 55 years and older (likely to retire soon), the proportion of workers aged 15-34 years of age (what does the supply pipeline look like), and how these proportions have changed between 2006 and 2016 (two Census periods), in comparison to averages for all occupations. The following occupations appear most at risk of a future shortage based on these calculations:

- In both Simcoe and Muskoka: Transport truck drivers
- In Simcoe only: Machinists and machining and tooling inspectors

Finally, we also undertook an analysis of job board aggregator data. This data reflects on-line job postings across various platforms (e.g. Indeed, Job Bank and so on), collected into one database (eliminating duplications), to show a cumulative count of job postings by occupation for Simcoe and Muskoka. Our analysis looked at job postings for occupations which included skilled trades and we sought to draw out any trends in terms of these job postings, comparing annual job postings from October 2016 to September 2019. The analysis compared the trend in job posting (whether it was going up or down) in comparison to the trend for job postings for all occupations in these areas during the same time period.

The trends which emerged were as follows:

- A strong growth in job postings for:
  - Cooks
- A moderate growth in job postings for:
  - Early childhood educators and assistants
  - Hairstylists and barbers
  - Plumbers
  - Carpenters
- A slight growth in job postings for:
  - Construction trades helpers and labourers
  - Automotive service technicians, truck and bus mechanics and mechanical repairers
- A slight drop in job postings for:
  - Heavy equipment operators (except crane)
  - Transport truck drivers
- A moderate drop in job postings for:
  - Heating, refrigeration and air conditioning mechanics
  - Construction millwrights and industrial mechanics
  - Welders and related machine operators
- A considerable drop in job postings for:
  - Electricians (not industrial and power system)
  - Machinists and machining & tooling inspectors

We are less confident regarding the conclusions which can be drawn from this data. A drop in job postings could mean that there were fewer job vacancies in a given occupation. Yet we know from the employer survey that for a number of the industrial trades, such as machinist or industrial mechanical millwright, employers found it difficult to recruit. Another explanation for a drop in job postings is that employers sought other strategies to try to find journeypersons in these occupations.

Other insights from the data. There are several other features of the skilled trades which emerge from an analysis of the relevant data for Simcoe and Muskoka:

- Based on the registration data, it is evident that skilled trades in the Construction, Industrial and Motive sectors are almost exclusively comprised of males, usually 97% or more of all tradespersons, both among journeypersons and apprentices; the rare figure outside that range is found among General Machinists, where 92% of journeypersons and 93% of apprentices are male – in actual numbers, this means 2 female and 22 male registered journeypersons and 5 female and 66 male apprentices; only among the Service sector trades are there a number of skilled trades where there are more females present, certainly among Childhood Development Practitioners and also among Hairstylists (males make up 17% of Hairstylist journeypersons and 9% of Hairstylist apprentices);
- Especially among the Construction trades, a large proportion of skilled tradespersons (often 50% or more) are working at no fixed workplace, that is, they constantly change where they carry out their function (for example, moving from one construction site to another); in both Simcoe and Muskoka, over 70% of carpenters as well as of plasterers and drywall installers work at no fixed workplace;
- Certain skilled trades occupations have higher proportions of self-employed workers; over one-third of the following occupations are self-employed: *in Simcoe and Muskoka*: painters & decorators (except interior decorators); carpenters; hairstylists and barbers; *in Simcoe*: plasterers and drywall installers; *in Muskoka*: plumbers;
- Certain skilled trades occupations have higher proportions of workers who work mainly part-time weeks, such as the following occupations where over 30% of employees worked mainly part-time weeks: *in Simcoe and Muskoka*: cooks as well as hairstylists and barbers; *in Simcoe*: bakers.

The labour force data is largely based on where employed residents live. The commuting data reveals different commuting patterns for different occupations. Some highlights:

- *Destinations for Simcoe residents employed in skilled trades*: more Hairstylists & Barbers stay in Simcoe for their work (83%), while among some industrial trades, such as Industrial Electricians and Industrial Millwrights, a slightly higher proportion travel elsewhere, in particular to Peel. Only slightly more than half of Electricians stay in Simcoe, and close to a quarter of them commute to Toronto for work;
- *Travelling to jobs in Simcoe*: At least three-quarters and usually more of the Simcoe skilled trades jobs are filled by workers living in Simcoe;
- *Destinations for Muskoka residents employed in skilled trades*: Tradespersons living in Muskoka are even more likely to work in Muskoka compared to residents working in other occupations;
- *Travelling to jobs in Muskoka*: Among Hairstylists & Barbers jobs in Muskoka, the vast majority are filled by Muskoka residents, whereas in a number of skilled trades occupations, a slightly larger proportion that average come from Parry Sound. This is especially pronounced in the case of

welders, where half the jobs are filled by commuters from outside Muskoka, largely from Parry Sound.

