

CONSTRUCTION
SECTOR COUNCIL



CONSEIL SECTORIEL
DE LA CONSTRUCTION

THE STATE OF WOMEN IN CONSTRUCTION IN CANADA



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ABOUT THE CSC

The Construction Sector Council (CSC) – a partnership between labour, business and government – is a national not-for-profit organization committed to the development of a highly skilled workforce that will support the future needs of Canada’s construction industry.

Like many industries, the construction industry faces a number of human resource challenges. These include the need to accurately forecast labour demand and supply, to increase the mobility of workers, to make the most of new technologies, and to cope with an aging workforce.

This report is part of the CSC’s Labour Market Information program. It is available in both official languages and can be obtained electronically at www.csc-ca.org.

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EXECUTIVE SUMMARY

In industrialized countries worldwide, it is predicted that industry in general, and the construction industry in particular, will face a serious shortfall of skilled workers in the next decade. Global competition for skilled workers will intensify as a result. The projected declines in skilled labour will be driven by demographic trends and national up-skilling strategies that promote university education over other educational pathways to prepare for global competition in the knowledge economy. In response, the Canadian construction industry is taking steps to expand the domestic labour pool by improving access to industry careers by older workers, Aboriginal peoples, immigrants and women.

Despite successful initiatives to increase the numbers of women in the construction industry, the rate of their participation, particularly in the trades and onsite construction management, has not grown significantly over time. To address this problem, questions about the challenges and barriers women face must be reopened. This research examines the barriers, as well as good practices that could be implemented to overcome them. The Construction Sector Council conducted this research between 2008 and 2009 using literature review, secondary data analysis, a survey, interviews and focus groups. The purpose of the research was to guide industry in establishing benchmarks for change and to document the good practices needed to achieve it.

Women's participation in construction

The absolute number of women employed in construction has increased over time. Women constituted 12.6% of the Canadian construction industry workforce in 2006, but the rate of their employment (4%) in the construction trades was smaller. Although there were slight increases between 2001 and 2006 in women's participation rate in some trades (insulators, cabinetmakers, painters/decorators, tilesetters and floor covering installers), there was little or no growth in many other occupations, and in many trades the representation of women was still less than 2%.

In registered apprenticeships, the number of women more than tripled between 1996 and 2007, but growth as a proportion of total apprenticeship registrations (7.5% in 1996 and 10.6% in 2007) was limited. Female apprenticeship completions as a proportion of total completions were extremely low (1.8%) in 2007 and this has been constant since 1996. Low rates of apprenticeship completion are a well-recognized problem globally, and one that applies both to men and women apprentices. Due to an aging workforce and the impending retirement of skilled journeypersons, low apprenticeship completion rates signal a potential crisis in industry's ability to prepare and train future generations.

In comparisons based on international data, the rate of women's participation in the Canadian construction industry appears to resemble those in other industrialized nations. The exception is Germany, where the percentage of both men and women employed in the industry is markedly higher than in other countries. Canada's performance appears to be on par with, if not somewhat superior to the performance of two countries – the United States and Australia. Comparisons with United States and Australian Census 2006 data showed that in all three countries women were represented at a rate of less than 3% in trades such as plumbing, carpentry, bricklaying, concrete finishing, roofing, electrical and crane operation. In other occupations such as land surveyor, construction inspector, and health and safety inspector, Canada appeared to outperform these two countries, with women constituting 15.8% of land surveyors, 12.8% of construction inspectors and 30.1% of health and safety inspectors.

In key informant interviews with representatives of employers, owners, unions, labour organizations and construction associations, many employers indicated that women have aptitudes and abilities that suit them best to professions such as engineering, to the lighter construction trades, and to occupations that involve customer relations, human relations, communication, and organizational skills such as project management, site inspection, and health and safety. This may contribute to higher levels of women employed in construction engineering, inspection, and health and safety inspection.

The literature reviewed for this research showed repeatedly that high school girls see themselves as lacking the intelligence and ability for science, trades and technology careers. The 2008 Construction Sector Council Women in Construction Survey supported this finding. In the survey, the large majority (more than 80%) of respondents who were likely to consider careers in construction reported that they believed they had the skills or aptitude for such work, compared to less than 20% of those who were most unlikely to consider these careers. The problem of girls' uncertainty about their abilities is addressed in some schools in Austria, where it is compulsory for both high school girls and boys to sample courses in the trades in order to be exposed to these skills areas. Canadian students do not receive systematic exposure to these areas of work.

Career decisions and interest in careers in construction

The growing body of international research literature related to the career choices of girls and women reflects efforts to expand domestic labour pools by opening the construction industry to more women. Recent research emphasizes the interplay of factors in the career decisions girls and women make, a finding also supported in this research. Secondary analysis of Canada Millennium Scholarship Foundation (MSF) Survey of Secondary Students' data indicated that personal interests, having a work-related talent or ability, enjoying a course at school, program entrance requirements, and the likelihood of financial rewards were the most influential factors after parental influence on female students' decisions about education and career. Among female apprentices surveyed by the Canadian Apprenticeship Forum (CAF) Survey of Apprentices,² the reasons most often cited for entering an apprenticeship were the expectation of steady work or good pay, interest in a trade, the need for a job, and a desire to own their own business.

Given the importance of salary to the career decisions of girls and women, it should be noted that those surveyed by the 2008 Women in Construction Survey³ were not well informed about the salaries that women earn in construction trades/management. Only a quarter (25%) of the respondents believed that women earn good salaries in construction, another 20% disagreed with this, and 55% indicated that they did not know.

Furthermore, half of the young women aged 18 to 34 surveyed by the Construction Sector Council had never received information about careers in construction trades/management. Of those who indicated that they might consider such occupations, more had received information about and encouragement to enter them, but it is not known whether these supports had been passively received or actively sought.

Seven percent (7%) of the women surveyed by the Construction Sector Council were employed in construction trades/management. Of those, 11% held an apprenticeship certification. Thirteen percent (13%) of survey respondents not employed in construction were still at least slightly likely to consider a career in the construction trades in future (5% were fairly or very likely to consider it), while about a fifth (19%) were slightly likely to consider a career in construction management (9% were fairly or very likely). When these respondents were combined, 23% of those not employed in construction at the time of the survey indicated they were at least slightly likely (18% were fairly or very likely) to consider a career in trades or management, with more expressing an interest in management. This is a very promising statistic considering that half of the women surveyed had

¹ Secondary analyses of Millennium Scholarship Foundation (MSF) Survey of Secondary School Students data were conducted for this research. The MSF Survey of Secondary School Students surveyed 14,329 Canadian Grade 9 to Grade 12 students in 2005. Half of the students surveyed were female.

² Secondary analyses of Canadian Apprenticeship Forum (CAF) Survey of Apprentices data were conducted for this research. The CAF Survey of Apprentices surveyed 2,224 students, 11% of whom were female.

³ The 2008 Construction Sector Council Women in Construction Survey was administered to 1,290 young Canadian women respondents aged 28 to 34 years.

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never received information about these careers and that the pool of women who could be targeted for construction careers is larger than the 18 to 34 age group.

The 2008 Construction Sector Council Survey replicated and built upon the findings of international research. It also makes a new contribution to the global conversation about girls' and young women's career decision making and suggests directions for continuing research. In doing so, it introduces new findings about the frequency with which young women consider careers in construction trades/management, and explores the attitudes of these young women toward construction careers.

Educational and career pathways

Efforts to boost the participation of women in construction careers depend on effective educational and career pathways, particularly in the construction trades where female participation is lowest. Secondary analysis of data from the 2005 Survey of Secondary School Students confirmed what has been established in other research: namely, that about two-thirds of girls in high school planned to attend university, and very few (4% of girls and 12% of boys) expected that their highest educational attainment would be an apprenticeship.

The low levels of youth interest in the trades highlight the supply problem the construction industry faces in Canada and elsewhere. It is an issue many believe has been made worse by closing high school shops in many Canadian provinces. Evidence to support this observation was provided by a finding from the Canadian Apprenticeship Forum Survey of Apprentices, showing that for many apprentices, high school trades courses, high school co-op and work experience are highly influential in career decision making. This finding supports the case for continuing to build and strengthen high school trades apprenticeship programs since they are key feeder programs to the trades.

Several studies have reported that girls are systematically streamed away from science, trades and technology careers by the very educational pathways intended to expose them to opportunities in these sectors. Studies have found that gender stereotypes are reproduced in high schools in students' interactions with teachers and career counsellors who tend to steer female high school students toward university rather than other forms of education. It is believed that since teachers and counsellors usually have a university education, they are positively biased toward this recommendation. The accumulated evidence points to the need to rebuild broken educational pathways, or develop completely new ones, or both.

The Canadian Apprenticeship Forum Survey of Apprentices produced findings that may be used to help recruit more women to construction. For example, the survey found that trades apprenticeships were not the first career choice for most female (70%) and male (60%) apprentices. Almost three-quarters of female apprentices left high school five or more years before completing the survey. About two-fifths worked right after high school, a third attended college, and a fifth attended university (findings were similar for male apprentices). A quarter of female apprentices had completed a college certificate or diploma or an applied degree before entering a trades apprenticeship. Many young women and men choose to enter a trades apprenticeship as a second or third career choice, after working or pursuing higher education. Industry key informants who promote construction careers to college-level women reported in this research that these women respond with strong interest. More systematic and vigorous recruitment of female (and male) apprentices from this pool of candidates is suggested.

Good practices to increase women's participation in construction

Literature review, key informant interviews and focus group findings confirmed that barriers to women's access to industry careers persist in recruitment, apprenticeship training and education, hiring/employment, and the workplace. Programs to address barriers to the skilled trades are documented by the Canadian literature, but there is a gap in the literature documenting the industry's good practices in recruitment, hiring and workplace retention. Interviews with industry informants were used to address that gap and investigate why the rate of women's participation in construction trades/management has not increased more significantly.



Key informant interviews showed that more large construction companies (with 100 employees or more) are making inroads in hiring women than smaller companies. Far fewer small employers (with less than 100 employees) employed women in these occupations, but those that did reported that this was working well. Most of the medium- and large-size employers (100 or more employees) employed some tradeswomen (the range was 1% to 10%), with the highest rates in medium-size companies. Large companies more often employed women in onsite construction management (the range was 1% to 30%).

The interviews and focus groups suggest several reasons to explain why the rate of women's participation in construction trades/management has not increased more significantly. The first is the problem of supply. Many employers in industry maintained that supply was the main factor, not the need for the industry to make workplaces more welcoming to women. Employers and association representatives focused primarily on the need to promote industry careers by improving the image of industry and working against gender stereotypes.

Some industry informants also recommended increasing pre-apprenticeship programming to prepare more women to enter the trades, expose them to construction workplaces before career training, and provide work-hardening experiences to prepare women to be more fully equipped to succeed in gender-segregated construction workplaces. The success of the Alberta Women Building Futures program is attributed to the fact that the program provides rigorous screening and work-hardening as part of pre-apprenticeship training, and also provides support after women are hired.

A number of programs offer examples of good practices. For example, employers and industry association representatives actively promote careers in construction by giving presentations at high schools, colleges, and trades fairs. Programs to expose girls to work in trades and technology include the Saskatchewan *Girls Exploring Trades and Technology* camps and, in Toronto, the *Discover Engineering* program. Employers and industry associations provide scholarships for women entering or advancing in careers in construction. Pre-apprenticeship programs, such as the British Columbia Institute of Technology *Trades Discovery* program, provide training to prepare women to enter the construction trades. In Alberta, employers have partnered with community organizations to fund the preparation of women for the skilled trades. Examples include the *Women Building Futures* program and the Vermilion/YWCA Skills Training Centre.

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The second reason that women's participation in construction has not increased more significantly is the lack of demand. Some employers argued that a recruitment and hiring strategy is needed, while many others argued that they do not believe it is their job to recruit women to the construction industry. There was disagreement about the desirability of hiring quotas. Construction owners suggested that they are in a position to take leadership by introducing quotas in bidding and contract requirements. Most industry informants believed that more women could be hired if employers had greater financial incentives, but some industry experts warned that incentives could be abused, and that the real indicator of improved hiring is the retention of women, not just more hires.

Good hiring and employment practices include pre-apprenticeship programs that provide support for women apprentices beyond training through to hiring and retention. The *Women Building Futures* program in Alberta, the *Women Unlimited* project in Nova Scotia and the *Partners Building Futures* pilot project in New Brunswick are all examples of this. Another approach is the *Skilled Trades Employment Program (STEP) for Women* in British Columbia. Initiated by the British Columbia Construction Association with funding by the provincial government, this program provides mentorship, work placement and ongoing employment support.

The third reason that the rate of women's participation in construction trades/management has not increased more significantly is the problem of retention. Key informants reported that most women do not stay in the trades longer than five years. Many leave to start families and then are unable to return because of inflexible work policies that make it difficult to fulfill parenting responsibilities. Many industry informants did not see problems of gender-based harassment and bullying on job sites as contributing factors, but tradeswomen in the focus groups described incidents of harassment and bullying, unsafe working conditions on the job, and lack of workplace policies and management support.

Tradeswomen who participated in focus groups offered recommendations that were echoed by industry informants. These included calls for:

- workplace safety;
- workplace respect and family-friendly policies;
- stronger leadership by employers and management;
- good hiring and HR practices to assure that women are not hired on the basis of gender only;
- careful education of all employees in new policies and practices; and,
- monitoring to ensure that policies make a meaningful difference.

Local construction associations, along with provincial associations, could also act as distribution systems, allowing information about good practices to reach small- and medium-size employers. Multi-stakeholder partnerships already play a growing role in supporting the development of good practices and may also prove useful in this effort.

Good practices to increase retention could include the toolkits available via the Internet that support the spread of good industry practices and standards. Two examples are the Construction Owner's Association of Alberta (COAA) *Respect in the Workplace* toolkit (a standardized policy that enables companies to assess work sites, promote awareness, training, and communication, and develop mechanisms to address bullying, harassment and violence) and the human resources toolkit being developed in Saskatchewan to improve the hiring and retention of women employees.

Two issues were emphasized in the research:

1. It is very important to take a generic approach to workplace change to avoid targeting women and prevent backlash against them. Consistent with this approach is the recommendation that a business case for diversity be developed to drive industry-wide change.
2. To successfully build and maintain women's participation, multiple programs to improve recruitment, training, education, hiring, employment and retention must work together.

With respect to the claims of critical mass theory, the research suggests that although increased recruitment may increase the numbers of women in previously segregated occupations, retention of women requires more. The economic and legal research of Scott Moss (2004) suggested that the percentage of women in the workplace can be seen as a proxy for employers' treatment of women. These arguments are consistent with the findings of the 2008 Construction Sector Council Women in Construction Survey, which indicates that for young women in Canada, being treated equally at work, equal representation, and having opportunities for advancement and flexible work hours are all highly influential considerations in their career decisions. Consequently, this research concludes that the changes recommended by industry informants and tradeswomen in the focus groups be implemented across Canada, and must also address capacity-related challenges for smaller employers, which could limit their buy-in.



01 INTRODUCTION

In Canada, construction is a multi-billion dollar industry, which produces almost 12% of the national gross domestic product (Conference Board of Canada, 2005). By 2020 it is estimated that Canada will face a shortfall of over one million skilled workers in key industry sectors, including construction (Construction Sector Council, 2004a, 2004b; Conference Board of Canada, 2007; Browarski, 2007; MacDonald, 2006). It is expected that a number of factors will combine to produce shortages of skilled workers in construction and other sectors. Canada and most of the industrialized world is experiencing a “perfect storm” of demographic and labour shifts due to declining birth rates, longer life expectancy, and retirement of the front-end of the “baby boom” (Saunders, 2006; Pereira, Shinewald, Wise, Yates, and Young, 2007; Braundy, 2002). Although labour shortages are not yet widespread, in some sectors and regions the skills gap is already being felt.

This situation has many in government and industry calling for renewed efforts to build the labour force and address looming labour shortages (Saunders, 2006; MacDonald, 2006; Conference Board of Canada, 2007; Browarski, 2007; Construction Sector Council, 2009). The need to expand the Canadian labour pool is driving initiatives to improve access to members of under-represented groups. As a result, sectors including construction, older workers, Aboriginal peoples and women are being targeted for labour force recruitment and training (Construction Sector Council, 2004).

In most industrialized countries, male-female rates of participation in the construction industry remain unequal. More success has been observed in professions such as medicine and law, but in engineering, a discipline that prepares some workers for careers in construction management, much less has been achieved. Canadian women are under-represented in construction trades/management. Despite overall increases in the rate of women training in apprenticeships, their share of apprenticeships in the construction sector has not increased significantly. Similarly, despite the success of various programs in overcoming the historical barriers to the recruitment and training of girls and women, overall participation levels remain low.

Since construction work is highly gendered, many men and women regard it as “men’s work.” A shift in mentality – among employers, the current mostly male workforce, and potential workers – can take generations. In addition, it is unclear how to define “success” in attracting women into construction trades and construction management occupations when there are such persistent barriers.

With these issues in mind, the Construction Sector Council undertook this research to investigate the state of women in construction and answer the following questions:

- What is the current status of women in construction and construction-related trades apprenticeships?
- Which factors influence young women’s career choices, including their attitudes toward careers in construction?
- Why do young women enter and leave the construction trades and apprenticeships?
- What is the threshold for women’s participation to achieve sustainable change?

- What barriers limit improvement in the rate of women's participation in construction?
- Which good practices in recruitment, education, hiring, and the workplace support change or are successfully encouraging women to pursue careers in construction?

To address these questions (Appendix A), the study conducted a review of literature, analyzed secondary data and surveyed young women in Canada about career choices. In the final stage of the research, interviews were conducted with industry informants to identify the changes needed to increase women's participation in the industry, the barriers to change, and specific industry practices with the potential to overcome those barriers. Focus groups were held with women in trades and employed in onsite construction management to learn about their experiences, and hear their recommendations for improving recruitment, hiring and retention.

This report draws from academic literature, grey literature and secondary data sources, including:

- Construction Sector Council (labour market information)
- Statistics Canada Census and Labour Force Survey data
- Registered Apprenticeship Information System (RAIS) data
- International Labour Organization data
- Australian Census data
- United States Department of Labour data
- Canada Millennium Scholarship Foundation (CMSF) Secondary School Survey data
- Canadian Apprenticeship Forum (CAF) Survey data

The report is organized as follows:

- Section 2 discusses and presents for comparison Canadian statistics on the rate of women's participation in the construction industry. It also presents data that show the rate of women's participation in and completion of registered apprenticeship training.
- Section 3 reviews literature related to the career choices of girls and young women. In addition, it presents secondary data analysis from two surveys about students' and apprentices' career choices as background to a discussion of results from a 2008 Construction Sector Council survey investigating the career choices of young Canadian women and their interest in careers in the construction industry.
- Section 4 presents information about the barriers to women's participation in construction occupations in Canada. In addition, it describes Canadian programs and initiatives introduced to overcome these barriers and attract and retain more women in the industry.
- Section 5 presents the results of industry informant interviews and focus groups with women employed in the construction trades and onsite management. These results document the work being done by industry to overcome the barriers and recommends ways to increase the supply, demand and retention of women in construction workplaces.

The Canadian construction industry employs workers in two key groups:

1. managers and professionals, who plan, organize, provide advice on specialist functions or field activities, direct and coordinate all activities and resources involved with construction operations; and,
2. construction tradespersons, who construct, install, finish, maintain and repair internal and external structures in residential, commercial/institutional, industrial and civil construction.

Where information is available, this paper discusses women's participation in both the construction trades and in onsite construction management occupations.

02 WOMEN'S PARTICIPATION IN THE CONSTRUCTION INDUSTRY

One of the strategies being proposed in Canada and internationally to respond to the retirement of large numbers of skilled construction workers within the next decade is to increase the participation rates of those who have historically been under-represented in the industry. There is an understanding that the increased participation of women, Aboriginal peoples, newcomers, and mature workers in the trades and in onsite management would help replenish Canada's skilled construction workforce.

This section presents Canadian and international statistics that depict the rate of women's labour force participation across industries, in apprenticeships and construction occupations.

It also presents critical mass theory, which is frequently referred to in discussions about the percentage of women that industry could target to increase participation rates in the trades and onsite management.

2.1 Educational preparation

Slightly more young Canadian females appear to be obtaining education in the construction field than those in older age categories, although the differences are small. In 2006, 2.4% of Canadian females in the labour force aged 15 to 24 had completed a certificate or diploma in construction, compared with 1.4% of females in the labour force aged 25 to 34, and 1% of those aged 35 to 54 years.

Women who hold construction management positions such as project managers, supervisors, managers and estimators often hold professional degrees in engineering or architecture. Completion of post-secondary education is necessary for entry into some construction management occupations. While women now comprise the majority of full-time enrolments in many university programs, they still account for much smaller shares of full-time enrolment in mathematics and science faculties. Still, the proportion of women in technical areas of study has increased over the last 30 years.

Growth has been observed in engineering, although the field remains male-dominated (Anderson and Gilbride, 2003). In 2001-02, women represented 24% of students in engineering and applied sciences, up from only 3% in 1972-73 (Statistics Canada, 2006). Increases in women's enrolments in engineering continued after this, but then by 2005 dropped off slightly (Canadian Council of Engineers, 2006). Today, less than 20% of engineering students in Canada are women (Canadian Council of Engineers, 2006).

2.2 Representation of women in apprenticeships

The status of women in apprenticeships has been investigated in a number of recent Canadian studies, including:

- the Canadian Apprenticeship Forum (2004) report on the barriers experienced by women in accessing and completing apprenticeship training;
- the Newfoundland Women in Resource Development Committee (2002) report on women in apprenticeship;

- a report on women in the trades in British Columbia and the Yukon (2007); and,
- several reports on pre-trades training, trades occupations, and trades apprenticeships in the Yukon, Northwest Territories and Nunavut (Tompkins and Associates, Ltd., 2005, 2006, 2008).

Similar work is being done internationally, such as a report published by the United Kingdom Equal Opportunities Commission (Miller, Pollard, Neathey, Hill, and Ritchie, 2005), called *Gender Segregation in Apprenticeships*.

In Canada, total apprenticeship registrations for men and women doubled between 1996 and 2007, rising from 165,325 to 358,555 for all major trades groups combined. The number of males in registered trades apprenticeships more than doubled (from 152,845 to 320,485), while the number of females more than tripled (from 12,480 to 38,070) in this period. In 2007, of the 358,555 Canadians in registered trades apprenticeships in Canada, about a tenth (10.6%) were women, compared to 7.5% in 1996 (Table 2-1). Although the absolute number of women registering in trades apprenticeship has increased several-fold, the increase is much smaller in the proportion of women in all trades groups combined and in the non-traditional trades.



Of the total number of women in registered apprenticeships (28,070) in 2007,

- more than half (55%) were registered trades apprentices in the food services sectors;
- 8% were apprentices in building construction trades;
- 5% worked in electrical, electronics, or related trades;
- 6% were in metal fabricating trades;
- 5% were in motor vehicle and heavy equipment trades; and,
- only 1% worked in industrial and related mechanical trades.

Another 21% of female registered apprentices were found in other trades.

In the trades sectors considered to be traditionally female areas, women made up at least half the workforce. In the food services sector, women comprised 65% of registered apprentices in 2007, while in all of the non-traditional trades groups women made up less than 4% of registered apprentices. In 2007 in non-traditional trades groups, the proportion of registered apprentices who were women ranged from 1.9% in industrial and related mechanical trades to 3.7% in the building construction trades. Data from 2007 are presented in Table 2-1, showing the number and proportion of women in registered trades apprenticeships and completed apprenticeships for all the major trades groups.

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Table 2-1: Proportion of women in registered and completed apprenticeships in 2007

Trades groups	Apprenticeship registrations (% women)	Apprenticeship completions (% women)
Total major trades groups	10.6	11.3
Building construction trades	3.7	1.8
Electrical, electronics and related trades	3.0	1.5
Metal fabricating trades	2.8	1.6
Motor vehicle and heavy equipment trades	2.7	1.8
Industrial and related mechanical trades	1.9	0.9
Other trades	52.0	62.1
Food services	64.6	79.1

Source: Statistics Canada (Registered Apprenticeship Survey); see appendices B and C

Although the number of women in registered apprenticeship in the non-traditional trades doubled, tripled and quadrupled in some sectors between 1996 and 2007, the absolute number of women in these trades remained small and the proportion of women in registered apprenticeships in the non-traditional trades did not change significantly. For example, in the building construction trades, the representation of women in apprenticeships increased from 2.6% in 1996 to 2.9% in 2002 and then to 3.7% in 2007, although their numbers tripled, increasing from 860 in 1996 to 2,950 in 2007. In the electrical trades, women's representation in apprenticeships rose from 1.9% in 1996 to 2.5% in 2002 and then to 3.0% in 2007, although the numbers of women more than tripled, from 540 to 1,770 in 2007 (Table 2-2).

Table 2-2: Women in registered apprenticeships, 1996 to 2007

Apprenticeship registrations	1996		2002		2007	
	Number of women	%	Number of women	%	Number of women	%
Total major trades groups	12,480	7.5	21,760	9.4	38,070	10.6
Building construction trades	860	2.6	1,320	2.9	2,950	3.7
Electrical, electronics and related trades	540	1.9	1,010	2.5	1,770	3.0
Metal fabricating trades	430	1.3	970	1.9	2,110	2.8
Motor vehicle and heavy equipment trades	660	1.9	995	2.2	1,915	2.7
Industrial and related mechanical trades	220	1.5	315	1.7	470	1.9
Other trades	680	21.8	2,810	45.1	8,115	52.0
Food services	9,090	53.8	14,340	61.4	20,735	64.6

Source: Statistics Canada (Registered Apprenticeship Survey); see Appendix B

Similar to the representation of women in registered apprenticeships, about a tenth (11.3%) of total apprenticeship completions were by women in 2007, compared to 12.1% in 1996. In 2007, women represented more than three-quarters (79.1%) of completed trades apprenticeships in the food services sector. In the non-traditional trades, the proportion of apprenticeships completed by women ranged from 0.9% in the industrial and related mechanical trades to as many as 1.8% in the building construction trades. In percentage terms, this is very similar to the proportion of females in registered apprenticeships in non-traditional trades sectors (1.9% in industrial and related mechanical trades, 3.7% in the building construction trades). Further information for the period between 1996 and 2007 is provided in appendices C and D.

It is well known that from 1996 to 2007, increases in registered apprenticeship completions in Canada did not keep pace with the explosive growth of registrations. Although female apprenticeship completions in the non-traditional trades doubled between 1996 and 2007, their real numbers remained small. For example, in the construction building trades, there were 40 female registered apprenticeship completions in 1996 and 70 completions in 2007. In the electrical, electronic and related trades, female apprenticeship completions doubled (increasing from 35 in 1996 to 70 in 2007), and in the metal fabricating trades, completions tripled (increasing from 25 to 85 between 1996 and 2007). This well-known pattern affects both men and women in registered apprenticeships in Canada and around the globe.

2.3 Labour force participation

In 2007, women accounted for 47% of the total Canadian labour force. Despite steady increases that have brought their participation to this level, gender parity has not been achieved in all occupations (Statistics Canada, 2006). The rate of women's participation in the labour force varies widely across sectors.

Occupational segregation refers to the unequal representation of women and men in different employment sectors and industries (horizontal segregation) and at different levels in organizations (vertical segregation). Another dimension of gender-based occupational segregation is the fact that women are concentrated in low-paying occupational categories and experience a significant wage gap (A Commitment to Training and Employment for Women (ACTEW), 2007; Canadian Labour Congress, 2008). Canadian women in the workforce are concentrated in public and social services; the majority works in the fairly low-paying clerical, sales, and service occupations that are considered traditional areas of employment for women, with very few employed in trades occupations (Canadian Labour Congress, 2008). Women accounted for just 22% of professionals in the natural sciences, engineering and mathematics in 2006 (Canadian Council of Engineers, 2006).

In sectors of employment that are considered traditional areas of work for women, women represent the majority of the labour force. Women represent 82% of workers employed in the area of health care and social assistance and 67% of workers in education. In some other sectors, such as retail, finance and insurance, real estate, rental and leasing, and professional, scientific and technical services, the rate of women's participation is 45% or more (Table 2-3). Appendices E, F, and G provide further information about the rate of women's participation in the industry from 2001 to 2006.

Non-traditional occupations are defined as areas of employment where less than 45% of jobs are held by women. In these occupations, the participation levels of Canadian women have remained persistently low over time (Insightrix Research Inc., 2007). In non-traditional industry sectors, including agriculture, forestry, fishing and hunting, mining and oil and gas extraction, utilities, construction, manufacturing, and transportation and warehousing, women's participation has historically been close to 30% or lower. There has been almost no change in the participation rate of women in the manufacturing and primary sectors over the past decade (Statistics Canada, 2006). Women account for one-third (33%) of workers in the wholesale trade, 29% of workers in

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manufacturing, 25% of those in transportation and warehousing, 18% of those employed in mining and oil and gas extraction, and 12% of those employed in the construction sector.

