

A HUMAN RESOURCES STUDY OF THE CONSTRUCTION INDUSTRY ON PRINCE EDWARD ISLAND

Training Report

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Introduction

1.0 Introduction

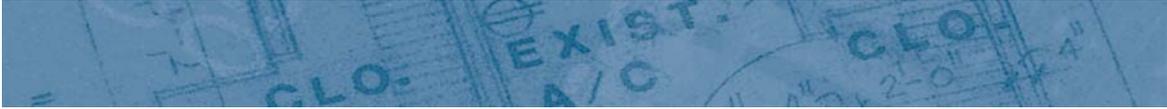
Prince Edward Island has two primary training avenues through which new entrants can access the training required for certification in trades within the construction industry. One avenue is through the Province's only Community College - Holland College, and the other is through the Provincial Apprenticeship Program. The College offers eleven pre-apprentice construction trades programs (these are outlined in a later section), and for five of these trades the college also offers a Block Release Program.

In the pre-apprenticeship stream through the college, students are involved in a full-time classroom curriculum, with an on-the-job placement (usually 2-3 weeks in length) at some point over the course of the program. Depending on whether the program is one year or two years in length, students are able to earn credit hours toward their apprenticeship requirements; students are credited 1000 hours for a one-year program, and 2000 hours for the two-year program.

Students must already be employed in a trade, and working under the supervision of a journeyman, to enter the Block Release Program. Once registered in the Apprenticeship Program students attend five modular training sessions usually over a three-year period. These training sessions are five weeks in length (150 hours of training), and each one focuses on a particular building technology and skill in the respective trade. For example, the carpentry program might include a module on foundations. Students would spend the entire module learning about the theory, technology and skills required for building foundations.

While there have been no formal trades certificate programs in Island high schools for the past 12-15 years, some students are able to get a limited amount of exposure to the carpentry and welding trades in some high schools. Some Island high schools also offer a Career Exploration Program to a limited number of students (about 5% of the students get access to this program). More recently, a new Accelerated Secondary Apprenticeship Program has been introduced into Island high schools.

Training on specific topics is available through various industry associations and unions. This training is provided through short modular training courses. These courses are designed to provide new information (new building designs, new safety and/or environmental requirements, etc), "hands on"



opportunities to work with the new materials and technology, and business management information to builders and contractors.

All of these training avenues are described more fully in the following sections of this report.

2.0 Holland College

2.1 Commitment to Trades Training at Holland College

Holland College assumed the primary responsibility for trades programming as a result of a major reorganization of vocational training in the province in the late 1970's and early 1980's. Over the past two decades, trades programming has evolved in response to labour market demand and provincial and economic development priorities and requirements. Research and interviews conducted for this study show that Holland College has pursued its responsibilities for trades training in an innovative and vigorous way. The following examples demonstrate the commitment of Holland College to trades training:

- ▲ The development of new models, such as the West Prince carpentry program, for delivering trades training in smaller communities. The program is delivered in three modules over a nine-month period and combines classroom and on-the-job skills development. It is delivered by Holland College through the Westville High School. In reality, this is the Holland College carpentry program delivered as an outreach module. Students completing all requirements graduate with a certificate, and are eligible to enter the Apprenticeship program to get their certification. There are 20 active participants in the West Prince program. Many are young men who worked in construction sector as carpenters helpers, and labourers and were interested in learning the trade, but were not anxious to travel to Charlottetown to take the course. The program has received very positive early reviews from participants and employers. Holland College is considering setting up a similar one in Eastern Kings next fall. The College also has offers courses during the evenings and on the weekends to accommodate trades workers who are employed during the weekdays.
- ▲ The use of labour market research, and consultations with industry, to determine the number of people to be trained in each trade. Holland College employs an advisory committee model to stay in touch with all trades. A committee of six to twelve individuals exists for each trade taught at the college. Committees include representation from tradespeople such as plumbers, employers and suppliers. The college also attempts to include representatives from all regions of the province. The college meets with each



Committee once a year. As a result of this consultation, Committee feedback is used to modify curriculum and delivery methods, and to ensure that the program is as relevant as possible. Key informant interviews indicate that this system works well. Labour market developments are closely monitored during the academic year and students and graduates are surveyed with regard to their perceptions and success in the labour market. These activities demonstrate the college's commitment to identify labour market trends and industry needs as quickly as possible.

- ▲ Plans to enhance the accessibility of trades programs through Prior Learning Assessment and Recognition (PLAR).
- ▲ Marketing, advertising and promotion programs to maximize awareness of trades careers and training opportunities at a number of levels including with prospective students, teachers and the general public through press releases, open houses, trade shows/career fairs, events with industry associations and the media. The college participates in careers promotion initiatives with the Province and the Federal Government through the Labour Market Development Agreement (LMDA). In 2003, the college partnered with the Province's Apprenticeship Branch, Skills Canada and the PEI Construction Association to organize Construction Awareness Week in PEI.
- ▲ The college recognizes that increased awareness of trade's career opportunities in high schools is critical to recruitment. The high school market is the primary focus of the college's recruitment officer who visits 150 high schools throughout Atlantic Canada during the time period of September through November with return visits to Island schools in January/February. Trades related opportunities already are available in high schools in PEI including carpentry, welding and the Accelerated School Apprenticeship Program (ASAP). The college focuses marketing efforts on high school teachers and principals through open houses, direct mail outs and other promotional efforts. As a result of these efforts, there has been a significant increase in the number of high schools that have begun arranging advance tours of the college facility for their students.
- ▲ There has been a conscious linkage between the college's Community Based Adult Education Program and the college programs. There are seats reserved for adults who get



their GEDs and want to move into a specific program. There is a blend of academic work and “hands on” opportunities in this model aimed at improving the motivation of students.

- ▲ The college’s commitment to quality is demonstrated through its ISO 9001 certification. ISO certification is an internationally recognized quality management standard. It commits the college to the following practices:
 - ▲ *Two student surveys per year*
 - ▲ *One survey of graduates per year*
 - ▲ *Review of survey results by senior management*
 - ▲ *A five year rolling record of Critical Performance Indicators to be maintained for each full-time program*
 - ▲ *Annual review of Critical Performance Indicators by senior management*
 - ▲ *Regular, on-going internal audits by the Quality Office*
 - ▲ *Annual external audits by the ISO certification body*
 - ▲ *Continual quality improvement supported by active monitoring*

2.2 Construction Trades Programs

Table 1 provides a summary of Holland College training programs in the following construction trades. The source for this information is the 2003-2004 college Calendar.

Table 1
Holland College – Construction Related Trades

Program	Admission Requirements	Length	Credential	Location	Tuition Fees (2)	Other Costs (3)
Carpentry (1)	Grade 12 or equivalent	9 months	Certificate	Ch'town	\$3,415	\$390
Construction Technology	Grade 12 or equivalent plus grade 11 math, English and Physics	2 years	Diploma	Ch'town	1 st year	1 st year
					\$3,455	\$1,050
					2 nd year	2 nd year
					\$3,250	\$50
Electrical (1) - Construction	Grade 12 or Equivalent, plus grade 11 math, English and Physics	1 year	Certificate	S. Park	\$3,415	\$900
Electrical (1) - Industrial	Grade 12 or Equivalent, plus grade 11 math, English and Physics	2 years	Diploma	S. Park	1 st year	1 st year
					\$3,455	\$900
					2 nd year	2 nd year
					\$3,250	\$200
Electro-mechanical Technology	Grade 12 or Equivalent, plus grade 11 math, English and Physics	2 years	Diploma	S. Park	1 st year	1 st year
					\$3,455	\$500
					2 nd year	None
					\$3,250	
Machinist	Grade 12 or Equivalent, plus grade 11 math, English and Physics	9 months	Certificate	S. Park	\$3,415	\$1,000
Heating, VAC Technology	Grade 12 or Equivalent, plus high standing in math and science	2 years	Diploma	S. Park	1 st year	1 st year
					\$3,455	\$500
					2 nd year	2 nd year
					\$3,150	\$200



Table 1
Holland College – Construction Related Trades

Program	Admission Requirements	Length	Credential	Location	Tuition Fees (2)	Other Costs (3)
Plumbing (1)	Grade 12 or Equivalent, plus grade 11 math, English and Physics	9 months	Certificate	G'town	\$3,415	\$725
Steamfitting and Pipefitting	Grade 12 or Equivalent, plus grade 11 math, English and Physics	9 months	Certificate	G'town	\$4,915	\$630
Welding (1)	Grade 12 or Equivalent	9 months	Certificate	G'town	\$3,415	\$1,175
Welding Fabrication	Grade 12 or Equivalent	2 years	Diploma	G'town	\$4,915	\$775

Notes:

- (1) - Training in these trades is also offered through the Block Release Program.
- (2) - Other fees typically include student union fees, graduation fees, etc.
- (3) - Other costs typically include books, equipment and tools, safety clothing, etc.

Source: 2003-2004 Holland College Calendar

In addition to the theory and curriculum requirements, all of these programs include a provision for on-the-job placements with employers in the student's chosen trade. Students who graduate from the program receive a diploma or certificate. Once graduates begin working in their chosen trade they may become involved in the provincial Apprenticeship program and pursue the Certification of Trades Qualification. The Apprenticeship program is described in more detail in a later section.