The most important issues expected to impact the skilled trades over the next five years

The biggest issue that employers are concerned about is demographic, which has two components: the retirement of the baby-boom generation and the reduced number of youth who are entering the trades. As one employer summarized it:

> "The big challenge is that the skilled trades population is older and are starting to retire and youth are not as drawn to skilled trades as in the past, so this will create shortages if we don't increase the number of youth entering the trades."

> "We need to start promoting the idea of trades to youth at a younger age and provide a professional prestige to the trades; we need to sell youth and their parents on the idea that this is an interesting profession, with opportunity as well as the ability to work with advanced technology."

The point has to be emphasized that apprentices cannot take the place of experienced journeypersons. The challenge faced by employers is that it will take some years before the increase in apprentices will address the current shortage of seasoned journeypersons. One employer made this clear with the following observation: "Lots of experienced tradespersons leaving and, while youth appear to be joining trades in increasing numbers lately, there is a gap of experienced workers in the 35 to 55 years old range."

Or as another employer expressed it: "The apprenticeship system is getting more apprentices, but there was a lost couple of decades where numbers declined and now we are paying the price."

In the survey, employers were asked to indicate whether they agreed with a series of statements regarding priority issues. Their level of agreement was as follows:

- 83% felt that the declining number of youth choosing skilled trades was a major concern;
- 66% felt that the retirement of the baby boom generation was creating a gap in the skilled trades labour market supply;
- 36% feeling that youth were less inclined to commit to a longer training program;
- 29% felt that apprenticeship programs needed to be made more flexible;
- 28% said that more attention needed to be placed on soft skills
- 20% thought that increasing opportunities in emerging industries were drawing youth from the trades.

It is clear from the survey responses that the demographic challenges posing by increased retirements and fewer youth entrants is the major concern, which is particularly pronounced among firms with over 100 employees and firms operating in the Industrial and Motive sectors. Employers in the Service sector express less concern regarding these demographic impacts, whereas they rate the need for more emphasis on soft skills as a significant issue.

Some other issues which employers raise as a major concern are: the complexity of the apprenticeship process; unrealistic expectations on the part of new entrants into the field regarding their wages and

hours of work; concern with what they see as a diminished work ethic; and the cost to the employer of training these new workers.

> "If the government doesn't make the apprenticeship system more flexible and easier to use, then it will face shortages of apprentices down the road."

The impact of technological change on skilled trades occupations

Technological change is having a considerable impact on the skilled trades, particularly in terms of the new skills which have to be acquired.

In the survey, employers were asked to indicate their level of agreement with a series of statements. Their responses were as follows:

Table 7: Percent of employers agreeing with the following statements on the impact of technological change

Technological change is re-shaping the skill requirements of the job	64%
Technological change is advancing at a rapid pace and training programs are not keeping up	28%
Don't know or is hard to say	27%
Technological change is increasing the demand for jobs in this occupation	24%
Technological change is reducing the demand for jobs in this occupation	5%

The increasing digitization of products requires a wider range of skills:

> "The equipment is getting more and more sophisticated, and so need a higher level of skills as well as a broader range of skills. For example, our tractors not only need to be serviced in terms of mechanical issues, but also GPS systems and remote control."

> "Technological change has more impact now and will into the future. For instance, the number and type of sensors in things like sideview mirrors and other components mean the technicians need to have a better understanding of digital/IT/ networking. We anticipate a time when we will need a dedicated IT employee to handle the built-in technology."

It also meant a change in the training curriculum, as well as investments in new equipment, something which could be a challenge for smaller businesses.

> "Generally, the work is becoming more sophisticated and requires constant upgrading of skills and tools. With electric and hybrid cars, this will mean significant changes. Apprenticeship programs are going to have to change their curriculum. Currently the training is being provided by manufacturers. There will need to be quite an investment in new tools. It may be that dealerships and larger operations will be at a competitive advantage over small operators."

In the Motive sector, there is a concern regarding the business models which steer customers to make use of authorized dealerships:

> “We need legislation similar to that in the United States, called "right to repair" laws. Manufacturers should be required to release proprietary information to enable non-dealer technicians to work on vehicles.”