The overall rate of women's participation in the trades, transport and equipment operation, and related occupations was 6.9% in 2006 and 2007. Within this sector, women represented as many as 10% of transportation equipment operators and related workers (Statistics Canada, Census 2006). The highest representation of women is found in the Other Trades category, which includes upholsterers, tailors, dressmakers, furriers and milliners, shoe repairers and shoemakers, jewelers, watch repairers and related occupations.⁴

Table 2-3: Female labour force participation by industry in 2006

Industry ⁵	Women (%)
Agriculture, forestry, fishing and hunting	29.6
Mining and oil and gas extraction	18.3
Utilities	24.7
Construction	12.2
Manufacturing	29.1
Wholesale trade	33.1
Retail trade	55.2
Transportation and warehousing	25.0
Information and cultural industries	46.0
Finance and insurance	63.2
Real estate, and rental and leasing	45.4
Professional, scientific and technical services	44.6
Management of companies and enterprises	49.3
Administrative and support, waste management and remediation services	44.6
Educational services	67.0
Health care and social assistance	82.1
Arts, entertainment and recreation	48.7
Accommodation and food services	60.4
Other services (except public administration)	53.2
Public administration	47.2

Source: Statistics Canada, Census 2006; see Appendix D

Women's participation appears to be lower in the construction sector than in other industries, as shown in Table 2-3. Women represented 12.2% of construction industry workers in 2006, with many in clerical and secretarial areas (Fielden, Davidson, Gale, and Davey, 2000). By far the smallest representation of women in any occupational category is found in the traditional trades and major trades groups (Table 2-3 and appendices E, F and G). Women's participation in construction,

⁴ The 2006 National Occupational Classification for Statistics (NOC-S) concordance can be accessed online at http://www5.hrsdc.gc.ca/NOC-CNP/docs/Crosswalk_E.pdf.

⁵ Categories based on North American Industry Classification System

stationary engineering, electrical, machining, metal, and mechanics trades is lower than the average for the major trades groups combined.

2.3.1 Occupational distribution of women in construction

In 2006, women represented 4% of tradespersons in construction (Table 2-4), a small increase over the Canada 2001 Census, when women represented 3.2% of tradespersons in that sector. Secondary data from the Canada Labour Force Survey produced a similar finding, namely that the rate of women's participation in construction trades increased from 2.8% in 2000 to 4% in 2007.⁶ Although the change is small, the pattern nonetheless suggests a very gradual increase in the women's participation rate, albeit one that has taken place during a period of significant growth in the industry overall.

Census 2001 and Census 2006 occupational data were compared to determine the pattern of women's representation in construction occupations and the extent of change in that period. Women represented 4% of those in the construction trades in 2006 (Statistics Canada, Census 2006), with less than 2% representation in plumbing, pipefitting, gas fitting, carpentry, bricklaying, concrete finishing, electrical, construction millwright, air conditioning and refrigeration, and crane operation. Women were the most strongly represented in the following trades in 2006: cabinetmaking (7.6%), insulating (7.0%) and tilesetting (5.3%). Women also represented 7.3% of construction labourers and 8.5% of other trades helpers and labourers. There were sizeable increases in percentage terms in the construction trades – for example, women's representation as tilesetters and plasterers/drywallers/finishers, insulators, ironworkers, and drill blasters grew more than 50% in percentage terms, although these increases are very small in absolute terms.

Table 2-4: Proportion of female labour force participation by construction trade (Census 2001 and 2006)

Occupational category and occupations	Women's participation		
	2001 (%)	2006 (%)	Increase or decrease (%)
Construction trades	3.2	4.0	26.0
H111 Plumbers	1.3	1.9	46.5
H112 Steamfitters, pipefitters, sprinkler system installers	1.4	1.7	15.7
H113 Gasfitters	2.3	1.4	-39.4
H121 Carpenters	1.5	1.8	20.9
H122 Cabinetmakers	6.1	7.6	24.3
H131 Bricklayers	1.4	1.1	-20.6
H132 Concrete finishers	1.0	1.2	28.7
H133 Tilesetters	3.1	5.3	67.9
H134 Plasterers, drywall installers and finishers, and lathers	2.4	4.2	79.7
H141 Roofers and shinglers	1.7	2.1	22.7
H142 Glaziers	5.4	4.0	-25.8

Continued on next page

⁶ The results of secondary analysis of Canada Census and Labour Force Survey data are similar but not equal, likely due to differences in sampling (for example, the Canada Labour Force Survey excludes the territories of Canada).

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Table 2-4: Proportion of female labour force participation by construction trade (Census 2001 and 2006) (continued)

Occupational category and occupations	Women's participation		
	2001 (%)	2006 (%)	Increase or decrease (%)
H143 Insulators	4.6	7.0	51.8
H144 Painters and decorators	10.9	14.0	28.3
H145 Floor covering installers	3.4	4.5	32.5
H211 Electricians (except industrial and power system)	2.2	1.6	-29.2
H212 Industrial electricians	1.6	1.7	3.5
H311 Machinists, and machining and tooling inspectors	5.5	5.0	-10.2
H312 Tool and die makers	3.9	4.4	13.1
H321 Sheet metal workers	2.2	3.1	40.8
H322 Boilermakers	3.1	2.5	-20.0
H323 Structural metal and platework fabricators and fitters	3.6	4.4	22.6
H324 Ironworkers	1.7	3.1	81.5
H325 Blacksmiths and die setters	3.7	4.6	23.6
H326 Welders and related machine operators	3.6	4.2	18.5
H411 Construction millwrights and industrial mechanics (except textile)	1.3	1.5	18.3
H412 Heavy-duty equipment mechanics	1.9	1.1	-42.0
H413 Refrigeration and air conditioning mechanics	1.3	1.4	7.3
H421 Automotive service technicians, truck mechanics and mechanical repairers	1.5	1.7	16.9
H611 Heavy equipment operators (except crane)	2.3	2.7	20.0
H621 Crane operators	1.9	1.8	-0.9
H622 Drillers and blasters – surface mining, quarrying and construction	1.5	2.8	88.7
H821 Construction trades helpers and labourers	6.5	7.3	12.0
H822 Other trades helpers and labourers	8.0	8.5	6.4

Source: Statistics Canada, Census 2001 and Census 2006

2.3.2 Representation of women in construction management

Women account for only 9% of Canada's registered professional engineers (Canadian Council of Engineers, 2006). Gender segregation in the profession has been the focus of ongoing research in this country (Anderson, Gilbride, and Stewart, 2006, 2004, 2003; Zywno, Gilbride, and Gudz, 2000). Efforts to attract girls and women to engineering education have shown some limited success. More reference to this work is made in Section 4 of the report, which focuses on good practices in Canada.

Women represented 6.5% overall of contractors/supervisors in trades and transportation in 2006 (Statistics Canada, Census 2006). Women accounted for 7.9% of construction managers, 6.4% of residential homebuilders and renovators, 10.5% of estimators, 15.8% of survey technologists and technicians, 33.6% of mapping and related technologists and technicians, 20.3% of engineering inspectors and regulatory officers, 34.6% of health and occupational safety inspectors, and 12.3% of construction inspectors.

Table 2-5: Proportion of female labour force participation by management occupation (Census 2001 and 2006)

Occupational category and occupations	Women's participation		
	2001 (%)	2006 (%)	Increase or decrease (%)
Construction management positions			
A371 Construction managers	6.7	7.9	18.5
A372 Residential home builders and renovators	5.5	6.4	15.9
C134 Construction estimators	9.3	10.5	13.5
C154 Land survey technologists and technicians	13.3	15.8	18.8
C155 Mapping and related technologists and technicians	34.7	33.6	-3.2
C162 Engineering inspectors and regulatory officers	16.1	20.3	25.8
C163 Inspectors in public and environmental health and occupational health and safety	30.1	34.6	15.0
C164 Construction inspectors	7.0	12.3	75.6
H011 Supervisors, machinists and related occupations	8.1	6.2	-23.5
H012 Contractors and supervisors, electrical trades and telecommunications occupations	7.2	4.9	-31.3
H013 Contractors and supervisors, pipefitting trades	4.4	2.6	-40.9
H014 Contractors and supervisors, metal forming, shaping and erecting trades	3.2	2.6	-18.6

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Table 2-5: Proportion of female labour force participation by management occupation (Census 2001 and 2006) (continued)

Occupational category and occupations	Women's participation		
	2001 (%)	2006 (%)	Increase or decrease (%)
H015 Contractors and supervisors, carpentry trades	2.2	3.4	53.0
H016 Contractors and supervisors, mechanic trades	4.8	5.9	23.1
H017 Contractors and supervisors, heavy construction equipment crews	3.4	3.1	-8.3
H019 Contractors and supervisors, other construction trades, installers, repairers and servicers	4.4	4.9	13.2

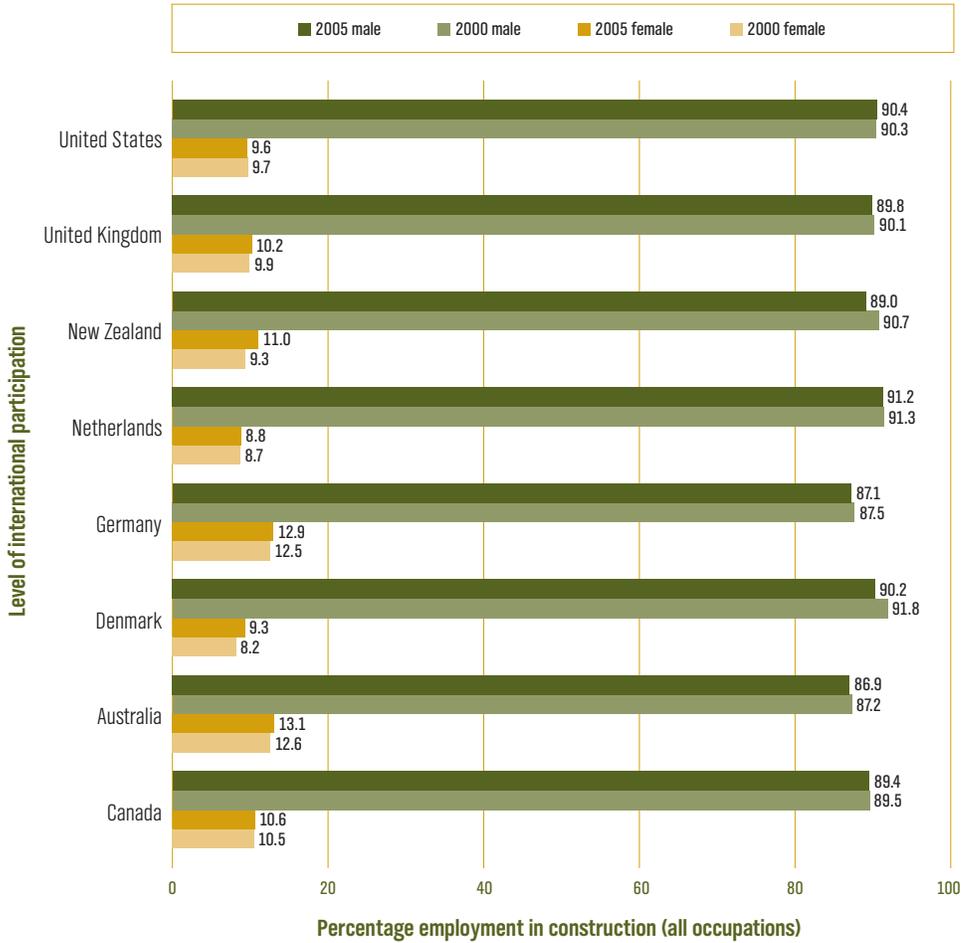
Source: Statistics Canada, Census 2001 and Census 2006

Between 2001 and 2006, there were sizable increases (76%) in women construction inspectors (from 7.0% to 12.3%) and engineering inspectors (16.1% to 20.3%). However, decreases were observed in women's representation as electrical trades contractors and supervisors, pipefitting contractors and supervisors, metal forming, shaping and erecting trades contractors and supervisors, and heavy construction equipment crew contractors and supervisors between 2001 and 2006 (Table 2-5).

2.4 International comparisons

The rate of female participation in the construction industry in Canada compares well with rates of female participation in other industrialized countries, including Australia, Denmark, Germany, Netherlands, New Zealand, United Kingdom and United States. In these countries, the rate of women's participation in the construction industry ranged from 8.8% (Netherlands) to 13.1% (Australia) in 2005, and from 8.2% (Denmark) to 12.6% (Australia) in 2000. In Canada, women comprised 10.6% of the construction labour force in 2005 and 10.5% in 2000. Female and male construction industry participation rates for these countries in 2000 and 2005 are illustrated in Figure 2-1.

Figure 2-1: Women in construction: comparative international participation rates (2000 and 2005)



Source: International Labour Organization Department of Statistics (UNdata)

In examinations of 2006 Canadian Census data with 2006 Australian Census data and 2006 U.S. Census data (Table 2-6 and Table 2-7), Canada compared well on the representation of women in construction occupations. It outstripped Australia slightly in the construction trades overall (4.0% compared to 2.4%) and in many individual construction trades, but most of these differences were small in absolute terms and may not be meaningful. Canada outdid Australia in women cabinetmakers (7.6% compared to 2.3%) and insulators (7.0% compared to 2.7%). There were also small differences between Canada and Australia among glaziers (4.0% compared to 1.3%), structural metal workers (4.4% compared to 0.8%) and welders (4.2% compared to 0.7%).

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Table 2-6: Participation of women in construction by occupation in Canada and Australia

Canada*	Women (%)	Australia**	Women (%)
A371 Construction managers	7.9	Construction managers	5.6
C031 Civil engineers	12.2	Civil engineering professionals	9.4
H1 Construction trades	4.0	Construction trades workers	2.4
H111 Plumbers	1.9	Plumbers	1.1
H121 Carpenters	1.8	Carpenters and joiners	0.8
H122 Cabinetmakers	7.6	Cabinetmakers	2.3
H131 Bricklayers	1.1	Bricklayers and stonemasons	1.2
H132 Concrete finishers	1.2	Concreters	1.3
H141 Roofers and shinglers	2.1	Roof tilers	1.2
H142 Glaziers	4.0	Glaziers	1.3
H143 Insulators	7.0	Insulation and home improvement installers	2.7
H145 Floor covering installers	4.5	Floor finishers	3.1
H211 Electricians (except industrial and power system)	1.6	Electricians	1.2
H321 Sheet metal workers	3.1	Sheet metal trades workers	0.9
H323 Structural metal and platework fabricators and fitters	4.4	Structural steel construction workers	0.8
H326 Welders and related machine operators	4.2	Structural steel and welding trades workers	0.7
H621 Crane operators	1.8	Crane, hoist and lift operators	2.5
H622 Drillers and blasters – surface mining, quarrying and construction	2.8	Drillers, miners and shot firers	3.7
H821 Construction trades helpers and labourers	7.3	Labourers	13.7
C163 Inspectors in public and environmental health and occupational health and safety	30.1	Safety inspectors	25.0

* Canada Census 2006

** 2006 Census of Population and Housing, Australia

Canada outperformed the United States in women land surveyors (15.8% compared to 9.9%) and construction inspectors (12.8% compared to 8.8%). In some other trades, smaller differences were observed between Canada and the United States in both directions (i.e., Canada outdid the United States and vice versa). In all three countries, women were represented at a rate of less than 3% in plumbing, carpentry, bricklaying, concrete finishing, roofing, electrical and crane operation. In all three countries, the percentage of women safety officers was at least 20%. In public and environmental health and occupational safety inspection, Canadian data suggested higher levels of female representation (30.1%) versus Australia (25.0%) and the United States (22.6%).

Table 2-7: Participation of women in construction by occupation in Canada and the United States

Canada*	Women (%)	United States**	Women (%)
A371 Construction managers	7.9	Construction managers	7.8
C031 Civil engineers	12.2	Civil engineers	11.9
C051 Architects	25.2	Architects, except naval	22.2
C134 Construction estimators	10.5	Cost estimators	12.7
C154 Land survey technologists and technicians	15.8	Surveying and mapping technicians	9.9
C164 Construction inspectors	12.3	Construction and building inspectors	8.8
H111 Plumbers	1.9	Pipelayers, plumbers, pipefitters and steamfitters	1.8
H121 Carpenters	1.8	Carpenters	2.4
H122 Cabinetmakers	7.6	Cabinetmakers and bench carpenters	4.4
H131 Bricklayers	1.1	Brickmasons, blockmasons and stonemasons	1.6
H132 Concrete finishers	1.2	Cement masons, concrete finishers and terrazzo workers	0.7
H134 Plasterers, drywall installers and finishers, and lathers	4.2	Drywall installers, ceiling tile installers and tapers	2.9
H141 Roofers and shinglers	2.1	Roofers	1.4
H144 Painters and decorators	14.0	Painting workers	16.6
H145 Floor covering installers	4.5	Carpet, floor, and tile installers and finishers	2.4
H211 Electricians (except industrial and power system)	1.6	Electricians	1.9
H311 Machinists, and machining and tooling inspectors	5.0	Machinists	6.7
H312 Tool and die makers	4.4	Tool and die makers	0.9
H321 Sheet metal workers	3.1	Sheet metal workers	3.1
H326 Welders and related machine operators	4.2	Welding, soldering and brazing workers	5.9
H411 Construction millwrights and industrial mechanics (except textile)	1.5	Millwrights	2.9
H413 Refrigeration and air conditioning mechanics	1.4	Heating, air conditioning, refrigeration mechanics	2.7
H621 Crane operators	1.8	Crane and tower operators	1.5

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Table 2-7: Participation of women in construction by occupation in Canada and the United States (continued)

Canada*	Women (%)	United States**	Women (%)
H821 Construction trades helpers and labourers	7.3	Helpers, construction trades	6.2
C163 Inspectors in public and environmental health and occupational health and safety	30.1	Industrial engineers, including health and safety	22.6

* Canada Census 2006

** U.S. Department of Labor, Bureau of Labor Statistics, Annual Averages 2006

Based on the data available, Canada's progress in promoting women's participation in the construction industry through the latest global economic boom cycle appears comparable to the progress made by other countries with similar apprenticeship systems. The data also show that women are much more strongly represented in engineering and health and safety inspection occupations.

2.5 Critical mass theory

Strategists interested in growing the rate of women's participation in non-traditional fields frequently look for guidance and direction to critical mass, a concept originally borrowed from physics (Greed, 2000). Critical mass theory suggests that a particular proportion – or critical mass – of women in non-traditional fields is required to produce the outcomes that would reflect a desegregated workplace. First, the theory proposes that greater tolerance of differences would be achieved, and would represent a change of organizational culture in workplaces where such differences were not previously tolerated. Second, it is theorized that targeting a critical mass would result in a higher proportion of women employed by organizations and that this would be a measurable demographic trend. Third, a critical mass of women would be expected to disrupt token status, although this component of critical mass would likely be the most difficult to identify (Powell, Bagilhole, and Dainty, 2006). More will be said about this later in this section.

For the construction industry, critical mass theory suggests two key questions. First, is there a particular number or percentage of women required in the construction industry for these sorts of changes to be achieved, and if so, what might that percentage be? In other words, what is the target number of women necessary to maintain an increased rate of women's participation in the construction trades and onsite management? Second, could the changes described above be expected if a critical mass of women in construction trades and onsite management were achieved?

Much of the literature on critical mass theory has been based, at least in part, on the early work of Rosabeth Moss Kanter (1977). Kanter described four types of groups:

- 1) uniform groups, in which everyone in the group shares a particular significant characteristic, such as gender, race, or ethnicity, and the ratio is 100:0;
- 2) skewed groups, in which token members of other groups are present but their numbers are too small to generate a powerful alliance. Skewed groups have a ratio of up to about 85:15;
- 3) tilted groups, in which minority members are in the position to form coalitions and affect the culture of the group; and,
- 4) balanced groups, which have a ratio of between 60:40 and 50:50.

Kanter's work did not use the term "critical mass," but others have suggested that the shift from a skewed to a tilted type of group would signal that critical mass had been achieved. For Kanter, minority members, or tokens, are largely identified by a particular characteristic such as gender, race, age or ethnicity. This characteristic is tied to assumptions about culture, status and behaviour

and is held by majority category members. Tokens are forced to “represent” their minority group to the larger group, whether or not they choose to do so. Women in a skewed group would face both of these difficulties regardless of whether an organization intends women to serve as tokens. Applying Kanter’s framework to the construction industry, women in construction trades and onsite management can, in most organizations, be described as fitting into the category of tokens in a skewed group, based purely on proportionate representation.

2.5.1 The tipping point

Kanter’s work raised questions about the specific numbers needed for change, and called for further quantitative investigations to determine the “tipping points” between group categories. However, subsequent writers have not responded to this call. Instead, many contributors on the subject have simply adopted the original numbers suggested by Kanter.

A range of numbers has been proposed. The Canadian Human Rights Commission (1999) suggested a critical mass of 10%, without providing any particular rationale for that number. In work (Greed, 2000) that has focused specifically on the construction industry, the percentages have ranged from 15% to 35%. Greed has noted that the construction industry may require an even higher proportion of women than 35% to reach a tipping point. In her report on women in apprenticeship and trades in the Yukon, Madsen (1999) argued that studies had shown women are more comfortable in workplaces that employ at least 30% women, and that achieving this “critical mass” is crucial.

Greed (2000) extended the discussion by pointing out that in physics, critical mass is not expressed as a percentage, but rather a quantity necessary for a chain reaction to occur. She advised that the analogy to critical mass means reckoning with another known rule of physics – namely, that very minor factors and changes can completely disrupt the chain reaction.

2.5.2 Expected outcomes

Although critical mass theory does not provide the construction industry with a specific proportion of women to maintain women’s presence across industry occupations, it is important to consider what is at stake in the discussion. What are the hoped-for outcomes from achieving a critical mass of women in construction workplaces? The theory offers the following:

As the group’s presence and level of participation grows, at a particular point the perspective of members of the minority group and the character of relations between minority and majority changes qualitatively. In theory, the minority is increasingly able to organize itself and insure its survival from within and effects a transition to an accepted presence, without external assistance, in a self-sustaining process (Etzkowitz et al., 1994).

It is not clear that the presence of a set proportion of women will lead to self-sustaining change in an organization or industry. Clearly, there are many factors that could prevent such outcomes. The first is related to the diversity of women. In their study of female faculty in university science departments, Etzkowitz et al. found that “as the number of women faculty members in a department increased, they divided into distinct subgroups that could be at odds with each other.” This result overlooks women’s diversity and calls into question the idea that, in sufficient numbers, women will share enough characteristics, interests and identifications to work together and alter workplace culture.

While Greed (2000) argued that a critical mass of women would permanently change their position in the construction industry, she was less confident that such changes would be as specific, predictable, or positive as the literature on critical mass in construction would suggest.

Critical mass is one of the most frequently used terms in the industry when discussing equal opportunities. It fits in well with the scientific and quantitative bent of the construction subculture (Larsen, 1958), but is highly optimistic and

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over-simplistic if used as a predictive social concept without acknowledging the immense cultural and structural obstacles present (Greed, 2000).

Thus there is debate about whether a critical mass of women can change skewed groups in predictable or positive ways. This is not to reject the concept altogether, but rather to suggest that a more complex understanding of the issues is needed.

Gale (1994) was also skeptical that a higher proportion of women would change the workplace culture. The author argued that those who have chosen careers in a particular workplace culture have a vested interest in promoting and maintaining it against change. Furthermore, Gale argued that some women may have chosen careers in construction because in some ways they like the culture, implying that they are also part of maintaining it.

2.5.3 What the evidence suggests



It is often assumed that after a critical mass of women is reached in a workplace, its presence will be self-sustaining and women's employment will increase without further intervention. However, several studies have challenged these assumptions.

In her study of a program designed to increase the representation of women in a computer science program, Lagesen (2007) found no evidence to support this hypothesis. Although a recruitment campaign based on quotas produced a large increase in the number of women in the program, when the campaign ended, there was actually a reduction in applicants. She notes that "the observed effects did not support the theory of critical mass, since the fairly large number of women was not self-increasing or even self-sustaining" (Lagesen, 2007, p. 87). Another study found that the retention of women through career transition points in science was much lower than for men, despite increases in the number of women entering the career pipeline (Etzkowitz et al., 1994).

Being a token or a minority in a skewed group presents various difficulties. First, compared to dominants, tokens receive an "awareness share" or "visibility" that is proportional to their percentage in the group (Kanter, 1977). Second, differences are exaggerated (Kanter calls this "polarization"), and third, the characteristics of minority individuals are distorted to fit a generalized view (Kanter calls this "assimilation"). Kanter suggested that the three effects of tokenism could be disrupted by increasing the number of women in an organization.

Kanter's propositions have received some support from research. In her 2007 study, Lagesen observed that an increase in the number of women did disrupt some of the negative effects of tokenism. She found that when the number of women increased in a computer science program, they no longer saw themselves or were seen by others as a small minority at risk of being marginalized or becoming tokens. According to Lagesen, this changed perception, based on a change in numbers, can produce more freedom for members of minority groups (Lagesen, 2007).

In conclusion, there is limited evidence to suggest that there is a threshold percentage of women that will make workplace culture better, reduce the effects of tokenism, and make the number of women in construction self-increasing or self-sustaining. This should not, however, be taken to

imply that increasing the number of women in the construction trades and onsite management would not have positive effects.

The most promising potential outcome could be the disruption of tokenism. It would make individual women less visible, and provide less opportunity for their differences to be exaggerated or their characteristics to be distorted to fit stereotypes about women. Additionally, it could become harder for those both inside and outside the industry to see construction as inherently masculine.

However, and as Yoder (1991) reminds us, there is far more going on in the marginalization of women in particular occupations than just their numbers. While higher numbers may affect women's token status, it is not possible to predict confidently the impacts.

2.6 Conclusion

As in many other countries, Canada is making extremely slow progress in increasing women's representation in the construction trades but somewhat more in boosting their representation in construction management.

This research addresses the proportion of women that industry should aim to employ, based on the number of them who are interested in careers in construction. Estimates of the percentage of women needed to desegregate workplaces and occupations range from 10% to 30%, but there is no answer to the question of how many women would be interested in construction careers, particularly in the trades, under ideal circumstances.

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Around the world, research, discussion and knowledge sharing are taking place about strategies to support women's inclusion in the construction industry. One current avenue of research is to investigate the career choices of young girls and women. In Canada, there is a growing body of research related to girls' interest in science, trades and technology (Anderson and Gilbride, 2004; Armour, Carmody, Clark, Manicom, and Nicoll, 2001; Hypatia Project, 2002; Armour, 2003; Manicom, Armour, Sewell, and Parsons, 2004a; Manicom, Armour, and Parsons, 2004b; Zywno, Gilbride, and Gudz, 1999, 2000). Research and discussion is occurring in places as far flung as Australia and New Zealand, Europe, the United Kingdom and Ireland, Asia, and Africa (Adeyemi, Ojo, Aina, and Olanipekun, 2006; Arslan and Kivrak, 2004; Chen and Carr, 2004; Chileshe, 2007; Clarke, Pedersen, Michielsens, Susman, and Wall, 2004; Craw, Clarke, Jefferys, Beutel, Roy, and Gribbling, 2007; Miller, Pollard, Neathey, Hill, and Ritchie, 2005; Mutandwa, Sigauke, and Muganiwa, 2008; New Zealand Council for Education Research, 2008; Polsler and Paier, 2003). This section provides a brief review of the literature, as well as the results of secondary data analysis from two recent Canadian surveys. These analyses provide insight into the factors that influence the career choices of Canadian high school girls and into the experiences of young Canadian women on the pathway to apprenticeship.

To build on existing research, the Construction Sector Council conducted a survey in 2008 as part of this study with the goal of investigating the factors that influence young women's career choices in Canada and their attitudes toward careers in construction. This survey produced findings that can be used to inform strategies to encourage girls and young women to enter construction careers. The second half of this section describes the survey design and discusses the results.

3.1 Background literature: career choices of girls and women

Research that investigates girls' and women's decisions to enter non-traditional careers continuously tests theories of individual career development. According to one of these theories, people form concepts of themselves (self-concepts), which they then match to the images they develop of the occupational world (Greene and Stitt-Gohdes, 1997). This theory has generated studies to investigate the images that young people form about work (Thiessen, 2002).

Another important perspective on the career choices of girls and women in gender-segregated occupations is provided by the economic and legal research and analysis of Scott Moss (2004) in the United States. Moss presents a formidable case to suggest that women not only choose rationally to enter workplaces that support both genders to avoid discrimination, they also exit workplaces in which they experience discrimination.