2.3 Delivery Structure & Model

Trades programs require a significant amount of capital outlay for specific equipment, materials and physical space. For this reason, the programs are generally offered in the more central locations within the province. The Charlottetown Centre offers programs in Carpentry and Construction Technology; the Summerside – Slemmon Park Centre offers Electrical (Construction), Electrical (Industrial), H-VAC, Machinist, and Electromechanical; and at the Georgetown Centre training



programs in plumbing, Steamfitting/Pipefitting, Welding and Welding Fabrication are offered. While the college does not have portable or modular training programs as such, it is beginning to “pilot” some new course delivery models by building on the availability of existing resources in the smaller communities. There has been one such pilot underway over this past year (2003) in West Prince (Carpentry), and it has shown some promising results. There is now consideration being given to using a similar model in other parts of the province.

2.4 Applications and Enrolments

According to Holland College enrolment data and discussions with key informants, the early 1990’s saw the number of applicants to specific construction trades programs fluctuate depending on student interest and the perceived needs coming out of the labour market. However, in recent years, the number of applicants to many of the construction trades programs has been increasing. This is believed to be a result of the renewed interest in and awareness of the trades, recent public discussions about possible skill shortages in the trades, and trades career promotion initiatives targeted on high school students.

The number of applicants to construction trades programs at Holland College in the 2002/2003 fiscal year is presented in the following table. The number of seats available in each course also is shown.



Table 2
Applicants and Seats in Holland College Trades Programs, 2002/2003

	# Qualified Applicants	# Of Seats
Electrical (Construction)	47	12
Electrical Industrial	24	12
Electro-mechanical Technology	14	12
H-VAC	30	16
Machinist	27	15
Automotive technology	42	35
Carpentry	74	26
Plumbing	32	8
Steamfitting/Pipefitting	20	8
Welding	30	16
Welding Fabrication	17	10

Source: Shirley St. Germain, Vice-President's Office, Programs, Holland College

Overall, there were twice as many applicants as seats in 2002-2003 in the programs listed in the table. Plumbing programs had four times as many applicants as seats while Carpentry had three times as many. The data indicate that in 2002-2003 the demand for programs significantly exceeded their availability. It is important to point out that in interpreting these data that applicants often apply to, and qualify for, more than one program.

Student surveys indicate that the top three reasons why in-coming students chose Holland College in 2002/03 were:

- ▲ The school offered the applicant's program of choice,
- ▲ Employment opportunities in the selected trade, and

- ▲ The reputation of program.

2.5 Program Enrolment Patterns

Table 3 provides a summary of the trades enrolment statistics for the past three years as well as an indication of how enrolments are shaping up for the 2003/04 school year. For most trades, the early indications are that enrolment interest in some programs (carpentry, electrical, H-VAC) is higher than normal. As the table indicates, the college is increasing the number of seats in some of the programs areas.

Table 3
Enrolment Statistics

	2000/01	2001/02	2002/03	Target 2003/04	Accepted 2003/04	Pending Applications
Electrical (Construction)	11	12	11	12	14	30
Industrial Electrical	7	6	12	12	17	10
Electro- mechanical	10	10	10	12	13	0
HVAC	11	15	12	16	18	7
Machinist	8	16	12	18	11	0
Carpentry	14	18	24	26	32	66
Plumbing	3	7	10	16	18	20
Steamfitting and Pipefitting	5	3	8	8	9	1
Welding	15	12	11	16	24	2
Welding Fabrication	3	6	5	10	4	0
Total	87	105	115	146	160	136

Source: Holland College Enrolment Office



Pending applications include all individuals who have completed the first level of application for the respective program; these applications are pending review and assessment, and not everyone may meet the required program criteria. As well, in some cases an individual may have applied for more than one program.

Enrolments jumped from a total of 87 in 2000-2001 in the trades shown in Table 3 to 160 in 2003-2004. This represents an 84% increase in only three years. The largest proportional increase occurred in plumbing with enrolments jumping by 500% from 3 in 2000-2001 to 18 in 2003-2004. Enrolments in Industrial Electrical and Carpentry jumped by over 100% while enrolments in the electrical (Construction) program experienced the smallest increase of 27% from 2000-2001 to 2003-2004.

One of the challenges for the college in expanding the number of seats is the need for additional resources (physical space, instructional time, equipment and materials), and additional on-the-job training sites to accommodate student placements. In most instances, program tuition fees alone would not be enough to offset these additional costs, and hence additional funding would be required from some level of government.



2.6 Age Profile and Funding for Holland College Students

The College completes a New Student Survey each fall with new students who enter full-time programs. Table 4 below provides a profile of the average age of incoming students in 2002 – 2003. It also documents the proportion of students who accessed HRDC funding to assist with tuition costs.

Table 4
Percentage of Students Accessing HRDC Funding and Average Age of Students

	% HRDC Funding	Avg. Age
Electrical (Construction)	82	25
Industrial Electrical	50	21
Electro-mechanical	60	26
HVAC	75	27
Machinist	67	23
Carpentry	40	23
Plumbing	80	25
Steamfitting/Pipefitting	63	24
Welding	57	21
Welding Fabrication	0	23

Source: Holland College Enrolment Office



The average age of incoming students to the above trades programs in the 2002-2003 school year ranged from 21 for students in welding and industrial electrical to 27 for students of HVAC. This raises a number of observations and questions. Since most of these students would have graduated from high school when they were 18-19, where were they during the ensuing three to four years and what was their motivation to pursue a trades program at this time? Were they not aware of the availability of trades training programs earlier? Is this age group a strategic group to target in terms of future recruitment to the trades?

As the above table suggests, HRDC training dollars are a source of funds for a large percentage of students in many of the specified trades. There is considerable variation in proportion of students who accessed HRDC funding by trade. The proportion ranged from 0% for welding fabrication to 40% for carpentry up to 80% for plumbing and 82% for electrical (construction). To be eligible for HRDC funding students have to be “EI eligible”; that is, they must have worked the required number of hours/weeks and have established an active EI claim.

HRDC and the Canada/PEI Labour Market Development Agreement (LMDA) have been a critical source of revenue to the College, and it has been extremely helpful to the College in terms of its capacity to quickly respond to new and emerging labour market needs.

The LMDA has been instrumental in helping the College secure the resources to put new training infrastructure in place, and to enhance existing facilities and programs. In the coming year (2003-2004), efforts will be made to explore the use of LMDA resources to assist the college in developing an enhanced Prior Learning Assessment and Recognition (PLAR) program targeted at improving accessibility to the trades programs.



2.7 The Decision-Making Process Regarding Programs and Number of Seats

The college uses a structured and detailed process to review the nature and scope of its annual program offerings, and to determine the number of seats assigned to a program area. This process has four parts:

1. Five Critical Performance Indicators are tracked annually, and the collective results of this review exercise assist the college in deciding whether to keep or add to a program, or to reduce or drop a program. These indicators include:
 - ▲ *Student satisfaction surveys (two such surveys are required each year by ISO9001 Certification).*
 - ▲ *Employment levels and trends in the particular trades and occupations.*
 - ▲ *The number of applicants who have applied to the respective programs.*
 - ▲ *Overall program costs (instructors, curriculum design, physical space, materials and equipment, safety requirements, etc).*
 - ▲ *The level of program attrition and the number of graduates not working in the trades.*
2. The registrars' office looks at each program and brings the following information and data into the process:
 - ▲ *The historical trends regarding enrolments in each program area.*
 - ▲ *The current number of seats allocated to each program, and the attrition and completion rates.*
 - ▲ *The employment trends for each trade or occupation, and other relevant Labour Market Information.*
3. The college has Program Advisory Committees in each of the specific program areas, and the input and advice of these Committees is sought on several questions:
 - ▲ *What do they see as needs and trends in the particular trade or occupation?*
 - ▲ *Are more seats needed?*



- ▲ *Does the curriculum need to be modified and enhanced?*
- ▲ *Are new modules and delivery methods needed and should time frames or time lines be changed?*

While always looking for ways to improve and strengthen its relationship with industry, the college feels that it has developed a good rapport with most sectors. The college feels that machinists and welders are the only two “soft areas” where there may be a mismatch between industry needs and the number of program applicants and seats. The college is continuing to work with these two industry sectors to look for ways to better address these needs.

4. Consultations are held with the PEI Apprenticeship Program staff. Observations, trends and needs of Apprenticeship Program staff vis-à-vis the program are considered.

For the most part, the college feels that this process provides its program management staff with the data it needs to make informed decisions about which programs to deliver, how many seats to make available and what programs need to be strengthened.

Key informants have indicated that Holland College has increasingly aligned its program training curriculum with the key economic development priorities of the province. Accordingly, the college has strategically targeted sectors such as Aerospace, Information Technology and Communications, Tourism and Hospitality, and Golf Management as areas of potential student interest and hence future enrolment capacity. While the trades as a program cluster were not directly targeted for development and expansion, some trades did benefit during the period of growth and expansion depicted in Table 3 above.

The development of the Aerospace focused training facility at Slemon Park (old Summerside air base) allowed the college to upgrade its training (physical space, new equipment, etc) capacity for trades such as electrical – both Construction and Industrial – Machinist and HVAC Technology. At the same time, the building of the Welding Fabrication Centre in Georgetown upgraded the college’s facilities and capacities in the plumbing, steamfitting/pipefitting, welding and welding fabrication trades.