Overall, employers do not feel that technology will reduce the demand for labour, but it will result in demands for a higher-skilled workforce.

> “Many employers are investing heavily into automation in order to reduce their requirements for labour, which is even more difficult to fill than skilled trades at the moment. I believe that this will lead to an increased need for technical personnel in general, so that technology is actually increasing the demand for skilled trades in manufacturing.”

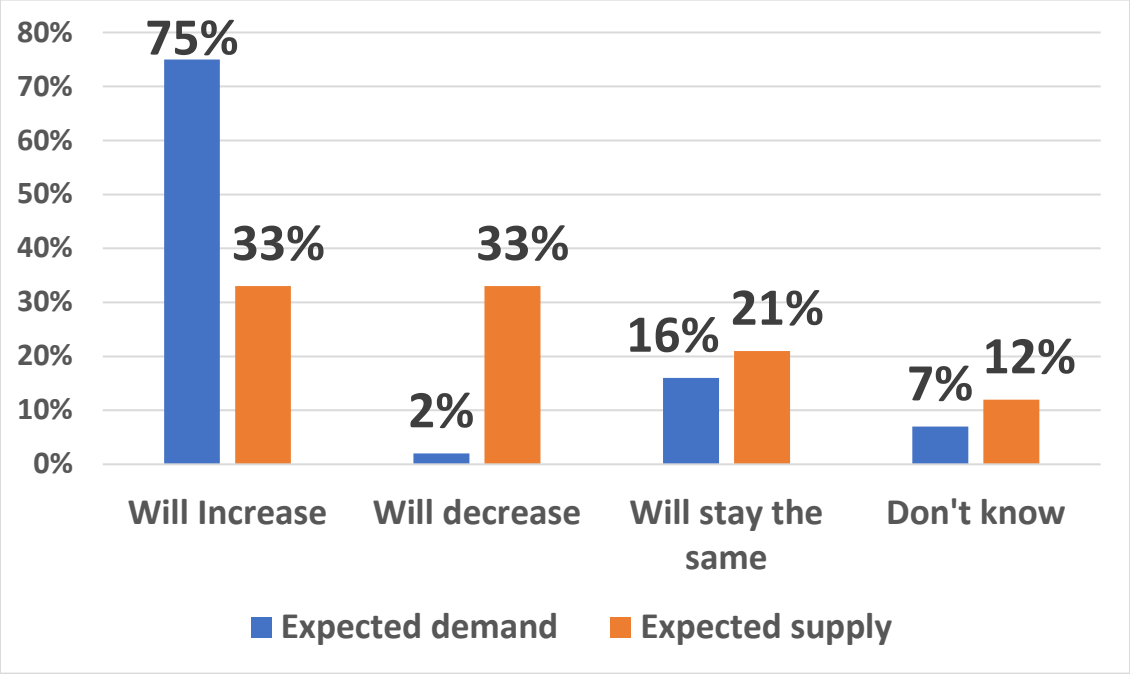
Some employers note a generational difference, where older workers sometimes have difficulty picking up the new technology, whereas younger workers are completely comfortable with and embrace the new technology.

What journeyperson skilled trades occupations are most difficult for employers to fill and why

In general, employers find it hard to recruit journeypersons. In the survey, 61% of all employers stated it was “very difficult” for them to hire a journeyperson and a further 25% said it was “difficult.” There was limited variation by size of firm or by the trades sector in which the firm employed journeypersons. The highest degree of difficult was expressed by firms in the Construction sector, of whom 67% said it was “very difficult” to hire a journeyperson, whereas the lowest was expressed by firms in the Service sector, of whom 50% said it was “very difficult.”

Further, employers were asked about the demand and supply of their skilled trades occupations in the coming two to three years. 75% of employers felt demand for these occupations would increase, while only 2% felt demand would decrease. Yet only 33% felt the supply would increase, while 33% felt it would decrease. These figures show that employers feel the skilled trades labour squeeze will worsen over the next few years. The following chart illustrates the point.

Chart 1: Expectations of employers regarding the supply of and demand for skilled trade workers in Simcoe and Muskoka over the next 2-3 years



From the employer survey and interviews, the skilled trades most frequently mentioned for which it was difficult to hire were: general machinist; carpenter; industrial electrician; industrial mechanic millwright; CNC programmer; and tool and die maker. In addition, the following trades also received a fair bit of mention: electrician – construction and maintenance; plumber; welder/metal fabricator; automotive service technician; and cook. Finally, a smaller number of employers also mentioned: truck and coach technician; refrigeration and AC systems mechanic; sheet metal worker; and heavy-duty equipment technician.

