

# Key Research Findings

This analysis was based on the pre-determined criteria listed below:

Section	Description	Measures
<b>Student Demand</b>	<p>Includes an assessment of OCAS (2007 - 2011) enrolment data at other colleges in terms of mean growth rate with a specific focus on Fleming's direct competitors where appropriate (Georgian, Sheridan, Seneca and Durham)</p> <p>Trends in certificate, diploma, degree, apprenticeship and continuing education (where available).</p> <p><b>Click Below to Access Full Source Document:</b>  <a href="#">Fall Enrollment Trend</a></p>	<ul style="list-style-type: none"> <li>● Strong = Fleming enrolment growth is outpacing system and is equal to or greater than 3%</li> <li>● Moderate = Fleming enrolment growth is equivalent to system demand and is between 1.0 to 2.9%</li> <li>● Weak = Fleming enrolment growth is less than the system demand and is less than 1%</li> </ul>
<b>Labour Market</b>	<p>Includes projected employment rate growth based on a consolidation of various Ontario, Canadian, and US sources including HRSDC, Sector Council Reports US Bureau of Labour Statistics, and the MTCU Employment Profile.</p>	<ul style="list-style-type: none"> <li>● Strong = Between 5-6 positive labour market indicators</li> <li>● Moderate = Between 3-5 positive labour market indicators</li> <li>● Weak = Between 1-2 or no positive labour market indicators</li> </ul>
<b>Competitive Analysis</b>	<p>Includes the number of actual colleges offering the program as well as the ratio of applications to acceptances at Fleming compared to other colleges and specific comment about Fleming's direct competitors where appropriate (Georgian, Sheridan, Seneca and Durham)</p> <p><b>Click Below to Access Full Source Document:</b>  <a href="#">Fall Conversion Report</a></p>	<ul style="list-style-type: none"> <li>● Strong = Fleming conversion ratio is greater than 2 below the system</li> <li>● Moderate = Fleming conversion ratio is 1 above, below or equal to the system</li> <li>● Weak = Fleming conversion ratio is greater than 2 above than the system</li> </ul>
<b>Financial Analysis</b>	<p>Includes a review of Contribution to Overhead (CTO) for existing programs (2010-11)</p> <p><b>Click Below to Access Full Source Document:</b>  <a href="#">Costing Analysis</a></p>	<ul style="list-style-type: none"> <li>● Strong = CTO is greater than 35%</li> <li>● Moderate = CTO is between 30 - 34%</li> <li>● Weak = CTO is between 20 – 30%</li> </ul> <p><b>No Contribution = 19% or less</b></p>

## Key Research Findings

<b>Key Performance Indicators</b>	<p>Includes KPI trends from the Key Performance Indicator Summary 5 Year Historical Overview KPI Data from Reporting Years 2008-2012.</p> <p><b>Click Below to Access Full Source Document:</b> <a href="#">Key Performance Indicators</a></p>	<ul style="list-style-type: none"><li>● Strong = Above system average in 6-7 indicators</li><li>● Moderate = Above system average in 3-5 indicators</li><li>● Weak = Above system average in 0-2 indicators.</li></ul>
<b>Resource Analysis</b>	<p>Requires school level assessment regarding space, technology, capital equipment and human resources. Recommendations from recent Program Review Reports included here</p>	

# Key Research Findings

## Plumbing Techniques (41010)

### Student Demand<sup>1</sup>

• **WEAK**

The following information consists of OCAS yearly student fall registration data as well as a mean growth rate and average student registration for each program under these categories:

#### Certificate

- Fleming has experienced a mean growth rate of **-3%** and an average registration of **33 students**
- St. Clair is the only school to offer this program, which has experienced a **-2%** mean growth rate and an average registration of **46 students**

#### Diploma

- La Cite is the only school to offer this program, which has experienced a **13%** mean growth rate and an average registration of **29 students**

#### Certificate

Program: 41010 – Plumbing Techniques														
	2008	2009	% Change (08-09)	2009	2010	% Change (09-10)	2010	2011	% Change (10-11)	2011	2012	% Change (11-12)	% Mean Growth Rate (08-12)	5 Year Average Reg. Students
→ Fleming										34	33	-3	-3	33
Total										34	33	-3	-3	33

Program: 41010 - PLUMBING TECHNIQUES														
	% Change 2007 2008 (07-08)			% Change 2008 2009 (08-09)			% Change 2009 2010 (09-10)			% Change 2010 2011 (10-11)			% Mean Growth Rate (07-11)	5 Year Average Reg. Students
ST. CLAIR							47			47 46 -2			-2	46
Total							47			47 46 -2				

#### Diploma

Program: 51010 - PLUMBING TECHNICIAN														
	% Change 2007 2008 (07-08)			% Change 2008 2009 (08-09)			% Change 2009 2010 (09-10)			% Change 2010 2011 (10-11)			% Mean Growth Rate (07-11)	5 Year Average Reg. Students
LA CITÉ COLLÉGIAL				24			24 35 46			35 28 -20			13	29
Total				24			24 35 46			35 28 -20				

<sup>1</sup> Registration data obtained from the Program Counts by Applicant Type Report (RPT0050P) in the OCAS Reporting and Analytics Cube December 7, 2011. Some programs/colleges may not be included because they were missing MCU codes in the OCAS dataset Prepared by Fleming Data Research (07-2012)