While training for the various trades has continued to be part of the college’s program inventory over this period, it has not received the same degree of attention as many of the sectors targeted above.

Despite the growth in enrolments documented in Table 3, student demand for trades training has been less than that in targeted sectors.

2.8 Graduation Patterns

The number of graduates in key construction trades programs from 1995 to 2002 is presented in the following table.

Table 5
Holland College Graduate Employment Statistics: Class of 1995 – 2001

	Number of Graduates							
	1995	1996	1997	1998	1999	2000	2001	2002
Electrical (Construction)	14	16	11	9	15	6	10	11
Electro-mechanical	16	10	14	7	8	3	4	4
HVAC	10	9	13	9	12	11	5	8
Machinist	10	11	10	10	11	18	9	16
Automotive Technology	8	17	17	15	16	17	13	NA
Carpentry	13	13	18	16	12	15	13	17
Plumbing	15	10	9	9	9	7	5	7
Welding	10	13	14	17	17	14	15	10
TOTAL	96	99	106	92	100	91	74	73

Source: Holland College

The total number of graduates in the programs included in the table above dropped from 96 in 1995 to 73 in 2002. The number of graduates in plumbing dropped from 15 in 1995 to 7 in 2002 while those in electrical Construction decreased slightly and those in carpentry increased slightly.

2.9 Directly Employed Graduates

Data provided by Holland College allows for the calculation of the number of graduates that indicated in a follow-up survey that they were employed directly in the trade for which they received



training.

“The Employment Report of Holland College Graduates for the Academic Year Ending 2001” (p. 1) prepared by The Office of Planning, Development & Research Holland College in July 2002 described the methodology used to collect the data as follows:

“The Survey of Graduates uses a telephone survey technique. ... Each graduate is contacted directly. At least four attempts are made to contact each graduate at different times during the day and different days of the week.

The employment statistics are based on the graduates’ labour market status and employment status during the first full week of May. The employment question is based on any employment the graduate had at any time since graduation.”

Estimates of direct employment are provided in Table 6. Readers are cautioned that the percentages in the table are based on small numbers that would not meet statistical reliability tests.

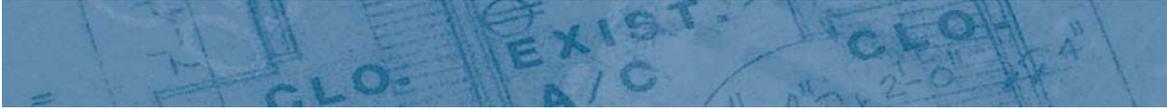


Table 5
Holland College Graduate Employment Statistics: Class of 1995 – 2001
Percent of Directly Employed Graduates¹

	1995	1996	1997	1998	1999	2000	2001
Electrical (Construction)	50%	40%	60%	50%	88%	75%	50%
Electro-mechanical	43%	56%	36%	0%	33%	67%	50%
HVAC	34%	57%	NA (*)	57%	40%	71%	0%
Machinist	50%	28%	83%	87%	33%	NA (*)	57%
Automotive Technology	67%	80%	NA (*)	67%	88%	NA (*)	91%
Carpentry	NA (*)	25%	42%	30%	86%	55%	30%
Plumbing	0%	34%	45%	50%	50%	50%	40%
Welding	66%	34%	51%	40%	63%	50%	79%

* Note: cells erroneously coded as date in original data.

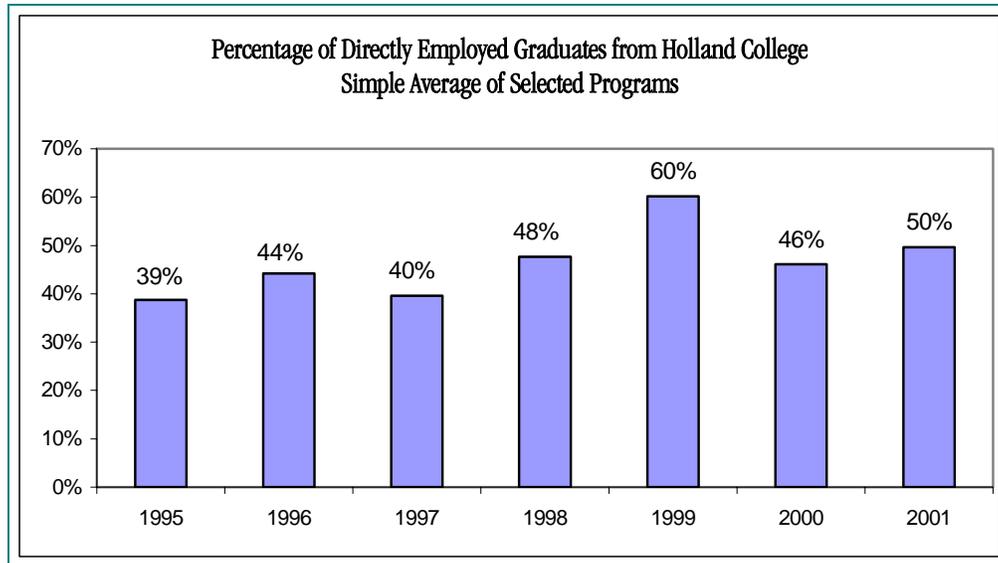
Source: Shirley St. Germain, Vice-President's Office, Programs, Holland College

The table shows that a relatively low proportion of graduates were directly employed in their trade for most years and programs. It also shows that direct employment percentages were significantly higher in the 1999-2001 period than in the 1995-1997 period. These findings are illustrated in the following exhibit.

¹ % directly employed = % employed * % direct. Industrial Electrical and Steamfitting/Pipefitting omitted due to a lack of data.



Figure 1



The relatively low percentage of graduates who were directly employed in their trade raises questions about the pay-off from trades training as well as questions about the ability of the training system to meet industry needs for skilled workers. Additional research to identify the reasons why these percentages were low should be a priority for follow-up research. In particular, it should be determined whether the percentages were low because of a lack of demand for graduates or for other reasons.²

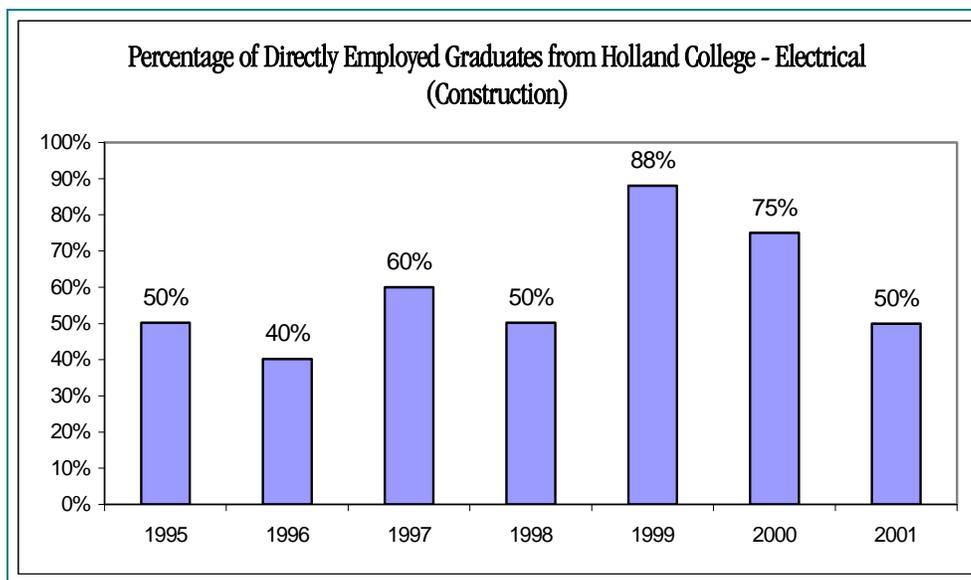
Uncovering the reasons for low direct employment rates is critical to the development of public policy related to training. Increasing employment rates could increase the number of tradespeople without devoting additional resources to training. Increasing training capacities may be inadvisable if a high proportion of graduates will not find employment in the field for which they are trained.

² Other reasons could include inadequate wages and working conditions, lack of full-time employment or an inability of graduates to meet the experience, skill and other employment requirements of employers.



Direct employment for graduates of the Construction Electrician course was generally higher than the average for all trades, and also was significantly higher on average in 1999-2001 compared to 1995-1997. Direct employment jumped to almost 90% in 1999 but fell significantly to 50% in 2001.