Efforts are being made internationally to understand girls' orientation to vocational careers. In a study (Polsler and Paier, 2003) in Austria, more than 900 students were interviewed and 700 teachers surveyed to identify the mechanisms that determine the girls' vocational orientation.

Polsler and Paier's study started from the premise that career choices are based on "a continuous process of balancing individual interests against objective possibilities" and an understanding that parents and peers are key influences on the process, along with teachers. The investigation focused on the "interaction between students' and teachers' ideas of gender role models with special emphasis on the emergence of career orientations as the result of social interactions at school." This study also examined the practices and attitudes of career counsellors and occupational organizations. It found that career counsellors, like teachers, frequently believe that girls and women are not suited for non-traditional occupations and that gender segregation is an expression of this. In the study, girls rated their abilities related to construction and technology lower than boys did. This finding was repeated by the Nova Scotia Hypatia Project (2002), in which the high school girls interviewed tended to say they did not consider themselves intelligent enough for science and technology careers.

A report titled *Trading Choices: Young People's Career Decisions and Gender Segregation in the Trades* from the New Zealand Council for Education Research (2008) is based on a qualitative study in which 86 young men and women were interviewed to explore gender differences in decisions to enter the trades in New Zealand. Researchers found that family and schools tend to reproduce gender stereotyping in relation to work and career, such that "unacknowledged assumptions about the purposes of senior secondary education, and about differences in male and female interests, effectively filter women away from trades-related paths." However, another key finding was that male and female participants were attracted by the same aspects of the trades, "for example, earning-while-learning, low/no fees, useful for life, earning capacity, high likelihood of employment, internationally recognized qualifications, etc." See Appendix H for the list of Human Rights recommendations contained in this report.

Past research reported that girls and women tended to value job challenge, the physical work environment and fringe benefits, and to be more oriented to altruism, whereas boys and men tended to value advancement and security more highly (Cumming, 1997). Research has provided a basis for arguing that women's career choices are influenced by family background and that, compared with males, women value factors such as the proximity of the workplace to their homes more than they do salary. The influence of external factors, such as the nature of the industry, working conditions, and positive advice from parents, peers, or career counsellors has also been investigated in relation to girls' and women's decisions about careers in construction and engineering.



Research that is more recent has produced different findings. For example, a South African study about girls' decisions related to work in the construction industry focused on the knowledge, attitudes, and perceptions that determine their occupational preferences. This study found that both male and female students rated salary, working conditions, and opportunities for advancement and lifelong learning as their top considerations in choosing a career, although female students rated the influences of family and counsellors more highly than did males (Chileshe and Haupt, 2007). These researchers concluded that external factors such as a lack of information about

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construction careers may play a bigger role than gender differences. A marketing campaign to promote construction career opportunities to girls and women was proposed as a result.

A hallmark of recent research about women's career development is the emphasis on multiple factors and their interactions in producing career decisions. Some of these factors include background (gender, age, socioeconomic status, ability), personal characteristics (academic self-esteem, independence, values, attributions), and environmental variables (parental and teacher support), as well as workplace characteristics (Farmer, as cited in Greene and Stitt-Gohdes, 1997; Helwig, 1998).

A social marketing campaign was launched by the Canadian Apprenticeship Forum and Skills/Compétences Canada from 2003 and 2006 to promote careers in the skilled trades and apprenticeships in this country (APCO, 2004). Parents, educators, students, and career counsellors were targeted. The campaign found that career counsellors, like parents and youth, are among those who lack information about the skilled trades. It also found that:

the public, and key influences such as parents and teachers, view university education as the most effective, if not the only means of securing gainful employment and a promising future. Since pursuing skilled trades typically means completing post-secondary education with training through an apprenticeship program, the perception is that these careers are for people who could not make it into university. This myth has caused many parents and educators to strongly encourage and direct youth into university programs instead of college (APCO, 2004).

Recent research conducted by the Canadian Apprenticeship Forum investigated the barriers to accessing and completing apprenticeship and reported that "the attitude of many guidance counsellors toward apprenticeship is often very negative, reflecting a lack of knowledge of the complexity of the work involved and the level of difficulty associated with the material being taught" (Canadian Apprenticeship Forum, 2004a). Findings consistent with this have been reflected in other studies, which reported that career counsellors, who are university graduates, do not tend to promote careers in particular industries or in the skilled trades.



Three very recent studies in Austria, New Zealand and Australia all reached similar conclusions, namely that: teachers and career counsellors tend to reproduce gender biases that steer girls away from the skilled trades and apprenticeship; and, that gender stereotypes are being transmitted along the very information pathways intended to recruit youth to apprenticeship (New Zealand Council for Education Research, 2008; Polsler and Paier, 2003). Polsler and Paier's study in the Austrian secondary school system concluded that career counsellors, like teachers, frequently believe that girls and women are not suited for non-traditional occupations and that gender segregation is an expression of this. The same study also found that girls rated their abilities related to construction and technology low compared to boys. A New Zealand study produced a similar finding, namely that family and schools tend to reproduce gender stereotyping in relation to work

and career, such that “unacknowledged assumptions about the purposes of senior secondary education, and about differences in male and female interests, effectively filter women away from trades-related paths” (New Zealand Council for Education Research, 2008).

A great deal of research continues to focus on the career choices of girls (and, to a lesser extent, women) and on ways of influencing those decisions, with the aim of overcoming gender segregation in occupations such as engineering and the skilled trades, and in industries such as construction. The current research also pursues this line of investigation. Taking all of these perspectives and empirical findings into account, the survey in this study was designed to investigate young Canadian women’s career choices, attitudes toward, and knowledge of careers in construction. Survey methodology and findings are discussed in this section.

3.2 Secondary data analysis: pathways to careers in construction

Secondary analysis of Millennium Scholarship Foundation Survey of Secondary School Students data supported what is known from other research, namely that parental education is strongly predictive of the educational decisions of youth. Parents were the most influential factor on youth’s educational decisions, followed by personal interests, having a creative talent, or enjoying a course at school.

Secondary analysis of Canadian Apprenticeship Forum Survey data showed that about two-fifths (38%) of female apprentices indicated that work had been their first choice right after high school, a third (34%) said college had been their first choice, and another fifth (20%) said that university had been their first choice. The findings were very similar for male apprentices. For about half (47%) of female apprentices, it had been at least 10 years since they attended high school, and for another fifth (21%), it had been between five and 10 years. The findings were fairly similar for male apprentices. A quarter (26%) of female apprentices had previously completed a college-level certificate, diploma or applied degree.

Female apprentices cited the influence of high school counsellors and teachers less than half as frequently as counselling from someone they knew in the construction industry, family members or an employer. In most cases, female apprentices received information from someone working in a trade, from family, friends or an employer. The two prior-training programs that participants reported receiving most frequently were high school trades courses or high school co-op or work experiences. This supports the case for resuming high school trades apprenticeship programs as apprenticeship feeder programs.

Although fewer female apprentices reported difficulties in securing an apprenticeship, more reported a barrier in hiring, with 90% of those who had difficulty saying that the biggest obstacle was that no one was hiring apprentices, compared to two-thirds of male apprentices who had had difficulty. This suggests that female apprentices may have encountered more barriers in hiring than male apprentices.

These findings (see Appendix I for a more detailed findings report) have implications for future strategies to attract new trades apprentices and others to construction. Industry recruitment tends to focus largely on youth, but it is not known whether recruitment campaigns alone can overcome parental influence and the larger social valuation of university. It is possible that industry recruitment efforts will succeed in attracting somewhat more youth and winning over some parents. However, it is just as likely that there will continue to be a need to recruit from the older pool of students who have initially chosen to attend college or university due to the powerful influence of other factors, including social policy that drives the promotion of university education for all, on their career choices. It is important that this older pool of students not be treated any less seriously than youth.

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3.3 Methodology

A survey was developed and administered to investigate the factors shaping Canadian women's career choices and attitudes toward working in skilled construction trades/management occupations. A goal of the survey was to determine what "success" might mean in terms of attracting women into construction trades (i.e., the proportion of women who could conceivably be attracted to the trades). To some extent, this is difficult to determine due to current gender stereotyping and occupational segregation, but even under these conditions, there will likely be some women who would consider employment in construction if pathways were available to support their access to these opportunities.

3.3.1 Survey instrument

A 32-item survey was developed based on all these inputs (Appendix J), extensive literature review and on the input of key informants, including:

- the findings of past and recent literature related to women in non-traditional careers;
- women's choice of careers in construction;
- girls' interest and attitudes in vocational occupations and apprenticeship; and,
- an extensive search of literature related to the barriers that limit women's participation in the trades, in apprenticeships, and in the construction industry.

A variety of experts provided a check on the relevancy and scope of survey items to the Canadian construction industry. Informal contact was made by telephone and e-mail with a number of key Canadian informants, including those with knowledge of the barriers that limit women's participation in the skilled trades and the construction industry, as well as those who have done research or developed programs to overcome these barriers. Informants highlighted the factors known to influence the interest in and access of young women in Canada to careers in the skilled trades and the construction industry. Finally, content experts at the Construction Sector Council were consulted.

During survey development, efforts were made to harmonize response options with Statistics Canada categories for age, income, firm size and rural/urban distinctions. Further information was gathered about respondents' employment status, main activity in the last year and number of jobs.

The survey was piloted in both paper and online formats, translated into French and administered in the late fall of 2008. Participants were asked for their opinions and experiences related to:

- educational attainment and aspirations
- parental education
- factors that influence career decisions
- people who influence career decisions
- information received about careers in construction
- encouragement or discouragement related to careers in construction
- attitudes to careers in construction and non-traditional occupations
- employment in the construction trades or in construction management occupations
- interest in construction industry careers

In administering the survey, the order of items was randomized in Questions 6 to 12 and Questions 15 and 18 to eliminate the response-order bias that can be produced by response sets. In Question 18, some responses were asked in the negative to prevent bias based on response sets. Standard unipolar and bipolar scaling was used.

3.3.2 Recruitment

Standing panels kept by a major Canadian survey company were used to administer the survey online to women aged 18 to 34 years across Canada. This age range was chosen because roughly 90% of all apprentices fall in this age bracket. Age and region quota corresponding to national census statistics were used in the distribution of surveys to panelists to help achieve a more representative national sampling. The survey was distributed to representative numbers of women in all categories of household income, working status, household size, and education based on national census statistics. Participants were given the choice to complete the survey in either French or English, based on their language spoken.

3.3.3 Survey sample

The online survey was completed by 1,290 women aged 18 to 34 years. The smallest proportion of participants was under 20 years of age (12% were between 18 and 19 years of age). A third (36%) of the respondents were 20 to 24 years of age, 28% were 25 to 29 years of age, and a quarter (24%) were between 30 and 34 years of age. Half (49%) of this sample of women were single, while another 46% were married/common law. Only 3% were divorced or separated and 2% indicated that their marital/partner status was not captured by the responses provided. About a third (34%) of survey respondents had dependent children living with them.

Table 3-1: Percentage of respondents by province

Province/territory	Percentage
Newfoundland and Labrador	3
Nova Scotia	5
Prince Edward Island	0.3
New Brunswick	3
Quebec	14
Ontario	40
Manitoba	4
Saskatchewan	4
Alberta	13
British Columbia	14
Northwest Territories	0
Yukon	0
Nunavut	0

Note: Percentages may not add to 100 due to rounding.

Nine percent (9%) of respondents completed the survey in French. Six percent (6%) of the respondents were Native or Aboriginal (First Nations, Métis or Inuit). Almost all (96%) of the survey respondents were Canadian citizens; the remaining 4% were permanent residents (2.9%), refugees (0.1%), temporary workers (0.4%) or non-specified other (0.9%). The distribution of participants across rural and urban settings was fairly even (20% were living in a rural or small town setting, 25% in a town or small city, 27% in a metropolitan centre, and 28% in a large metropolitan centre). The representation of respondents by province is shown in Table 3-1. The three territories are not represented in the sample because although surveys were distributed to panellists in the Northwest Territories, Yukon and Nunavut, no responses were received.

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3.3.4 Data analysis

SPSS 16.0 was used to perform data analysis. Cross-tabulation and chi-square analysis were used to transform data, compare frequencies and test statistical significance.

3.4 Survey results

The Women in Construction Survey asked respondents to provide information about educational attainment and aspirations, parental education, employment and income. Questions were also asked about the factors that influence career choices, the appeal of careers in the construction trades or construction management, and about information and encouragement participants had received regarding career opportunities in construction trades/management. Participants were asked whether they had ever considered a career in construction trades/management. Finally, participants were asked about the likelihood that they would consider a career in these areas in future. The results of data analysis are presented in this section of the report.

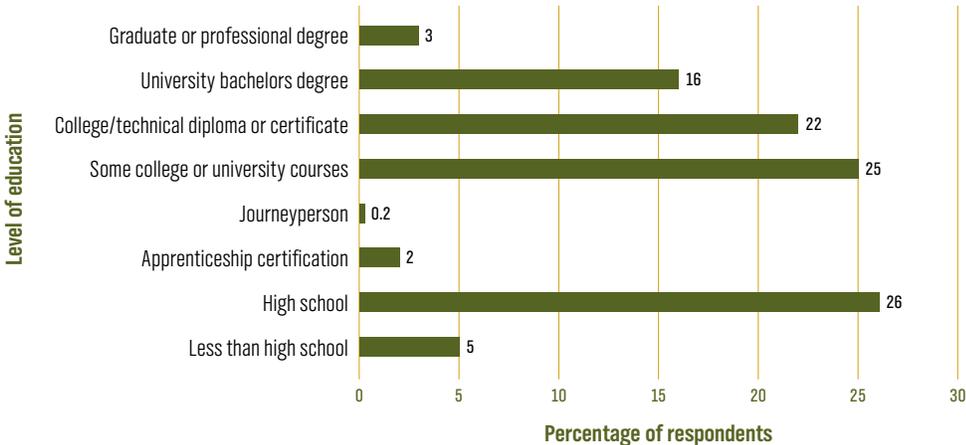
3.4.1 Education

Education and training provide pathways to employment that shape the pattern of women's participation in the labour force. Data analyses were performed to investigate the relationships between educational attainment, educational aspirations, parental education, and interest in employment in construction trades/management.

3.4.1.1 Educational attainment

Survey respondents' levels of educational attainment are displayed in Figure 3-1. A quarter of the survey respondents (26%) reported high school as the highest level of education they had completed to date; only 5% of respondents had completed less than high school. Almost two-fifths (38%) of respondents had earned either a college, technical institute, or university credential, and 3% had completed a graduate or professional degree. A quarter (25%) of respondents had completed some university or college/technical courses without earning a credential, and only 2% had completed an apprenticeship certification or were journeypersons.

Figure 3-1: Educational attainment of respondents



n = 1,290

Note: Percentages may not add to 100 due to rounding and "do not know" responses.

Apprenticeship certification

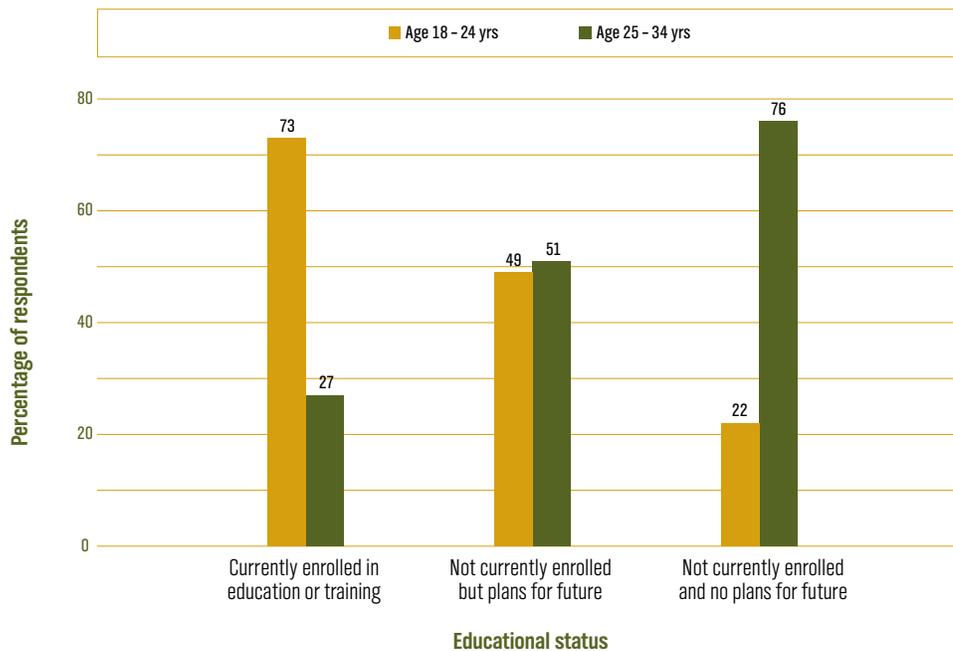
A small proportion of survey respondents had completed an apprenticeship certification (2%) or become journeypersons (0.2%) and 1.4% were enrolled in programs to earn an apprenticeship certification or become journeypersons at the time of the survey. More respondents (7.5%) indicated that they had at one time been registered as trades apprentices. None of the Aboriginal women in this sample had completed an apprenticeship certification.

Seven percent (7%) of survey respondents were employed in the construction trades or in construction management. Nearly half (48%) of those who were employed in the construction trades or in construction management had been registered trades apprentices at one time, and 11% had earned an apprenticeship certification.

3.4.1.2 Educational aspirations

About a third (29%) of survey respondents were enrolled in education or training at the time of the survey and another 38% were planning to continue their education in future. Another third (33%) were not enrolled in any education and had no plans to continue in future. A large majority of younger respondents 18 to 24 years of age (73%) were enrolled in education at the time of the survey while the majority (76%) of respondents 25 to 34 years of age had no plans for further education in future. Half the respondents aged 18 to 24 years and 25 to 34 years were not enrolled in education but were planning to continue their education in future (Table 3-2).

Figure 3-2: Respondents' educational status and future plans



n = 1,290

Note: Percentages may not add to 100 due to rounding.

The educational aspirations of respondents who were either enrolled in education or planning to continue their education at some time in the future are presented in Table 3-2. The majority (75%) of this group of respondents were planning to complete a university or a college credential, while 7% expected that they would complete high school (or the equivalent). A small proportion (5%) expected that the highest level of education they would complete would be an apprenticeship certification or journeyperson.

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Table 3-2: Educational aspirations of respondents planning to continue their education

Level of education planned in future	Proportion of respondents (%)
High school	7
Apprenticeship certification (n = 24)	3
Journeyman (n = 20)	2
Training or upgrading (non-credential)	9
College/technical diploma or certificate	28
University bachelor's degree	19
University graduate or professional degree	26

n = 863

Note: Percentages may not add to 100 due to rounding and "other"/"do not know" responses.

Table 3-3: Educational aspirations of the whole sample of survey respondents

Highest level of education planned	Proportion of respondents (%)
Less than high school	2
High school	15
Some college or university courses (no credential)	5
Apprenticeship certification or journeyman status (n = 51)	4
Training or upgrading (non-credential)	6
College/technical diploma or certificate	30
University degree	37

n = 1,290

Note: Percentages may not add to 100 due to rounding and "other"/"do not know" responses.

About two-thirds of respondents (67%) expected to complete post-secondary education in their lifetimes (Table 3-3). This reflects a growing trend in Canada, namely that an increasing proportion of the population is accessing and completing post-secondary education, and means that industry will recruit from a more educated labour pool in future.

Apprenticeship certification

Of those respondents planning to earn an apprenticeship certification, 72% were between 20 and 29 years of age, while 70% of those planning to become journeymen fell into that same age group. Just 15% of respondents who expected to earn an apprenticeship certification or become journeymen were 18 to 19 years of age and another 15% were 30 to 34 years of age. A fifth of those planning these careers (21% and 20%, respectively) were Aboriginal.

Overall, two-thirds of these respondents were either already enrolled in an apprenticeship program (50%) or were becoming journeymen at the time of the survey (13%). A third (34%) was already employed in construction trades/management.

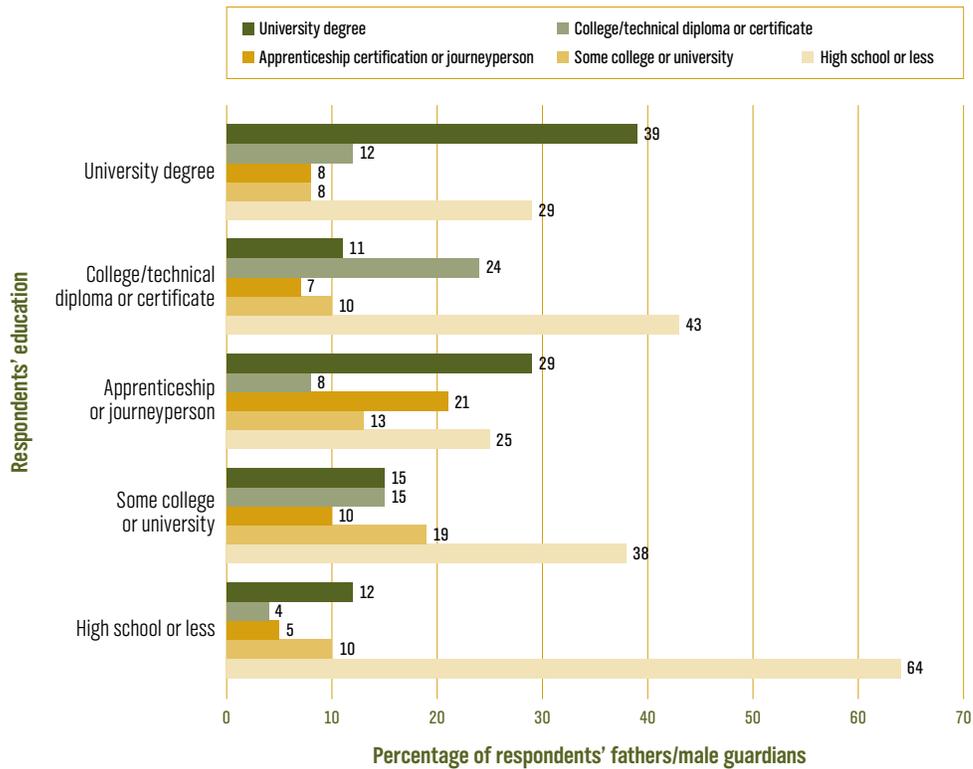
The results of this survey support the projection that industry will be recruiting from a more educated labour pool in future, since, of those respondents planning to complete apprenticeship certification or become journeymen, a quarter (26%) had completed some university or college courses, 14% had earned a college credential, and 5% had completed a university degree. A third

(34%) had completed high school or less, while 21% had already earned an apprenticeship certification. The implications for social marketing and career development activity will be discussed in the summary of key findings.

3.4.1.3 Parental education

Parental education is a known predictor of students' educational aspirations and attainment (Berger, Motte, and Parkin, 2007), and in turn, education provides a direct pathway to various careers. For this reason, the educational attainment of survey respondents' parents was examined.

Figure 3-3: Educational attainment of fathers or male guardians



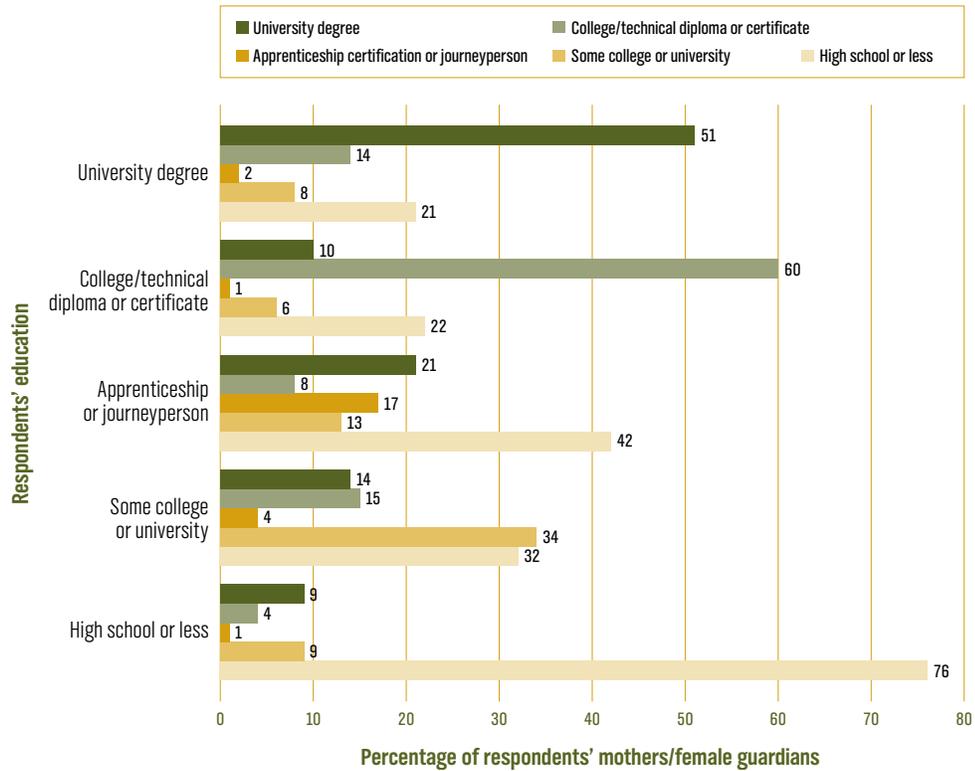
n = 1,290

Note: Percentages may not add to 100 due to rounding and "do not know" responses.

Respondents who had completed college or university often had parents/guardians who had completed these credentials. Education levels of respondents and their parents/guardians are displayed in Figure 3-3 and Figure 3-4.

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Figure 3-4: Educational attainment of mothers or female guardians



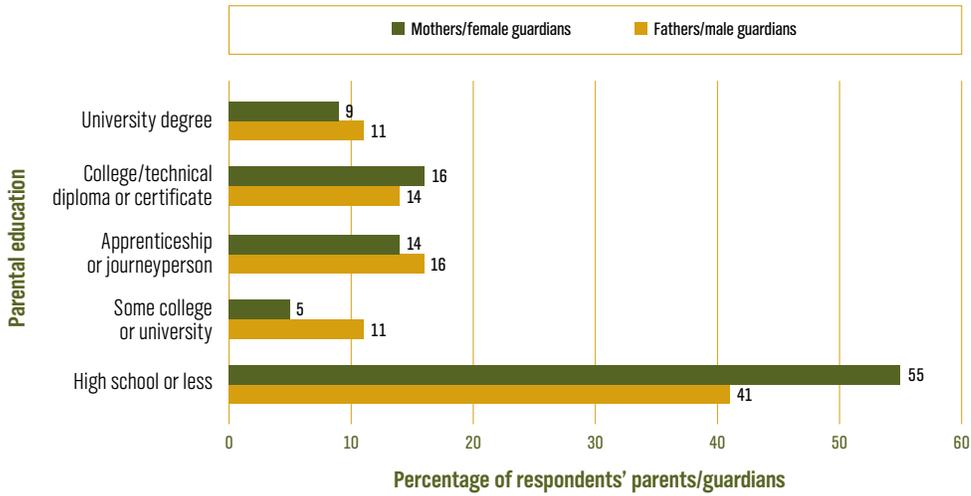
n = 1,290

Note: Percentages may not add to 100 due to rounding and "do not know" responses.

Parental education of respondents who had completed or planned to complete an apprenticeship

Seventeen percent (17%) of respondents who had completed an apprenticeship or were journeypersons and 16% of those who were planning to complete an apprenticeship had parents/guardians who had completed an apprenticeship certification or were journeypersons. In both cases, a quarter (25%) had parents/guardians who had completed post-secondary education (college or university) and at least two-fifths had parents/guardians whose highest level of education was high school or less. These results are displayed in Figure 3-5.

Figure 3-5: Parental education of respondents planning to complete apprenticeship certification or become journeypersons



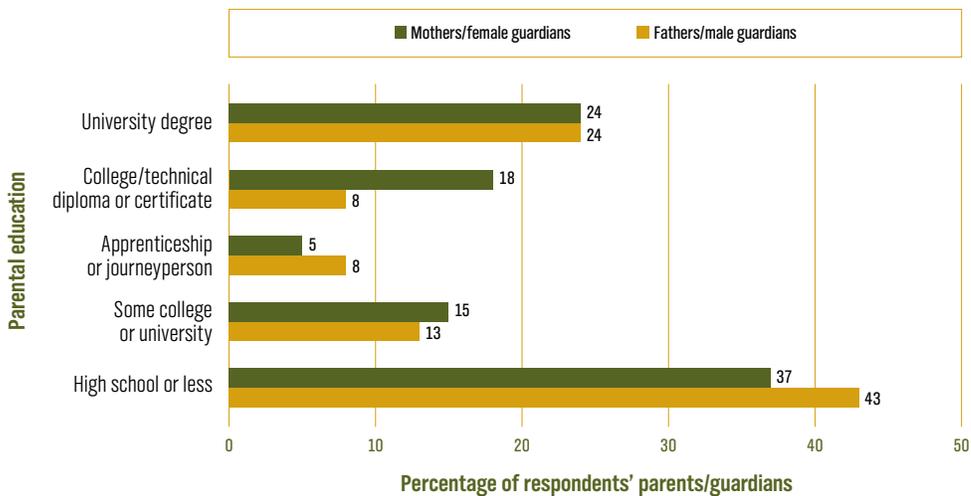
n = 44

Note: Percentages may not add to 100 due to rounding and "do not know" responses.