The following quote from an employer provides a sense of how they view their challenge:

"There is a shortage of experienced machinists. Anyone who is any good is in a job; those who are looking for a job have less complete skills. When it comes to machinist apprentices, there are candidates around, but their soft skills are not as good; in particular, they are less willing to put in longer hours when the work requires it. When it comes to welder fitter journeypersons, here again, they may have welding skills, but it is the fitting and metal fabricator skills which are in short supply. For welder apprentices, the same comment made about the commitment to longer hours when required on the part of machinists applies here as well."

It is very common for an employer to make the observation that a journeyperson who is unemployed but available for work is often lacking a specific technical skill or has issues with certain soft skills.

When it comes to journeypersons, a number of employers indicated that they often have to try to lure such workers from other employers in the area.

What apprentice skilled trades occupations are most difficult for employers to fill and why

While 61% of employers indicated in the survey that it was “very difficult” for them to hire a journeyperson, only 26% said the same for hiring an apprentice. And while only 15% of employers said it was “somewhat difficult” or “no at all difficult” to hire a journeyperson, twice as many (33%) said the same about hiring an apprentice. Large firms with over 100 employees (13%) and firms in the Motive sector (7%) were least likely to say it was “very difficult” to hire an apprentice.

From the interviews, employers were naming the same skilled trades as what they mentioned with regards to journeypersons as the skilled trades for which it was also difficult to hire apprentices. In the case of apprentices, they were more often to mention the lack of soft skills, in particular, their work ethic and their willingness to put in the hours. They also felt youth were drawn to other kinds of work. As one employer stated: “It seems that youth are less interested in getting their hands dirty and are more interested in doing design work or things like that.” Another employer felt that if youth do choose a skilled trade, they are more likely to go into a more familiar one, such as electrician or plumber, as opposed to a sheet metal worker.

There were, however, strategies that worked better for some employers in recruiting apprentices:

“When we are looking for apprentices in the fields of heavy-duty equipment technician or truck and coach technician, we find kids who grew up around machines, like growing up on a farm, are more comfortable and adept with machines, and also understand the safety issues better.”

“We first seek to hire them in entry-level occupations and see how they work out in our company before we propose that they enter an apprenticeship, which could happen four months after they are initially hired. But we need to test them first, not hire an apprentice. It is hard finding that entry-level person with the aptitude, interest and right work ethic.”

In the survey, 63% of employers stated that they had sponsored or were currently sponsoring an apprentice. The proportions did not vary by size of firm, but it did vary by sector: 100% of firms in the Motive sector had answered yes, as did 67% in the Construction sector, 58% in the Industrial sector and a lower 38% in the Service sector.

Over the course of the last six years, the following seven trades represent both the highest as well as regularly consistent number of apprentice registrations in the combined Simcoe County and Muskoka District area: Automotive Service Technician; Electrician - Construction and Maintenance; Hairstylist; Truck and Coach Technician; General Carpenter; Child Development Practitioner; and Plumber. All seven of these trades have also seen their apprenticeship registration numbers increase over this six-year period.

Recruitment methods for hard-to-fill skilled trades positions

Employers were asked what methods they used to recruit candidates for hard-to-fill skilled trades positions. This question solicited an open-ended response, and so the answers below represent the actual responses which employers provided (they were able to provide more than one answer). The table lists the top twelve responses, including the number of employers who mentioned each option.

Table 8: Recruitment methods used by employers (Number of employers responding: 86)

RECRUITMENT METHOD	NUMBER OF MENTIONS
Indeed	21
On-line job boards in general	20
Advertisements, job ads (newspaper, radio)	16
Word-of-mouth	12
Job fair/career fair	12
Secondary schools, including co-op programs	10
Recruitment services	8
Employment agencies	7
Georgian College	6
Job Bank	5
LinkedIn	5
Schools generally (high schools or colleges)	5

The following quote gives a sense of the challenges employers have with different recruitment methods:

> "We have tried all kinds of strategies for machinists. For example, we have placed advertisements in newspapers outside our area, but we find that those who might be drawn to come into our area for a job often have a reason to leave the area as well. OYAP students are too young -- they are still exploring their career options and often change their mind and enter a different trade or career. EO services often do not refer people with the right fit or the people they propose require more pre-employment assistance. We have learned that the best route is to find local individuals whom we can then train into these positions."