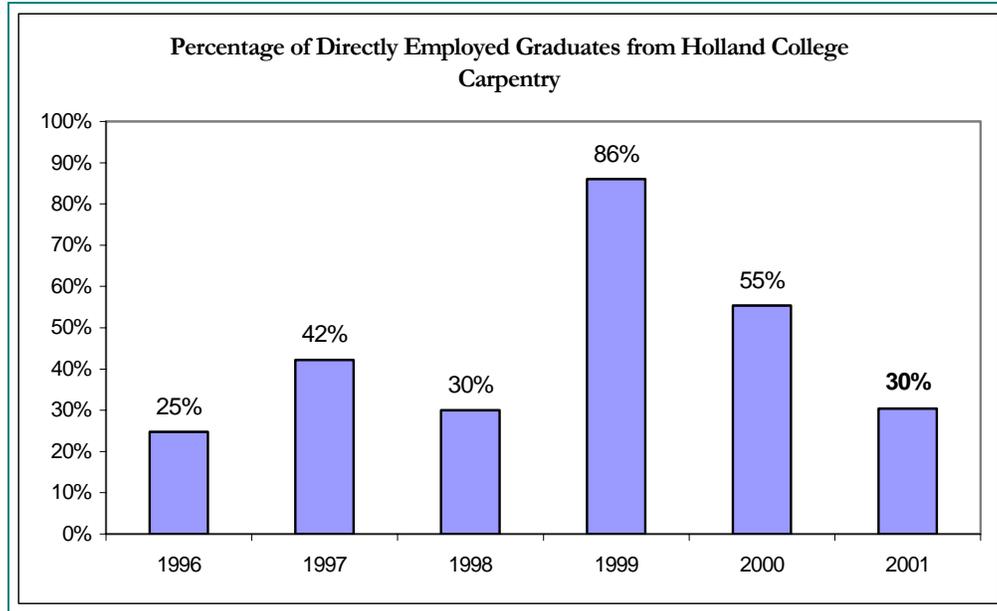
Figure 2



Only about one-third of the graduates of the Carpentry course were directly employed in their trade from 1996-1998. As with Construction Electricians, direct employment jumped dramatically in 1999 but it fell precipitously in 2001.



Figure 3



Direct employment for graduates of the plumber's course grew from about one-third in 1996 to 50% over the 1998-2000 period but fell to 40% in 2001. The percentage of graduate plumbers that were directly employed did not jump in 1999 as did that for carpentry and construction electrician graduates.

Provincial Apprenticeship Program

3.0 Provincial Apprenticeship Program

3.1 Description

The Apprenticeship and Trades Qualifications Act (1968) is the legislative authority that underpins the structure and delivery of apprenticeship training within PEI. The Act is administered through the provincial Department of Education (Continuing Education and Training). Its activities are executed through a Provincial Apprenticeship Board. This Board provides advice regarding policy direction, appropriate regulatory provisions and standards, and promotes the development of training and certification in a wide range of occupations in response to local labour market needs. The Board is comprised of a total of at least nine people: three representing employers, three representing employees, one person representing Holland College, at least one member at large, and a chairperson.

The Apprenticeship Branch of the PEI Department of Education sponsors training programs in many trades, including a number of the construction related trades. These apprenticeship programs are a combination of both on-the-job and in-school technical training modules, leading to a Certification of Trades Qualification and inter-provincial certification under the national Red Seal Program.

An apprentice is a person who is employed in a designated apprenticeable trade under an agreement with an employer and the Apprenticeship Training Division. The apprentice agrees to work for the employer, and the employer agrees to provide him/her extensive on-the-job experience and technical training. The apprentice's work hours and work experience are logged on a regular basis in the Apprenticeship Logbook, and the supervising journeyman must verify that the required hours and skills were in fact achieved. During a typical apprenticeship program, an individual will spend about 80-85% of his or her time on-the-job, while the other 15-20% is spent in a structured training environment.

On PEI, technical training is provided by Holland College through Block Release modules. The Block Release Program differs from the pre-employment Apprenticeship program in that the students are also full-time employees. The blocks are generally five to six weeks in length. Each block offers a concentrated course of study on a specific area of a trade. For example, one block of the carpentry course focuses on building foundations.



There are no tuition fees in the Block Release Program and, because the students are also full-time employees, they are eligible for EI benefits during the in-school training blocks. A travel allowance is also available for apprentices who must travel long distances to attend the program.

After each training session in the Block Release Program there is an exam. Students must score 70% or higher on this exam to successfully complete the module. The Block Release Program is generally more concentrated and advanced compared to the full-time pre-apprenticeship program. It is offered at no cost to the apprentice. Students are eligible for EI while in training.

For students who enrol in full-time pre-apprenticeship courses at Holland College, apprenticeship generally begins after their course is completed and they are working full-time with a suitable employer. For Block Release participants, they must be fully registered as an apprentice before they are eligible to access the Block Release modules. In terms of active apprentices, approximately one third are in the Block Release program, while the remaining two-thirds come through the pre-apprenticeship training programs at Holland College.³

³ Source: Craig Norton, Manager Apprentice Training



In PEI, there are some 45 trades that are currently designated under the Apprenticeship and Trades Qualifications Act, and a number of these are trades within the construction sector (many of these are also Red Seal designations). Briefly these trades include:⁴

- ▲ Carpenter
- ▲ Construction Electrician
- ▲ Plumber
- ▲ Welder
- ▲ Bricklayer
- ▲ Boilermaker
- ▲ Floor Covering Installer
- ▲ Industrial Equipment Mechanic – millwright
- ▲ Mobile Crane Operator
- ▲ Painter and Decorator
- ▲ Steamfitter/Pipefitter
- ▲ Sprinkler System Installer
- ▲ Refrigeration and AC Mechanic; and
- ▲ Construction Craft Worker (laborer)

There are training programs available through Holland College for all but two of the above trades. For training programs not available at Holland College (Painter and Decorator, Mobile Crane Operator), students must go elsewhere. In some cases this means going to colleges in other Atlantic provinces such as New Brunswick and Nova Scotia. Section 2.6 of this report shows that a number of factors including industry demand and the number of student applications are factors that determine whether or not a program is offered.

⁴ Source: Provincial Apprenticeship Program Website



Up until this past year (2003), there was no formal training offered to bricklayers, but this has changed. A recent initiative involving HRDC, the PEI Apprenticeship Board and Holland College resulted in a training program being offered to eleven students beginning September, 2003. These students have already participated in a five-week training module and are currently working within the industry. In January 2004 they will enter a pre-apprenticeship training program at Holland College⁵. In addition, in 2002 a joint initiative between the PEI Apprentice Board, Holland College and the Construction Labourers Union resulted in the development of a Block Release Training Program for Construction Craft Labourers.

The Provincial Apprenticeship Board has recently begun to initiate specific industry agreements as a method of increasing the number of certified tradesmen out in the field. An example of this is the recent agreement between the PEI Carpenter's Union and the PEI Apprenticeship Division (Dept of Education).

The Union now has about 100 carpenters who are in the Apprenticeship Program; some of these are new entrants, while others were already in the industry but did not have the opportunity to participate in the program previously. Their age demographic went from average age of 46 to 40 in past two years. The union believes the recent agreement with the Provincial Apprenticeship Division was a big factor in achieving this.

⁵ Source: Craig Norton

The following table shows apprenticeship training requirements at Holland College.

Table 7 Apprenticeship Training Requirements		
Trade	Required Number of Hours	Pre-Apprentice Credits⁶
Carpentry	8000 – can write Red Seal exam after 6000 hours if student passes required tests	1000 hours
Construction Electrician	8000 – can write Red Seal exam after 6000 hours if student passes required tests	2000 hours
Industrial Electrician	8000 – can write Red Seal exam in less time if student passes required tests	2000 hours
Precision Machinists	8000 – can write Red Seal exam after 6000 hours if student passes required tests	1000 hours
Metal Fabricator	8000 – can write Red Seal exam in less time if student passes required tests	1000 hours
Plumber	8000 – can write Red Seal exam after 6000 hours if student passes required tests	1000 hours
H – VAC	8000 – can write Red Seal exam in less time if student passes required tests	1000 hours
Steamfitter/Pipefitter	8000 – can write Red Seal exam in less time if student passes required tests	1000 hours
Welder	6000 – can write Red Seal exam after 4500 hours if student passes required tests	1000 hours

Source: Holland College 2003 – 2004 Program Calendar

⁶ Students must successfully complete the pre-apprenticeship program to gain the appropriate credit hours toward their apprenticeship.



There are only three certified trades in PEI at this time including: Automotive Mechanic, Construction Electrician and Plumber. To work in these three trades an individual must be either a certified journeyman or be registered as an apprentice for that trade.

3.2 Program Access

It was shown above that individuals enter apprenticeship through the Block Release Program or the pre-apprenticeship program at Holland College. Both streams lead to a Certification of Trades Qualification.

Certificates of Trades Qualification are conferred when apprentices successfully complete all the required elements of the program including: skills sign off, progress exams, a log of work hours and successful completion of a final certification exam (pass mark is 70%). Individuals then become certified tradespeople and, in most cases, receive the Inter-provincial Red Seal endorsement as well.

A third route to the trades was opened in 2001 by the Provincial Apprenticeship Board with the introduction of the Accelerated Secondary Apprenticeship Program (ASAP). This program allows career-minded students to get a head start in the post-secondary Apprenticeship Training Program while still in high school. Through on-the-job work experience, and safety and technical training opportunities, young apprentices log hours and gain trade specific skills which will allow them to move directly into a trades related training program once they graduate from grade 12.

While the ASAP program has been in operation for just two years, early indications are that it appears to be successful in exposing students to career tracks and/or occupations they may not have otherwise considered. As of 2003, eleven out of twelve Island high schools participated in the program with 35 youth apprentices involved in a range of construction related trades including: electrical, welding, plumbing, metal fabrication, and construction labourer. A brief program report completed after the first year of the program noted that more than half of the 21 participants went on to pre-apprenticeship training in the trades they had selected. Several others went on to other post secondary training at UPEI and/or Holland College⁷.