# Key Research Findings

## Labour Market

• **STRONG**

### Employment Ontario<sup>2</sup>

#### Plumbing (NOC - 7251)

- Employment Ontario Rating (2009-2013):
  - **Good**
- Education and Training
  - “A person working in this trade must hold a valid Certificate of Qualification or be registered as an apprentice. Upon the successful completion of the apprenticeship program and passing a trade examination, a person working in this trade is entitled to a Certificate of Apprenticeship and a Certificate of Qualification. Inter-provincial (Red Seal) trade certification, which allows qualified plumbers to work in other provinces and territories, is available to for this trade.”
  - “Completion of a four to five-year apprenticeship program or a combination of over five years of work experience in the trade and high school, college or industry courses in plumbing is usually required to be eligible for trade certification.”
  - “Entry to apprenticeship requires a job and usually completion of Grade 12. The apprentice applies directly to the employer, union or joint industry committee for an apprenticeship opening. Students who have completed Grade 10 have an opportunity to become registered apprentices while finishing high school under the Ontario Youth Apprenticeship Program. Alternatively, entry into apprenticeship can be pursued through pre-apprenticeship training.”
- Demand
  - “Opportunities for employment in this occupation are expected to be good over the period from 2009 to 2013. In addition, many job openings will be created each year from the need to replace workers who retire. Jobs in the plumbing trades are determined primarily by the existing stock of piping that must be maintained and the amount of new construction and renovation work.”
  - “Technological advances in plumbing are creating the need for higher skills. Computer literacy is important, as the use of computers in drawing, estimating, coordination and cost reporting related to plumbing expands. Increasingly, computer-controlled equipment is being utilized on the job. The plumbing trade is changing through increased installation of integrated plumbing systems in home construction, an increase in prefabrication, and new plastics and joining technologies in gas and water piping. More sophisticated measuring devices are being introduced and better material handling and joining methods are being developed. Licensed plumbers who also hold a gas fitter's certificate will have better job prospects.”
  - “This occupation is less vulnerable to the economic cycle compared to other construction jobs. In an economic downturn, plumbers are still required to maintain, replace and restore piping systems. In addition, the residential renovation stimulus is likely to create short term demand for plumbers in many home renovation projects particularly in bath remodeling.”

<sup>2</sup> "7251 Plumbers." *Employment Ontario*. N.p., n.d. Web. 31 Aug. 2012.  
<[http://www.tcu.gov.on.ca/eng/labourmarket/ojf/pdf/7251\\_e.pdf](http://www.tcu.gov.on.ca/eng/labourmarket/ojf/pdf/7251_e.pdf)>.

# Key Research Findings

## HRSDC<sup>3</sup>

### Plumbing (NOC - 7251)

- Job Openings (2011/2020): **22,680**
- Job Seekers(2011/2020): **31,686**
- Post Secondary Education Graduates: **29,715 (94%)**
- “Based on projections and considering that labour supply and demand in this occupation were balanced, it is expected that the number of job seekers will remain sufficient to fill job openings over the 2011-2020 period. Approximately half of the job openings will arise from retirements over the projection period, despite a low retirement rate, which is due to the fact that workers in this occupation are generally younger than the overall average and retire later than those in other occupations. Consequently, the gap between the average age of workers and the retirement age is greater than average. The other half of job openings will arise from economic growth, but will be far fewer than during the 2001-2010 period, during which the construction industry was stimulated by the building of new housing units, a substantial increase in renovation spending and, more recently, the increase in non-residential construction spending. However, the recent economic recession and a slowdown in population growth will result in a decrease in demand for housing and, therefore, a drop in the number of new job openings for plumbers, pipefitters and gas fitters. In terms of supply, nearly all job seekers will come from the school system. However, over the 2011-2020 period, many workers will leave this occupation to work in others because of the slowdown in the construction industry.”

## US Bureau of Labour<sup>4</sup>

### Plumbers, Pipefitters, and Steamfitters (SOC – 47-2152)

- Employment Growth (2010/2020): **Increase 26%**
  - **419,000(2010) to 527,500(2020)**
- “Employment of plumbers, pipefitters, and steamfitters is projected to grow 26 percent from 2010 to 2020, faster than the average for all occupations. Demand for plumbers is expected to come from new building construction and stricter water efficiency standards for plumbing systems, such as low-flow toilets and showerheads.”
- “The construction of new power plants and factories should spur demand for pipefitters and steamfitters. Beginning in 2011, employment of sprinklerfitters and plumbers is expected to increase as states adopt a change to the International Residential Code that requires new single- and double-family homes to have fire sprinkler systems.”
- “Job opportunities are expected to be good as some employers continue to report difficulty finding qualified professionals. In addition, many workers are expected to retire over the next 10 years, which will result in more job openings. Workers with welding experience may have the best opportunities.”

<sup>3</sup> "Plumbers, Pipefitters And Gas Fitters (725)." *Human Resources and Skills Development Canada*. N.p., n.d. Web. 31 Aug. 2012. <<http://www23.hrsdc.gc.ca/occupationsummarydetail.jsp?&tid=96>>.

<sup>4</sup> Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2012-13 Edition*, Plumbers, Pipefitters, and Steamfitters, on the Internet at <http://www.bls.gov/ooh/construction-and-extraction/plumbers-pipefitters-and-steamfitters.htm> (visited August 31, 2012).

## Key Research Findings

- “Like that of many other types of construction work, employment of plumbers, pipefitters, and steamfitters is sensitive to fluctuations of the economy. On the one hand, workers may experience periods of unemployment when the overall level of construction falls. On the other hand, shortages of workers may occur in some areas during peak periods of building activity.”
- “However, maintenance and repair of plumbing and pipe systems must continue even during economic downturns, so plumbers and fitters outside of construction, especially those in manufacturing, tend to have more stable employment.”