Parental education of respondents employed in construction

The educational attainment of the parents/guardians of respondents employed in construction trades/management, and those who were planning to complete an apprenticeship were similar (Figure 3-6). About two-fifths of the parents/guardians had completed high school or less, while 42% of mothers and a third (32%) of fathers had completed post-secondary credentials. A small proportion had earned apprenticeship certification or were journeypersons themselves (5% of mothers/female guardians and 8% of fathers/male guardians).

Figure 3-6: Educational attainment of parents or guardians of respondents employed in construction



n = 93

Note: Percentages may not add to 100 due to rounding and "do not know" responses.

These findings suggest that it is important to target parents across all categories of education in social marketing campaigns and other initiatives to educate them about career opportunities for young women in construction trades/management.

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3.4.2 Employment and income

The Women in Construction Survey asked respondents questions about their main activity in 2008, what type of employment they had and how many hours and jobs they worked altogether. Although 25% of respondents reported they did not have a job, the majority (63%) had one job, 10% indicated that they had two jobs, and 2% indicated that they had three or more jobs. More than half (54%) of those respondents with employment had full-time permanent work, while 28% had a permanent part-time job. Only 7% were self-employed, 7% indicated that their primary job was temporary, and 4% indicated that their primary employment was seasonal.

Table 3-4: Respondents' estimated gross personal income in 2008

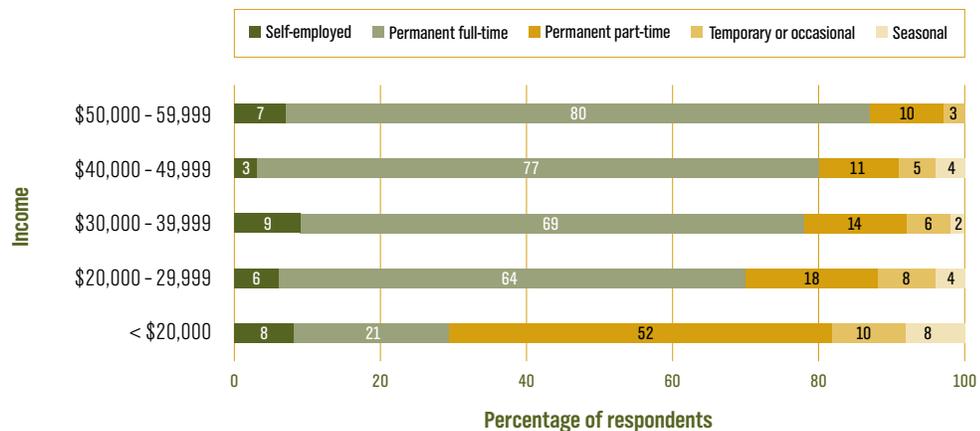
Estimated income	Proportion of respondents (%)
< \$20,000	44
\$20,000 - \$29,999	22
\$30,000 - \$39,999	14
\$40,000 - \$49,999	10
\$50,000 - \$59,999	4
\$60,000 or more	6

n = 1,290

Note: Percentages may not add to 100 due to missing, "other," and "do not know" responses.

The distribution of survey respondents' income is displayed in Table 3-4. Two-thirds (66%) of survey respondents expected their 2008 gross personal earnings to be less than \$30,000. A smaller proportion (14%) expected their 2008 income to be between \$30,000 and \$40,000 in 2008, and a fifth (20%) expected to earn \$40,000 or more in 2008, all jobs combined.

Figure 3-7: Type of employment and expected gross personal income in 2008



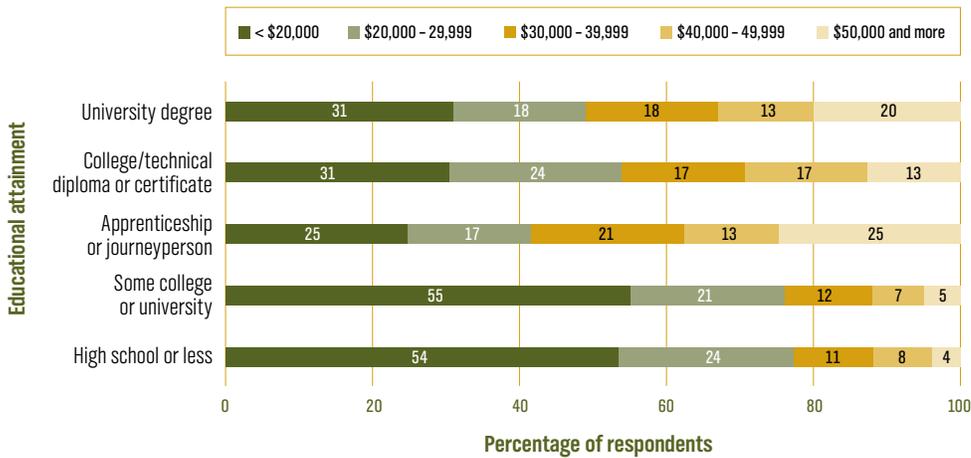
n = 841

Note: Percentages may not add to 100 due to missing, "other," and "do not know" responses.

These results underscore the fact that many women in Canada are employed in occupations that remunerate them poorly. This is well known from Canada Census and Labour Force Survey data and highlights that the construction industry has opportunities to attract women into skilled trades/management based on the promise of increased income.

Respondents' gross personal income is displayed in Figure 3-7 for each type of employment. A fifth of those respondents who expected to earn under \$20,000 in 2008 were employed full-time. This was also true for the 64% who expected to gross between \$20,000 and \$29,999 in 2008, and the sixty-nine percent (69%) who expected to gross between \$30,000 and \$39,999, all jobs combined.

Figure 3-8: Income of respondents (all types of employment included) by education

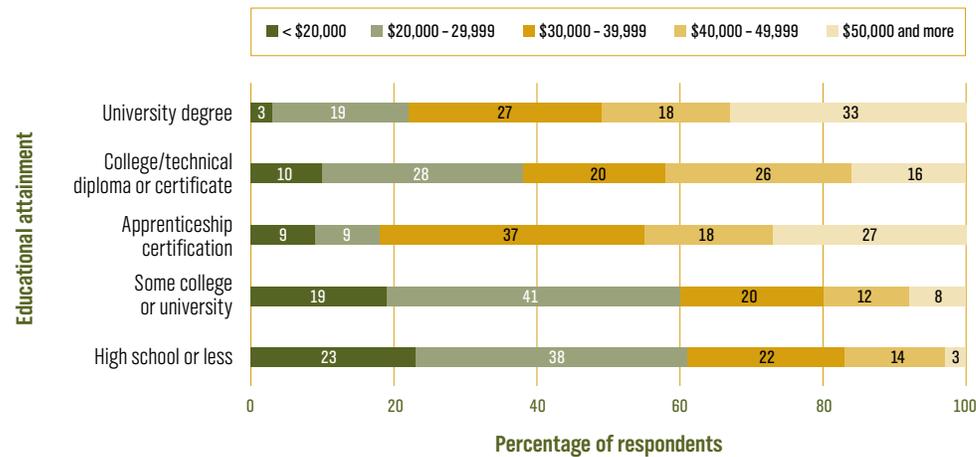


n = 1,290

Note: Percentages may not add to 100 due to missing, "other," and "do not know" responses.

Gross 2008 earnings are presented in Figure 3-8 for each level of respondents' education. All types of employment, including part-time, temporary/occasional and seasonal employment are combined in this comparison. More than half the respondents who had completed either high school or less, or some college or university courses, expected to earn less than \$20,000 in 2008. The expected 2008 earnings of respondents with a university degree (31%) or college credential (31%) was similar to that of respondents who had completed apprenticeship certification or were journeypersons, but the small number of respondents (n = 24) who had completed an apprenticeship certification or were journeypersons limits the power of these comparisons.

Figure 3-9: Income of respondents with full-time permanent jobs by education



n = 453

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The income levels of respondents employed in permanent full-time jobs only are displayed by education level in Figure 3-9. The expected income of respondents who had completed apprenticeship certification or become journeypersons compared well with income from other educational attainment levels, although sample size limits these comparisons. Income levels will be discussed again in Section 5.1, which describes the characteristics of respondents employed in the construction trades or in construction management.

3.4.3 Factors that influence career choices

The Women in Construction Survey asked respondents to rate the influence of various factors on their career choices. Respondents' ratings of the influence of these factors are presented in Table 3-5.

Table 3-5: People and other factors that directly influence career choices

Sources of influence on career choice	Fairly/very influential (%)	No influence (%)
A course in college or university	43	34
Being offered a job or training opportunity	43	32
Parents	38	34
Friends	34	34
A course in high school	34	41
Teacher (high school, college, university)	34	41
Spouse or life partner	33	41
Experience in co-op, summer job or youth apprenticeship	33	43
Family members not including parents or spouse/partner	32	40
Media (e.g., newspapers, television, magazines, advertising)	26	46
Job fair in college or university	23	55
Counsellor in an adult career service, college or university	22	56
High school guidance counsellor	21	56
Job fair in high school	20	57

n = 1,290

Note: Percentages may not add to 100 due to missing, "other," and "do not know" responses.

When asked about the people and experiences that have a direct influence on their career choice the largest proportion (43%) of respondents ranked as fairly or very influential taking a course in college or university and being offered a job or training opportunity. The next most frequently reported sources of influence were parents and friends, followed by high school courses, teachers, spouses, co-op summer job or youth apprenticeship experience, and family members. High school guidance counsellors and adult career services, college, and university career counsellors were rated fairly or very influential by the fewest respondents (21% and 22%, respectively), along with job fairs in high school (20%). This is a noteworthy finding since the prevailing belief is that career counsellors, particularly at the high school level, play a key role as guides in students' education and career choices. The finding is underlined by the fact that more than half of the survey respondents (56%) reported that career counsellors (high school counsellors as well as those in college, university, and adult career services) had no influence at all on their career decisions.

The survey asked respondents to rate the influence of workplace and education-related factors on their career choices. Workplace factors were rated highly influential by more respondents than

the other factors listed in Table 3-6. At least three-quarters of respondents rated enjoyment of work tasks, a career that matches their skills or aptitudes, salary, long-term security, and benefits as fairly or very influential (very few – 6% to 8% – indicated that these factors had no influence).

Table 3-6: Workplace and other external considerations in career choices

Sources of influence on career choice	Fairly/very influential (%)	No influence (%)
Enjoyment of daily work tasks	80	6
Career matches my skills or aptitudes	79	6
Salary	79	7
Long-term security	79	7
Benefits	75	8
Women are treated equally	71	12
Possibility of promotion	70	10
Flexible work hours	69	10
Opportunity to train on the job while earning an income	68	11
Women are equally represented	63	15
Prestige of the career	54	15
Opportunity to be a role model	53	17
Required training or education is inexpensive	52	19
Availability of women role models	49	23
Scholarship opportunities	46	25
Opportunity to be self-employed	41	28

n = 1,290

Note: Percentages may not add to 100 due to missing, "other," and "do not know" responses.

At least half (53% to 71%) of the survey respondents indicated that other influential factors included women being treated equally, opportunities for advancement, flexible work hours, on-the-job training, equal representation of women, job prestige, and the opportunity to be a role model (only 12% to 17% reported that these factors had no influence). Opportunities for self-employment and scholarships, and the availability of women role models were rated fairly or very influential by at least 40%.

Asked about the appeal of other aspects of work (Table 3-7), more than half of the survey respondents rated work that requires creativity (63%), work that involves interactions with clients or the public (55%), and work with their hands (51%) as fairly or very appealing. Two-fifths (44%) of respondents rated work in an office or similar setting fairly or very appealing, but the same proportion (44%) also rated being physically active fairly or very appealing. Half (51%) rated the necessity of relocating to get work fairly or very appealing.

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Table 3-7: Ratings of the appeal of other aspects of work

Factors that influence choices of career	Fairly/very appealing (%)	Fairly/very unappealing (%)
Work requires creativity	63	12
Work involves interacting with customers or the public	55	18
Working with my hands	51	18
Work in an office or similar setting	44	26
Work involves being physically active	44	22
Travelling is a required part of the work	38	31
Relocation to another part of the province or country to get work	20	51

n = 1,290

The Women in Construction Survey asked respondents to judge the workplace characteristics of small, medium, and large firms (Table 3-8). More respondents rated large firms as more likely to offer higher salaries, better benefits, and more opportunities for promotion, education and training. Consistent with other research, fewer respondents thought that supervisors in large firms were likely to be flexible with employees; more respondents thought supervisors in small firms were more likely to be flexible with employees.

Table 3-8: Expectations of the workplace based on firm size

Expectations	Small firm (%)	Medium firm (%)	Large firm (%)	No relationship to size (%)
Higher salaries	13	23	36	29
More job security	18	27	24	31
Better benefits	10	21	44	25
More opportunities for promotion	16	25	36	23
Better education and training opportunities	14	24	33	28
More flexible hours	23	23	26	28
Better representation of women	15	21	21	43
Policies are more supportive of women	15	20	21	44
Supervisors can be more flexible with employees	36	23	17	25

n = 1,290

Note: Percentages may not add to 100 due to rounding.

Between 15% and 21% of respondents thought that small-, large-, or medium-size firms were more likely to have better representation of women and to have supportive policies in place. However, 43% thought that better representation of women was unrelated to firm size, and 44% saw no connection between firm size and policies that support women. This is a key finding since at least two-thirds of survey respondents rated these two characteristics as significant factors in career decision making.

3.4.3.1 Factors related to the choice of careers in construction trades/management

Respondents were asked about the sources of information and encouragement they had received related to career opportunities for women in construction trades/management. They were also asked about their attitudes to work in construction and in gender-segregated occupations and to rate the appeal of careers in construction trades/management.

Sources of information about careers in construction trades/management

Findings concerning sources of information are displayed in Table 3.9.

Slightly more than half (52%) of the survey respondents had not received information from any sources about career opportunities in construction trades/management. The greatest proportion of respondents who had received information had obtained it from friends (22%) and media (22%). The next most frequently cited sources were people the respondents knew who worked in the construction industry (19%), parents (15%) and family (15%). What is notable about this is that many of these are informal sources. Survey results showed that information was least often received from high school guidance counsellors (11%) and counsellors in college, university or adult career services (7%).

The fact that half the respondents (52%) in this sample had never received information from any sources about careers in construction trades/management is important, especially in light of the three-year national social marketing campaign conducted between 2004 and 2007 to promote the skilled trades via public media, the Internet and other channels. Clearly, this information did not reach many young women.

Table 3-9: Sources of information received about careers in construction trades/management

Source of information	Respondents who received information about careers (%)
No information received from any source	52
Media (e.g., advertising, TV, movies, etc.)	22
Friends	22
Someone I knew in the construction industry	19
Parents	15
Family members not including parents	15
High school job fair or industry presentation at my school	14
A course in high school	13
Teacher	13
College or university job fair	12
High school guidance counsellor	11
A course in college or university	9
Counsellor in adult career service, college or university	7

n = 1,290

More respondents (57%) with a family member who worked in construction trades/management had received information about opportunities in these careers than those without (38%). Similarly, more respondents (57%) who knew a woman in construction trades/management had received information, compared with those who did not (31%). These results are statistically significant.

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Sources of encouragement to enter careers in construction trades/management

The Women in Construction Survey asked respondents to provide information about the levels of encouragement they had received to enter careers in construction trades/management and the sources of encouragement, including friends and family, people employed in construction, career counsellors, teachers, job fairs, and media (Table 3-10).

The majority (68% to 78%) of respondents had been neither encouraged nor discouraged from entering a construction career. The three sources of encouragement cited most frequently were people employed in the construction industry, media, and the offer of a work or training opportunity in construction.

Significantly, the least frequent sources of encouragement included teachers, high school and college/university job fairs or industry presentations, mentorship programs, and career counsellors in high school, university, college, and community career services. It is notable that high school guidance counsellors and career counsellors in university, college, or community career services were among the least frequent sources of encouragement. These findings suggest that the pathways public education provides to careers in construction may not encourage students to consider all opportunities available to them.

Table 3-10: Sources of encouragement to pursue careers in construction trades/management

Sources of encouragement/ discouragement	Encouraged (%)	Discouraged (%)	Neither encouraged nor discouraged (%)
Someone who worked in the construction industry	22	10	68
Being offered a work or training opportunity	20	9	72
Media (e.g., newspapers, television, magazines, advertising)	18	12	71
Parents	16	14	70
Friends	16	13	70
Other family members not including parents or spouse/partner	15	12	72
Spouse or life partner	15	12	73
Teacher	13	12	76
High school job fair or industry presentation at my school	13	10	77
College or university job fair	13	10	77
Counsellor in a college, university or community career service	12	10	78
High school guidance counsellor	11	11	78
Mentorship program	11	10	78

n = 1,290

Note: Percentages may not add to 100 due to rounding.

The findings show a strong relationship between the information and encouragement respondents received. Many more who had received information about construction career opportunities also received encouragement to pursue these opportunities. Almost three-quarters (70%) of respondents who had received career information had also received encouragement, while those who had not received information (69%) had not received encouragement. These results are statistically significant.

Attitudes to work in gender-segregated occupations and in construction trades/management

Respondents rated their agreement with a number of statements related to work in the construction industry (Table 3-11). These questions were intended to explore the attitudes of Canadian women 18 to 34 years of age toward this work. More than half of the respondents (59%) agreed that construction work can be dangerous. Almost half (44%) of the respondents agreed that it is difficult for women to succeed in male-dominated occupations and another 40% agreed that not many employers in the construction industry want to hire women. Only a fifth (20%) agreed that work in construction is not physically difficult for women, while equal proportions felt that men and women have the same talent for jobs in construction management occupations (49%) and management (49%). Somewhat fewer believed that they had the skills or aptitude themselves for these careers (28%).

Table 3-11: Attitudes toward work in the construction industry and gender-segregated occupations

Sources of influence on career choice	Agreed (%)	Disagreed (%)	No opinion (%)
Work in construction can be dangerous	59	8	33
It is possible to train on the job in the construction industry while earning an income	45	9	46
It is difficult for women to succeed in male-dominated occupations	44	18	38
Women and men have equal talent for construction management occupations (e.g., project manager, manager, supervisor, estimator, etc.)	49	11	40
Women and men have equal talent for the construction trades (e.g., electrician, plumber, welder, roofer, bricklayer, landscaper, etc.)	40	20	40
Not many employers in construction want to hire women	40	15	47
Work in construction is not physically difficult for women	20	39	41
There is job security in the construction industry	30	21	49
It is possible to work flexible hours in construction	29	23	48
I have the skills or aptitude for work in construction	28	30	42

Continued on next page

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Table 3-11: Attitudes toward work in the construction industry and gender-segregated occupations (continued)

Sources of influence on career choice	Agreed (%)	Disagreed (%)	No opinion (%)
Women have good opportunities for advancement in the construction industry	27	25	48
Women earn good salaries in construction	25	20	55
Where I live, there are lots of jobs in construction for women	20	26	54

Note: Percentages may not add to 100 due to rounding or "do not know" values.

Almost a third (30%) believed that there is job security in construction and one-fifth (20%) agreed that there were many construction jobs for women in their neighbourhoods. Only a quarter of respondents agreed that women earn good salaries in construction (25%) or have good opportunities for advancement in construction (27%). Almost a third (29%) said that it is possible to work flexible hours in construction.

3.4.4 Interest and employment in construction trades/management

This section of the report describes four groups of survey respondents, those who:

- 1) were employed in construction trades/management;
- 2) indicated that they were attracted to construction trades/management;
- 3) were not employed in construction trades/management but had considered a career in these occupations; and,
- 4) were not employed in construction trades/management but indicated that they were fairly or very likely to consider these jobs in future.

Comparisons of respondent groups were conducted using cross-tabulation and the Pearson chi-square tests. The results of these comparisons are discussed in this section. More detailed information is provided in appendices K, L, M, and N.

3.4.4.1 Respondents who were employed in construction trades/management

Seven percent (7%) of survey respondents were employed in the construction industry either in the skilled trades or in construction management occupations. Sixteen percent (16%) of these were Aboriginal women. Further information about respondents employed in the construction trades or construction management is provided in Appendix K.

Fifteen percent (15%) of the respondents employed in construction trades/management were between 18 and 19 years of age; 69% were 20 to 29 years of age; and, 16% were between 30 and 34 years of age. About a third (38%) of respondents had dependent children living with them, similar to respondents who were not employed (34%) in construction trades/management. Almost all (95%) of those employed in construction trades/management were Canadian citizens, mirroring the survey sample in which 96% of respondents were Canadian citizens. Half (50%) of the respondents employed in construction trades/management careers lived in rural settings, towns or small cities, and an equal proportion (50%) lived in metropolitan centres.

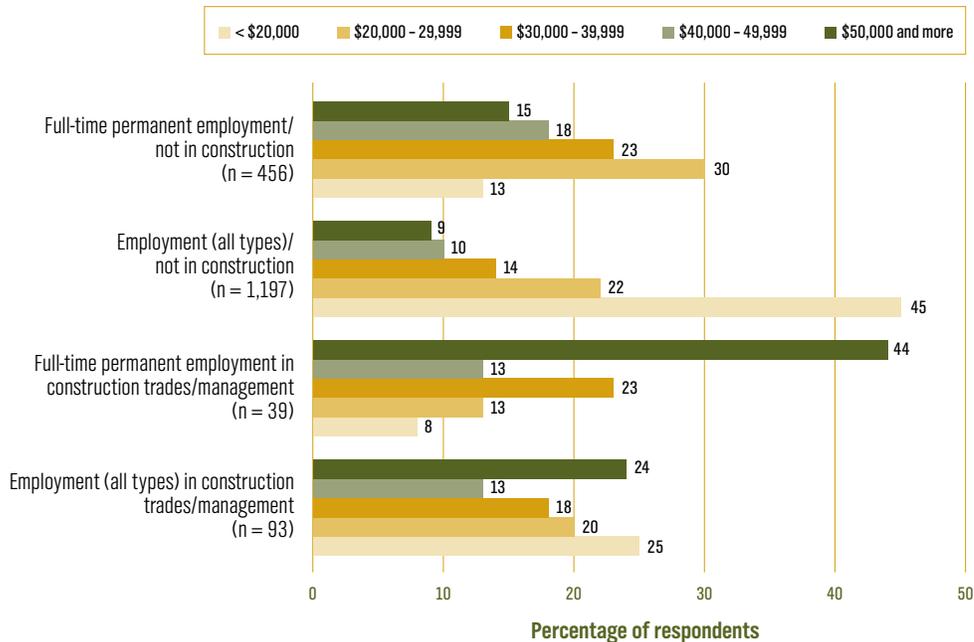
About a third of respondents employed in construction trades/management had completed either high school or less (34%) or post-secondary education (37% to 18% had completed a college credential, 15% had completed an undergraduate university degree, and 4% had completed a university graduate degree). Another fifth (17%) of the survey respondents had completed some college or university courses. These

findings illustrate that there are multiple educational pathways to employment in the construction industry. They also support what other research has also shown, namely that for some, registration in a trade and employment in the industry can be a second or a third choice of education/career.

The rate of respondents' permanent employment in construction was not different from those who were not working in the industry. Half (51%) of the respondents employed in construction trades/management had permanent full-time employment, similar to 54% of respondents not in these occupations. One tenth (11%) of those working in construction trades/management was self-employed, compared to 6% of those not employed in these careers.

There were more high earners (gross annual income greater than \$50,000) and fewer low earners (less than \$20,000) among respondents working in construction (Figure 3-10). This is an important finding, particularly in light of the fact that only 25% of survey respondents agreed, and another 20% disagreed, that women in construction trades/management earn good salaries. This suggests that many young women lack accurate information about the financial rewards of working in the industry. All jobs combined, more respondents in these construction careers worked 41 to 50 hours per week or more. It is possible that this contributed to the finding that women employed in these careers earned higher annual incomes in 2008.

Figure 3-10: Income of respondents employed in construction trades/management



Note: Responses may not add to 100 percent due to rounding.

Equal proportions of those employed in construction trades/management occupations (45%) and those who were not employed in these careers (46%) were fairly or very satisfied with their main job and equal proportions were dissatisfied. Of those employed in construction trades/management, 15% were fairly or very dissatisfied with their main job or occupation compared to 16% of those not employed in construction.

Cross-tabulation and Pearson chi-square tests were used to compare respondents employed in construction trades/management with those not employed in these careers based on whether they had a family member in these careers, and on whether they had received information about or encouragement to enter these careers. The results of these comparisons are all statistically significant (Table 3-12).

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About three-quarters (72%) of respondents employed in construction trades/management had a family member who worked in the industry, compared to the 44% not employed in these careers. Many more of those employed in construction trades/management had received information (85%) or encouragement (63%), compared to less than half of respondents not employed in these careers (42% received information and 34% received encouragement).

Table 3-12: Comparisons based on whether respondents were employed in construction trades/management

Factors	Employed in construction trades/management (%) n = 93	Not employed in construction trades/management (%) n = 1,197
Had family in construction trades/management	72***	44***
Information received from at least one source	85***	42***
Encouragement received from at least one source	63***	34***

*** p < .001

The appeal of careers in construction to respondents not employed in construction

About one-fifth (22%) of respondents who were not employed in construction rated careers in the trades appealing (10% rated them fairly or very appealing and 12% rated them only slightly appealing), and a third (32%) rated careers in construction management appealing (18% rated construction management careers fairly or very appealing, while 14% rated them slightly appealing). About half of the respondents (53%) who were not employed in these fields rated careers in the construction trades unappealing (32% rated these careers very unappealing), while 41% rated careers in construction management unappealing (23% considered such careers very unappealing). A quarter of the respondents rated construction careers neither appealing nor unappealing.

About three-quarters (71%) of those who rated careers in the construction trades fairly or very appealing, and half (52%) of those who rated careers in construction management fairly or very appealing had also considered entering a career in construction at one time.

Table 3-13: The appeal of careers in construction trades/management occupations

Factors	Construction trades (%) n = 652		Construction management (%) n = 586	
	Fairly or very appealing	Fairly or very unappealing	Fairly or very appealing	Fairly or very unappealing
Information received from at least one source	59***	27***	61***	21***
Encouragement received from at least one source	55***	35***	55***	33***

n = 1,197

*** p < .001

Note: Because there was a significant relationship interaction between the appeal of careers in construction trades/management and whether respondents were employed in those careers, the relationships in Table 3-13 were investigated only for those respondents not employed in construction trades/management.

An important finding is that the appeal of careers in construction trades/management is related to whether respondents received information about these careers and encouragement to enter them. More than half of those who rated careers in construction trades/management as fairly or very appealing had received information (59% of those who found the trades appealing and 61% of those

who found management appealing) or encouragement (55% of those who found the trades appealing and 55% of those who found management appealing). Fewer of those who found these careers fairly or very unappealing had received information about information or encouragement. These differences are statistically significant (Table 3-13).

3.4.4.2 Young women who had considered a career in construction trades/management

A quarter (23%) of the survey respondents not employed in the construction trades or construction management had considered entering these careers. Ten percent (10%) of those respondents who had considered entering careers in the construction industry were Aboriginal women. Further information about these respondents is provided in Appendix L.

Seventy percent (70%) of those who had considered a career in construction trades/management were between 24 and 29 years of age; another 10% were between 18 and 19 years of age; and, a fifth (21%) were 30 to 34 years of age. In addition, 40% lived with dependent children, almost half (45%) lived in rural settings, small towns, or small cities, and the other half (56%) lived in metropolitan centres.

In addition:

- two-fifths (40%) of those who had considered a construction career had completed high school, compared to 29% of those who had not;
- a third (34%) who had considered working in the industry had a post-secondary credential (college 22% or university 12%), compared to 43% of those who had not;
- about a fifth (23%) of respondents who had considered these careers, and 27% who had not, had completed some college or university courses; and,
- two percent (2%) of respondents who had considered construction trades/management, and 1% who had not considered these options, had completed an apprenticeship certification or become journeymen.

Similar proportions of those who had considered a career in construction trades/management and those who had not, had permanent full-time employment (42% and 39%, respectively). The expected 2008 earnings of those who had considered a career in construction trades/management were not different from those of who had not. Less than half of both respondent groups expected their total gross earnings in 2008 to be less than \$30,000, 44% expected to earn less than \$20,000, and a quarter (27%) expected to earn between \$20,000 and \$29,999, all jobs combined.