⁷ Source – PEI Apprenticeship Division



3.3 Current Level of Activity

A March 2002 study – *“Opportunities for Promoting Apprenticeship: Labour Market Analysis”* – completed for PEI Provincial Apprenticeship Board⁸ examined the number of new apprenticeship registrations over the past several years. While the study was looking at the Apprenticeship Program in a broad sense, it specifically examined seven different construction sector related occupations: Carpentry, Bricklaying, electrical, plumbing, Refrigeration and AC, Sheet Metal and Welding.

The study noted that the construction industry is the biggest single employer of apprentices. In conducting the study, the research firm received survey responses from 99 Island construction firms on a series of questions about business growth expectations (30% projected business growth), job growth (a number anticipated hiring more workers), and their views and attitudes about the Apprenticeship Program (40% saw the program as important and they were interested in it).

Appendix “C” of the Enterprise Management Consultants, March 2002 report presents data on apprenticeship activity in the all trades over the 1990-2001 period. These data are summarized in Table 8. In interpreting apprenticeship data, it is important to note that Craig Norton, Manager Apprentice Training for the Province of Prince Edward Island indicates that the data on apprenticeship contains gaps and inaccuracies and should be interpreted with caution.

⁸ Enterprise Management Consultants, Prism Economics and Analysis, AMEC and Advantage Communications, “Opportunities for Promoting Apprenticeship: Labour Market Analysis”, March, 2002



Table 8
Apprentice Overview, PEI
All Trades

	Start	Finish	New App.	In-School	Completions	Withdrawals
1990-91	309	326	109	221	42	0
1991-92	326	339	114	211	46	53
1993	336	316	85	232	45	60
1994	316	298	78	192	48	46
1995	298	340	124	213	43	34
1996	340	355	82	188	37	30
1996-97	343	337	96	263	60	39
1997-98	340	367	111	240	34	48
1998-99	367	382	124	205	46	63
1999-2000	382	398	90	137	39	35
2000-2001	398	467	151	298	48	34

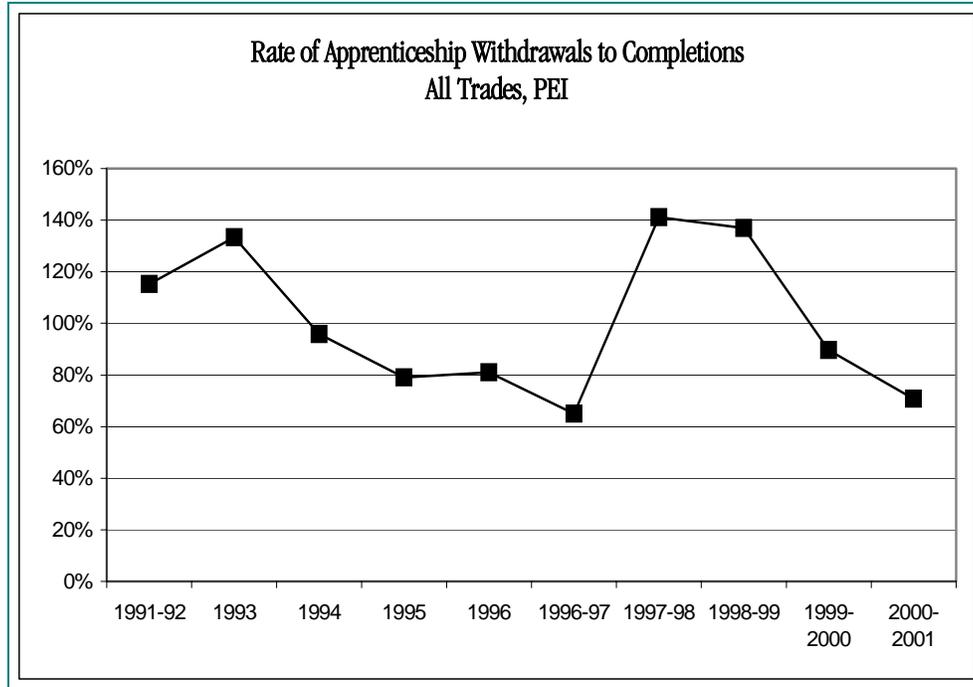
Source: Appendix C of the Enterprise Management Consultants, March 2002

There were 488 apprentices who completed the program over the eleven-year period compared to 442 who withdrew from the program. Almost as many apprentices withdrew from the program between 1990 and 2001 as completed it. The rate of withdrawals to completions for all apprenticeship programs in PEI is illustrated in the following exhibit⁹.

⁹ 1990-91 is not shown in the exhibit because there were no withdrawals recorded in this year.



Figure 4



The exhibit shows annual withdrawals as a percentage of completions. It shows that the rate of withdrawals to completions stood at 133% in 1993. It declined over the next four years reaching a period low of 65% in 1996-97. The rate of withdrawals to completions jumped to 141% in 1997-98 and remained high in 1998-99 before dropping to 71% in 2000-2001.

The total and average number of new registrations into the Apprenticeship Program in selected construction trades over the seven-year period 1994 – 2001 is presented in Table 9.



Table 9
New Apprenticeship Registrations – Selected Construction Trades
1994 – 2001

	Carpenter	Bricklayer	Electrician	Plumber	Refrig & AC	Sheet Metal	Welder	Total
Annual Average	15	.5	20	5.5	2.5	.75	10	54.25
Total '94 - '01	105	6	136	40	16	6	70	379

Source: Enterprise Management Consultants, March 2002, Exhibit #23, p. 26 (based on Apprenticeship Activity Report – PEI Department of Education and Prism Economics and Analysis)

A more complete summary of apprenticeship statistics for the construction trades over the period 1990 – 2001 is provided in Table 10.

Table 10
Apprenticeship Activity for Construction Trades, 1990-2001

Construction Related Trades:	Start (1990)	Finish (2001)	New Apps	In-School Training	Completions	Withdrawals
Carpenter	729	745	191	467	90	72
Bricklayer	36	32	8	10	1	8
Electrician	767	812	207	532	88	66
Plumber	371	374	68	223	37	24
Refrigeration & AC	34	49	20	20	3	2
Sheet Metal	90	82	18	30	9	15
Welder	201	215	84	107	27	36
Sub-Total	2,228	2,309	596	1,389	255	223

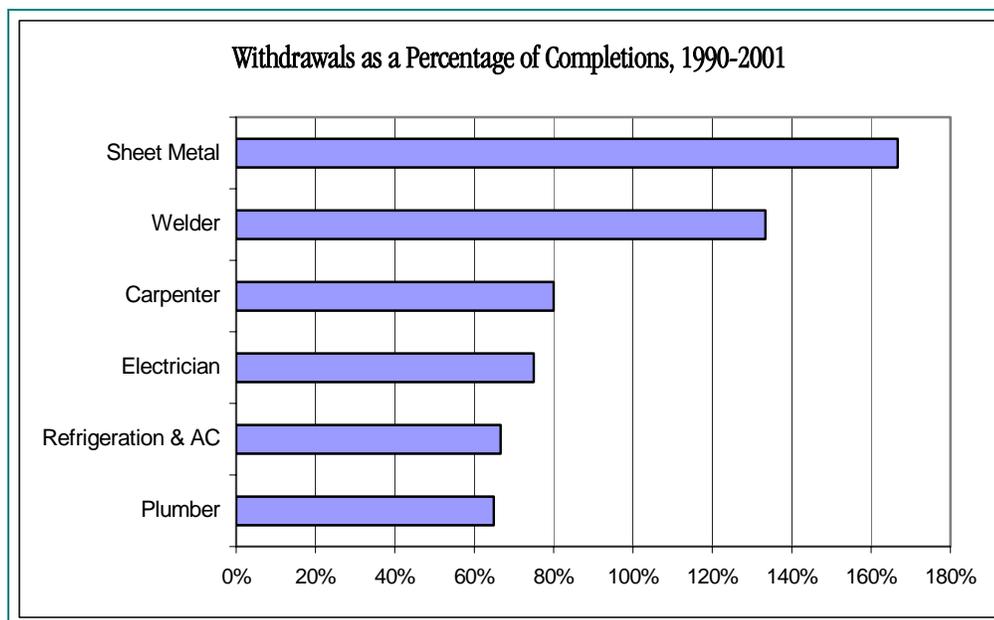
Source: Enterprise Management Consultants, March 2002, Appendix C, Based on PEI Apprenticeship Branch.

The table shows that there were 2,228 apprentices in the designated occupations at the beginning of 1990 and 2,309 at the end of 2001 – for a growth of 81 apprentices over the 12-year period. Five hundred and ninety-six new apprentices entered the program over the period, and 1,389 apprentices took in-school training. There were 255 completions and 223 withdrawals from the apprenticeship program from 1990 to 2001. The overall percentage of withdrawals to completions for the trades in Table 10 was 87% - slightly less than the 91% rate for all Apprenticeable trades.



The rate of completions to withdrawals by trade over the 1990-2001 period is illustrated in the following exhibit. Data on bricklayers was not included in the exhibit as this trade was not taught at Holland College over the period.

Figure 5



Source: Enterprise Management Consultants, March 2002, Appendix C, Based on PEI Apprenticeship Branch.