# Key Research Findings

## Sector Council Report

Plumbers (for the province of Ontario) <sup>5</sup>

Data Type	Units	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment (construction, industrial maintenance)	# of Workers	235	332	167	170	165	161	161	162	164	166	169	171	173	175	177
Employment (construction, maintenance total)	# of Workers	3,448	3,664	3,586	3,920	3,905	3,927	3,974	4,040	4,097	4,152	4,202	4,254	4,309	4,358	4,405
Employment (construction, new)	# of Workers	8,857	8,863	8,690	8,313	9,023	9,348	10,129	10,606	10,723	10,917	11,048	11,372	11,744	11,814	11,623
Employment (Non-Residential)	# of Workers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Employment (Residential)	# of Workers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Employment (Total)	# of Workers	12,305	12,526	12,275	12,233	12,927	13,274	14,104	14,646	14,820	15,069	15,250	15,626	16,052	16,172	16,028
Excess Supply (Total)	# of Workers	645	785	1,124	1,265	1,243	1,318	1,142	1,228	1,382	1,364	1,328	1,222	1,154	1,240	1,400
Excess Supply Rate (Total)	%	5.0	5.9	8.4	9.4	8.8	9.0	7.5	7.7	8.5	8.3	8.0	7.3	6.7	7.1	8.0
Labour Force (Total)	# of Workers	12,950	13,311	13,400	13,498	14,170	14,592	15,245	15,873	16,202	16,432	16,578	16,848	17,206	17,412	17,428
Labour Force - Average Age	# of Workers	38	38	38	39	39	39	39	39	39	39	39	39	39	40	40
Labour Force Change: Construction	# of Workers	449	361	89	98	673	422	653	628	329	230	146	270	358	206	16
Labour Force Change: Mortality (Deaths)	# of Workers	-	33	33	33	33	35	36	38	40	40	40	40	41	42	42
Labour Force Change: Net In-Mobility	# of Workers	-	299	19	31	607	359	593	575	279	183	105	235	329	182	-5
Labour Force Change: New Entrants	# of Workers	-	313	320	315	315	327	333	340	351	354	354	353	355	360	363
Labour Force Change: Retirements (construction)	# of Workers	-	218	217	215	216	228	237	249	261	267	272	277	284	293	300
Labour Market Rankings	Rankings (?)	-	-	-	-	-	3	4	3	3	3	3	3	3	3	3
Peak Employment (Total)	# of Workers	13,498	13,741	13,466	13,419	14,188	14,568	15,492	16,091	16,275	16,537	16,724	17,131	17,596	17,728	17,571
Peak Excess Supply (Total)	# of Workers	450	596	967	1,118	1,078	1,154	943	1,026	1,195	1,173	1,131	1,008	924	1,013	1,188
Peak Excess Supply Rate (Total)	%	3	4	7	8	7	7	6	6	7	7	6	6	5	5	6
Peak Labour Force (Total)	# of Workers	13,948	14,337	14,433	14,536	15,266	15,722	16,434	17,118	17,470	17,710	17,856	18,140	18,521	18,741	18,759

"For Labour Market Rankings: 1=Excess supply... 5=Excess demand"

<sup>5</sup> Construction Sector Council -Construction Forecasts. N.p., n.d. Web. 31 Aug. 2012. <<http://www.constructionforecasts.ca/>>.

## Key Research Findings

“Demand requirements related to industrial and other non-residential buildings rise steadily from current levels through 2019, but provincial labour market conditions are generally balanced, assuming worker and skills mobility meets regional demand requirements in the Greater Toronto Area as well as in the Northern and Southwest regions. Employment is divided between the residential and non-residential sectors. A potential for mobility between these sectors may help to meet market requirements. The age profile for this trade is younger than average. New entrants into the labour force are estimated to meet replacement demand requirements, but workers from outside the local market may be required to meet increased demands early in the scenario period and to maintain balanced conditions across the remainder of the period.”

### Professional Associations

- [Ontario Pipe Trades Council](#)
- [Plumber’s Residential Council of Ontario](#)
- [Ontario Plumber’s Association](#)
- [Ontario Plumbing Inspectors Association Inc.](#)
- [Canadian Institute of Plumbing and Heating](#)
- [United Association of Journeymen and Apprentices of the Plumbing and the Pipe Fitting Industry of US and Canada](#)
- [Mechanical Contractors Association of Canada](#)
- [Infrastructure Health & Safety Association](#)



# Key Research Findings

## Working in Canada

### Plumbing (NOC - 7251)

- **Employment Rating by Region:**

Location	Employment Potential
Hamilton--Niagara Peninsula Region	Fair
Kingston - Pembroke Region	Fair
Kitchener--Waterloo--Barrie Region	Fair
London Region	N/A
Muskoka-Kawarthas Region	Fair
Northeast Region	N/A
Northwest Region	N/A
Ottawa Region	Fair
Stratford--Bruce Peninsula Region	Fair
Toronto Region	Fair
Windsor-Sarnia Region	N/A

- **Wage Range by Region:**

Location	Wage (\$/hr)		
	Low	Median	High
Ontario	14.00	26.00	38.00
Hamilton--Niagara Peninsula Region	14.00	26.00	38.00
Kingston - Pembroke Region	14.00	26.00	38.00
Kitchener--Waterloo--Barrie Region	14.60	25.00	33.00
London Region	14.00	26.00	38.00
Muskoka-Kawarthas Region	14.00	26.00	38.00
Northeast Region	14.00	26.00	38.00
Northwest Region	14.00	26.00	38.00
Ottawa Region	14.00	26.00	38.00
Stratford--Bruce Peninsula Region	14.00	26.00	38.00
Toronto Region	13.00	27.00	38.00
Windsor-Sarnia Region	14.00	26.00	38.00

# Key Research Findings

## Competitive Analysis<sup>6</sup>

• **MODERATE**

The following information consists of OCAS yearly fall application and registration data as well as a conversion ratio for each program under this category:

### Certificate

- Fleming's conversion ratio has lowered slightly from 2011-2012, going from a **3:1** to a **4:1**
- In 2011, St. Clair had a conversion ratio of **4:1**