Factors associated with career choice

More than three-quarters (84%) of respondents who had considered entering the construction trades or construction management rated these careers fairly or very appealing compared to less than one quarter (20%) of those who had not considered them.

Cross-tabulation and Pearson chi-square tests were used to compare respondents who had considered employment in construction trades/management with those who had not, based on whether they had a family member who worked in these occupations, and on whether they had received information about or encouragement to enter them. The differences found are all statistically significant (Table 3-14).

Respondents who had worked in construction trades/management more often knew a woman in (61%) or had a family member employed in these occupations (60%) compared with respondents who had not considered working in the construction trades (39%) or construction management (40%). Comparisons based on whether respondents had received information about or encouragement to enter these careers produced similar results. Almost two-thirds of respondents who had considered a construction career had received information (63%) about job opportunities in the industry or encouragement (62%) to pursue them. A third or less of those who had not considered these careers had received information (36%) about or encouragement (25%) to enter them.

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Table 3-14: Factors related to whether respondents had considered a career in construction trades/management

Factors	Considered a career in construction trades/management	
	Yes, considered it (%) n = 274	No, did not consider it (%) n = 923
Knew a woman in construction	61***	39***
Had family in construction trades/management	60**	41**
Information received from at least one source	63***	36***
Encouragement received from at least one source	62***	25***

** p < .01, *** p < .001

Survey respondents were asked to rate their agreement or disagreement with a series of statements related to work in construction and in gender-segregated occupations. The ratings of respondents who had considered a career in construction trades/management were compared with those of respondents who had not (Table 3-15).

Table 3-15: Attitudes to work in construction and in gender-segregated occupations

Attitudes	Considered a career in construction trades/management	
	Yes, considered it (%) n = 274	No, did not consider it (%) n = 923
Where I live, there are lots of jobs in construction for women.	42 (ns)	34 (ns)
There is job security in the construction industry.	75	53
I have the skills or aptitude for work in construction.	80	22
Women earn good salaries in construction.	55	70
Women have good opportunities for advancement in the construction industry.	54 (ns)	50 (ns)
Women and men have equal talent for the construction trades (e.g., electrician, plumber, welder, roofer, bricklayer, landscaper, etc.).	77 (ns)	81 (ns)
Women and men have equal talent for construction management occupations (e.g., project manager, manager, supervisor, estimator, etc.).	96	87
Not many employers in construction want to hire women.	86	72
Work in construction is not physically difficult for women.	35 (ns)	28 (ns)
It is difficult for women to succeed in male-dominated occupations.	78	65
It is possible to work flexible hours in construction.	63	45
It is possible to train on the job in the construction industry while earning an income.	97	81
Work in construction can be dangerous.	97	88

(ns) = non-significant

The most sizable differences were found between respondents when they assessed their own skills for work in construction, and whether the industry provides job security, flexible work hours, and training on the job. Eighty percent (80%) of those who had considered a career in construction trades/management believed they had the skills, compared with only 22% of those who had not considered them. More respondents who had considered a career in construction trades agreed fairly or very strongly that there is job security in the industry (75%), that it offers opportunities to work flexible hours (63%) and earn an income while training on the job (97%).

A greater proportion of respondents who had considered careers in construction trades/management agreed fairly or very strongly that women have equal talent for construction trades and management. These women more often agreed that not many employers in construction want to hire women; that it is difficult for women to succeed in male-dominated occupations; and, that construction work can be dangerous. Another notable finding is the fact that a smaller proportion of those who had considered careers in construction trades/management agreed (fairly or very strongly) that women earn good salaries in those occupations.

3.4.4.3 Respondents likely to consider careers in construction trades/management

When the 1,197 respondents not employed in the industry were asked how likely it was that they would consider a career in the construction trades, 13% indicated that there was some likelihood of this in future (5% fairly or very likely and 8% slightly likely). More (60%) indicated that they were unlikely to consider a career in the construction trades (for 9% it was slightly unlikely; for 51% it was fairly or very unlikely). For 26% of these respondents it was neither likely nor unlikely that they would consider a career in the construction trades in future.

When respondents not employed in the construction industry were asked how likely it was that they would consider a career in construction management in future (project manager, manager, supervisor or estimator), 19% indicated there was some likelihood they would consider this (for 9% it was fairly or very likely; for 10% it was slightly likely). For 55% it was unlikely (for 46% it was fairly or very unlikely; for 9% it was slightly unlikely), and a quarter (26%) indicated it was neither likely nor unlikely. Further information about respondents who were fairly or very likely to consider a career in construction trades/management in future is provided in Appendix M.

Aboriginal respondents comprised 22% of those likely to consider a career in the construction trades (14% of those who were fairly or very likely to consider entering these careers were Aboriginal). Seventeen percent (17%) of those who were likely to consider a career in construction management were Aboriginal (6% of those who were fairly or very likely to consider such a career were Aboriginal).

The remainder of the findings discussed in this section are based on respondents who were fairly or very likely to consider a career in construction trades/management, and on comparisons with those who were fairly or very unlikely to consider these careers. These respondents will be referred to as most likely, or most unlikely, to enter these careers in future.

- More than three-quarters (80%) of respondents most likely to consider a career in the construction trades and two-thirds (60%) of those most likely to consider a career in construction management had considered these options in the past.
- The majority of respondents most likely to consider a career in the construction trades (79%) or construction management (72%) was between 20 and 29 years of age.
- A fifth (19%) of those most likely to consider a career in the construction trades and a quarter (23%) of those most likely to consider a career in construction management fell into the 30-to-34 age bracket. Again, this is consistent with the findings of other research that, for some young people, choosing a career in construction follows completion of some post-secondary education and/or work experience.

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- Almost half of the respondents most likely to consider working in the construction trades (42%) or construction management (37%) had dependent children living with them. About half of these respondents lived in rural settings, small towns, or small cities and another half lived in metropolitan centres.
- About half of those most likely to consider employment in the construction trades (54%) or construction management (56%) had full-time permanent employment; those most unlikely to consider entering the trades (54%) or management (52%) were also permanently employed.
- More than three-quarters of those who were most likely to consider work in the construction trades expected their total gross 2008 earnings to be less than \$30,000.
- Fifty-six percent (56%) expected to earn less than \$20,000 and 24% expected to earn between \$20,000 and \$29,999, all jobs combined.
- Two-thirds of those most likely to consider employment in construction management expected their 2008 earnings to be less than \$30,000.
- Forty percent (40%) expected to earn less than \$20,000 and 26% expected to earn between \$20,000 to \$29,999, all jobs combined.

Factors associated with career choice

Fewer respondents who were most likely to consider careers in construction trades/management were satisfied with their current main job compared to those who were least likely to consider these careers. Half (52%) of respondents most likely to consider employment in the trades were fairly or very satisfied with their current main job, compared to 79% of those who were most unlikely to consider construction work. Of those most likely to consider a career in construction management, two-thirds (64%) were fairly or very satisfied with their current main job, compared with 79% of those not likely to considering these careers. These are statistically significant differences.

A large majority of respondents who were most likely to consider entering the construction trades (86%) and construction management (91%) rated these careers fairly or very appealing compared to only 4% of those who were most unlikely to consider entering careers in the construction trades and 10% of those most unlikely to consider working in construction management.

Cross-tabulation and Pearson chi-square tests were used to compare respondents who were most likely to consider a career in construction trades/management with those who had not considered these careers, based on whether they knew a woman or family member in these sectors, and on whether they had received information about opportunities in or encouragement to enter them. Again, most of the results of these comparisons are statistically significant (Table 3-16).

Table 3-16: Factors related to the likelihood respondents would consider a career in construction trades/management

Factors	Likely to consider a career in construction trades	Likely to consider a career in construction management
	Fairly or very likely (%) n = 59	Fairly or very likely (%) n = 106
Knew a woman in construction	42 (ns)	53**
Had a family member in construction trades/management	54*	55**
Information received from at least one source	63***	59***
Encouragement received from at least one source	64***	59***

* p < .05, ** p < .01, *** p < .001
(ns) = non-significant

Equal numbers of those who were most likely (42%) and those who were most unlikely (40%) to consider a career in the construction trades knew a woman in the industry. More of those who were most likely to consider work in construction management (53%) knew a woman who worked in the industry than those who were most unlikely (38%) to consider these careers. Similarly, those most likely to consider work in the construction trades (54%) or construction management (55%) had a family member who had worked in these occupations; 41% of those most unlikely to consider these careers did have a family member in the trades (42%) and management (41%).

Respondents most likely to work in the construction trades had more often received information (63%) about these opportunities or encouragement (64%) to enter these careers, than those who were most unlikely to consider the construction trades (26%) or construction management (25%).

Similarly, respondents who were most likely to consider employment in the construction trades (64%) or construction management (59%) had more often received encouragement to enter these careers than those who were most unlikely to consider a career in the trades (28%) or management (26%).

Attitudes to careers in construction

Respondents were asked to rate their agreement with a series of statements about work in construction and in gender-segregated occupations. The ratings of respondents who were most likely to consider entering a career in construction trades/management were compared with those of respondents who were most unlikely to consider this. The results of these comparisons are presented in Table 3-17 and in more detail in Appendix N.

Table 3-17: Comparisons based on attitudes related to work in construction and in gender-segregated occupations

Attitudes	Likely to consider a career in the construction trades		Likely to consider a career in construction management	
	Fairly or very likely n = 64	Fairly or very unlikely n = 143	Fairly or very likely n = 68	Fairly or very unlikely n = 128
	Agreed (%)	Agreed (%)	Agreed (%)	Agreed (%)
Where I live, there are lots of jobs in construction for women.	52	28	56	30
There is job security in the construction industry.	80	49	84	48
I have the skills or aptitude for work in construction.	88	19	80	18
Women earn good salaries in construction.	44	71	42	73
Women have good opportunities for advancement in the construction industry.	72	43	72	43
Women and men have equal talent for the construction trades (e.g., electrician, plumber, welder, roofer, bricklayer, landscaper, etc.).	72 (ns)	83 (ns)	61	84
Women and men have equal talent for construction management occupations (e.g., project manager, manager, supervisor, estimator, etc.).	94 (ns)	87 (ns)	95	85
Not many employers in construction want to hire women.	86 (ns)	72 (ns)	86	68
Work in construction is not physically difficult for women.	68	22	58	22

Continued on next page

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Table 3-17: Comparisons based on attitudes related to work in construction and in gender-segregated occupations (continued)

Attitudes	Likely to consider a career in the construction trades		Likely to consider a career in construction management	
	Fairly or very likely n = 64	Fairly or very unlikely n = 143	Fairly or very likely n = 68	Fairly or very unlikely n = 128
	Agreed (%)	Agreed (%)	Agreed (%)	Agreed (%)
It is difficult for women to succeed in male-dominated occupations.	78 (ns)	68 (ns)	84	65
It is possible to work flexible hours in construction.	84	42	70	39
It is possible to train on the job in the construction industry while earning an income.	100	80	95	78
Work in construction can be dangerous.	97 (ns)	89 (ns)	100	88

(ns) = non-significant

Similar to the results comparing respondents who had considered a career in construction trades/management with those who had not, respondents who were most likely to consider entering such a career were much more likely to agree that they had the skills for it. Respondents who were most likely to consider careers in the construction trades (88%) or construction management (80%) thought they had the skills or aptitude for this work, those least likely to consider the trades (19%) or management (18%) believed they had the skills or aptitude. Respondents most likely to consider construction careers were also more likely to agree that the industry offers job security, opportunities for advancement, and flexible work hours, that there were lots of jobs for women in construction where they lived, that there are good opportunities for female advancement, and that construction work is not physically difficult for women.

It is again noteworthy that respondents who were most likely to consider working in construction trades/management agreed less often that women in the industry earn good salaries. Some respondents were still likely to consider a construction career despite thinking that these careers do not remunerate women well.

3.5 Key findings

The Construction Sector Council Women in Construction Survey was designed to uncover a number of issues. The first was to identify the potential for increased interest in construction trades/construction management among young Canadian women aged 18 to 34 years of age. It was expected that this would be achieved by identifying the proportion and characteristics of young Canadian women in this age group who had considered or were likely to consider working in the industry. Other goals included identifying the influence of various factors known to be related to career decision making, and to learn more about young women's attitudes toward construction employment.

3.5.1 Respondents interested in the skilled trades and construction

- Two percent (2%) of the young women surveyed had earned apprenticeship certification or had become journeypersons, and 1% was enrolled in programs to earn apprenticeship certification or become journeypersons at the time of the survey.
- Five percent (5%) of those planning to continue their education expected the highest level of education they would complete would be apprenticeship certification or journeyperson status.

- Seven percent (7%) were employed in the construction trades or in construction management.
- One quarter (23%) of the 1,197 survey respondents not employed in construction trades/management had considered entering these careers at one time.
- Thirteen percent (13%) of respondents not employed in construction trades/management indicated that there was some likelihood they would consider a career in the construction trades. For 5%, this was fairly or very likely.
- Nineteen percent (19%) of respondents not employed in construction trades/management indicated that there was some likelihood they would consider a career in construction management. For 9%, this was fairly or very likely.

3.5.2 Education

Identifying respondents' educational achievement levels and aspirations produced several findings with potential implications for social marketing, outreach and recruitment of young women to the construction industry.

- About a third (37%) of those employed in construction trades/management had completed post-secondary education, 18% had completed a college credential, 15% had completed an undergraduate university degree, and 4% had completed a university graduate degree. Another fifth (17%) of respondents had completed some college or university courses.
- A sizable majority of respondents (67%) expected to complete post-secondary education in their lifetimes, which reflects the increasing access to education and rising levels of educational attainment in Canada.
- A fifth (19%) of respondents intending to earn an apprenticeship certification in future had already completed a post-secondary credential (14% had completed college and 5% had completed a university degree). Another quarter (26%) was enrolled in college (13%) or university (13%) at the time of the survey. Twenty-one percent (21%) had also earned an apprenticeship certification previously and 34% had completed high school or less.
- About two-fifths of the mothers (37%) and fathers (43%) of those working in construction trades/management had completed high school or less. Two-fifths (42%) of respondents' mothers and a third (32%) of fathers had completed post-secondary credentials. A small proportion had earned an apprenticeship certification or were journeypersons (5% of mothers/female guardians and 8% of fathers/male guardians).

3.5.2.1 Implications for social marketing, career development and recruitment

The fact that two-thirds of this sample of Canadian women aged 18 to 34 years were planning to complete a post-secondary credential reflects a growing trend in Canada, namely that more people are accessing and completing post-secondary education. This suggests that industry will likely find that it is recruiting from a progressively educated labour pool.

It also reinforces what is known from other research, namely that there are multiple educational pathways to registered apprenticeship and to work in the construction industry. In this sample of women, almost half of those planning to complete an apprenticeship or become journeypersons had completed at least some post-secondary-level courses. This finding also confirms the results of other research, namely that for some, employment in the skilled trades, registration in apprenticeship, and employment in the construction industry may be a second or a third choice of education or career.

Findings related to the levels of parental education suggest the importance of targeting parents across all categories of education in social marketing campaigns and other initiatives intended to educate parents about career opportunities for young women in construction trades/management.

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3.5.3 Employment and income

- The expected 2008 earnings of respondents with a university degree (31%) or college credential (31%) was similar to that of respondents who had completed apprenticeship certification or were journeypersons, but the small number of respondents who were in the latter category limits the power of these comparisons.
- The rate of permanent employment of respondents employed in construction trades/management (51%) did not differ from permanent employees who were not employed in construction (54%). One-tenth (11%) of those employed in construction trades/management were self-employed, compared to 6% of those not in these careers.
- There were more high earners (gross annual income greater than \$50,000) and fewer low earners (less than \$20,000) among respondents employed in construction trades/management. All jobs combined, more respondents employed in trades/management careers worked 41 to 50 hours per week or more. This may have contributed to the finding that women in these occupations earned more in 2008 than respondents who did not.

3.5.3.1 Implications for social marketing and recruitment

The fact that the income levels of those with apprenticeship certification compared well with those respondents who had post-secondary-level education is an important finding, particularly in light of the fact that only 25% of all respondents agreed and another 20% disagreed that women in construction trades/management earn good salaries. This suggests that many young women lack accurate information about the financial rewards of these careers. It also highlights the opportunity for the industry to attract women into the skilled trades and management occupations based on the promise of improved income.



3.5.4 Factors that influence career decision making

- Enjoyment of work tasks, a career that matches skills or aptitudes, salary, long-term security, and work benefits were rated fairly or very influential by the majority (75%) of respondents.
- Workplace and education factors were rated as exerting much more influence on career decision making than influential people.
- Other factors – women being treated equally, opportunities for advancement, flexible work hours, the opportunity to train on the job, equal representation of women, the prestige of the job, and the opportunity to be a role model – were rated fairly or very influential by between half and three-quarters of respondents. By comparison, only 12% to 17% reported that these factors had no influence.
- The opportunity to be self-employed, scholarship opportunities and the availability of women role models were rated fairly or very influential by between two-fifths to one half of respondents.

- Forty-three percent (43%) ranked a course in college or university and being offered a job or training opportunity as fairly or very influential on career choice.
- Other frequently reported sources of influence were parents and friends, followed by high school courses, teachers, spouses, co-op summer job or youth apprenticeship experience, and family members.
- High school guidance counsellors and adult career services, and college and university career counsellors were rated fairly or very influential by the fewest respondents (21% and 22%, respectively), along with job fairs in high school (20%). More than half the respondents (56%) reported that career counsellors (high school counsellors as well as those in college, university and adult services) had no influence at all on their career decisions. This is noteworthy, since the prevailing belief is that career counsellors, particularly at the high school level, play a key role as guides in students' education and career choices.

3.5.4.1 Firm size

- More respondents (33% to 44%) thought large firms are more likely to offer higher salaries, better benefits, more chances for promotion, and better opportunities for education and training. Fewer respondents thought this was more likely to be true in medium- (21% to 25%) or small-size firms (10% to 16%).
- Consistent with other research, fewer respondents thought that large firms would be flexible with employees; more respondents believed supervisors in small firms were more likely to be flexible with employees.
- At least two-thirds of survey respondents rated woman-friendly workplace policies and equal representation of women as significant factors in career decision making; two-fifths did not believe that there was a connection between firm size and the likelihood of equal female representation (43%) or female-supportive workplace policies (44%). By comparison, 15% to 21% did believe there was a connection to firm size (small, medium or large).

3.5.5 Attitudes to work in construction

- Almost half (44%) of the respondents agreed that it is difficult for women to succeed in male-dominated occupations and another 40% agreed that not many employers in the construction industry want to hire women.
- Between two-fifths and one half of respondents agreed that men and women have equal talent for work in the construction trades (40%) and management (49%), while somewhat fewer agreed that they had the skills or aptitude for these careers themselves (28%).
- Almost a third agreed that construction offers job security (30%) and the possibility for flexible working hours (29%).
- A fifth (20%) agreed that there were many jobs for women in construction where they lived.
- Only a quarter agreed that women in construction earn good salaries (25%) or have good opportunities for advancement (27%).
- More than half the respondents (59%) agreed that construction work can be dangerous.
- Eighty percent (80%) agreed that work in construction is physically difficult for women.

The responses of those who had considered entering a career in construction trades/management were compared with those who had not. Similarly, the responses of respondents who were most likely to consider a career in construction trades/management were compared with those who were most unlikely to do so.

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- Compared to respondents who had not considered entering a career in construction trades/management, a greater proportion of respondents who had considered entering these careers agreed fairly or very strongly that these jobs offer the possibility of earning an income while training (97% compared to 81%), provide job security (75% compared to 53%), and possibilities for working flexible hours (63% compared to 45%).
- Compared to respondents who had not considered entering a career in construction trades/management, a greater proportion of respondents who had considered entering these careers agreed fairly or very strongly that women have equal talent for construction management occupations (77% compared to 81%).
- Compared to respondents who had not considered entering a career in construction trades/management, more respondents who had considered entering these careers also believed that not many employers in construction want to hire women (86% compared to 72%), it is difficult for women to succeed in male-dominated occupations (78% compared to 65%), and construction work can be dangerous (97% compared to 88%).
- Some findings were significant for respondents likely to consider a career in construction management in future when compared to those who were not likely to do so. A greater proportion of respondents who were most likely to consider these careers agreed fairly or very strongly that women and men have equal talent for construction management (97% compared to 85%), that not many employers in construction want to hire women (86% compared to 68%), and that it is difficult for women to succeed in male-dominated occupations (84% compared to 65%).
- It is noteworthy that compared to respondents who had not considered entering a career in construction trades/management, a smaller proportion of those who had considered entering these careers agreed fairly or very strongly that women in these occupations earn good salaries (42% compared to 73%). Significantly fewer respondents most likely to consider construction careers believed that women earn good salaries.
- Compared to respondents who were least likely to consider construction careers in the trades or management, a greater proportion of those most likely to consider these careers agreed fairly or very strongly that there were lots of these jobs for women where they lived (52% to 56% compared to 28% to 30%), that the industry offered women good opportunities for advancement (72% compared to 43%), and that construction work is not physically difficult for women (58% to 68% compared to 22%).

3.5.5.1 Women's belief that they have the skills/aptitude for careers in construction

A much greater proportion of respondents who had considered or were likely to consider a career in construction trades/management believed that they had the necessary skills or aptitude than those who had not considered these careers or were unlikely to do so.

- Eighty percent (80%) of respondents who had considered a career in construction trades/management thought that they had the skills and aptitudes, compared to only 22% of those who had never considered such a career.
- A much greater proportion of respondents most likely to consider working in the construction trades (88%) or management (80%) agreed that they had the skills or aptitude, compared to only 19% and 18%, respectively, of those who were not likely to consider these careers.

3.5.5.2 Women or family members employed in construction

- Most (72%) respondents employed in construction trades/management had a family member in these careers, compared to 44% of those who were not employed in the industry. More (61%) respondents who had considered a career in construction trades/

management knew a woman working in the industry or had a family member employed there (60%), compared with respondents who had not considered such careers (40%).

- Of those most likely to consider construction careers:
 - 42% knew a woman who worked in the trades;
 - 53% knew a woman who worked in management;
 - 54% had a family member in construction trades; and,
 - 55% had a family member in construction management.

3.5.5.3 Information and encouragement

- Half (52%) of the young Canadian women who responded to the survey had never received information about opportunities for women in construction trades/management. The majority (68% to 78%) had been neither encouraged nor discouraged from entering construction.
- Respondents who had received information were also more likely to have received encouragement. Almost three-quarters (70%) of respondents who had received information about construction careers had also received encouragement to enter them, while a similar majority (69%) of those who had not received information had not received encouragement.
- The appeal of careers in construction trades/management was related to whether information was received about them. More than half (59%) of the respondents who found careers in the construction trades fairly or very appealing had received information about them, compared to about a quarter (27%) of those who rated these careers fairly or very unappealing.
- Those already employed in construction, those who had considered these careers, and those who were most likely to consider them were much more likely to have received information or encouragement, compared with those who were not employed in these careers, did not find them appealing, had not considered entering them, and those who were most unlikely to consider them.
- A large majority of those employed in construction trades/management had received either information (85%) about these careers or encouragement (63%) to enter them, compared to less than half of those not currently in these careers (42% and 34%, respectively).
- About two-thirds of respondents who had considered working in construction had received information (63%) or encouragement (62%) to enter the industry, compared to those who were most unlikely to enter it (35% and 25%, respectively).
- More of the respondents most likely to consider the construction trades (63%) or construction management (59%) had received information about opportunities in the industry compared to those who had not considered such a career. Fewer of those who were most unlikely to consider these careers had received information (36% and 35%, respectively).
- Two-thirds of those who were most likely to consider working in the construction trades (64%) or management (65%) had received encouragement to enter these fields. The majority of those most unlikely to consider these careers had received no encouragement to enter them (72% or 74%, respectively).

Sources of information about careers in construction

- About a fifth of respondents who had received information about construction careers obtained it from informal sources such as friends (22%), media (22%), people already working in the industry (19%), parents (15%) and family (15%).
- Compared to information received from other sources, fewer respondents had received information from high school guidance counsellors (11%) and counsellors in adult, college,

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or university career services (7%), which indicates that students are not learning about the options available to them through traditional educational pathways.

- Respondents who had a family member (57%) or knew a woman (57%) who worked in construction were more likely to have received information about opportunities in the trades or construction management than those who did not have these connections (38% and 31%, respectively).

Sources of encouragement to enter careers in construction

- For those who had received encouragement to enter careers in construction trades/management, the three most frequent sources were people employed in the construction industry, media, and the offer of a work or training opportunity in construction.
- The least frequent sources of encouragement were teachers, high school and college/university job fairs or industry presentations, mentorship programs, and career counsellors in high school, university, college, and community career services. Guidance and career counsellors were among the least frequent sources of encouragement, which again points to the fact that students are not being encouraged to consider all available options.



3.6 Conclusion

The findings of the 2008 Construction Sector Council Women in Construction Survey can inform strategies to make careers in the construction industry more attractive to girls and young women. One of the survey's key goals was to explore the number of women the construction industry can expect to draw from in recruitment efforts. Seven percent (7%) of the 1,290 women surveyed were already employed in construction, either in the trades or management. About a quarter of the 1,197 Canadian women surveyed (aged 18 to 34 years) who were not employed in the industry had considered a career in it at one time. For 13% there was some likelihood that they would consider a career in the trades and one-fifth (19%) would be likely to consider a career in construction management. Combining these two groups, 23% of respondents who were not employed in construction indicated they were at least slightly likely (18% were fairly or very likely) to consider a career in either trades or management, with more expressing an interest in management. This important finding indicates that a significant number of young women might be interested in pursuing work in the industry if they received information and encouragement.

The majority of respondents likely to consider employment in construction had received information about and/or encouragement to enter it. Friends, media, parents and the industry itself were the most frequent sources of information. This suggests that the industry's promotional efforts are having some effect, even though half of the young women in this sample had never received career information.

However, a surprisingly small number of women (only one quarter) thought that women earn good salaries in construction trades/management, which means that women are making career choices

without accurate information. In view of these figures, and the proportion of respondents who had never received construction career information or encouragement, it is possible that more women could be interested in these careers than is indicated by the number of those saying that they were likely to consider these careers in future.

The majority of young women rated the following as influential factors:

- the enjoyment of work tasks
- a career that matches their skills or aptitudes
- salary
- long-term security
- benefits
- workplace education

At least half of the respondents agreed the following factors were influential:

- women being treated equally
- opportunities for advancement
- flexible work hours
- on-the-job training
- equal representation of women
- job prestige
- the opportunity to be a role model

The findings of industry interviews and focus groups with women employed in construction trades/management (Section 6) shed light on whether construction industry workplaces can meet such expectations.

Another significant survey finding was that more than three-quarters of young women who had considered a career in construction believed they had the talent or aptitude for it, but the opposite was true for those who had never considered these careers. It is well known that most young women are not provided with opportunities to develop building construction skills. The closure of high school shops in many provinces has limited opportunities for youth to explore such aptitudes. It is possible that if more young women had these, it might increase the pool of women who indicated they were likely to consider these careers.

The research also found that almost two-fifths of those employed in construction trades/management had completed post-secondary education. One-fifth had a college credential, 15% had an undergraduate university degree, and 4% held completed university graduate degrees. Another fifth had completed some college or university courses. What we know from these and other research findings is that there are multiple pathways to careers in construction. The industry should not rule out or underestimate students engaged in college and university as recruitment targets. The construction industry tends to focus on youth in promoting construction careers. Youth in elementary and high school are clearly an important labour pool, but so are students in college and university, as well as those without post-secondary education. The findings of this survey suggest that recruitment should also target these populations since other research has shown that, for some, employment in the skilled trades, registration in apprenticeship, and employment in the construction industry may be the result of a second or a third choice of education or career.

04 ADDRESSING THE BARRIERS TO WOMEN'S PARTICIPATION IN THE CANADIAN CONSTRUCTION INDUSTRY

Under-representation of women in the construction industry was largely unexplored until the 1990s. In Canada and elsewhere, there is recognition that increasing women's participation in construction holds potential benefits both for employers and the economy as a whole. However, despite ongoing efforts to increase their participation in construction trades/management, Canadian women continue to be under-represented in these careers. This section of the report focuses on the work that is being done in Canada to increase women's participation in the construction industry, with reference also to related research in other parts of the world.

The econometric analysis presented by Moss (2004) shifted the burden of change away from the choices made by girls and women onto employers whose hiring and employment practices, the author argued, support continued gender segregation and avoid the costs of solutions to address it. Moss also maintained that the percentage of women in the workplace can be taken as a proxy for employers' treatment of them. To hold women's choices responsible for perpetuating gender segregation, he says, is "a misinterpretation that ignores the reality that such choices are constrained by historical discrimination." He proposed further that legal and policy interventions that increase employer responsibility are needed to promote affirmative action and educational reform. Essentially Moss argued that recruitment and retention patterns in gender-segregated occupations will only change when workplaces begin to seriously accommodate women.