The exhibit shows that the rate of withdrawals to completions was highest for sheet metal workers (167%) and welders (133%). Significantly more apprentices withdrew from the program than completed it in both of these trades. Carpenters (80% withdrawal rate) and electricians (75%) also experienced significant withdrawal rates while rates for refrigeration and air conditioning (67%) and plumbers (65%) were somewhat lower.

Beginning in 2001, the Provincial Apprenticeship Program began to prepare an annual activity report with regard to nature and scope of program activity. The 2001-2002 Apprenticeship Training Activity Report included the following data on the reasons for program cancellations.

Table 11
Provincial Apprenticeship Program
Number of Program Cancellations by Reason – 2000 - 2002

	2000 – 2001	2001 – 2002
No Longer Trade Employed	8	12
Not Interested in Training	9	6
Moved	7	11
Will Write by Application	6	2
Working in Another Trade	0	9
Training in Another Trade	0	2
Other Reasons	6	9
Total	36	51

Source: 2001-2002 Apprenticeship Training Activity Report

Just under one-quarter (23%) of the cancellations in 2000/01 and 2001/02 occurred because individuals were no longer employed in the trade with 21% occurring because individuals moved. Just under one-fifth (17%) of cancellations occurred because individuals were not interested in the training they were receiving. Approximately 12% of cancellations resulted from individuals working in or taking training in another trade.

3.4 Projected Need for Apprentices

The study completed by Enterprise Management Consultants projected the need for some 569 additional apprentices between 2002-2008 (see Table 12 below). The 569 total was determined by adding new employees needed to support the estimated annual growth in the industry to the number of workers needed to replace workers leaving the industry because of retirement and/or attrition.

The electrical trade led the way with a projection of 196 new apprentices required by 2008, carpentry second with 154, welding was third with 98 and plumbing was fourth with 63.

Table 12
Projected Registration Targets – Selected Construction Trades, 2002 – 2008

	Carpenter	Bricklayer	Electrician	Plumber	Refrig & AC	Sheet Metal	Welder	Total
Annual Growth	20	1	22	8	4	1	11	67
Annual Replacement	2	0.5	6	1	1	1	3	14.5
Annual Average	22	1.5	28	9	5	2	14	81.5
Total '02 – '08	154	9	196	63	35	14	98	569

Source: Enterprise Management Consultants et al, March 2002 (Based on Apprenticeship Activity Report – PEI Department of Education and Prism Economic and Analysis)

The registration targets presented in the Enterprise Management Consultants report are compared to actual registrations in 2001 in the following table.



Table 13
Target Registrations from 2002 – 2008 vs. Actual 2001 Registrations

	Carpenter	Bricklayer	Electrician	Plumber	Refrig & AC	Sheet Metal	Welder	Total
Annual Registration Targets	22	1.5	28	9	5	2	14	81.5
2001 Registrations	20	1	27	4	6	0	16	74

Source: Enterprise Management Consultants et al, March 2002

The table shows that the targets are somewhat higher than the number of registrations in 2001 for carpenters, bricklayers, electricians and sheet metal trades. The target for plumbers is more than twice the number of registrations in 2001 while the targets for refrigeration & air-conditioning and welders are less than registrations in 2001.

The authors of the report make the following comments on the targets contained in the table above:

“The suggested targets . . . represent a 66% or two-thirds increase over registrations in the past seven-year period. These are ambitious goals that combine current strong prospects for labour markets with replacement needs and opportunities to add more certified workers in many trades. While the goals are ambitious relative to the past seven years they represent a smaller 15% increase over registrations in 2001.” (Enterprise Management Consultants, Prism Economics and Analysis, AMEC and Advantage Communications, “Opportunities for Promoting Apprenticeship: Labour Market Analysis”, March, 2002p. 44)

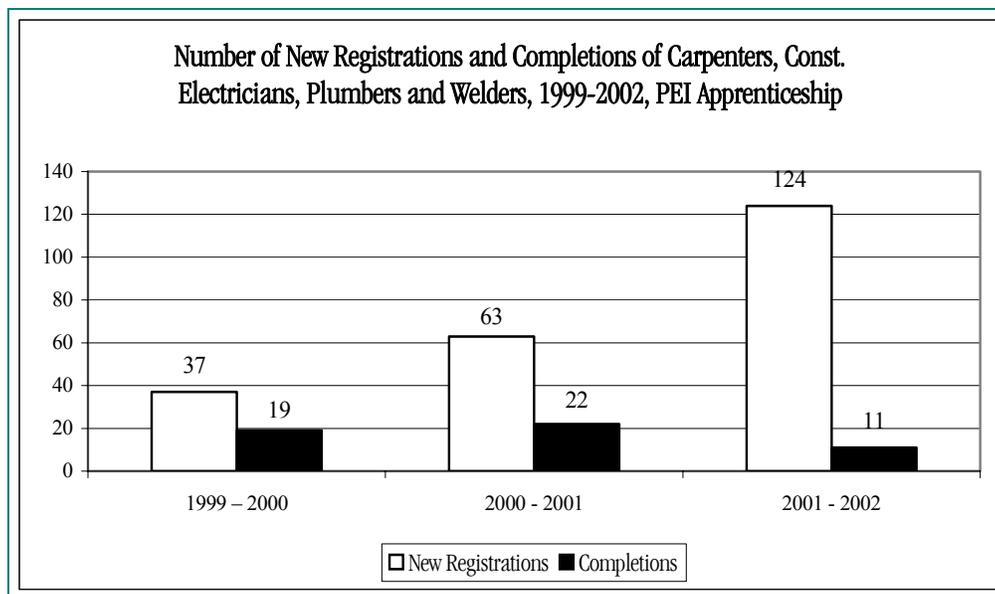
The targets presented in Tables 12 and 13 are only a minute fraction of the total labour force of young adults. They also represent a small proportion of the total labour force in the designated trades. For example, the annual target registrations represent:

- ▲ 2% of the estimated labour force of 1,040 for the carpentry trade (2001 Census)
- ▲ 5% of the estimated labour force of 1,040 for the plumbing trade (2001 Census)
- ▲ 11% of the estimated labour force of 1,040 for the electrical trade (2001 Census)

It should be noted that attrition from the Apprenticeship program may efforts to increase the number of certified tradespeople by increasing apprenticeship registrations. This is an especially serious problem for plumbers and electricians where certification is mandatory to practice these trades.

The following exhibit shows the number of registrations and completions for the past three years in trades estimated to require the highest number of apprentices over the next five years.

Figure 6



Source: Source: 1999-2000 and 2001-2002 Apprenticeship Training Activity Reports – PEI Apprenticeship Division

In interpreting the exhibit it is important to note that the number of new registrations for carpenters in



2001-2002 is unusually high compared to previous years. This is because of the signing of a Joint Registration Agreement between Local 1338 of the Carpenters and Joiners Union. Local 1338 now requires all members be certified carpenters. Through the joint agreement many carpenters who may not have completed their apprenticeship because of lack of opportunity are becoming registered. It is not anticipated that the number would be this high in the future.

The exhibit shows that while the number of registrations increased significantly over the period, the number of graduates dropped dramatically in 2001-2002. The number of construction electricians who graduated from apprenticeship declined from twelve in 1999-2000 and 2000-2001 to only four in 2001-2002. There were no graduates from the welding program in 2001-2002 whereas three welders graduated in 1999-2000 and four graduated in 2000-2001. These data point to a potentially serious short-term supply problem for these key trades.

High School Trades Preparation and Programming

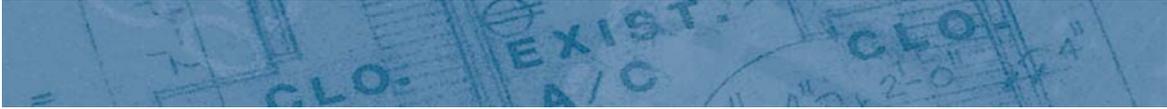
4.0 High School Trades Preparation and Programming

While there has been no formal trades certificate programs in Island high schools for the past 12-15 years, there always has been some level of trades exposure for students. There are a number of trades related introductory programs available in most Island high schools; however, there are only two that are directly related to the construction sector – carpentry and welding. A quick overview of the other programs provides a sense of some of the new programs that are competing for the student’s attention.

- ▲ Automotive Technology
- ▲ Drafting
- ▲ Cosmetology
- ▲ Electronics
- ▲ Robotics
- ▲ Aviation Aircraft Maintenance
- ▲ Hospitality/Tourism
- ▲ Food Service

In 2000, the Dept of Education/School Boards introduced a program called the Career Exploration Program into the Island High Schools. This program consists of a series of courses based on the knowledge and skills drawn from specific occupations in the world of work. The general purpose of each course is to provide students with opportunities to explore the world of work and to have students develop introductory skills associated with specific careers. Each course contains three types of information: (1) knowledge of the specific career or employment field, (2) specific manual skills, and (3) common work and attitudinal skills. These Career Exploration Courses are offered in five cluster areas:

1. Business & Information
2. People and the Service Industry
3. Construction & Manufacturing; this area is further broken down into such areas as;
 - ▲ *Woodworking Fundamentals*



- ▲ *Construction technology*
 - ▲ *Construction woodworking*
 - ▲ *Metal working fundamentals*
4. Power & mechanics
 5. Communications & the Arts

Because of the availability of teachers and teaching time, only a small number (about 5% of students in any given high school) get into the Career Explorations Courses. As an example, for one of the larger high schools with a school population of 1000 students, this amounts to about 50 students per year. Obviously, there are a large number of students who could benefit from more access to the Career Exploration Programs.