### Diploma

- La Cite has had a conversion ratio of **4:1** for the last two years; in 2009 the school had a very high ratio of **0:1**

### Certificate

Program: 41010 – Plumbing Techniques															
	App. 2008	Reg. 2008	Conv. Ratio	App. 2009	Reg. 2009	Conv. Ratio	App. 2010	Reg. 2010	Conv. Ratio	App. 2011	Reg. 2011	Conv. Ratio	App. 2012	Reg. 2012	Conv. Ratio
Fleming										99	34	3:1	135	33	4:1
Total										99	34	3:1	135	33	4:1

Program: 41010 - PLUMBING TECHNIQUES															
	App. 2007	Reg. 2007	Conversion Ratio	App. 2008	Reg. 2008	Conversion Ratio	App. 2009	Reg. 2009	Conversion Ratio	App. 2010	Reg. 2010	Conversion Ratio	App. 2011	Reg. 2011	Conversion Ratio
ST. CLAIR	0			0			13			185	47	4:1	179	46	4:1
Total	0			0			13			185	47	4:1	179	46	4:1

### Diploma

Program: 51010 - PLUMBING TECHNICIAN															
	App. 2007	Reg. 2007	Conversion Ratio	App. 2008	Reg. 2008	Conversion Ratio	App. 2009	Reg. 2009	Conversion Ratio	App. 2010	Reg. 2010	Conversion Ratio	App. 2011	Reg. 2011	Conversion Ratio
LA CITÉ COLLÉGIAL	0			0			0	24	0:1	127	35	4:1	111	28	4:1
Total	0			0			0	24	0:1	127	35	4:1	111	28	4:1

<sup>6</sup> Application data obtained from OCAS College Count Cube October 19, 2011 Registration data obtained from the Program Counts by Applicant Type Report (RPT0050P) in the OCAS Reporting and Analytics Cube December 7, 2011. Some programs/colleges may not be included because they were missing MCU codes in the OCAS dataset Prepared by Fleming Data Research (07-2012)

# Key Research Findings

## Financial Analysis

**NOT AVAILABLE**

Source: Program Costing Analysis 2010/2011

- Contribution to Overhead: NO INFO
- Program Weight: 1.20
- Funding Unit: 0.90

## Key Performance Indicators

**NOT AVAILABLE**

Source: Key Performance Indicator Summary 5 Year Historical Overview KPI Data from Reporting Years 2008-2012

KPI1-Graduation Rate	-
KPI2-Working	-
KPI3-Working Related	-
KPI4-Grad. Satisfaction	-
KPI8-Student Satisfaction-Learning	-
KPI9-Student Satisfaction- Teachers	-
KPI11-Grad. Satisfaction-Program	

## Resource Analysis

### Equipment

### Staffing

### Space

# Key Research Findings

## Appendix

**The following is the original environmental scan conducted by the Library Researchers to form the basis of the previous summary of Key Research Findings Report.**

### **Overview of the Profession:**

**NOC: 7251-B – Plumbers**

<http://www.workingincanada.gc.ca/report->

[eng.do?area=8792&lang=en&noc=7251&province=35&action=final&titleKeyword=Plumbing](http://www.workingincanada.gc.ca/report-eng.do?area=8792&lang=en&noc=7251&province=35&action=final&titleKeyword=Plumbing)

Plumbers perform some or all of the following duties:

- Read blueprints, drawings and specifications to determine layout of plumbing system, water supply network and waste and drainage systems
- Install, repair and maintain domestic, commercial or industrial plumbing fixtures and systems
- Locate and mark positions for pipe connections, passage holes and fixtures in walls and floors
- Cut opening in walls and floors to accommodate pipe and pipe fittings
- Measure, cut, bend and thread pipes using hand and power tools or machines
- Join pipes using couplings, clamps, screws, bolts, cement or soldering, brazing and welding equipment
- Test pipes for leaks using air and water pressure gauges
- May prepare cost estimates

### **Common Job Titles**

- Maintenance Plumber
- Plumber
- Plumber Apprentice
- Plumbing Mechanic

### **Typical Employers**

- Plumbing, heating and air conditioning construction firms
- Self-employment
- Maintenance departments of various establishments

### ***Labour Market***

#### **Working in Canada**

1. Employment potential for the Kawartha Region is “Good” (Working in Canada)

<http://www.workingincanada.gc.ca/report->

[eng.do?area=8792&lang=eng&noc=7251&action=final&s=2&titleKeyword=#report\\_tabs\\_container2](http://www.workingincanada.gc.ca/report-eng.do?area=8792&lang=eng&noc=7251&action=final&s=2&titleKeyword=#report_tabs_container2)

# Key Research Findings

## HRDSC

### 2. National Outlook – 10-Year Projection (2011-2020)

This occupation (**Plumbers**) is part of a larger occupational group called **Plumbers, Pipefitters and Gas Fitters (NOC 725)**.

<b>Occupations in this group</b>	Plumbers (7251) Steamfitters, Pipefitters and Sprinkler System Installers (7252) Gas Fitters (7253)
<b>Employment (non-student) in 2010</b>	71,531
<b>Median Age of workers in 2010</b>	38
<b>Average Retirement Age in 2010</b>	64

- Estimated that there will be more job seekers in this field than job openings for the 2011-2020 periods (job openings are expected to total **22,680**. It is expected that **31,686** job seekers will be available to fill these job openings). Nearly all job seekers will come from the school system (94%) with 6% from immigration
  - Over the 2006-2008 period, this occupation experienced a small number of job losses, along with a slight drop in its unemployment rate
  - According to Employment Ontario the Opportunities for employment in this occupation are expected to be good over the period from 2009 to 2013.
  - According to Employment Ontario (Estimates 2006), 21% of workers in this group were self-employed, and 91% Full-Time
  - Local wage for Peterborough/Kawartha Region 2010:
    - Low: \$15.65      Average: \$24.97      High: \$ 36.91
- <http://www23.hrsdc.gc.ca/occupationsummarydetail.jsp?&tid=96>

## US Bureau of Labour

<http://www.bls.gov/oco/ocos211.htm#outlook>

### Job Outlook

**Employment change.** Employment of plumbers, pipelayers, pipefitters, and steamfitters is expected to grow 16 percent between 2008 and 2018, faster than the average for all occupations. Demand for plumbers will stem from new construction and from renovation of buildings. In addition, repair and maintenance of existing residential systems will keep plumbers employed. A growing emphasis on water conservation, particularly in dryer parts of the country, that will require retrofitting in order to conserve water in new ways will increase demand for plumbers.