The barriers to women's participation in construction have been researched and discussed extensively over the past two decades in Canada and in other industrialized countries such as the United States, Australia and the United Kingdom. Recent research and policy suggest that well-known barriers to women's participation in science, the trades and technology contribute to occupational segregation in the skilled trades, in apprenticeships, in professions such as engineering, and in the construction industry more broadly.

It can be argued that the same barriers also limit the impact of initiatives to increase the rate of women's participation. This section of the paper also discusses the key barriers believed to limit the extent to which women are attracted to and remain in construction jobs. Barriers in four areas are examined: recruitment, education and training, employment, and the workplace. While an effort has been made to describe good practices to address all barrier types and obstacles, a complete list of initiatives is not provided in this report.

4.1 Barriers to women's participation in construction

4.1.1 Recruitment

A frequent focus of research is the difficulty of attracting or recruiting girls and women to construction careers via apprenticeships in the non-traditional trades as well as science and technology studies. Many factors are thought to limit women's entry into construction occupations (Thurairajah, 2007), including the industry's poor image; lack of role models, knowledge and career advice; gender-biased recruitment; peer pressure; and, poor educational experiences.

The difficulty of attracting females to the construction industry is the reason that high school girls' career choices have been of such great interest. Somewhat more literature has focused on girls'

career choices rather than those of adult women. The targeting of youth is notable in light of findings that trades apprentices in Canada tend to be in their late twenties on average. For most of them, an apprenticeship is not the first choice of education or training. This was reflected in a recent study of apprenticeship in Australia (Misko, Nguyen, and Saunders, 2007). Understanding that apprenticeship is often a second or third option for many high school graduates may have implications for targeting youth at various points through post-secondary education, and for creating promotional messages that take a longer view of career pathways. Canadian school-to-work transition literature shows that 29% of youth do not attend university, college or CEGEP (Bezanson, 2008). These youth may represent a pool of potential candidates for apprenticeship training. The availability of post-high-school programs in Canada to engage and recruit these youth to apprenticeships could be improved (Bell and Bezanson, 2006). Recent Australian research (Misko, Nguyen, and Saunders, 2007) was the basis for recommending that apprenticeship marketing should concentrate on, but not be limited to those students who do not go on to college or university after completing high school. The same study also found that students considered the low pay received during apprenticeship to be a disincentive.

4.1.1.1 Unsuccessful competition with the promotion of post-secondary education

Marketing campaigns that aim to attract youth to the construction industry, or change the images Canadians hold of the skilled trades, must compete directly with the very strong promotion of post-secondary educational pathways and funding options (e.g., loans, grants and scholarships). The desirability and superiority even of post-secondary educational pathways (university and college) is a perception that Canadian society strongly endorses. The first choice of education for most Canadian youth is university or college. This is clear from the findings of the Canada Millennium Scholarship Foundation Secondary School Survey and the findings of research that evaluated the impacts of the Canadian Apprenticeship Forum and Skills/Compétences Canada (CAF/SCC) marketing campaign.

It is not just girls whose educational and career goals do not include construction employment and apprenticeships. Although slightly more high school boys than girls aspire to careers in the skilled trades, their numbers are small compared to those who have decided to pursue university or college study. A key reason for this difference is the widespread belief in Canadian society that a university education (and to a lesser extent a college credential) assures the best future prospects and prosperity (APCO, 2004; Bell and Bezanson, 2006). This is discussed in a report about the Promoting Skilled Trades and Apprenticeship Project (APCO, 2004), a three-year national marketing campaign commissioned by the Canadian Apprenticeship Forum and Skills/Compétences Canada to promote careers in the trades. One of the five key factors described in that report as accounting for the shortage of workers in Canada's skilled trades is the following:

The public, and key influences such as parents and teachers, view university education as the most effective, if not the only means of securing gainful employment and a promising future. Since pursuing skilled trades typically means completing post-secondary education with training through an apprenticeship program, the perception is that these careers are for people who could not make it into university. This myth has caused many parents and educators to strongly encourage and direct youth into university programs instead of college. Little do they know that training for skilled careers can, in fact, be highly specialized and most often challenge intellectual, creative and problem solving skills. Training is typically more practical, provides the opportunity to “earn while you learn” and carries a lesser debt load than university education. It therefore provides a greater and more immediate return on investment, which ironically, speaks to the financial reward issue that the public primarily seeks from their career choices. (APCO, 2004)

04 ADDRESSING THE BARRIERS TO WOMEN'S PARTICIPATION IN THE CANADIAN CONSTRUCTION INDUSTRY

It is worth reflecting on whether marketing campaigns to promote the skilled trades, however sophisticated and far-reaching, are powerful enough to shift the values of a society that holds post-secondary education in such high esteem and associates the trades and apprenticeships with lower levels of achievement and social status. In addition, marketing campaigns that promote the trades compete directly with the very successful promotion of post-secondary education, which uses the secondary school system to disseminate information. A final advantage enjoyed by post-secondary education systems is the fact that although

there are access routes and articulation agreements between colleges and universities these rarely exist for apprenticeship training. The situation has been described as “parallel tracks” in which apprenticeship runs alongside of other post-secondary training and educational options (Charnow et al., 2006).

The Ontario Workforce Shortage Coalition (2008) has called for improved pathways to apprenticeship, and better laddering to other post-secondary programs.

4.1.1.2 Limited interest in careers in construction

The challenges of recruiting young women to careers in construction, and specifically to trades apprenticeships, are well known. This is attributed in large part to the limited interest of most high school girls in these careers and in professions such as engineering. This has been explained in the past by research showing that girls and women choose careers for different reasons than boys. Recent research has contradicted this, finding that girls and boys have similar reasons (such as salary, job security and benefits) for making educational and career choices. However, some differences between boys' and girls' choices of career continue to be reported. For example, research shows that girls continue to associate work in many of the skilled trades with dirt and risks to physical safety (Cumming, 1997; New Zealand Council for Education Research, 2008; Thiessen, 2002).

Otherwise, evidence from multiple sources suggests that most high school students of both genders surveyed by the Canada Millennium Scholarship Foundation Secondary School Survey aimed to earn a university degree or a college credential. Only a small minority of these identified an interest in pursuing training in a skilled trade. It is likely that this limited interest is related to numerous other factors, such as the influence of parents, teachers, and counsellors, negative images of the trades, limited information about them, and the availability of role models and mentors, to name a few.



4.1.1.3 Parental influence

Most of the parents of high school youth surveyed in the Canada Millennium Scholarship Foundation Secondary School Survey expected their children to earn university- or college-level credentials and comparatively few expected their children to aspire to apprenticeship training in a skilled trade. More of the parents of students who intended to get a university or college credential shared their children's goals than did parents of students who expected to pursue an apprenticeship. Comparable information about parents' support for their children's interest in science and technology cannot be offered at this time.

Secondary data analysis of Secondary School Survey data showed that one of the factors that predicts students' decisions about post-secondary education (which in turn can influence later career decisions) is the parents' educational attainment and occupation. University- and college-educated parents were very likely to expect their children to achieve the same levels of education they had. This finding was reproduced in a recent Australian study (Misko, Nguyen, and Saunders, 2007) that investigated factors related to the educational decisions and attitudes toward apprenticeship of 1,600 Grade 10 to 12 students and 800 young apprentices in training. This study reported that 80% of apprentices had discussed apprenticeship with their parents. If parental expectations pre-empt discussion of study and career alternatives, it is possible that direct appeals to parents and youth to esteem careers in the skilled trades more highly will not produce much change.

4.1.1.4 Negative image

Canadian career development specialists Bell and Bezanson (2006) indicated that the main barriers to participation in the trades appear to be negative perceptions of such careers and limited knowledge of apprenticeship as an option. It has been suggested that government take the lead in changing the perception of apprenticeship status by adopting it as a model for training in the ranks of government (Braundy, 2004; Ontario's Workforce Shortage Coalition, 2008). The Ontario Workforce Shortage Coalition suggests changes in the educational curriculum from kindergarten through post-secondary education to integrate theory with hands-on learning and science with applied technology, and to reward those who respond to different modes of learning. These changes may be a positive thing for learners generally, but it is still possible that such changes would not affect the general attitude of the population toward apprenticeships in the skilled trades. Apprenticeships and construction jobs are widely perceived as "dirty," "difficult" and low-status. This is frequently attributed to lack of information and awareness; numerous studies have shown that Canadian youth, in particular, lack accurate information about occupations in the skilled trades (Canadian Apprenticeship Forum, 2004a, 2004b; Fielden et al., 2000; Armour, Carmody, Clark, Manicom, and Nicol, 2001).

Canadian researchers have also investigated the attitudes of male and female high school students toward engineering careers. Anderson, Gilbride, and Stewart (2006, 2003) conducted research to understand and influence the attitudes and images of engineering held by high school students in the Greater Toronto Area. The opportunity to conduct the research was provided by the Ryerson *Discover Engineering* program, in which female engineering faculty, staff, and students offer co-ed workshops in high schools to introduce students in grades 9 to 12 to engineering. Their *Image of Engineering Study* (2006), conducted between 2002 and 2005, included almost 4,000 students in the Toronto area, 56% of whom were female. The study showed that the students' knowledge of engineering was often incorrect, and two-thirds of male students compared to only 10% of female students were interested in a career in engineering.

In this study, researchers were particularly discouraged by the finding that students of both genders, with more accurate knowledge about engineering, still believed that engineering was not a field for women. Researchers concluded that although initiatives such as the *Discover Engineering* program can begin to dispel the myths, they are unlikely to completely overcome the longstanding bias against women pursuing careers in the field.

4.1.1.5 Lack of information

The Canadian Apprenticeship Forum and Skills/Compétences Canada's (2004) three-year-long national marketing campaign to promote the skilled trades and apprenticeship attempted to raise public awareness and disseminate information about these career opportunities. The fact that few high school students choose apprenticeship as a vocational pathway is often attributed in part to the fact that youth and their parents lack accurate information about construction career opportunities and salaries. For example, the median income for a journeyman in a female-dominated trade is \$29,371 (hairdressing, cooking, etc.) while in a male-dominated trade such as plumbing or welding, the median income is \$52,305 (Insightrix Research Inc., 2007).

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Consultation with Canadian youth indicates that they lack information about the full range of career options and would like more information of this kind over a long enough period so that they can make more informed choices (de Broucker, 2006, as cited in Bezanson, 2006). It would appear that university and college education is promoted almost as a stand-in for career planning, despite the fact that an estimated 29% of youth go directly from high school into the labour force (Bezanson, 2006).

A similar lack of information about apprenticeship is reported elsewhere. In Australia, 15% of youth surveyed reported that they lacked information about apprenticeships and stated that this was a key reason that they did not enter them (Misko, Nguyen, and Saunders, 2007). In addition to lacking information, most young students lack the hands-on experience that is provided by science, trades and technology courses. In Austria, to ensure that young people receive this exposure, it is mandatory in some secondary schools for all students to sample courses in the skilled trades.

The dissemination of information to improve the links between supply and demand in the youth labour market (school-to-work transition) has been a focus of interest and research in Canada recently (Brisbois, Orton, and Saunders, 2008; Orton and Harvey, 2008; Saunders, 2008). The recent Canadian Apprenticeship Forum/Skills/Compétences Canada marketing campaign worked to increase public knowledge of apprenticeship and careers in the skilled trades. Evaluation of the campaign's impact found that 73% of youth surveyed after the campaign said their knowledge of the skilled trades had increased, although only 25% of youth and a third of their parents (36%) indicated that they were aware of all of the career options available in the skilled trades. Very few parents (11%) or youth (16%) indicated that they believed skilled trades were low-paying positions, with 66% of parents and 47% of youth stating that they thought the skilled trades provided tradespersons with an above-average lifestyle. It was outside the scope of the campaign to measure whether providing information helped increase public understanding of these career options or influenced youth and parents' subsequent decisions about education and employment.

4.1.1.6 Influence of career counsellors and teachers

Career counsellors are responsible for disseminating information to students about educational and career opportunities and helping them make informed decisions. However, the recent study of the barriers to apprenticeship in Canada from the Canadian Apprenticeship Forum found that career counsellors are among those who, along with parents and youth, lack information about the skilled trades. If they lack this information, it is reasonable to surmise that they also lack information about the challenges and the supports available for women who want to enter non-traditional occupations in the construction industry.

A finding of secondary data analysis from the Millennium Scholarship Foundation Secondary School Survey was that less than 15% of students (male or female) indicated that a career counsellor influenced their decisions about post-secondary options. This finding was similar for teachers, with only a fifth of students indicating that teachers had been influential in their choice of future education. More than half (60%) the apprentices surveyed for the CAF Survey of Apprentices indicated that they had not received any counselling related to their decision to enter an apprenticeship from either a high school teacher or guidance counsellor. However, a small number indicated that the counselling they received from a guidance counsellor (14%) or teacher (18%) positively influenced their decision to enter an apprenticeship. Very few apprentices reported negative influence from any source of counselling. These findings suggest that guidance counsellors are not a primary influence on the majority of youth's decisions about education and career.

Other sources have reported a negative influence from career counsellors. For example, recent research conducted by the Canadian Apprenticeship Forum about barriers to accessing and completing apprenticeship reported that "the attitude of many guidance counsellors toward apprenticeship is often very negative, reflecting a lack of knowledge of the complexity of the work involved and the level of difficulty associated with the material being taught" (Canadian Apprenticeship Forum, 2004a). Findings consistent with this have been reflected in other studies,

which reported that career counsellors, who are university graduates, do not tend to promote careers in particular industries or in the skilled trades. Three very recent studies in Austria, New Zealand and Australia all reached a similar conclusion: namely, that teachers and career counsellors tend to reproduce gender biases that steer girls away from the skilled trades and apprenticeship, transmitting gender stereotypes along career information channels.

4.1.1.7 Lack of role models and mentors

It is widely acknowledged that the lack of visible women role models in the skilled trades perpetuates gender stereotypes related to the place of women in construction. To recruit more women to the skilled trades, the Saskatchewan Apprenticeship and Trades Certification Commission (2007) recommended that female role models be increased in schools by hiring women in industrial arts programs, and creating opportunities for women in the trades to be part of the school environment (e.g., delivering presentations about the trades in schools). The recent Women in Leadership Foundation (*Women in Leadership, 2007 Recommendations and Action Plan to Attract, Recruit, and Retain Women in Construction* (see Appendix O) made similar recommendations.

In the *Discover Engineering* program described above, faculty, staff and engineering students present workshops to introduce engineering to high school students. It is believed that such measures, taken at the high school level, could improve the image of the skilled trades that girls hold. How much difference this would make is unclear, however, given the findings of Anderson, Gilbride, and Stewart (2006) that students' knowledge of engineering did not affect the belief that women are unsuited to engineering.

4.1.2 Education and training

Recruitment is not the whole answer to increasing women's participation in gender-segregated occupations and industry sectors because the challenges of supporting their success, program completion and job placement remain.

4.1.2.1 Unequal access

The Women in Resource Development Committee (2005) supported the finding of a Newfoundland study suggesting that apprenticeships are more costly for women than men because men, having worked full-time and qualifying more often for Employment Insurance, also qualify more often for Human Resources Skills and Development Canada (HRSDC) funding (Watt-Malcolm, 2005). The Women in Resource Development Committee (WRDC) has called for the provision of government funding to women in apprenticeships to redress this inequality.

4.1.2.2 Workplace training

The Canadian Apprenticeship Forum study of barriers to apprenticeship raised questions about the shortcomings of workplace-based technical training (Canadian Apprenticeship Forum, 2004a, 2004b) compared to education and training received in institutions and found this difference to be a key barrier for women in apprenticeship. The finding was confirmed in research conducted by the Saskatchewan Apprenticeship and Trades Certification Commission (Scullen, 2008), which reported a disparity between institutional technical training environments and work site environments. Further research was recommended to identify differences in the education and training delivered in these two contexts and to develop strategies to address them.

4.1.2.3 Isolation, discrimination and harassment

Braundy has argued that empowering recruits is not enough to ensure that training and work environments include women. She says that this must be accompanied by a second type of intervention directed toward those who control training and workplace culture. Sensitization of faculty, staff and students in post-secondary institutions is essential to fostering a more accepting training environment. Based on the findings of a study of apprenticeship in Canada (2002), the Women in Resource Development Committee (WRDC) of Newfoundland and Labrador recommended

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improving women's apprenticeship training by providing gender sensitivity training, including to journeypersons who provide 80% of apprenticeship training (2002). The WRDC Education Centre also provides gender sensitivity education to industry (2006).

4.1.2.4 Lack of role models and mentors

The lack of female role models and mentors is often considered an important factor related to the presence of women in construction training and employment. In the United Kingdom, there has been debate about the value of female role models in increasing women's participation when the "gatekeepers" do not recognize the importance of bringing women into the sector (Eisenberg, 1999). This debate has led to recommendations for a more engaged approach to mentoring and mentorship programs that support recruitment and retention of women in construction education and training.

4.1.2.5 Inadequate funding

There is strong agreement that reluctance to provide reliable long-term funding for women's educational and training programs creates such instability that successful programs simply cease operating after a number of years of success (Watt-Malcolm and Braundy, 2004; Scullen, 2008; Women in Leadership Foundation, 2008; Women in Resource Development Committee, 2005). Braundy has argued that lack of stable federal funding is a significant factor limiting women's participation in the construction industry. Many programs that used to promote women in construction no longer exist. Watt-Malcolm's (2005) research found that some employers agree that lack of government funding prevents change. Research conducted by the Canadian Apprenticeship Forum (2004b) to investigate barriers to apprenticeship in this country found that the costs of supporting apprenticeship at all levels (jurisdictions, secondary schools, communities and agencies) are a key barrier to women's participation in apprenticeship. Funding temporary pilot projects ineffectively or defunding them after an initial development period will not help overcome the obstacles to wider female participation in the construction industry.

4.1.3 Employment

4.1.3.1 Difficulty finding employment

Women seeking employment or apprenticeship opportunities in the construction industry often face employers who are unwilling to hire women or support them in completing apprenticeships. It is widely acknowledged that women face discrimination and stereotyping in hiring (Women in Leadership Foundation, 2008; Wage Gap Reduction Initiative, 2007). Research conducted by the Women in Resource Development Committee (2005) reported that, in Newfoundland and Labrador, women face a greater challenge than men in finding trade-related employment, with only a fifth of women compared to half of men employed as apprentices. Braundy (2004) recommended that incentives be provided to support the hiring of women and other equity-seeking groups.

4.1.3.2 Lack of informal networks

It has been recognized for some time that women entering non-traditional occupations do not have access to the informal networks enjoyed by men, through which most positions are filled (Fielden, 2001; Andrews and Wilkins, 2003). This is the basis for developing formal supports to ensure that women who have received preparatory training in the construction trades can secure and retain appropriate employment. Two examples of such initiatives are provided in the next section. Sustained funding for these initiatives will be critical to achieving benefits.

4.1.4 Workplace

4.1.4.1 Isolation in unwelcoming work environments

The Canadian Apprenticeship Forum identified that unwelcoming workplaces and training environments pose a major barrier to women's participation in the construction industry. Discrimination, harassment and isolation are well-reported experiences of women in construction

workplaces, as well as in classrooms and training (Hypatia Project, 2002; Manicom, Armour, Sewell, and Parsons, 2004a; Manicom, Armour, and Parsons, 2004b). Harassment and discrimination in the form of sexual harassment or sexist language, jokes and teasing are well-known problems, but other forms of unfair treatment are reported as well (Scullen, 2008). The Canadian Apprenticeship Forum report on the barriers to apprenticeship described the challenges women face in construction workplaces, including unsafe working conditions, particularly in work in remote locations or camps. The lack of facilities to accommodate women in these settings further exacerbates the challenges.



4.1.4.2 Hiring, salaries, promotion and retention

Legislation is required to support the inclusion of under-represented groups in various sectors of the economy. In this country, the *Canadian Human Rights Act* and the *Employment Equity Act* charge employers with specific responsibilities to meet the needs of employees. Mandatory employment equity programs are not in force in Canada although the success of such measures has been demonstrated (Construction Sector Council, 2004a). The Women in Resource Development Committee (WRDC) (2002) observed that employers do not tend to be leaders in equity initiatives and for this reason, public pressure will likely be needed for significant change to occur. The WRDC (2002) proposed, however, that unions may be partners in developing equity initiatives to change hiring practices in the construction industry.

Inequalities in hiring were reported by the Canadian Apprenticeship Forum (2004b). Research conducted by the Saskatchewan Apprenticeship and Trades Certification Commission recounted the recent experiences of women who have faced such barriers in securing jobs in construction (Scullen, 2008). For example, women with children report that they have been treated with skepticism about their reliability as employees.

Equal opportunity in the labour market implies equal access to equal pay, job security and promotion. The Women in Resource Development Committee (2005) reported a significant wage difference between men and women employed in construction, one that is confirmed by the CAF (2004b) as well as the Canadian Labour Congress (2008). Women's retention rates in the construction sector are low compared to those of men. This is true in the skilled trades and in engineering (Canadian Coalition of Women in Engineering, Science, Trades and Technology, 2006). Since employers do not track the number of women they hire, promote, and retain, or the reasons they leave, it is not possible to provide statistics on the promotion and retention of women in construction. Despite this, it is understood that the turnover of women in the industry, their occupational isolation, and limited promotion opportunities all militate against their increased participation. Braundy (2004) has argued that unions can play a key role in supporting the retention of women in construction workplaces by adjusting seniority and layoff procedures to allow women (who are typically most recent hires) to remain on the job.

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4.1.4.3 Lack of flexibility

Besides systemic sexism, the nature of work in the construction industry poses obstacles for women who are primary caregivers to dependent children. Long hours with overtime in peak periods of employment, work on weekends, and changing work locations can be typical in the construction industry but are not easily managed by women with children who must arrange transportation and childcare. Acceptance of long hours is seen as demonstrating employee commitment, without which jobs may become insecure and promotion unlikely. Within the industry, there is a general lack of understanding of family and work commitments, which can manifest in women self-selecting themselves out of the positions leading to management (Prairie Research Associates, 2002; Fielden et al., 2000).

4.2 Initiatives to increase women's participation in construction

Although programs exist in many provinces to support the recruitment, education and training, employment, and retention of women in construction workplaces, Canada lacks an adequately funded national strategy to build on successes and ensure the provision of stable supports. The Women in Resource Development Committee, the Women in Leadership Foundation (2008), and the Canadian Coalition of Women in Engineering, Science, Trades and Technology (2004) have all proposed a comprehensive set of changes to increase women's participation in construction trades and technology careers. Some of their recommendations are reflected in Section 5.

There are Canadian programs in place to improve school-to-work transitions (Bell and Bezanson, 2006) and provide flexible approaches to training in the trades (Solvig Norman Open School BC and Lindsay Langill Industry Training Authority, 2006). However, these initiatives are largely gender-neutral. Programs that successfully support women's entry into the construction trades and technology occupations show that gender-based models are necessary and effective (Charnow, Lior, and Wortsman, 2006).

The good practice examples described here reflect the range of programs and measures that are required. However, they outline the range of programs being developed in Canada to respond to occupational segregation in the construction industry (see Appendix O for a list of organizations that support Canadian women in construction). To compare Canadian developments with changes taking place overseas, information about relevant efforts in the United Kingdom (Equal Opportunities Commission, 2005a, 2005b, 2006) are included in appendices P and Q.

4.2.1 Recruitment

4.2.1.1 Introduction for girls to trades and technology

The following two initiatives aim to recruit girls into the trades and technology sectors by providing them with more information and exposure to these occupations. Both initiatives include the provision of information, role modeling, all-girl experience, and in the case of *Girls Exploring Trades and Technology* camps, provision of hands-on experience and early exposure to trades skills for younger girls.

Girls Exploring Trades and Technology (GETT) camps

GETT camps have been offered since 1992 by the Saskatchewan Institute of Advanced Technology (SIAT). The week-long camps are offered free to local girls in grades 7 and 8, and introduce girls to industrial trades by teaching them carpentry and computer design as they create and assemble go-carts. The camps reinforce course choices such as science, mathematics, and industrial arts at the high school level that prepare girls for careers in industrial and technical careers.

Discover Engineering program, Toronto

The Ryerson University *Discover Engineering* program was established to encourage young people, especially women, to pursue careers in science, technology or engineering. Since its beginning in 1991 as a week-long summer camp for pre-university women attending high school, *Discover Engineering* has expanded and now includes a one-day career conference for high school girls

and a one-day Girl Guides conference, as well as workshops presented in co-ed high school classrooms. The program is delivered by Ryerson faculty, staff and engineering students. The impacts of these initiatives have been assessed on an ongoing basis using follow-up surveys and other evaluation tools (Anderson and Gilbride, 2004; Zywno, Gilbride, and Gudz, 1999, 2000). Between 1996 and 2004, more than 40% of the students who attended *Discover Engineering* camps chose to study engineering or technology programs, and of them, more than 80% indicated that the camp greatly or moderately influenced their choice.

- ▶ *Expose girls to trades and technology (provide girls with “taster” experiences)*
- ▶ *Introduce girls to role models in trades and technology careers*

4.2.2 Education and training

4.2.2.1 Educational institutions

The Nova Scotia Hypatia Association, in partnership with the Women’s Economic Equality (WEE) Society has conducted extensive research into the barriers faced by girls and young women in post-secondary education. Based on interviews with Nova Scotia high school students (Hypatia Project, 2002; Manicom, Armour Sewell, and Parsons, 2004a; Manicom, Armour and Parsons, 2004b) a series of recommendations was developed targeting departments of education, schools and school boards. Strategies and resources were provided to support progress toward gender equity in educational institutions, to make learning environments and curricula more female-friendly, to engage students in a battery of exercises to challenge career-related gender stereotyping, and to support professional development to enable teacher interventions in gender harassing behaviours. The development of stronger linkages between high schools and community colleges was recommended.

In another study, (Manicom, Armour, and Parsons, 2004b) the Hypatia Association together with the WEE Society, conducted focus groups with female students in various technical programs in a Nova Scotia community college. The report produced a number of findings and recommendations, including a call for institutional accountability practices to support gender equity, such as the collection of data to reflect the recruitment, retention and outcomes of students by gender. The research report also compiled a list of strategies to support educational institutions in introducing gender equity policy and practices.

- ▶ *Gender equity policies*
- ▶ *Institutional accountability practices (recruitment, retention and employability)*

4.2.2.2 Pre-apprenticeship programs

Pre-apprenticeship and orientation programs for women provide education and training in all-female classes, sometimes also providing female instructors who are employed in the trades. The pre-apprenticeship programs described below are typical in that they combine the following elements: mentors, Essential Skills training, employability skills, in-class education combined with work-based training, and sometimes also assistance with placement in employment. In programs described as integrated, formalized supports are provided such as workplace preparation, placement in employment, and mentoring and support beyond placement in employment. Some programs target low-income women. A number of programs have been developed to support Aboriginal women in trades careers discovery. The British Columbia Construction Association has developed a successful program – *STEP for Women* – to support women in entering the construction industry.

Numerous pre-apprenticeship programs for women are offered across Canada. Frequently, but not always, pre-apprenticeship programs provide women with an all-female training experience. Some of these programs target specific groups, such as immigrant and Aboriginal women. Most employers consider pre-apprenticeship training a necessity for women planning to enter a construction trade. The following provides examples of pre-apprenticeship programs in Canada; it is not intended as an exhaustive list.

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ACCESS trades, *Trades Discovery for Aboriginal Women*, British Columbia

A partnership between the Aboriginal Community Careers Employment Services Society (ACCESS) and the Construction Industry Training Institute (CITI) supported the development of a program to provide Aboriginal women with an opportunity to discover the skilled trades. The Greater Vancouver Urban Aboriginal Strategy provided funding for this initiative. The women receive two weeks of employability skills training, two weeks training in painting and decorating, one week of heavy equipment operation, and three weeks of the metal trades (pipefitting, welding and metal fabrication). They also complete a three-week practicum with an employer with the opportunity to enter an apprenticeship in a chosen trade. The goal is to provide a safe and supportive all-female environment to help prepare them for work in construction. ACCESS reported in 2008 that 20% of the employed graduates of ACCESS trades programs were Aboriginal women.

- ▶ *Program targets a specific population of women who face known additional barriers*



Aboriginal Apprenticeship and Industry Training (AAIT) Women in the trades

AAIT was formed in 1995 in response to the findings of a survey that showed Aboriginal people working in the trades were rarely able to obtain an apprenticeship. An Apprenticeship and Industry Training Board was established to address the concerns of Aboriginal people in the technical and trades areas. AAIT supports an *Aboriginal Women in the Trades* program, along with carpentry, math upgrading, project management, building inspector, and building maintenance worker apprenticeship. The *Women in the Trades* program offers a six-month, entry-level program through Secwepemc Cultural Education Society (SCES), Aboriginal Apprenticeship and Industry Training, and Thompson Rivers University, British Columbia. The program is delivered in partnership with the local bands or organizations.