The Youth Internship Program (YIP) allows Grade 11 and 12 students to gain exposure to aerospace trades at Slemmon Park. They receive on-the-job training as part of this program.

An Employability Skills Program was begun as a pilot program at Bluefield High School in 2003. The Program is aimed at Grade XII students. The focus is on the employability skills areas – communications, problem-solving and teamwork. Each student develops a Career Portfolio and spends four weeks exploring four different possible job/employment sectors including: IT, health, construction trades and business.

It is important to provide information to high school students on careers in the construction industry. A direct method of providing career information is through high school guidance counselors. However, the availability of career exploration and counseling for secondary students is acknowledged as a large gap and most Island high schools do not have a strong focus in this area¹⁰.

Career guidance counseling was traditionally associated with the duties of the guidance counselor but this is not the case anymore. In fact just recently the education system dropped the reference “guidance” from the work title of this position. The work title of the position previously known as the *Guidance Counselor* is now called the *School Counselor*. The primary role of this position is to deal with the

¹⁰ Source: Dept of Education key informant



personal and social needs and issues presented by students. This has been the reality for most schools in the past several years.

While there is little formal and/or career exploration and counseling provided in high schools, there are several initiatives that attempt to expose students to the career exploration process. Some of these initiatives are broad based in scope and include all high schools, while others are more specific to certain schools. Some initiatives are:

- ▲ All high schools have the computerized career exploration program called *Choices*. Theoretically, all secondary students have access to this program, but experience to date suggests that most students still need to be guided or facilitated through the process. One school board does provide this service; the Western School Board hires a resource person from September to February to ensure that all grade 11-12 students go through the process. In other areas of the province, most students are on their own, and the uptake/usage of this program tends to be limited.
- ▲ There are generic Career Days held each year in most Island high schools. While procedures differ from school to school, people representing various construction-related trades are often invited to present information and talk with students.
- ▲ Many Atlantic universities and colleges are making visits to more and more high schools as part of their promotional and marketing efforts.
- ▲ Each year on the first Wednesday of November, students from grades 9 – 10 across the province participate in a “Take Your Kids to Work Day”. This experience exposes a large number of students to a wide variety of careers and occupations, including the trades.
- ▲ The Accelerated Secondary Apprenticeship Program is now in all Island high school, and more and more students are participating.
- ▲ The Career Transitions Program being piloted at Bluefield High School has shown early signs of helping participating students to successfully make the transition to post secondary training.
- ▲ The most recent and aggressive trades promotion program is becoming operational in September, 2003. A partnership including many stakeholders (Department of Education,



School Boards, Holland College, HRDC) has just launched a career promotional and marketing initiative. The initiative is called the PEI Career Promotion Marketing Strategy, and it has a specific focus on health occupations and the trades. One of the initial project goals is to establish a series of partnerships that will serve to integrate career planning and health/trades career promotion with other relevant initiatives and activities. The project is beginning its “roll out” in September, 2003 and will include several streams:

- ▲ *A series of professionally developed communication tools (brochures, posters, etc),*
 - ▲ *TV and radio spots providing information on specific career choices,*
 - ▲ *Career Know How presentations to be targeted to high schools, and*
 - ▲ *A website containing background information on career occupations, complete with up-to-date labour market information.*
- ▲ Skills Canada PEI has a mission is to encourage youth to consider skilled trades as a first choice career option. The organization is governed by a volunteer board of directors consisting of trades people and representatives from Holland College, labour and industry. One of the issues addressed by Skills Canada PEI is the commonly held public perception that the trades are viewed as dirty, hard work, and unskilled occupation more suited to those who could not make it at university. A key goal of Skills Canada PEI is to change this broad public misconception. This goal will be pursued through two main programs: (1) Skills Competitions and (2) Presentations at the provincial, national, and international levels. According to a survey conducted for Skills Canada, over 60% of those who participated in Skills Competitions indicated that they came away with a more positive perception of what a skilled trades career is all about. These Competitions have begun to create considerable interest at the secondary school/college levels, with a number of schools holding competitions to select their entry into the provincial competition. It is estimated that in 2002, approximately 350 young people across the province participated in Skills Competitions. On a national level, PEI has won more medals, on a per capital basis, than any other province in recent years. At the national competitions in Vancouver, the PEI team came away with about 8% of the gold medals. Skills Canada PEI staff and volunteers spend a great deal of time in classrooms across the province talking to students about skilled careers as a positive and viable career option for students with



the aptitude and interest. Similar presentations are made at various Career Fairs, Workshops and Expos designed to expose young people to potential career/occupational options. During these presentation opportunities, the organization distributes a variety of promotional materials on skilled careers to youth and the public generally.

In discussing the general area of career exploration at the secondary level, one key informant identified three issues that will likely present ongoing challenges: (1) it appears that many high school students are delaying their post secondary study until they work long enough to establish an EI claim, (2) the lack of a strong “career culture” and (3) many students still are graduating from high school with a general education diploma.

Other Training Programs

5.0 Other Training Programs

A number of unions, building suppliers, and organizations such as the Atlantic Home Builders and Renovation Sector Council (AHRSC) also provide training to tradesmen. This training is generally targeted at addressing training needs not typically covered in programs offered through various public or private training colleges. The training tends to be a “one of” workshop, or a series of sessions dealing with specific topics such as the introduction of new building technologies, building codes and standards and business management.

Training available through the AHRSC is described below.

5.1 Atlantic Home Builders and Renovation Sector Council (AHRSC)

The AHRSC was established in 1991 as a Sector Council for the residential construction industry in the Atlantic Provinces. Since 1991, the AHRSC has focused its attention on the general training needs of the industry in the Atlantic Region. It is estimated that approximately 5,000 builders, renovators, sub-trades, carpenters, labourers, designers and inspectors in Atlantic Canada have taken training courses through the Council over the past decade.

In terms of focus, the Council does not fund courses that are typically available through public or private schools but has supported essential training that would not otherwise be accessible to the builders and renovators in the area. Sector Council-sponsored training addresses three targeted areas that have been identified as priorities either because (1) they are areas deemed to be of greatest need, or (2) because they offer the best potential for the improved, long-term sustainability of the sector. The targeted areas are:



5.1.1 The Atlantic Home Warranty Program (AHWP)

Courses available through this program include:

- ▲ Administration Workshop
- ▲ Five Modules of the CMHC/CHBA Builders Workshop Series
 - *Moisture Problems*
 - *Concrete Foundations*
 - *Doors and Windows*
 - *Ventilation: Health and Safety Issues*
 - *Drywall Application*
- ▲ National Building Code
- ▲ Atlantic Housing Professional Studies Program
- ▲ Better Built House

5.1.2 Employment Insurance Training

Since 1992, the AHB&R Sector Council has received HRDC funding to assist in the delivery of sector-based training for recipients of Employment Insurance. The training focuses on upgrading employee skills particularly during the off-season, and ensuring that new employees have the proper training before they are hired. Training has been targeted on:

- ▲ Enhancing basic trade skills within the residential construction and renovation companies in Atlantic Canada;
- ▲ Improving the opportunity for mobility of labour by providing training that is consistent with newly developing, national standards of building practice;
- ▲ Reducing the period of seasonal layoffs by enhancing retrofit skills to better allow for continued employment year-round; and



- ▲ Encouraging a better understanding between employers and employees, through common courses in which both participate.

5.1.3 Renovation Sector Skills Development

The Sector Council offers the following courses:

Renovation Management – A full five-day course and the evening update certificate for AHPS are provided in this course. It focuses on skills that renovators require to be successful.

Energy Efficient Retrofits – Courses focus on imparting an understanding of how building science principles apply to the residential renovator and provide an overview of the most current technical practices.

EnerGuide Evaluator Training - This national program teaches individuals how to complete an energy evaluation on a house and recommend energy efficiency improvements.

HRAI for Renovation – This course covers ventilation, air quality control, retrofit activities and home inspection.

National Building Code – This course provides an overview of the National Building Code and its implications for builders.

Emerging Trends that will Impact on Training

6.0 Emerging Trends that will Impact on Training

One of the key challenges of any economy is to ensure that labour force is being utilized to its optimum potential. This in turn requires that the existing training systems are current and responsive, and to the degree possible, are able to ensure that both new entrants and existing workers have access to the training and skill development opportunities to be efficient and productive workers. To be current and responsive training institutions need to be aware of changes and emerging trends within various industry sectors and trades.

Over the course of the research phase for this study, and in particular during interviews with key informants, a number of changes and trends were noted. These changes or trends are already affecting the nature and scope of training in certain trades and skilled occupations. These changes and trends present both challenges and opportunities to the training sector, and in some instances, training institutions are already beginning to respond with new curriculum and new approaches.

6.1 New Building Designs and Construction Processes

Advancements in building design and construction processes that have been introduced into the industry over the past decade have changed the nature and pace of construction. In addition, new knowledge and awareness of the health impacts of certain materials and/or conditions within building structures have changed how buildings are designed and built. Issues such as new air quality regulations, emission control standards, and other environmental issues are now critical elements in the design process.