Another employer made the following observation about hiring a journeyperson:

> "In order to find someone who is good at what they do, you need to find them through word-of-mouth. Everyone knows who that person is and one can to try to lure that person from another employer."

The issue of apprentices dropping out of their apprenticeship

Most employers report that few apprentices drop out of their apprenticeship. According to the survey, the following represented the incidence of dropping out:

Table 9: Employer estimates of incidence of apprentices dropping out

Majority drop out	Less than half drop out	Very small number drop-out	No apprentices drop out
9%	18%	40%	33%

Thus, almost three-quarters (73%) of employers said that either a very small number or none drop out. The larger the firm, the more they are likely to say that very few or none drop out. By sector, here are the proportions in each category who say very few or none drop out: Industrial (83%); Motive (71%); and Construction (66%). The number of employers in the Service sector responding to this question was not sufficiently large to provide a robust sample.

As part of the survey, employers were offered a series of statements and asked to indicate whether they agreed with the reason provided. They could select more than one statement to agree with. Their responses were as follows:

Table 10: Employer views on reasons why apprentices may drop out

Personal difficulties sometimes arose which resulted in the apprentice dropping out	34%
There were ample job opportunities without completing an apprenticeship	20%
There was not much difference in wages with or without a certificate	13%
The length and complexity of the apprenticeship was a disincentive	13%

In the interviews, employers pointed out there can be a number of factors:

> "We find there are several reasons: the length and complexity of the program is a disincentive, both for the apprentice and for the employer; there are often job opportunities available regardless of whether one completes the apprenticeship or not; when business is going well, employers are very busy and they do not have the time to train; on the other hand, if business is slow and an employer cannot continue the sponsorship, the apprentice sometimes finds it hard to get another sponsorship."

> "In some cases, people realize it is not for them. In other cases, we see that they really don't have the aptitude or that they don't have the employability skills."

> "In our case, most were too young, having come through the OYAP stream. We find it is better if apprentices are in their early to mid-twenties and are more settled on this choice as their career path."

> "Length and complexity of the program is a problem. Also, there are ample job opportunities even without a completion. A big problem is having to wait for the classroom training portion. Some apprentices drop out for this reason, or else move elsewhere where they can sooner access the classroom portion."

The combination of youth who may need some guidance interacting with a system which may be complex or impersonal is a problematic mix:

> "Sometimes it is a personal problem for the apprentice; other times it is a bureaucratic mindset that is not trying to solve a problem but trying to enforce rules without exercising common sense."

A further barrier for these youth can be the written test:

> "You may have a student with a learning disability but who has talent at fixing things or another trade. Could they get help to set them up for success? That student may have excellent skills, but not be able to write about it on the test. Kids are intimidated and stressed already when it comes time for testing. It is not a pleasant experience."

Some employers acknowledge that the work can be a challenge, as in the following two quotes:

> "They can make equivalent money for less work elsewhere."

> "Other jobs pay as well or better, with better conditions."

Employers had a number of suggestions for how to reduce the drop-out rate of apprentices. One mentioned several times referred to the more hands-on, personal contact which was present in the past from the apprenticeship office.

> "They should go back to the old way of doing things, when the field person would come out to the place of employment and meet with the employer and apprentice and go over the apprenticeship requirements and expectations. It was important to have that in-person connection."

Other employers suggested financial support for apprentice during the time they attend the classroom training, increasing the number of classroom seats to reduce the waiting lists, and more hands-on, practical evaluation of skills as opposed to written tests for the purpose of certification.

> "To make apprenticeship completion more likely, (they) need to reduce the red tape, make the system easier to navigate and provide more direct, human support to both apprentices and employers to work through the process. Bring back more financial incentives for both employers and for apprentices."