**Job prospects.** Job opportunities are expected to be very good, with demand for skilled plumbers, pipelayers, pipefitters, and steamfitters expected to outpace the supply of well-trained workers in this craft. Some employers report difficulty finding workers with the right qualifications. In addition, many people currently working in these trades are expected to retire over the next 10 years, which will create additional job openings. Workers with welding experience should have especially good opportunities.

### **Construction Sector Council Report (Saved on CLT s Drive)**

CSC is predicting a large # of positions to become available to 2019 in Central ON (647 positions) (APPENDIX 27)

# Key Research Findings

## Industry Standards:

The occupation (Plumber) requires certification in the province of Ontario. This occupation is also **regulated** in the following Provinces and/or Territories: Alberta, Nova Scotia, Québec, New Brunswick, Saskatchewan, Northwest Territories and Prince Edward Island.

To become a plumber in Ontario you must do one of the following:

- Complete a five-year apprenticeship (approximately 9,000 hours, including 720 hours of post-secondary in-school training). Apprenticeship includes on-the-job training (about 90 per cent of the apprenticeship) and some in-school training (about 10 per cent of the apprenticeship). Apprenticeship is a training agreement between a person who wants to learn a skilled trade and an employer who needs a skilled worker. An apprentice earns wages while working and learning the skills necessary to become a qualified tradesperson or journeyperson.

or

- Provide documents that prove that you have the training and experience from another country that meets the requirements of the trade in Ontario.

When you have done this, you must also:

- apply for the Certificate of Qualification (this is called the “C of Q”) and receive a provisional certificate
- pay the required fees
- write and pass the Certificate of Qualification exam

[Red Seal Certification](#) provides Interprovincial Standards for Plumbers

[‘Ellis Chart’](#) provides comparative charts (General Information, Education, Curriculum Resources and Assessment) of Apprentice Training Programs across Canada

## Professional Associations:

[Ontario Pipe Trades Council](#)

[Plumber’s Residential Council of Ontario](#)

[Ontario Plumber’s Association](#)

[Ontario Plumbing Inspectors Association Inc.](#)

[Canadian Institute of Plumbing and Heating](#)

[United Association of Journeymen and Apprentices of the Plumbing and the Pipe Fitting Industry of US and Canada](#)

[Mechanical Contractors Association of Canada](#)

[Infrastructure Health & Safety Association](#)

## Employment Requirements

Employment requirements are prerequisites generally needed to enter an occupation.

- Completion of secondary school is usually required.
- Completion of a four- to five-year apprenticeship program

or

A combination of over five years of work experience in the trade and some high school, college or industry courses in plumbing is usually required to be eligible for trade certification.

## Key Research Findings

- Trade certification is compulsory in Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Saskatchewan, Alberta and British Columbia and available, but voluntary, in Newfoundland and Labrador, Manitoba, Nunavut, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is available to qualified plumbers.

Most employers who advertise are looking for workers who have the following experience and skills.

Experience:

1-5 years

Specific Skills:

Install, repair and maintain plumbing fixtures and systems. Join pipes with couplings, clamps, screws, bolts or cement. Inspect and test pipes for leaks.

Additional Skills:

Instruct apprentices

[ Source: [National Occupational Classification 2006 - HRSDC](#) ]

### Educational Programs Leading to this Occupation

Technological advances in plumbing are creating the need for higher skills. Computer literacy is important, as the use of computers in drawing, estimating, coordination and cost reporting related to plumbing expands. Increasingly, computer-controlled equipment is being utilized on the job. The plumbing trade is changing through increased installation of integrated plumbing systems in home construction, an increase in prefabrication, and new plastics and joining technologies in gas and water piping. More sophisticated measuring devices are being introduced and better material handling and joining methods are being developed. Licensed plumbers who also hold a gas fitter's certificate will have better job prospects.

Completion of a four to five-year apprenticeship program or a combination of over five years of work experience in the trade and high school, college or industry courses in plumbing is usually required to be eligible for trade certification. Entry to apprenticeship requires a job and usually completion of Grade 12. The apprentice applies directly to the employer, union or joint industry committee for an apprenticeship opening. Students who have completed Grade 10 have an opportunity to become registered apprentices while finishing high school under the Ontario Youth Apprenticeship Program. Alternatively, entry into apprenticeship can be pursued through pre-apprenticeship training.

[Source: <http://www.tcu.gov.on.ca/eng/labourmarket>]

### Educational Competitors

#### Individual Community College/Institute Information

(Click on Program Title to view college program page)

**7 colleges currently offering this program under either plumbing techniques or mechanical techniques**

**Includes Highlights of unique program characteristics.**

### CANADORE

[PLUMBING - MECHANICAL TECHNIQUES](#) Ontario College Certificate

# Key Research Findings

## CONESTOGA

[MECHANICAL TECHNIQUES-PLUMBING](#) Ontario College Certificate

## DURHAM

[PLUMBER](#) (Apprenticeship)

## GEORGIAN

[PLUMBING TECHNIQUES](#) Ontario College Certificate

## FLEMING

[PLUMBING TECHNIQUES](#) Ontario College Certificate

-Unique aspect of program – includes a compressed format of 19 weeks and an applied project.