- ▶ *Program targets a specific population of women who face known additional barriers*
- ▶ *Community partnerships*

Immigrant women

In 2008, pre-apprenticeship training in carpentry was offered to immigrant women in Ontario. One of the Ontario agencies that delivered this training recruited women to a carpentry pre-apprenticeship program, supported them during pre-apprenticeship training and placed them in employment afterwards. The Ontario government funded the project, with money contingent on successful placement of program graduates in carpentry jobs. All of the women who completed the pre-apprenticeship training were successfully placed. This is an example of a pilot program that received funding only for its duration. Whatever capacity was built in the agency during this program was not built on afterwards. One of the agencies whose staff we spoke with reported that there were significant challenges not only in locating women interested in receiving the training and placing them in employment after they graduated, but also in meeting rigid funding timelines that failed to take account of these challenges.

- ▶ *Program guarantee of employment after training*

Saskatchewan Indian Institute of Technologies (SIIT) *Women in Trades (WIT)* program

The SIIT *Women in Trades* program assists women in developing basic skills for entry-level work in residential and commercial construction and in understanding the work involved in trades such as carpentry, electrical, plumbing, painting, framing, drywall application and roofing. The 16-week program provides First Nations women with hands-on skills development based on coursework and a one- to two-week practicum coordinated through an SIIT job coach. This new program has shown strong success (completion and employment rates), with success attributed to promotion and recruitment, skillful and attentive instructors, use of role models and guest speakers, life skills and mentorship components, job coaching and continuing after-program support, viable funding, and industry support.

- ▶ *Job coaching*
- ▶ *Viable funding*
- ▶ *After-program support*

Women Exploring Trades and Technology, Yukon

Yukon Women in Trades and Technology (Yukon WITT) provides introductory courses to build women's skills in the carpentry, painting, electrical, welding and sheet metal trades. Yukon WITT also offers information sessions to communities and school classrooms across the Yukon. The Government of Yukon, Yukon College, and Yukon Women in Trades and Technology developed and piloted the *Women Exploring Trades and Technology* program in 2006 at Yukon College. This 16-week program provides women with the opportunity to explore the skilled trades and develop skills to help them function effectively in traditionally male-dominated workplaces. Women are given a hands-on introduction and are encouraged to pursue further training or an apprenticeship program. Applications to the program exceed the number of available spaces.

- ▶ *Preparation for work in male-dominated workplaces*

Women in Skilled Trades (WIST), Ontario

The *Women in Skilled Trades (WIST)* program is offered by the Ontario Women's Directorate in partnership with A Commitment to Training and Employment for Women (ACTEW). The program targets low-income women who are unemployed or underemployed and provides a pre-apprenticeship program consisting of 30 weeks of in-class instruction, followed by 20 weeks of work placement with local employers. Employers are engaged in educational activities to develop a positive work environment for students; mentors are also provided through many programs to support success. Each program offers gender-sensitive in-class and on-the-job training, and training takes up to one year to complete. This program qualifies women to work in the skilled trades and to enter apprenticeships.

- ▶ *Substantial training component*
- ▶ *Lengthy work placements*

Women's Work Training (WWTP) program

The *Women's Work Training (WWTP)* program was started in 1995 by Saskatchewan Women in Trades and Technology (SaskWITT) with funding for five years. This is an example of a successful program that could not continue because of defunding. While it was active, the program established the Regina Women Construction Co-op (RWCC) and helped low-income women gain employment in the carpentry trade by working toward inter-provincial journey certification. The program combined hands-on training with life and business skills. Funding for the program was not continued.

The combination of program components was believed to be an important contributor to its success in increasing the number of women registered in the carpentry trade in the province. The Saskatchewan Apprenticeship and Trades Certification Commission reported that registered female carpentry apprentices more than doubled in the province between 1995 and 2000, although

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the program reportedly helped more women to write their first-level carpentry exams than to complete inter-provincial Red Seal qualifying exams. However, it must be noted that the completion of Red Seal certification would be a very ambitious goal, given the fact that very few apprentices in Canada earn Red Seal certification.

Highlighted programs

British Columbia Institute of Technology (BCIT) *Trades Discovery Program for Women*

The British Columbia Institute of Technology (BCIT) has offered the *Trades Discovery Program for Women* since 1994. The full-time program provides 20 weeks of exposure to the trades and to career options within them using women instructors (three out of four instructors are women) with industry experience as role models, and a safe learning environment that encourages mentorship and ongoing support.

The program has an advantage in that BCIT is a leader in providing training for the trades in British Columbia and nationally. Other programs like it are offered at the Saskatchewan Institute of Applied Science and Technology (SIAST) and the Southern Alberta Institute of Technology (SAIT). The *Trades Discovery Program for Women* produced an increase in women's participation in BCIT's trades program (from 3% to 10%). Its great success is attributed to the fact that it has had continuing long-term support from BCIT and support and recognition from industry.

- ▶ *All-women classes*
- ▶ *Female instructors*
- ▶ *Long-term funding for educational programming*
- ▶ *Preparation for male-dominated workplace*
- ▶ *Ongoing support provided*

Partners Building Futures, New Brunswick

Partners Building Futures was a three-year pilot program created in 2006 with joint investment from Human Resources and Skills Development Canada (HRSDC) and the New Brunswick Ministry of Post-Secondary Education Canada. The province did not renew the program in 2009. *Partners Building Futures* offered women receiving social assistance a 10-week introduction to the skilled trades in New Brunswick, as well as pre-employment orientation and assessment at New Brunswick Community College, and ongoing support with training and related costs during apprenticeship. For example, the program paid transportation and dental expenses to replace social assistance benefits and helped these women through the initial period when their apprenticeships would not pay a living wage for them and their families.

In its first cycles, the program offered participants two weeks of job shadowing as an introduction to the workplace. This turned out to be an insufficient means of helping women find employment in the trades. In the last cycle of the project, employers were reimbursed for the apprentices' first three months on the job. This period allowed the women to make a connection to a workplace.

The program provided financial support such as daycare subsidies, start-up tools, travel and training. Two mentors provided support and advice, and program staff developed relationships with employers to ensure that participants secured appropriate employment opportunities. The program continued to offer these supports until participants completed the second year of apprenticeship, at which point their salaries were expected to increase to allow self-sufficiency. The expectation is that the program will be replicated or adapted in other provinces and regions of Canada.

- ▶ *All-women program*
- ▶ *Provision of transitional supports to low-income women*
- ▶ *Apprenticeship wages subsidized for the transition period*

- ▶ *Advocates for women and support in securing employment as an apprentice*
- ▶ *Ongoing support provided*

Orientation to Trades and Technology (OTT), Newfoundland and Labrador

The Women in Resource Development Committee (WRDC) was formed in 1999 to raise awareness of opportunities for women to work in the natural resources industries in Newfoundland and Labrador. WRDC is a non-profit organization that offers a 24-week *Orientation to Trades and Technology* program on campuses of the College of the North Atlantic. The program provides women with a safe and supportive environment in which to explore trades and technology training programs and benefit from practical experience in natural resource-based industries. The program includes an academic component, essential work skills, personal and professional development, hands-on skills development, exploration of the natural resource sector, labour market research, and job shadowing. WRDC provides education to the public about the issues that prevent women from entering the trades and advocates the use of women's skills in the natural resource sector through active dissemination of policy and research.

Vermilion/YWCA Skills Training program

The *Vermilion/YWCA Skills Training* program is a for-profit pre-apprentice trades program built on a partnership between the construction industry and the YWCA in Calgary. The key sponsor, Vermilion Energy Trust, initially invested \$2.5 million in the program and has since made further investments. The program was introduced as a pilot in 2007, providing 16 weeks of pre-apprenticeship trades training. The program serves low-income women, who can receive support from other programs offered by the YWCA, such as access to housing, childcare and a living wage.

- ▶ *All-women program*
- ▶ *Partnership between industry and community organization*

Women Building Futures (WBF), Alberta

Women Building Futures (WBF) (1998) is a non-profit organization in 1998 to help women and children living in poverty in Edmonton. The 16-week pre-apprenticeship program offers skills training, classroom and shop training, life skills and job retention skills training, academic upgrading, safety training, and two weeks of optional work experience and job placement in trades. The program has \$12 million in funding from many supporters, including all levels of government. *Women Building Futures* plans to expand into new regions and replicate its training program at several colleges.

The program has an awareness component, a rigorous screening process so that women who are unsuited to the trades can opt out of the training, apprenticeship placement, and mentoring. The program is very tough and reports a very high success rate (90%). Women are coached on the behaviours and dress that will allow them to be successful in the workplace. The goal is to produce apprentices who become journeypersons.

WBF has partnered with many Alberta employers who hire groups of WBF tradeswomen sight unseen. WBF also provides students with on-call mentoring services to help them with transitions into new occupations, and to keep graduates connected to the trade networks. In 2005, WBF services added a program called *Fixit Chicks*, which offers home renovation, and repair and maintenance services, along with workshops for women. In 2007, the federal government directed additional funding to the program, which facilitated significant expansion, including the development of training and affordable housing facilities for students. Some apartments are allocated to single parents.

- ▶ *All-women program*
- ▶ *Workplace preparation and work-hardening program*
- ▶ *Ongoing support to women during employment*
- ▶ *Partnership between community organization and industry*

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- ▶ *Residence provided*
- ▶ *Partnership with employers*
- ▶ *Integrated program components*
- ▶ *Ongoing mentoring by program staff after completion of training*

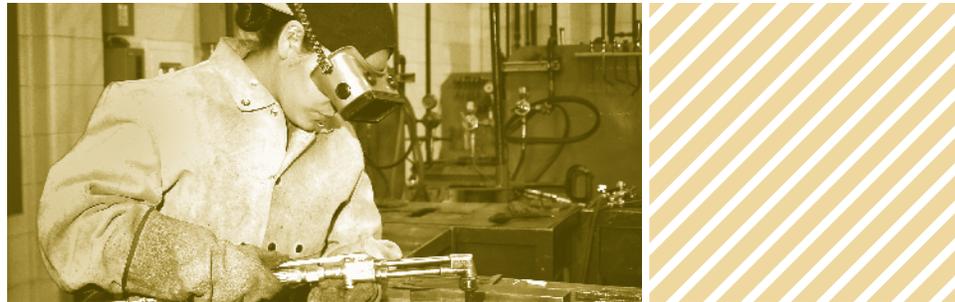
Women Unlimited, Nova Scotia

The *Women Unlimited* project was started in 2005 by two longstanding non-profit women's organizations with prior experience in trades and technology programs for women: the Hypatia Association and the WEE Society in Nova Scotia.⁷ The *Women Unlimited* project is woman-centred and serves those on Employment Insurance or social assistance who have been out of the workforce for some time. The women served by the program are underemployed, lack career progression options, and need income to support their families.

The project uses a two- to three-month recruitment process to ensure that women are not being set up for failure. Recruitment is followed by three months of career decision making, which provides the opportunity to job shadow and experience a variety of trades and technology occupations. Students then choose an occupation and program. Some of the women enter college at this point, others enter employment directly, and still others receive adult basic education.

The *Women Unlimited* project helps women find work, make the transition into employment, and keep that employment. It is built on the understanding that an integrated set of components and support must be provided continuously, over the long term, to ensure positive results. The program received three years of renewed funding starting in 2009.

- ▶ *Strenuous entry process (in both recruitment and career decision making)*
- ▶ *Partnership between community organization and college*
- ▶ *Partnership between community organizations*
- ▶ *Partnership with employers*
- ▶ *Integrated and continuing program supports and ongoing mentoring by project staff*



4.2.3 Employment

Funding for pre-apprenticeship programs is often provided with the proviso that women who complete the training will receive help in securing and retaining employment. The expertise necessary to secure trades employment for women needs to be better understood, with the results documented and disseminated if possible. There is also a need for more investment to support the retention of women in construction workplaces. A key informant contacted about a pre-apprenticeship program for women delivered by her agency indicated that unions do not necessarily have the expertise to secure appropriate employment for tradeswomen. Further work and the identification of good practices in this area would be helpful.

⁷ Women's Economic Equality (WEE) Society: <http://weesociety.ca/index.php/site/womenunlimited/>

Women in Science, Engineering, Trades, and Technology (SETT) Initiative

The Canadian Coalition of Women in Engineering, Science, Trades and Technology started the *Women in SETT Initiative* in 2003 to create the institutional-level change necessary to recruit and retain more women in SETT fields. The national WinSETT Centre acts as the catalyst. The Centre develops and disseminates tools and expertise to industry, government and educational institutions, and to women in SETT organizations.

- *Resource centre fostering the dissemination of best practices*

4.2.4 Workplace

4.2.4.1 Business case for diversity

In a recent report published by the Hypatia Association, Armour, Carmody, and Clark (2006) argued that it is important for employers in the construction industry to understand the benefits of diversity and the linkages between it and profitability. A compilation of resources (Armour, Carmody, and Clark, 2006; Clark, Martell, Wentzell, and Wheaton, 2009) was also produced to help develop a business case for diversity in Canadian workplaces. A key feature of the campaign is similar to the broad inclusive approach taken with employment equity.

A Europe-wide initiative to promote the development and implementation of workplace diversity has been underway since the European Commission began surveying employers about their diversity policies and released the report, *The Business Case for Diversity: Good Practices in the Workplace* (2005). A growing body of literature available from the European Commission documents employers' achievements in employment equity and charts progress toward inclusive workplaces (European Commission, 2008).

4.2.4.2 Tools for workplace change

The Ontario Women's Directorate (OWD) defines workplace culture as "the beliefs, attitudes, practices, norms and customs ('how things are done around here') that characterize a workplace." There have been calls for the development of a toolkit for organizational change and a compilation of good practices (Scullen, 2008). The Construction Owners Association of Alberta (COAA) has acknowledged the need for organizations to adhere to the principles of *Respect at Work*, which are supportive of diversity and anti-bullying.

The Nova Scotia Hypatia Association and the WEE Society have produced several reports outlining the change strategies and detailing the resources available to support employers as they create equitable workplaces that welcome women in construction (Armour, Carmody, and Clark, 2006; Clark, Martell, Wentzell, and Wheaton, 2009). The following action strategies are recommended by Clark, Martell, Wentzell, and Wheaton (2009) for employers working to achieve workplace diversity:

- Get executive team commitment.
- Link diversity to the bottom line.
- Build the business case for diversity.
- Identify and develop diversity leadership.
- Create an organizational working group to lead the diversity initiative.
- Develop a diversity vision.
- Assess the current workplace culture.
- Develop a diversity strategy.
- Implement the strategies.
- Monitor, evaluate and adapt.

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WinSETT is preparing a booklet entitled, *Welcoming Women into Science, Engineering, Trades and Technology Workplaces: A Checklist of Strategies*. *A Checklist of Strategies* was originally designed and distributed in 1994 by Women in Trades and Technology, National Network, and will be re-released by the Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT) (Overend, Emerson, and Hollett, 2008). It offered first steps to raise awareness and initiate positive organizational change in support of women in trades and technology workplaces. After being pilot tested in 2007 and 2008, it will be updated and re-released. The checklist includes research and effective practices for recruitment, selection, orientation, retention, career development, training, and health and safety. It also provides questions to guide employers in developing their own action plans for change.

► *Checklist to assess woman-friendly workplaces*

The Saskatchewan Apprenticeship and Trades Certification Commission (Scullen, 2008) produced a report recommending steps to support organizational change and build inclusive working environments for women. With input from consultants and groups such as Status of Women, Women in Trades and Technology groups and CCWESTT, the report recommended that employers be encouraged to attend educational workshops, assess organizational barriers to women's inclusion, and set up committees to find ways to recruit and retain women in the trades. It also called for the use of Employment Equity legislation to create requirements for change, as well as sensitivity training and education for employees. The Construction Sector Council was asked to create a toolkit of strategies to improve recruitment and retention. In addition, the report recommended incentives that would encourage employers to make workplaces female-friendly, as well as the development of awards to acknowledge employers' progress.

The Women in Leadership (WIL) Foundation has completed a lengthy study in which more than a hundred participants were engaged through round-table meetings, focus groups, conferences and surveys to gain a fresh understanding of the barriers to women's participation in the British Columbia construction trades. The resulting strategic plan, called the *WIL Action Plan*, has been reproduced in its entirety in Appendix R of this report. The plan is a comprehensive set of recommendations for all of institutions responsible for the recruitment, training, and employment of women in construction. This includes employers and unions, schools and educational institutions, including elementary and secondary schools, colleges, government and industry associations, as well as partnerships between all these players.

The strategies proposed to increase Canadian women's participation in construction have a great deal in common with those implemented in the United Kingdom (Equal Opportunities Commission, 2005a, 2005b, 2006), where advances have been made that are relevant to the Canadian context. Further information about developments in the U.K. is provided in appendices P and Q). Work is also being done in continental Europe where, for example, the European Association of Craft, Small and Medium-sized Enterprises (UEAPME) (Muller, 2007) has published a catalogue of good practices for diversity and non-discrimination. In New Zealand, the Human Rights Commission (Appendix H) developed a series of recommendations to support greater diversity in industry recruitment, training, and employment.

Other more general resources to support workplace change include *Workplaces that Work for Women: Creating a Workplace Culture that Attracts, Retains, and Promotes Women* (McLean, 2003) and the *Resource Guide: How to Recruit and Retain Women Workers in Non-Traditional Workplaces* (Wage Gap Initiative, 2007). These documents contain a set of questions entitled *A Framework for*

Assessing your Workplace: 20 Questions, which organizations can use to identify areas where change is needed. The questions highlight a range of issues that are very similar to those identified by the OWD as contributing to an inclusive workplace. These include:

- cultural norms and values that support positive relations between men and women;
- freedom from stereotyping related to women's and men's roles and occupations;
- conditions (work schedules, job titles, physical environment) that are inclusive of both genders;
- a strong "critical mass" of women, typically 30% or more throughout the organization;
- opportunities for promotion and advancement; and,
- an emphasis on reducing sources of unnecessary stress such as harassment and work-family conflict.

4.2.5 Industry practices to support recruitment

4.2.5.1 Scholarships

Scholarships communicate the value that government and industry place on the education pathways to construction careers. In the skilled trades and apprenticeships, there are very few scholarships to demonstrate this value. Instead, industry often awards scholarships to students who are going to university, but not to those who choose to attend college or enter the skilled trades.

The Canadian Association of Women in Construction (CAWIC) has established bursaries for women who want to enter the trades. In British Columbia, Canadian Construction Women (CCW) offers grants of \$5,000 to women wanting to advance their careers in construction. In 2002, British Columbia construction companies initiated a sponsorship fund that provides a \$200 award to students who complete the BCIT *Trades Discovery* program (described below), and 25 \$1,000 entrance scholarships for students continuing into apprenticeship.

- ▶ *Scholarships to increase appeal of trades and technology occupations*
- ▶ *Scholarships to signal the value that is placed on women by industry*

4.2.6 Industry practices to support women's employment

4.2.6.1 Securing employment for women in the trades

Examples of recent initiatives that support the employment of women in the construction trades are described below. Without initiatives of this kind, training programs will be less likely to result in employment for graduates.

Skilled Trades Employment Program for Women (STEP for Women)

The British Columbia Construction Association (BCCA) *Skilled Trades Employment Program for Women* (STEP for Women) is a mentoring pilot project that assists women in construction with employment and retention. A multi-tiered process, it begins with a job mentor assessing women's skills and aptitudes. Next, employment opportunities are outlined, and women are placed in construction jobs. The job mentor then maintains contact with program participants and their employers to ensure that an effective match has been made. In the workplace, participants are matched with a "buddy" or volunteer to answer questions and welcome them to the workplace. These components of the program have all been tested and found effective in helping women to secure jobs and keep them.

Piloted in 2008, the final tier of the program sees senior female tradespersons mentor outside the work site. STEP for Women is developing a pool of mentors and will connect them with mentees in their trades based on individual need. Mentor-mentee relationships could be formed to address a specific question or problem, or they could be more formalized relationships that extend over a longer

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period. STEP for Women plans two further initiatives: facilitating peer meetings where women (both mentors and mentees) can learn from the experience of peers, and invite mentors, mentees, counsellors and other interested individuals to an advisory forum to discuss issues of mutual concern.

- ▶ *Mentoring*
- ▶ *Work placement and re-placement*
- ▶ *Partnership with industry*
- ▶ *Advocate on behalf of women*
- ▶ *Open-ended support provided*

4.2.7 Industry practices to support workplace change

Respect in the Workplace, Construction Owners Association of Alberta (COAA)

A *Respect in the Workplace* committee was formed by the COAA in 2003 to create a standardized policy on workplace harassment that would respond to the shifts and challenges that accompany increasing diversity in the construction workforce.

Guided by the principle that all people have the right to be treated with dignity and respect, the policy seeks to provide a best practice through the promotion of awareness, training and communication. The policy has three interrelated components to address harassment, violence and bullying. *Respect in the Workplace* is an introductory document that stresses the legal requirement for employers to provide a workplace free from violence and harassment, along with the ethical obligation to prevent bullying by fostering respect.

Furthermore, the policy invites employers to assess levels of respect at their work sites, and it also encourages them to adopt the *Respect in the Workplace* material, set policy, create awareness, and conduct training to foster a new standard for workplace respect. The handbook describes bullying, harassment and violence; offers clear definitions and examples; and provides a guide for managers and employees. A ready-to-use toolkit was developed to help employers implement the *Respect in the Workplace* policy. The toolkit includes:

- a handbook developed from the model policy to support the development of respectful workplaces, with specific sections for supervisors and for employees;
- a sample site policy, for use within companies, that outlines rules, expectations, and process within the company;
- a sample site poster with the principles of workplace respect to advertise the policy to employees;
- a sample presentation and handouts for use in supervisory awareness training;
- a sample presentation for use in employee awareness training;
- sample certificates of completion for both supervisors and employees;
- a sample site assessment worksheet;
- scripts for a series of “toolbox talks” for supervisors to facilitate on six specific topics;
- sample materials to support investigations, including incident reports;
- a sample Progressive Discipline Procedure; and,
- a sample internal incident reporting form.

All of these materials are provided in free downloadable format on the Construction Owners of Alberta website.

- ▶ *Dissemination of best practice*



4.2.8 Conclusions

This review of literature about the barriers to women's participation in the construction trades and strategies to overcome them produced two key findings.

The first is that, to succeed, the interventions that have been developed to provide women with supportive training opportunities, to help women secure and maintain employment, and to improve workplaces must all function in tandem. For example, training women for work in construction will not, on its own, boost the rate of their participation in industry unless supports are in place to help them overcome the hiring and other workplace barriers. Women need support in securing and maintaining employment and in dealing with the obstacles they face in the industry. Furthermore, even if all of these interventions were implemented, it is unlikely that they would solve all of the issues women in construction face.

The second key finding is that very little literature is available that identifies industry contributions to the development of practices to increase the rate of women's participation in the construction trades and onsite management. This is a significant gap. This is why much of the qualitative stage of this research investigated industry best practices in this arena, along with the need for change in construction workplaces.

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GOOD PRACTICE IN SUPPORT OF DIVERSITY: PERSPECTIVES OF INDUSTRY AND OF WOMEN IN CONSTRUCTION

One of the strategies being proposed in Canada to respond to the retirement of large numbers of highly skilled construction workers in the next decade is to increase the participation rates of those who have been historically underrepresented in the construction industry. There is an understanding that the increased participation of women, Aboriginal peoples, newcomers and mature workers in construction trades/management can contribute to the replenishment of the skilled construction workforce in Canada.

Industry-based programs to increase the rate of women's participation in the construction trades and in construction management have previously been viewed with some skepticism outside Canada (Andrews and Wilkins, 2001; Agapiou, 2002; Greed, 2000; Whittock, 2002). The concern has been that the primary motivation for change is filling labour market skills shortages, rather than addressing conditions that would support equal opportunity for women.

Given the inequities that face women in construction workplaces, a comprehensive strategy for workplace change is a necessity, complete with the development of family-friendly workplaces, targets for increased hiring and retention of women (Braundy, 2004; Women in Resource Development Committee, 2004), monitoring (Scullen, 2008; Women in Resource Development Committee, 2002) and long-term investments in programs and supports to effect such change. It is also possible that legislative change will be a necessary element. These conclusions and recommendations were drawn from a review of Canadian literature regarding the barriers that limit women's participation in the construction industry.

In Section 4 of this report, best practices to increase women's participation in the Canadian construction industry were identified and described. That literature review found that relatively little has been published to date to highlight and document the achievements of industry in this area. A qualitative research methodology was therefore developed to investigate industry efforts to increase women's participation in construction, drawing both from the perspectives of industry representatives and women in construction.

5.1 Research methods

Key informant interviews were conducted to explore the knowledge and opinions of industry representatives, and three focus groups were held to explore the experiences of women currently employed in construction trades and in onsite management. The interviews conducted with industry employers were intended to answer the following questions:

- 1) Are changes in the rate of women's participation in construction trades/management being observed by industry employers, associations and labour organizations?
- 2) What do industry representatives think accounts for the fact that the rate of women's participation is not increasing more significantly?
- 3) What changes do industry representatives think are needed to increase the rate of women's participation in construction trades/management?
- 4) What practices have been introduced by those in the construction industry to increase the rate of women's participation? Are there signs that any of these practices have been successful?

- 5) What challenges does the construction industry face in introducing changes to increase women's participation in construction trades/management?
- 6) What supports do construction industry employers need to support such changes?

The focus groups conducted with women employed in construction trades/management were intended to answer the following questions:

- 1) What are women's experiences in recruitment and in hiring for the construction industry?
- 2) What are women's experiences working in construction workplaces?
- 3) What are the experiences of women construction trades apprentices?
- 4) What do women in construction trades/management think is needed to increase the recruitment, hiring and retention of women?

A detailed description of research methods follows, along with a presentation of the findings of the interviews and focus groups, as well as two summaries of key findings. Informants have been quoted verbatim.

5.1.1 Recruitment

Separate strategies were used to recruit industry informants and women working in construction trades/management to participate in the research.

5.1.1.1 Interviews

Industry informants were recruited using an initial list of 29 industry contacts (associations, labour, employers and owners) that was provided by the Construction Sector Council. The names of further construction employers and industry associations were identified using Internet searches of provincial/territorial association websites. In addition to these strategies, snowball sampling was also used during interviews to identify further informants who might be interested in participating in the research.

A total of 229 construction employers, 37 association informants and six labour informants received invitations to participate in the research. Of the 229 employers across Canada invited to participate, 175 were general contractors, 17 were electrical contractors, six were carpentry contractors, seven were masonry contractors, 13 were mechanical contractors and 11 were residential contractors.

A purposive sampling strategy was used to ensure the participation of industry employers, industry associations and labour organizations across Canada, and to ensure the representation of employers from a range of company sizes and from different areas of construction. Contacts were each sent an electronic transmission containing an information letter outlining the aims of the research, the voluntary nature of the research, confidentiality, the interview questions and an invitation to participate (Appendix S). Researchers then followed up by telephone to inquire whether industry informants were interested in scheduling a telephone interview.

5.1.1.2 Focus groups

Focus group participants were recruited in two locations in Canada. In British Columbia, women with experience working in construction trades/management were contacted by BCIT *Trades Discovery Program* and invited to participate in a focus group. The research was advertised by the BC Construction Association and also through BCIT program contacts. In New Brunswick, women who participated in the *Partners Building Futures* project were contacted by program staff and invited to participate in a focus group.

5.1.2 Sample composition

5.1.2.1 Interviews

Fifty interviews were conducted with 30 construction industry employers, 14 association informants and six labour organization informants. Two written responses were received, one from a provincial

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association and one from an employer; these responses were included in the data analysis. Employers in 11 of Canada's 13 jurisdictions (Table 5-1) participated. Employers in industrial, commercial, institutional and residential construction were interviewed, including several industry owners.

Table 5-1: Sample composition

Jurisdiction	Employers	Associations	Labour
National	-	2	1
NL	1	1	1
NB	8	-	-
NS	1	1	-
PE	1	-	-
QC	-	-	-
ON	5	5	1
MB	2	1	1
SK	2	1	-
AB	5	1	1
BC	2	4	1
YU	-	-	-
NU	2	-	-
NT	1	-	-

Construction industry association informants from seven provinces and two territories were interviewed, as well as one national industry association informant. Participants represented associations in industrial, commercial, institutional, general and residential construction, as well as sheet metal, mechanical, carpentry and millwright contractors. Labour informants in five provinces and one informant at the national level were interviewed.

The 30 employers in the sample included companies that provided residential construction services (6), residential and commercial services (1), commercial construction services (4), commercial and industrial services (4), industrial construction services (9), commercial, industrial and institutional services (4), as well as commercial, industrial, institutional and residential services (1).