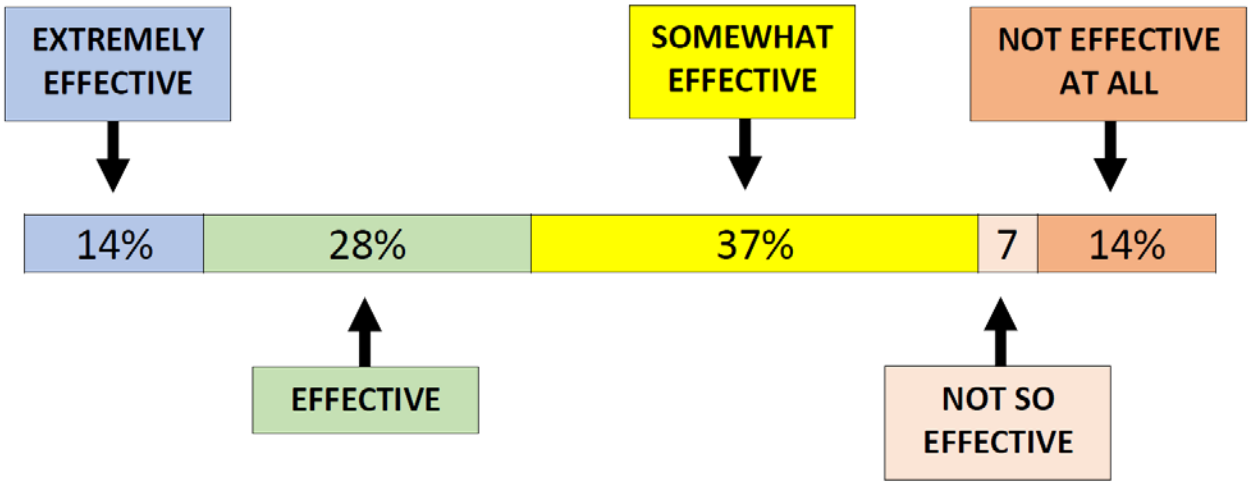
A number of employers also complained about apprentices leaving soon after receiving their certificate and wished to see some mechanism to counter that tendency.

> "There are ample job opportunities even without completing a certificate. Generally, it seems that people in the skilled trades will easily change jobs even for a small increase in wages. To complete training, and to ensure that apprentices stay for a least a minimum amount of time, there should be some bonus system, whereby there is a financial incentive to stay with an employer for some time after the apprenticeship. I know of a number of employers who say they will no longer take an apprentice perhaps the person bolts soon after they get their certificate."

Rating how well apprenticeship has served the skill requirements of employers

As part of the survey, employers were asked to rate the effectiveness of the apprenticeship system in meeting their organization's skill requirements. Their responses were as follows:

Diagram 1: How well has apprenticeship served employers' skill requirements



Overall, 42% of employers gave it a positive rating (extremely effective or effective) and 21% gave it a negative rating (not so effective or not at all effective). If one coverts the scoring to a numerical value, where "extremely effective" is assigned a value of "4", "very effective" is a "3", "somewhat effective" is a "2", "not so effective" is a "1", and "not at all effective" is a "0", the average rating is 2.2, which is slightly higher than "somewhat effective."

Firms with 20-99 employees provided the most negative assessment (27%), while firms with 100 or more employees provided the most positive assessment (54%). Firms in the Construction sector had the highest ratings at both ends of the spectrum, with 20% saying the apprenticeship system was extremely effective and 17% saying it was not at all effective.

In the interviews, one finds two common themes: on the one hand, employers like the apprenticeship approach in principle, the combination of on-the-job learning supplemented by classroom instruction.

> "A two-year college program makes it difficult for us to know what the applicant can do. The apprenticeship system works better for us because as the apprentice comes back from each school session, we can see what they have learned and how it has added to their skill set."

On the other hand, the problem with the apprenticeship system is primarily one of not being able to find any candidates or not being able to find the right candidates, or else difficulties which arise for other reasons, such as financial cost, red tape, delays in getting the classroom instruction, and so on.

Barriers to apprenticeship faced by employers

The major barriers which employers cite are:

1) The difficulty in finding appropriate apprentice candidates, who have the right work ethic, good soft skills, are motivated and interested in learning, and have some aptitude for the trade;

2) Addressing financial barriers, notably the cost to the employer as well as the financial challenges apprentices face, particularly with respect to financial support during the classroom training portion of their apprenticeship, as well as purchasing tools;
3) Overcoming the complexity of the apprenticeship system, including getting responses in a timely manner;
4) Ensuring there are a sufficient number of classroom seats and a wider range of apprentice programs available through Georgian College.

Employers elaborated on these and other themes in the course of their interviews:

> "It is a very cumbersome system, it is not easy to navigate the paperwork and reporting requirements, or to get assistance from a human. The on-line system for reporting is a nightmare."