## SHERIDAN

[MECHANICAL TECHNIQUES – PLUMBING](#) Ontario College Certificate

## ST. CLAIR

[PLUMBING TECHNIQUES](#) Ontario College Certificate

APS #	MTCU Code	Approved Program Name	Program Weight	Funding Unit	Degree Factor	Institution
01178	41007	MECHANICAL TECHNIQUES – PLUMBING	1.30	1.60	1.0	CANADORE
01241	41007	MECHANICAL TECHNIQUES-PLUMBING	1.30	1.60	1.00	CONESTOGA
n.a.	APPRENT	PLUMBER	n.a.	n.a.	n.a.	DURHAM
n.a.	n.a.	PLUMBING TECHNIQUES	n.a.	n.a.	n.a.	GEORGIAN
n.a.	n.a.	PLUMBING TECHNIQUES	n.a.	n.a.	n.a.	FLEMING
01240	41007	MECHANICAL TECHNIQUES – PLUMBING	1.30	1.60	1.00	SHERIDAN
01196	41010	PLUMBING TECHNIQUES	1.20	0.90	1.00	ST. CLAIR

### Employment Postings:

On January 26, 2012, there was no jobs listed locally in the JobBank (38 job opportunities in the province). See below for the variety of postings....

Source: [jobbank.gc.ca](http://jobbank.gc.ca)

**Job Number:** 6224505

**Title:** Plumber ([NOC: 7251](#))

**Terms of Employment:** Permanent, Full Time, On Call, Weekend, Day, Night, Evening

**Salary:** Remuneration Based on Commission Only, Bonus, Commission, Other Benefits

**Anticipated Start Date:** As soon as possible

**Location:** Toronto North, Ontario (2 vacancies )



# Key Research Findings

**Skill Requirements:**

**Education:** Some college/CEGEP/vocational or technical training

**Credentials (certificates, licences, memberships, courses, etc.):** Plumber Trade Certification, 3rd Period Apprentice, 4th Period Apprentice, 5th Period Apprentice

**Experience:** 2 years to less than 3 years

**Languages:** Speak English, Read English, Write English

**Major Work Area:** Service

**Type of Establishment Experience:** Commercial, Residential

**Area of Specialization:** Drainage, waste and venting systems, Compressed air systems, Fixtures and appliances

**Type of Piping:** Plastic, Copper, Historic piping systems (lead, wood and bituminized fibre)

**Specific Skills:** Install, repair and maintain plumbing fixtures and systems, Solder or braze piping, Select and install pumps, Repair, service and maintain plumbing systems or fixtures

**Additional Skills:** Professionalism in customer service

**Security and Safety:** Bondable, Driving record check (abstract)

**Transportation/Travel Information:** Vehicle supplied by employer, Valid driver's licence

**Essential Skills:** Reading text, Numeracy, Writing, Oral communication, Working with others, Problem solving, Job task planning and organizing, Continuous learning

**Other Information:** For a busy plumbing service company. Training an asset. We are not accepting applications from apprentices.

**Employer:** Mr. Rooter Plumbing

**How to Apply:**

Please apply for this job only in the manner specified by the employer. Failure to do so may result in your application not being properly considered for the position.

**Contact Name:** Derek Moreland

**By Phone: between 9:00 and 17:00:** (416) 677-5316

**By Fax:** (416) 742-4759

**By E-mail:** moreland@mrrootergta.ca

**Business Profile:** Commercial and residential plumbing service company.

**Advertised until:** 2012/01/31

**Job Number:** 6236550

**Title: Plumber (Licensed Plumber) (NOC: 7251)**

**Terms of Employment:** Permanent, Full Time, On Call, Overtime, Weekend, Day, Evening

# Key Research Findings

**Salary:** \$17.00 to \$25.00 Hourly for 40 hours per week, Medical Benefits, Dental Benefits, Disability Benefits, Life Insurance Benefits, Group Insurance Benefits, Vision Care Benefits

**Anticipated Start Date:** As soon as possible

**Location:** Ottawa, Ontario (2 vacancies )

**Skill Requirements:**

**Education:** Completion of high school, Completion of college/CEGEP/vocational or technical training

**Credentials (certificates, licences, memberships, courses, etc.):** Plumber Trade Certification

**Experience:** 3 years to less than 5 years

**Languages:** Speak English, Read English, Write English

**Major Work Area:** Construction, Maintenance, Repair, Service

**Type of Establishment Experience:** Commercial, Residential

**Area of Specialization:** Drainage, waste and venting systems, Fixtures and appliances, Pools and decorative fountains, Private sewage disposal systems, Water filtration/softeners

**Type of Piping:** Black carbon or steel, Plastic, Copper, Stainless steel, Historic piping systems (lead, wood and bituminized fibre)

**Specific Skills:** Read and interpret blueprints, drawings and specifications, Install, repair and maintain plumbing fixtures and systems, Cut holes to accommodate pipes and fittings, Measure, cut, bend and thread pipes in place, Join pipes with couplings, clamps, screws, bolts or cement, Solder or braze piping, Inspect and test pipes for leaks, Determine piping system requirements and pipe sizing, Select and install pumps, Weld pipes, Weld pipes using silfoss, Repair, service and maintain plumbing systems or fixtures

**Additional Skills:** Estimate labour and material costs, Prepare tenders and quotations, Employ computerized material take-off procedures, Professionalism in customer service, Schedule personnel, tools and equipment

**Security and Safety:** Basic security clearance, Criminal record check, Driving record check (abstract)

**Own Tools/Equipment:** Tools, Steel-toed safety boots

**Work Conditions and Physical Capabilities:** Physically demanding

**Transportation/Travel Information:** Own transportation, Vehicle supplied by employer, Valid driver's licence

**Essential Skills:** Reading text, Document use, Numeracy, Writing, Oral communication, Working with others, Problem solving, Decision making, Critical thinking, Significant use of memory, Finding information, Computer use

**Employer:** Multi-Drain Inc

**How to Apply:**

## Key Research Findings

Please apply for this job only in the manner specified by the employer. Failure to do so may result in your application not being properly considered for the position.