6.2 Information Technology & New “Green” Technology

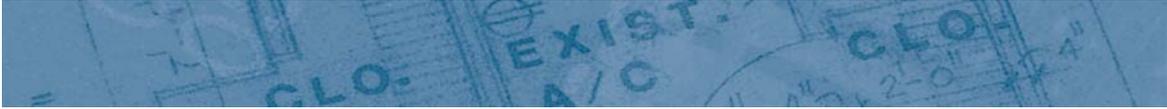
Information processing and communications technology have made many advancements in recent years, and are now influencing building design and construction. Many new buildings are being “wired for data”, thus requiring a whole new range of knowledge and skills to work with new codes, protocols and Information Technology requirements. In addition, some new larger projects such as the Atlantic IT Centre, and the new federal building have/will be integrating several new “green” technologies; “green” roofing, the collection of rain water to provide for flushing of toilets, watering of plants and greenery, hydrogen fuel cells, sunlight collectors to retain heat, etc.



In terms these trends, Holland College has been working on some major initiatives that are designed to help the college get “out in front” and bring its curriculum in line with emerging new developments and standards in certain areas within the broad construction field. The college currently has two proposals before the province’s Labour Market Development Committee:

- ▲ A proposal designed to focus on the environment and many of the new expectations, requirements and standards that will be emerging with Canada’s recent commitment to the Kyoto Agreement. The proposal has a focus on general public education and awareness regarding the new requirements and standards, and on curriculum development vis-à-vis these new standards – especially in the trades.
- ▲ The college is currently in discussions with the Federal government (Public Works and Government Services Canada) to sign a Memorandum of Understanding (MOU) with regard to the new federal building that is slated to begin construction within the next year. This building will have “state of the art” environmental, mechanical and information and communications systems design. The intention of the MOU is to provide for Holland College to be a partner and be involved in the monitoring, control and maintenance of systems. The partnership would allow students training in Electro-mechanical, H-VAC and other courses to have access to a learning environment with “state of the art” systems.

The college already has a similar MOU in place with the province and the new Atlantic Technology Centre. Students now have access to the Centre’s Multi-Media capacity and are able to work with the latest multi-media technology. This provides exposure to the IT and Multi-Media companies located in the Centre.



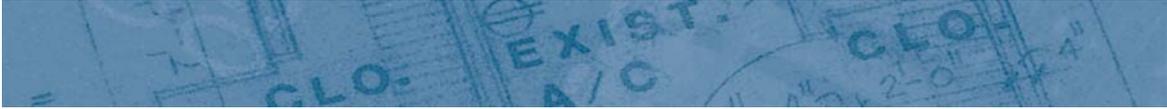
6.3 Business Management and Planning

Some key informants expressed concerns that there is a whole cohort of business owners/employers that will retire and leave the industry within the next ten years. They felt that the next generation of tradespeople is not ready to assume this role because the business experience and business “savvy” is not there. The key informants felt that succession planning within the industry is inadequate to address the scale and significance of upcoming retirements.

6.4 Higher Entry Level Requirements

There was a time in which a general high school diploma was enough to qualify students for most post secondary programs whether at the college or university level. In some trades it was not necessary to even have a high school diploma. This is not the case anymore. In discussions with key informants, it is clear that many industry sectors are now demanding a high level of academic knowledge and technical skill than was the case a decade ago. As a consequence, trade schools and other post secondary programs have established high standards for entry of incoming students. As an example, many Holland College trades programs require high school completion, and at least grade 11 math and science courses.

Registration officials at Holland College indicate that, in addition to high school graduation, candidates must have strong numeracy (math and science) and literacy skills. Recognizing that many of its incoming students had knowledge gaps, Holland College recently built supplementary math, science and general employability skills (communication, teamwork, critical thinking, problem solving, etc) into many of its programs. Key informants from Holland College indicate that this supplementary programming will, at least the short term, continue to be required to assist young people who want to pursue a trades career, but lack the necessary prerequisites (literacy, numeracy skills and proficiency) to meet the requirements of the program.



6.5 Production Processes

Key informants within the road building and heavy industry sector indicate that their industry is beginning to demand more highly trained workers. Environmental management issues related to emissions from engineering plants and new surveying technologies are driving the need for more knowledgeable and skilled tradespeople. In addition, specialty areas such as golf course construction, natural gas pipeline work and sewer and water work are expanding and heightening skill requirements.

6.6 Upgrading Curricula and Technology

Interviews with key informants indicate that training programs and curricula need to be brought up to date with new developments in construction design and building technologies. They felt that a number of the programs may need to be “re-tooled” and resourced to meet the new demand of the industry.

6.7 Training of Existing Workers

A huge training and development issue for the industry is to address the ongoing training needs of existing tradespeople who are working full-time and will never be in a position to leave their job for any extended period to get new training. Key informants indicated that little public funding is available for training workers that are already employed. Most of the funding is targeted on individuals who are EI eligible.

A series of flexible training modules will need to be developed for this population of workers, and both training institutions and employers will need to develop a collaborative approach to developing the most suitable (to employer, worker, training instructor) method of delivery.

Conclusions

7.0 Conclusions

Key conclusions resulting from the information and analysis contained in this report are:

1. There has been a serious and concerted effort by all governments and institutions involved in trades training on PEI to make training as accessible as possible and to serve the needs of the construction industry. These institutions have shown a dedication to quality, flexibility and innovation in their delivery of trades training programs.
2. Increases in apprenticeship registrations and enrolments at Holland College over the last number of years reflect efforts by governments and training institutions to increase the supply of highly qualified tradespeople in key construction trades.
3. Despite the best efforts of governments and training institutions, trades training faces a number of serious problems, including:
 - a. The number of graduates from Holland College in key construction trades declined from 1995 to 2002. The number of completions of apprentices in the trades was stagnant over the 1990s with significant declines in some key trades in recent years.
 - b. The percentage of Holland College graduates in key trades that found direct employment in their trade has been relatively low. The same conclusion holds for the proportion of apprentices in key trades that successfully completed their program and became certified tradespeople. The pay-off from trades training has been limited by low rates of direct employment and apprenticeship completion. These problems may be the greatest obstacles to meeting the needs of the construction industry for highly skilled tradespeople. For this reason, additional research on the causes of these problems, and potential solutions, should be a high priority.
 - c. An increase in direct employment rates for Holland College graduates, and completion rates for apprentices, would increase the number of certified tradespeople resulting from a given amount of training. It could achieve an increase in the number of certified tradespeople without devoting additional resources to training. Increased direct employment and apprenticeship completion rates are especially important at this time as low rates may limit the pay-off from recent increases in enrolments at Holland College and apprenticeship registrations.
 - d. Admission requirements for trades programs at Holland College usually include Grade 12 and



sometimes Grade 11 math, English and physics. These requirements may act as a significant barrier for many prospective tradespeople and may limit the potential supply of young people. Young people that meet these entrance requirements likely have other attractive career options. This presents a difficult challenge in attracting qualified young people into the trades. This challenge is especially difficult because of the widely documented tendency for young people to choose professional and technology related careers.

e. The trades recruitment problem is exacerbated by the lack of trades programs in high schools, and the lack of information and career counseling available to high school students.

f. It takes 8000 hours working on a job to become a certified tradesperson in most construction trades. Completion of a pre-apprenticeship program reduces this time requirement by 1000 hours for most trades and 2000 for electrical trades.

g. It takes a year of full-time work to accumulate 2000 hours. It therefore takes three to four years of full-time work to become a certified journey person. Many workers in the construction industry, particularly new entrants and less experienced workers, do not work full-time. For example, carpenters in PEI averaged 32 weeks per year according to the 1996 Census while plumbers and electricians averaged 35. At these averages, carpentry apprentices in the Block Release Program would take 6.25 years to complete their apprenticeship¹¹ while plumbers and electricians would take 5.7 years.

h. The extended length of apprenticeship in a seasonal industry such as construction could decrease the proportion of apprentices who successfully complete the program. Alternative job opportunities could arise over this time that would draw apprentices out of the program or individuals might be unable or unwilling to accept the relatively low wages paid to apprentices over such a long time period.

i. The extended length of time between the initiation and completion of apprenticeship also implies that it takes a long time to increase the supply of certified tradespeople. This makes it

¹¹ Assuming a 40-hour per week.



difficult to match the supply of skilled tradespeople to demand.

j. Two construction trades, construction electricians and plumbers, have compulsory certification. In these trades, all skilled tradespeople must go through apprenticeship. This reality makes it vitally important that training and apprenticeship programs produce the required number of skilled tradespeople.

k. The average age of individuals taking trades training at Holland College is relatively high. There appears to be a gap of several years between leaving or finishing high school and entering trades training for a large proportion of young people. This gap could result from a lack of information on trades training as a career option for young people and/or from the inability of young people to finance training. Young people may be “falling through the cracks” because of these limitations. That is, they may be good candidates for trades training in high school but end up stuck in low paying, unskilled jobs that they took right out of high school.

l. New technologies, construction methods and environmental realities are leading to specialties within trades. A supply of tradespeople with these specialties could provide an important competitive advantage to Island firms, particularly on large, complex projects.