> "Math skills are too low for many youth. This includes the OYAP apprentices who also score very low on math."

For some employers, the solution is doing a better job of screening and preparing apprenticeship candidates:

> "We begin the process before the apprenticeship. We hire them to do various functions in advance of a trades function. Then, after a few months, we might propose to them that they enter an apprenticeship."

What employers said could make the apprenticeship system better meet their needs

Employers had many suggestions regarding how the apprenticeship system could be made better.

Provide a stronger personal connection between the program and apprentices. Quite a few employers volunteered the comment that they felt the Ministry should reinstate the personal connection which apprenticeship officers used to provide in supervising the system and assisting apprentices navigate the process. Employers felt that this would reduce the drop-out rate as well as help smooth out difficulties which might arise and would be of benefit to both apprentices as well as to employers.

> "There is not enough interaction with Ministry representatives. They don't come out to the workplace and meet with the apprentice and the employer the way they used to. It is also very hard to reach them by phone."

> "I feel that there is less hands-on support for employers and apprentices than there was in the past, both in-person as well as being able to reach someone by phone. Now we don't get timely responses. Perhaps what is needed is some readily available chat support on-line."

> "There is a need for better and faster communication between the Ministry representatives and both employers and apprentices. I know of situations where apprentices have not heard back from the Ministry for weeks."

> "Ministry representatives need to be concerned with more than the 'paper trail'. They should interview the apprentices and have a better handle on their challenges. Perhaps it would help

the system as a whole if they conducted exit interviews with apprentices who leave their trade to learn about what is not working for them."

Explore mentorship approaches. Further along the same vein, some employers spoke of an actual mentorship function, to support the apprentice through the workplace training and classroom instruction. One raised the suggestion of enlisting the support of retiring tradespersons, who perhaps could be recruited in part-time roles as mentors and/or as trainers.

> "We feel that our supervisors could benefit from assistance in learning how to be good mentors to apprentices. We feel that employers generally could benefit from a program which would enhance the mentoring and workplace teaching capabilities of supervising staff. We also feel that more hands-on support through the apprenticeship process would be a great help. We found the high level of support we received from the OYAP resource person was very helpful."

Promote the trades more with youth, target parents and guidance counsellors, develop a compelling brand for trades. Employers felt that much more needed to be done to promote the trades, both in overcoming the stigma which is currently associated with the trades, as well as in introducing youth to the trades earlier in the school system. Employers felt that youth would benefit from more hands-on experiences and that the trades should be seen as a career option equal to that of going to college or university.

> "The high schools need to do a better job of engaging with employers to know what they want, as well as to make sure they provide the student with a realistic exposure to the trade. Schools need to stop placing almost exclusive focus on the academic stream and promote the technical stream more."

> "Highlight the technological aspects of skilled trades when promoting them, for instance, the importance of computer technology in manufacturing or other trades tasks."

> "Government has to engage in an intensive campaign to promote the attractions and benefits of careers in the skilled trades. Need to change the mindset that the trades are some second-class form of working."

> "Youth are no longer being introduced to technical skills in high schools. We need to bring back tech shops or else create separate trades schools early on that youth can immerse themselves in these skills. Right now, too many kids feel they have to go to university. They don't realize the trade-offs they are making, taking on a big debt and not taking advantage of good wages and good wage progression available in these jobs."

> "All the different trade sectors should get together across our area and promote trades through a combined strategy, including targeting parents. This is not just a matter of publicity, it should be a full marketing campaign."

> "They should pitch careers in the trades as involving problem-solving, creativity and the use of high-tech equipment and advanced skills."

> "Even among those youth interested in trades, there is very little awareness about certain niche categories, such as agricultural equipment technician, where it is the same aptitude as an auto service technician, but a different field and actually better pay."

> "Guidance counsellors need more information and a different attitude towards skilled trades. Similarly, teachers' attitudes toward skilled trades need to change."

Make the system easier to navigate. Another issue often raised was simplifying the process and the paperwork. Many employers felt that it was very challenging to navigate the application process or to get responses to questions. Additional challenges cited were waiting lists for the classroom training component of several apprenticeship programs, as well as the need for a wider range of apprenticeship programs to be made available through the local community college, Georgian College.

> "The website is painful, complex and confusing to use to get someone licensed. Make it easier."

> "Reduce the bureaucracy and paperwork. Try to help employers with their needs rather than put in place barriers and roadblocks that do not help employers, but instead makes things worse. Also, it is hard to get someone by phone."