**Contact Name:** HR Dept.

**By Phone: between 9:00 and 16:00:** (613) 737-6500

**By Fax:** (613) 737-6524

**By E-mail:** info@multi-drain.ca

**Advertised until:** 2012/02/15

**Job Number:** 6236152

**Title:** Plumber ([NOC: 7251](#))

**Terms of Employment:** Permanent, Full Time, Day

**Salary:** \$50,000.00 to \$80,000.00 Yearly for 40 hours per week

**Anticipated Start Date:** As soon as possible

**Location:** Ottawa, Ontario (2 vacancies )

**Skill Requirements:**

**Education:** Completion of college/CEGEP/vocational or technical training

**Credentials (certificates, licences, memberships, courses, etc.):** Plumber Trade Certification, Plumber Red Seal Endorsement

**Experience:** 5 years or more

**Languages:** Speak English, Speak French, Read English, Read French, Write English, Write French

**Major Work Area:** Construction, Maintenance, Repair

**Type of Establishment Experience:** Commercial, Residential

**Area of Specialization:** Drainage, waste and venting systems, Potable water distribution installation, Radiant heating systems, Well/private water systems, Water filtration/softeners

**Type of Piping:** Plastic, Copper, Historic piping systems (lead, wood and bituminized fibre)

**Specific Skills:** Read and interpret blueprints, drawings and specifications, Determine layout of systems and networks, Install, repair and maintain plumbing fixtures and systems, Locate and mark position of pipe connections, holes and fixtures, Cut holes to accommodate pipes and fittings, Measure, cut, bend and thread pipes in place, Join pipes with couplings, clamps, screws, bolts or cement, Solder or braze piping, Inspect and test pipes for leaks, Determine piping system requirements and pipe sizing, Select and install pumps, Weld pipes using silfoss, Repair, service and maintain plumbing systems or fixtures

**Additional Skills:** Estimate labour and material costs, Prepare tenders and quotations, Instruct apprentices, Professionalism in customer service, Schedule personnel, tools and equipment, Supervise other workers

**Own Tools/Equipment:** Tools, Steel-toed safety boots, Hard hat

**Work Conditions and Physical Capabilities:** Physically demanding

# Key Research Findings

**Transportation/Travel Information:** Vehicle supplied by employer, Travel expenses paid by employer

**Essential Skills:** Reading text, Writing, Oral communication, Working with others, Problem solving, Decision making, Critical thinking, Job task planning and organizing, Continuous learning

**Employer:** Shawn Boileau o/a Triton Plumbing

**How to Apply:**

Please apply for this job only in the manner specified by the employer. Failure to do so may result in your application not being properly considered for the position.

**By Phone: between 9:00 and 17:00:** (613) 223-4097

**By E-mail:** shawn@tritonplumbing.ca

**Online:** <http://www.tritonplumbing.ca>

**Business Profile:** Triton Plumbing is Ottawa #1 Plumbing Company Specializing in: Commercial/Service & Residential High end Renovation Contractor.

**Web Site:** <http://www.tritonplumbing.ca>

**Advertised until:** 2012/01/31

**Job Number:** 6229142

**Title:** Plumber - pipefitting (for hot-water heating installation) ([NOC: 7251](#))

**Terms of Employment:** Permanent, Full Time, Day

**Salary:** \$27.00 to \$30.00 Hourly for 40 hours per week

**Anticipated Start Date:** As soon as possible

**Location:** Pembroke Ontario, Ontario (1 vacancy)

**Skill Requirements:**

**Education:** Completion of high school, Completion of college/CEGEP/vocational or technical training

**Credentials (certificates, licences, memberships, courses, etc.):** Plumber Trade Certification, WHMIS Certificate, Driver's License (Class 3 or D)

**Experience:** 5 years or more

**Languages:** Speak English, Read English, Write English

**Major Work Area:** Construction

**Type of Establishment Experience:** Commercial

**Area of Specialization:** Drainage, waste and venting systems, Hydronic heating and cooling systems

**Type of Piping:** Black carbon or steel, Copper, Stainless steel

**Specific Skills:** Read and interpret blueprints, drawings and specifications, Determine layout of systems and networks, Locate and mark position of pipe connections, holes and fixtures, Cut holes to accommodate pipes and fittings, Join pipes with couplings, clamps, screws, bolts or cement, Solder or braze piping, Inspect and test pipes for leaks

**Additional Skills:** Professionalism in customer service

# Key Research Findings

**Security and Safety:** Basic security clearance, Criminal record check

**Own Tools/Equipment:** Tools, Safety equipment/gear, Steel-toed safety boots, Hard hat

**Work Conditions and Physical Capabilities:** Physically demanding

**Transportation/Travel Information:** Own transportation

**Essential Skills:** Reading text, Document use, Numeracy, Writing, Oral communication, Working with others, Problem solving, Critical thinking, Job task planning and organizing, Significant use of memory

**Employer:** KBM Fitting and Welding Inc.

**How to Apply:**

Please apply for this job only in the manner specified by the employer. Failure to do so may result in your application not being properly considered for the position.