> "They need to ensure that classroom seats are available. When classes are full or when a program is cancelled, it needs to be promptly communicated to an apprentice. It can result in an apprentice spending a year stuck at their level. It means a penalty to the apprentice and further cost to the employer."

> "Need to have Georgian College offer a greater range of apprentice training programs, such as industrial mechanic millwright and industrial electrician."

Provide financial assistance to employers and to apprentices. Employers also felt that there were considerable financial barriers which made it more difficult to engage in apprenticeships, both on the part of employers (for whom training is a cost) and on the part of apprentices (especially the lack of financial support when attending the classroom training sessions, as well as help with the cost of tools).

Update the programs and the curriculum. It was also felt that apprenticeships needed updating. The apprenticeship program categories did not always reflect how these functions were assigned as occupations within a workplace and that in many instances, the curriculum was out-of-date and did not incorporate important technological changes.

> "They need to update the occupational and trades categories. They reflect an old workplace -- these functions are performed differently now and there are new functions, and the occupational categories do not reflect what is really happening in a workplace."

> "Our one concern is that in the area of CNC operations, when apprentices do their classroom training they are receiving training regarding manual work that we no longer do. It doesn't reflect the machines we are using."

Better assessment of apprentices and provide safety training. Employers wanted to see better testing of apprentices, as some felt that they came to the workplace lacking the technical skills that they should

have acquired. As well, a number of employers felt it would be helpful if apprentices received standard health and safety training, as they all require this for the workplace.

> "Apprentices are not demonstrating the skills that they are supposed to have learned in school. They should be able to demonstrate those skills before being able to move on to the next level."

Use hands-on evaluation for certification tests. The testing for certification should be modified to make more use of hands-on testing rather than written tests.

Change the ratio further. Some employers felt that if the ratio of journeypersons to apprentices was changed further, then more apprentices could be trained.

> "The most important thing is to increase the ratio of apprentices to journeypersons. A journeyperson can easily supervise and train two or three apprentices. One is missing out on the number who can be trained if you limit it to a one-to-one ration as it now stands."

Reduce poaching. There should be an incentive to cut down poaching.

> "An employer could pay the apprentice's training costs in exchange for a two-year employment commitment. If the employee leaves, they have to reimburse the training costs on a pro-rated basis."

Concerns regarding stackable skill designations. Several employers raised concerns regarding suggestions that stackable, portable or modular skill sets would be introduced, to make it easier to train workers for specific skills which certain employers may be seeking. In most cases, there was opposition to this idea, on the grounds that a journeyperson should be expected to have a wide and deep set of knowledge and skills, which reflects a standard of expertise. This ensures the quality of the work and is also what makes skilled trades certificate attractive as a career.

Re-orient immigration to target persons with skilled trades expertise. Several employers noted that the current shortage of journeypersons should be addressed by changing the immigration criteria to allow for more skilled trades workers to be selected to come to Ontario.

Do more to bring women into the trades. Several employers felt that much more should be done to attract and retain women in the trades.

Special strategy for adult apprentices. Some felt a distinct strategy should be developed to target adult workers who could become apprentices, having a special "adult apprenticeship" stream, addressing the particular issues which may face adult workers as opposed to youth apprentices.

Recognition for training efforts. One employer suggested a recognition program for employers who do an exemplary job in training or mentoring apprentices, along the lines of the "Employer of Choice" designation and promoting it through community stakeholders.

Conclusion

This study was the result of a direction from the Ontario Ministry of Labour, Training and Skills Development to all Local Employment Planning Councils and Workforce Development Boards that they

canvass employers regarding the local skilled trades labour market and their views on the apprenticeship process. The purpose of this assignment was to collect information, which has been done through a variety of means and which has been transmitted to the Ministry. This document is intended to inform our wider community about what we heard.

There was a clear consistency in the messages that came from employers, from concerns about the impacts of pending retirements and fewer youth entering the trades, to complaints about the financial burden to employers of training apprentices and the complexity of the apprenticeship process acting as a disincentive to both employers and apprentices. Employers also highlighted the impact of technological change on the requirement for higher skill sets among tradespersons.

The Ministry has recently announced initiatives to promote skilled trades more with youth. Hopefully, this report can provide an up-to-date picture to our various stakeholders concerned with the local labour market, so that they can better understand and move forward with actions that can support local employers find the skilled trades workers that they so clearly need.