**By Phone: between 9:00 and 17:00:** (613) 839-0040

**By Fax:** (613) 839-0011

**By E-mail:** kmcknight\_1@hotmail.com

**Advertised until:** 2012/01/26

**Job Number:** 6225736

**Title:** Plumber, residential construction (Licenced ONLY) ([NOC: 7251](#))

**Terms of Employment:** Permanent, Full Time, Day

**Salary:** \$18.00 to \$26.00 Hourly for 44 hours per week

**Anticipated Start Date:** As soon as possible

**Location:** Grand Bend/Goderich, Ontario (1 vacancy)

**Skill Requirements:**

**Education:** Completion of high school, Completion of college/CEGEP/vocational or technical training

**Credentials (certificates, licences, memberships, courses, etc.):** Plumber Trade Certification

**Experience:** 5 years or more

**Languages:** Speak English, Read English, Write English

**Major Work Area:** Construction, Repair

**Type of Establishment Experience:** Residential

**Type of Piping:** Plastic, Copper

**Security and Safety:** Driving record check (abstract)

**Own Tools/Equipment:** Tools

**Transportation/Travel Information:** Own transportation, Valid driver's licence

# Key Research Findings

**Essential Skills:** Reading text, Oral communication, Working with others, Problem solving

**Employer:** Geo-Teck

**How to Apply:**

Please apply for this job only in the manner specified by the employer. Failure to do so may result in your application not being properly considered for the position.

**By Fax:** (519) 236-7499

**By E-mail:** info@geo-teck.ca

**Business Profile:** Furnaces, central air, ground source, electrical, plumbing & fixtures, gas & electric fireplaces, in-floor heating, bar-be-cues, hot tubs

**Web Site:** <http://www.geo-teck.ca>

**Advertised until:** 2012/02/10

**Job Number:** 6227479

**Title:** Plumber apprentice (service plumber) ([NOC: 7251](#))

**Terms of Employment:** Permanent, Full Time

**Salary:** \$24.44 Hourly for 40 hours per week, Bonus, Other Benefits

**Anticipated Start Date:** As soon as possible

**Location:** Milton, Ontario (1 vacancy)

**Skill Requirements:**

**Education:** Completion of high school, Some college/CEGEP/vocational or technical training

**Credentials (certificates, licences, memberships, courses, etc.):** Plumber Trade Certification

**Experience:** 2 years to less than 3 years

**Languages:** Speak English, Read English, Write English

**Major Work Area:** Service

**Type of Establishment Experience:** Commercial

**Additional Skills:** Professionalism in customer service

**Security and Safety:** Criminal record check, Driving record check (abstract)

**Own Tools/Equipment:** Tools, Steel-toed safety boots

**Transportation/Travel Information:** Vehicle supplied by employer, Valid driver's licence

**Work Location Information:** Various locations

**Other Information:** Service Milton, Guelph, Cambridge, Burlington & Woodstock.

**Employer:** Hy-Pro Plumbing & Drain Cleaning

**How to Apply:**

## Key Research Findings

Please apply for this job only in the manner specified by the employer. Failure to do so may result in your application not being properly considered for the position.

**By Fax:** (519) 621-6853

**By E-mail:** alittle961@aol.com

**Business Profile:** A well established service and plumbing specialist company looking for third year apprentice

**Web Site:** <http://www.hypro-drains.com>

**Advertised until:** 2012/01/26

**Job Number:** 6236558

**Title:** Maintenance and repair plumber, (non-construction) (Service/Drain Technician) ([NOC: 7251](#))

**Terms of Employment:** Permanent, Full Time, On Call, Overtime, Weekend, Day, Evening

**Salary:** \$14.00 to \$20.00 Hourly for 40 hours per week, Medical Benefits, Dental Benefits, Disability Benefits, Life Insurance Benefits, Group Insurance Benefits, Vision Care Benefits

**Anticipated Start Date:** As soon as possible

**Location:** Ottawa, Ontario (2 vacancies )

**Skill Requirements:**

**Education:** Completion of high school

**Credentials (certificates, licences, memberships, courses, etc.):** Not required

**Experience:** 2 years to less than 3 years

**Languages:** Speak English, Read English, Write English

**Major Work Area:** Maintenance, Repair, Service

**Type of Establishment Experience:** Commercial, Residential

**Area of Specialization:** Drainage, waste and venting systems, Fixtures and appliances, Pools and decorative fountains, Private sewage disposal systems

**Type of Piping:** Black carbon or steel, Plastic, Copper, Stainless steel, Historic piping systems (lead, wood and bituminized fibre)

**Specific Skills:** Install, repair and maintain plumbing fixtures and systems, Locate and mark position of pipe connections, holes and fixtures, Cut holes to accommodate pipes and fittings, Measure, cut, bend and thread pipes in place, Join pipes with couplings, clamps, screws, bolts or cement, Solder or braze piping, Inspect and test pipes for leaks, Select and install pumps, Weld pipes, Repair, service and maintain plumbing systems or fixtures

**Additional Skills:** Professionalism in customer service

**Security and Safety:** Criminal record check, Driving record check (abstract)

**Own Tools/Equipment:** Tools, Steel-toed safety boots

# Key Research Findings

**Work Conditions and Physical Capabilities:** Physically demanding

**Transportation/Travel Information:** Own transportation, Vehicle supplied by employer, Valid driver's licence

**Essential Skills:** Reading text, Document use, Numeracy, Writing, Oral communication, Working with others, Problem solving, Decision making, Critical thinking, Job task planning and organizing, Significant use of memory, Finding information

**Employer:** Multi-Drain Inc

**How to Apply:**

Please apply for this job only in the manner specified by the employer. Failure to do so may result in your application not being properly considered for the position.

**Contact Name:** HR Dept.

**By Phone: between 9:00 and 16:00:** (613) 737-6500

**By Fax:** (613) 737-6524

**By E-mail:** info@multi-drain.ca

**Advertised until:** 2012/02/15