Employers in the interview sample included three micro-size employers (0-9 employees), 10 small-size (10-99 employees), six medium-size (100-499 employees) and eight large-size (500+ employees) employers. For two of the employers interviewed, the information was unavailable and did not allow their size to be categorized.

A limitation of the grouping based on size was due to the fact that some companies provided information only about workers they employed directly while others reported on direct as well as on subcontracted employees. Most employers could at least estimate the number of women employed in construction trades/management.

Most of the associations could not provide information about the total number of people their member contractors employed, and very few associations had data about whether contractors were women. Data to reflect the number of construction tradespersons represented by labour organizations was not consistently available, and data to reflect the number of tradeswomen representing labour organizations was unavailable.

5.1.2.2 Focus groups

Thirty-two women participated in the focus groups in British Columbia and New Brunswick. The eight women who participated in the New Brunswick group had all been connected at one time to the *Partners Building Futures* program. Twenty-four women participated in the two focus groups held in British Columbia.

Of the 24 British Columbia focus group participants, two-fifths (9) were journeypersons, two were onsite project managers and one was a program coordinator. All of the New Brunswick participants were apprentice tradeswomen. Women were employed in a range of trades, including electrical (10), cabinetmaking (1), carpentry (3), automotive (1), sheet metal (1), steel fabrication (1), heat and frost insulation (2), welding (7), and plumbing (3). In New Brunswick, half of the participants were electricians; in B.C., a fifth (5) of the participants were welders. Data for the project managers were grouped with data for the women tradespersons because the discussion did not highlight differences between the experiences of project managers and those of women in the trades.

Focus group participants ranged in age from 28 to 45 in the New Brunswick group and from 22 to 51 in the British Columbia focus groups. The average age of the New Brunswick participants (35 years) was not different from that of B.C. participants (36 years). All of the New Brunswick focus group participants and a third (8) of the B.C. participants had dependent children. Three-quarters (6) of New Brunswick participants and a third (8) of British Columbia participants were single mothers with one to three dependent children.

The educational attainment of participants ranged from high school to various levels of apprenticeship training, some college or university courses, college diplomas and university studies. Only half of the participants reported their 2008 income. The average 2008 income for participants who reported their income in the New Brunswick focus group was \$18,333, while the average income of British Columbia participants was \$56,583. This difference reflects the fact that more of the women in the *Partners Building Futures* program were apprentices, whereas more participants in the B.C. focus groups had worked in their trades for several years and, in some cases, for as long as 16 or 20 years. Journeypersons and project managers in the B.C. groups reported earnings in 2008 of between \$55,000 and \$100,000.

5.1.3 Data collection

5.1.3.1 Interview questions

During the interviews, employers were asked to provide information about the number of people their companies had employed in the last year, the number of tradespersons and onsite managers, and the proportion of those tradespersons and onsite managers who were women. Labour and association informants were asked questions relative to the number of members their organizations represented and the proportion of their members who were women. Interviewees were asked whether they had observed an increase in the participation of women in construction and for their opinions about why the rate of women's participation in the industry has not been increasing more significantly.

Interviewees were asked to describe any recruitment, hiring or retention practices their companies or organizations had introduced to increase women's participation and to discuss whether those practices were successful. Interviewees were also asked what employers need to do to recruit, hire and retain women in construction trades/management and what women need to do to be successful in construction trades/management. Lastly, interviewees were asked about the changes in supports the construction industry needs to introduce to increase women's participation.

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5.1.3.2 Focus group questions

The focus groups were each between two and two-and-a-half hours in duration. Focus group participants were asked to report on the number of women working in their workplaces, their experiences of recruitment and hiring in the construction industry, and their experiences in construction workplaces. Participants were asked for their opinions about why women's participation has not increased more significantly. They were also asked for their thoughts about what needs to change to improve the workplace experiences of women in the construction trades and of onsite managers, and about the role employers and unions can play.

5.2 Perspectives of industry: employers, associations and labour

In the following section, the results of data analysis based on the interviews conducted with key industry informants are reported; excerpts of the interviews are provided to illustrate these findings.

5.2.1 Representation of women in construction trades/management

Employers were asked to provide estimates of the percentage of women employed in the last 12 months in the trades/management. Association and labour organization informants were asked to answer similar questions about their membership. Results are presented in appendices T and U.

5.2.1.1 Representation of women: employer estimates

Employers were grouped into four categories based on size: micro-size (0-9 employees), small-size (10-99 employees), medium-size (100-499 employees) and large-size (500+ employees). Most of the micro- and small-size employers did not employ any women in the trades/management, whereas all of the large-size employers reported that they employed between 1% and 3% women (and these estimates for large-size companies usually included subcontracted workers).

One micro-size employer reported that all of the small number of trades workers and project managers employed in that company were women; this was a residential company owned by two women whose intention it is to support women in construction. One small (general residential) employer also employed several women in the trades. All of the medium-size companies employed at least 1% women in the trades and two companies (one electrical/industrial and one masonry/residential/industrial/commercial/institutional) employed 8% and 10% women tradespersons. One of these employers stated that the increase in women in these occupations was intentional on the part of the company.

The findings for women employed in onsite management are different from the findings reported above for the employment of women in the construction trades. Across all categories of employer size, at least some examples were found of high rates of women – between 12% and 100% – employed in onsite management. However, unlike large-size employers, who all employed at least 1% women in management, many more micro-, small- and medium-size companies employed no women at all in construction management. Detailed information is presented in Appendix T.

When employers were asked whether they had observed changes in the rate of women's participation in construction trades/management, most indicated that they had not observed an increase. More employers indicated that they had observed an increase in women in construction management (Table 5-2).

Changes in women's participation observed

Two of three employers in micro-size companies reported that they had not observed any increase in women in the construction trades. Most small-, medium- and large-size employers reported that they had not observed an increase in women in the construction trades. The small number of employers who indicated that they had observed an increase over the years in the number of women commented that the increase was very small (1%).

Table 5-2: Increase in women in the construction trades and in construction management

Factors	Increase in women in trades observed		Increase in women in management observed	
	Yes	No	Yes	No
Micro-size employers	-	2	-	2
Small-size employers	3	7	-	8
Medium-size employers	1	6	5	2
Large-size employers	2	7	4	3

When asked whether an increase in women in management had been observed, more than half of medium- and large-size employers indicated that they had noted a significant increase in the proportion of women employed in management occupations, such as project managers, estimators, safety officers and quality managers. Employers argued that women applied for these jobs, and they were often the best people for the job. “In onsite management, we hire the best person for the job, and the last few had women applying. There was a woman manager in competition with five men. She was the best.” None of the employers interviewed had observed an increase in the percentages of women forepersons. Women who become construction forepersons must be promoted through the trades. It appears that this is an infrequently travelled career pathway for women.

5.2.1.2 Representation of women: association and labour organization estimates

Most of the association informants interviewed did not provide estimates of the total number of workers employed by member contractors or the percentage of their members, or employees of their members who were women. Where association informants could provide the total number of workers employed by their members, gender data was, in most cases, not available. The absence of gender data is a reflection of the fact that the rate of women’s participation in construction occupations is neither a target nor an indicator that is being tracked by industry associations. This reflects the extent to which most industry associations can be said to be taking an active lead in promoting the hiring and retention of women in the construction trades and in onsite management. Although there are exceptions, particularly at the provincial level, the key role that is being played by most associations appears to be in the area of promotion to increase the appeal of construction careers to youth.

Labour organization informants consistently estimated that the percentage of women union members was between 1% and 2%, with one report of more women employed on specific projects (in the 3% to 5% range). This information is provided in more detail in Appendix U.

Changes in the rate of women’s participation observed

Association informants who were interviewed for this research were divided in their opinions about whether there has been an increase in female construction trades apprentices or in the employment of women in construction trades/management. Association informants had either not observed a change in the percentage of women apprentices or women in these occupations, or they stated that any change in the hiring of women (in one sheet metal association and one masonry association) was extremely small. However, one association informant commented that, “there have been advances at the engineering level and somewhat in management. It’s been very obvious in the safety officers.”

Most labour informants stated that there had not been an increase in the percentage of women in the trades/management, and those who said they had achieved an increase expressed that it was very small. One labour organization informant commented that, “Women come and go in the same trades such as carpentry and electrical, and in the same trades that we never had women there still

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are no women (such as insulator, roofer, and bricklayer).” Another commented that, “I’ve been a pipefitter for almost 40 years. While I’ve been working we’ve seen a radical change in the number of women.” Labour informants who commented that they had observed an increase in women in the construction trades said so on the basis that they had observed an increase in female apprentices and college enrolments, not in women being hired or working in the field.

Table 5-3: Increase observed in women in trades and in management

Informants	Increase observed in women in trades/management	
	Yes	No
Industry associations	5	4
Labour organizations	2	6

5.2.2 Why women’s participation in construction has not increased more significantly

This section summarizes the opinions of informants about why women’s participation in construction is not increasing more significantly. Employers, association informants and labour informants offered many reasons to account for this, including:

- the weakness of educational pathways to careers in construction (particularly in the trades);
- the influence of negative stereotypes of careers in construction;
- limited hiring of women;
- high levels of turnover of women in the trades; and,
- unfriendly work conditions.

Informants also offered ideas about the construction occupations women may be best suited to and about industry’s expectations of women employed on construction work sites.

5.2.2.1 Supply

Many employers stated that it is their experience that women are not applying for work in construction. One employer said, “We haven’t had one coming in looking for work while I’ve been here, that’s 22 years. They come with résumés to work in the office, not out on the field.”

Weak educational pathways

The failure of education to target girls for careers in construction was cited as a key reason why women’s participation in construction is not increasing more significantly. Interviewees discussed the cancellation of high school shop classes and the fact that students are not being targeted with information about careers in construction early enough, that is, as early as Grade 8. Interviewees agreed strongly that educational pathways to the trades must be strengthened.

Another problem is the fact that the trades are not being promoted accurately, that is, as careers with attractive opportunities for career development and progression. Informants said that parents are likely a key influence, since many do not want their children channelled into the trades. Some informants said the construction industry has competition from all of the other opportunities open to women.

None of the informants said that they hold government social policy or educational policy responsible for the fact that careers in the trades have been de-emphasized in Canadian schools over time and that these careers are not competing well with the promotion of university education. Informants who discussed the problem of weak educational pathways consistently held schools, teachers, guidance counsellors and parents responsible for the failure to reach students with

accurate information and opportunities to experience these occupations, and their proposals for change reflected this.

Gender stereotypes

Gender stereotyping and stereotypes about careers that are appropriate for women were cited by interviewees as key reasons why women's participation in construction is not increasing more significantly. Some referred to this as a "social problem."

Negative stereotypes of work in construction

Interviewees also agreed that negative stereotypes of work in construction contribute to the fact that it is difficult to increase the percentage of women in construction. One employer said, "an underlying stereotype of hard physical labour and discrimination against women" discourages girls and women from choosing these careers. Another described how the stereotyping of work in construction is a barrier for parents, who might otherwise support their daughters in entering these careers.

5.2.2.2 Demand

Biases in hiring

Some informants emphasized the need to create more opportunities for women in construction through the increased hiring of women. As another employer said, "There's a lack of opportunity because of bias. That's the main reason. I don't think a lot [of employers] give them a chance. It's not a consideration. Bias like, 'Gee, she doesn't like to be dirty.' How do you know?"

These informants put the onus on employers to make this happen. One employer said:

"Everyone supports bringing women in but no one wants to create openings. The same thing happens with new apprentices, and this is true for male and female apprentices. Contractors and owners have done a poor job of addressing this."

One employer said that the reluctance to hire women is that, "Employers are scared that women cause problems with the Human Rights Commission. All you have to do is say that a man said something inappropriate. Here they side with women, and it's not fair." Another employer added, "There are struggles to get employers interested in hiring women, probably because they think it's easier to manage a business without male/female issues."

Suitable careers

Industry experts offered many thoughts about the occupations to which women are best suited. These observations are summarized below. Many industry informants discussed how inadequate physical strength acts as a significant barrier for women in some trades and also in some positions. Informants explained that all construction tradespersons are required to work to the requirements of any given project. Exceptions are not made for men or for women.

"On site, you need to move a ladder if it's a requirement of the job. Some jobs are less physical. Lack of physical strength can be a barrier for certain positions. Like framers, moving and lifting, or concrete, there's high physical demand. That's not to say there aren't women who can, but in the same trade, on a different project, the demands may not be as high. We had a framer, he did the framing, but when they got to the roof he said, 'I can't do the roof, I'm afraid of heights.' That's your job. If you can't do what you were hired to do. So the physical demands can be big. For a carpenter, for framing you generally need more strength, but for finishing you don't; there's more detail, it's smaller, but it's still carpentry."

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The following quotations illustrate the observations and thinking of employers about the specific trades to which women may be more attracted and suited and the reasons why this is the case.

“Electrical, welding, and carpentry are more likely to see more women.”

“The key trades for women are electrical, carpentry, mechanical, plumbing, and heavy equipment operator.”

“The finishing trades are good for women: painting, fine carpentry, trims around windows and doors, tiling, cabinetry, flooring, ceiling, walls, etc.”

“Some trades are more suitable for women who have an interest in doing things with their hands. Guys would choose on the same basis. For example, do you have to climb up a tower, or lift 300 pounds.”

“Women are no different than men. Once they get involved they are as good as men. They are most suited for electrical, plumbing, lathing drywall, and painting. Pour and place concrete and steel placement are much heavier, and it’s outside work in the cold, and all men. It involves heavy lifting and heavy machines. Women may not aspire to these trades as much.”

“We’ve never seen any women in the trenches; we’ve never seen one rigging a crane for piling. We’ve never had any equipment operators who are women. It’s physical barriers mostly for our kind of work like labour and equipment operation.”

“They can’t do all jobs because of the physical strength, but there are lots. They can lay floor, siding, do trim work; there’s lots of work in carpentry. I think you’re not going to see many women in foundation work. It’s dirty and heavy. It’s not 100%, but most don’t have the strength to do foundation. It’s hard. I don’t think they’ll go there because they make as much money doing trim work. And I wouldn’t be in framing and be outside when it’s -20, when you can be inside.”

“I don’t see a lot in plumbing or drywalling, but drywalling has the stigma of being a dirty job. I think women would excel at the mudding and taping end of drywall because it involves a bit more finesse.”

“It’s not fair to advertise for women in masonry, the work is very heavy. The older guys’ backs are gone.”

“Bricklaying’s not attractive to a lot of women. We also do stone and restoration, and it’s more fine [work], and some go in that direction. But there’s some on the walls.”

Some employers said that women are more proficient in and more likely to choose the technical trades over the more physical trades.

“More women are concentrating in technologies instead of working out on the tools. More go into management now, project management. It’s easier physically. We do hire women in all positions, though – heavy equipment operation, general labour, trades, electrical.”

Many of the industry informants interviewed suggested that women in the trades should be careful to choose a trade that is a good fit to their skills and to their work preferences.

“Women’s part in this is they need to pursue the trades and consider the trades that are suitable for them. We have heavy equipment that has heated cabs and is soundproof and hydraulic. Women have the ability to do this work but there is no great surge of women applying. In fact, women would take good care and caution, likely better than men in operating heavy equipment. For example, they would likely be more precise and particular in cutting a ditch.”

"You have to make sure women know what's involved in working on a construction site. Most women, I think, don't know. You can't be afraid of heights or being dirty. You can't wear eye shadow and makeup. You have to wear coveralls. It's not appealing to many. You have to be agile, have no fear of heights, you hit your thumb with a hammer, you get dirty. That end of the construction industry is not something that women are adapted to. Don't get me wrong, I don't mind that they're there. Some women like that work and are doing it. They're not afraid to get dirty. We have a few. You're not going to go home with nice, soft hands. You get calluses."

"Women should be sure that they're choosing a trade that they're comfortable with. It's important to decide what your skills are and how they fit in a particular trade. It's a good idea to start with safety courses. There are centres run by construction people, and they should talk to people in construction."



Many of the industry informants interviewed observed that women excel in construction management occupations, and their numbers are increasing in these occupations accordingly. One employer said:

"Employers and labour should be focusing on the unique strengths and abilities that women can bring to construction trades/management. These include the abilities of team-working, consensus management, negotiating, interpersonal skills and the ability to manage several projects at the same time. They need to see where women's skills are best utilized, like in project management, even onsite."

Another informant explained the appeal of management occupations to women as follows:

"There's a problem with the old boys club, and women are not considered one of the boys. In safety or management, you don't have to be one of the boys."

Industry informants also had ideas about the type of construction that might be the best training ground for women.

"Women are more attracted to residential commercial than industrial. It's closer, cleaner, smaller, less unionized. I don't know if that's a factor. At a site like ours, with the camps, working in a site with thousands of people. I don't know whether that's attractive to the individual or not."

"Residential is very different from heavy construction (industrial and infrastructure). Large heavy construction is not where women should start. Home renovation is a different animal, it's safe. Heavy construction is rough, dangerous, hard work, and very physical. It's not the best place to start in getting women into the trades. Home renovation is not a bad place for women."

Although several informants thought residential construction could be better for women in the trades, others thought that commercial construction offers the most safety and the best training opportunities for women who want to advance in their trade to journeyperson status.

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“Residential construction is still not the safest to work in, with the injury rates. Commercial seems to be set up differently, it’s easier. Residential still has an image of not being as safe as it could be.”

“Commercial is the training ground for apprentices, more than residential or industrial. Separate from the issue of women, commercial is the training ground for journeypersons. Residential and industrial is a small scope. You might get one skill out of two dozen in the trade. In commercial you’re exposed to all of the skills.”

Some informants stated that they saw women as well suited to self-employment in the construction industry. One association informant suggested, “I see women starting small companies for residential or small commercial markets.”

The opinions and observations presented above are those of employers who are in a position to recruit and to hire women. It is important to note that the opinions presented are consistent with the very low rates of women’s representation in the construction trades compared to their growing number in engineering and management occupations, such as project management (see Section 2).

Lack of hiring agenda/strategy

Most construction employers do not have an active strategy to increase the hiring of women. While several employers stated that they had an agenda to hire women in the construction trades and in construction management, the majority did not have an active strategy to support this. A provincial association informant stated that only between 10% and 20% of the association’s member companies have a clear agenda to increase women’s participation in construction. A regional association informant stated that increased hiring of women to boost women in the industry was not a priority for that association’s members. None of the labour organization informants reported that their organizations had introduced changes to increase the percentage of women members.

Union membership

Some employers argued that there are barriers that need to be broken down in unions since unionized employers, who are trying to hire more women, are completely reliant on the roster of women that is maintained by the unions. One informant expressed that,

“I haven’t heard our employers say, ‘I’d like to go out and hire a woman.’ Now, most of our contractors are unionized, and have a union hall. They’re not free to hire outside the union hall. So it flips back to unions.”

5.2.2.3 Retention

High levels of turnover

None of the informants interviewed could provide retention/attrition data for women, and one informant pointed out that retention is not being tracked for men in the industry either. Although retention data were not available, there was a sense among many informants that one of the reasons there are not more women in the construction trades is the high rate of turnover among women; female tradespersons are not being retained. One of the large-size employers said that there is better retention among women engineering management staff, but in the trades there is more turnover of women than of men. Some informants stated that women do not stay with the trades as a lifelong career, that they are more likely to move onto something else than men.

An association informant observed that, “With a lot more women into the trades, I don’t know how many stay more than three, four, five years. You can’t accumulate them if the turnaround is faster for women, you’re just putting more in stock.” This informant stated that, “A lot of women last five years, but a lot drop out by 10 to 15 years.” Informants observed that women in the trades leave when they become pregnant because they are not able to do the lifting anymore, and not all return.

One employer stated that it takes five to 10 years for women in the trades to gain experience and to progress to positions like foreperson, and others observed that women often leave before this to take teaching or other management positions. This suggests that some women leave the construction trades because they progress to other opportunities in the industry.

Work conditions

Employers listed many aspects of work in the trades that they believe are not appealing to women. These include the physical aspects of the work, working outside, working when it is 20 below, working when it is snowing or raining, the cyclical nature of the work, the hours, travel, the need for transportation, the danger and getting dirty. Work in the camps also involves long periods of separation from family. Some interviewees observed that the unequal share of the responsibility assumed by women in childcare is a barrier for women, saying,

"The primary reason is the family role women play. Most women with children are the primary caregivers. In construction, the inconsistent nature of the work is not conducive. You can work an extra two hours at the drop of the hat and start and quit at odd hours."

Not all informants agreed that women face bullying or harassment on construction work sites. One association informant argued that bullying in the workplace had largely been addressed. She said, "Our companies already have policies in place to cover this such as the Canadian Construction Association code of ethics, which came out about two years ago." Another association informant stated,

"There's been a significant attitude change in employers. Now they think that things are better with women on the job site. They get a better product, etc. It's rare for people to say they don't want women, now they seek them out. It's been a revelation for builders, from 'don't put a woman on my crew' to 'they're the best workers.'"

One large-size employer expressed the following:

"We are the last bastion of white male-dominated industry. We have some progressive managers but also some Neanderthal managers who will never get it. We don't tolerate it anymore, but I'm sure it was once even bragged about to display pin-up girls. Discrimination based on qualifications and pay is gone too."

A number of other informants said that there are no longer the problems of naked pictures of women or of whistling at women on job sites.

However, many employers also argued differently that the percentage of women on construction job sites has not increased because construction workplaces are still very challenging environments for women.

"It's a male-dominated workforce that wants to see it continue to be male dominated. The men don't make it easy on the women. There are still some there like that, although it may also be a bit better than it once was for women."

However, the limited retention of women in the trades was also related by many informants to the work conditions women often face on construction job sites. One labour informant argued that,

"Women are successful when they get the opportunities and training. When they leave, is that because they're not good or because the workplace isn't as comfortable as it is for men? You don't hear about men leaving the construction workforce because they're uncomfortable with their acceptability in the workplace because they're men."

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Preparation of women for construction workplaces

Many industry informants suggested that women should make themselves aware of what to expect on construction job sites since they will be exposed to a lot of talk and behaviour they will likely not find acceptable. One informant suggested that women get summer jobs in construction before settling on it as a career full-time.

“Women should get a summer job in a non-traditional occupation in construction to see how well she will fit in and see what kind of abuse she is going to take from the guys.”

Informants said that women need to educate themselves in advance of entering the trades so that they have an awareness of the working conditions on construction work sites. For example, they need to know about the hours, the work site conditions and the travel that is required.

“You have to know the entire dynamics of the industry, good and bad, like if you will be starting at 7 a.m. or are living in a camp. Is that a fit?”

“You’ll be working out of a 60-foot trailer with 15 other people. It’s overcrowded. We’ve always done it this way. And because it’s a construction site, it’s difficult to keep clean. I’m dusty when I get home at night. Just be aware. Only one person has come and left because they were not aware.”

“Women expect they can walk over and be employed in a company because it’s close to home. In construction you go where the work is. Either it’s not been communicated to them or they haven’t accepted or don’t understand this. The work in construction moves. You have to move to it. In industrial construction in particular you need to be mobile. For women with kids this is not going to be a fit.”

“Women entering the trades are coming into a male-dominated area of work. There’s some behaviour, talk, language that wouldn’t be acceptable. It’s tolerated, but even men who didn’t like it didn’t say anything so be tolerant. We pulled one of our employees in and said, ‘You’re in mixed company. It isn’t different than if you were at a party.’ And he thought, ‘Wow, I just saw another hard hat.’ At the same time, a woman entering the industry needs to be aware. Not necessarily tolerate, but needs to be aware.”

“Construction has been a man’s world for a long time. Women get treated as rough as any man gets treated and women give as good as they get. We can’t make women more comfortable because this is a hard business.”

“I believe females need to be able to accept the fact that an industry that is dominated by a particular group isn’t going to change as quickly as they would like. I’m not saying that they should accept it. In most industrial workplaces there will be language and practices they may find offensive. Not language that’s illegal, but disconcerting. They don’t have to accept it, but to understand that it’s there. They need to be on full lookout and know what to expect.”

Informants suggested that women need to be prepared to respond to the conditions they will encounter on construction work sites, and they also need to know how to select a company with good practices in place.

“Women (and youth) need to have some awareness training about the workplace, about how to dress for example. They need a good training program like Women in Trades and Technology that teaches them what harassment is, what crosses the line, and how to work in a male-dominated environment. They need to know how to handle themselves and how to deal with problems, and how to select a company based on the practices in place. For the awareness piece, good role modeling is needed.”

A small number of industry informants argued that women do not need to do anything different from male construction workers in order to be successful. Some informants indicated their belief that it is the industry that needs to make changes, not women. However, a number of construction industry informants (employers and association informants) argued their belief that there are no barriers or hurdles for women in construction today as long as they have the necessary training and experience, are confident and aggressive, do not give up easily, do not expect special treatment and are prepared to work as part of a team.

Frequently informants suggested that, “What women have to do is tough it out and be better than the guys.” Many employers argued that it takes a “special kind of woman” to endure the challenges of male-dominated workplaces. One employer gave the following example of a tradeswoman who had persevered and was successful.

“Until we have the core sustainable number of women who are needed to retain women, people have to be tolerant of the things they will have to endure because they’re not always going to be pleasant. An example is a tradeswoman who was not spoken to by her co-workers for two months. They were trying to drive her off the job. She ended up the job steward. She endured, took the punishment, and overcame. She was the only woman on that job site, but that changed after; later there were more. Women in these circumstances need to endure, they need tenacity and they need to have understanding. They need to be ambassadors.”

5.2.3 Changes introduced to increase the participation of women

Industry informants were asked whether their organization had introduced changes to increase the participation of women. Responses to that question, where they were available, are represented in Table 5-4. There were many more suggestions for the changes that are needed than there were examples of changes that have been implemented to increase women’s participation in construction trades/management.

A pattern is visible from the results presented. In this sample of industry informants, fewer micro-, small- and medium-size employers reported that they had introduced changes specifically aimed to increase the recruitment, hiring or retention of women. Half of the large-size employers interviewed reported that their companies had introduced changes to increase women’s participation in the industry. Almost half of the associations and one labour organization said they had introduced some change or engaged in activities to recruit women to the industry. The changes referred to are reported in upcoming subsections that focus on the changes under development to improve the recruitment, hiring and retention of women in construction trades/management.

Table 5-4: Changes introduced to increase the number of women

Informants	Workplace changes introduced	
	Yes	No
Micro-size employers	1	2
Small-size employers	1	9
Medium-size employers	2	4
Large-size employers	4	4
Industry associations	6	8
Labour organizations	1	7

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5.2.3.1 Supply

Promoting construction careers to youth and students

Although several employers had also visited schools to speak to youth about careers in construction, and one employer had introduced a networking dinner to introduce youth to mentors, most of the activity to promote construction careers to youth and students was reported by association informants. Employers commented on the difficulty they have in devoting time to promotional activities due to the expense of time lost from work.

Associations support the promotion of careers in construction for women in a variety of ways, using media such as construction magazines and newspapers to raise the profile of women in construction. One association said that it celebrates students' entry to apprenticeship as an accomplishment, has created scholarships to community colleges and has raised \$100,000 in scholarships for students going to community colleges.

Provincial associations are taking an active role in promoting careers in the construction industry. A number of association informants reported that they engage in active recruitment efforts designed to promote careers in construction to girls by appearing and speaking at career fairs, at high school career days, in colleges and at trade shows. Informants who have visited schools to speak to youth about careers in construction reported that the results of outreach efforts are encouraging.

"I speak to young women every chance I get. I emphasize that the trades lead to lots of opportunities in lots of other work, like safety coordination or the fire department. There are tons of opportunities. Our local college has a trades school where I go and speak to young women and sometimes women who are being retrained. I am also in the Speakers Bureau with the local school board – I speak to grades 6 to 8 students. Skills Canada also has something for women. I explain that back in my day, what you chose to do you did for a lifetime. But people change careers often several times in a lifetime now."

"We have our own student initiative. I go to the high schools and colleges and give presentations in which I point out opportunities for young women. In two recent presentations at Ryerson and George Brown College half of the attendees were women."

Several association informants observed that national-level promotional efforts to change the image of construction and to promote the construction trades to girls, to the parents of youth and to women do not appear to have been effective.

"There're lots of recruitment efforts for women, minorities, and Aboriginal peoples. They're all over the place coming from the Canadian Apprenticeship Forum and the Construction Sector Council. They're targeting various groups. They're supporting these efforts with government funding. There are all kinds of websites and constant promotion. But it hasn't been successful. There's been no marked increase despite these efforts. There might be more now, since in the recession the construction industry has been targeted with the federal infrastructure program. But that's short-term. The long term is anybody's guess."

Association informants reported that the efforts of local and provincial associations appear to be showing results. An employer described how the activities of local masonry associations and the opening of a masonry school in Ontario appeared to have had an effect on enrolment in a local masonry program in Manitoba.

"For the first time in 30 years, we have a full class of 15 boys in masonry here this year. Every other year we've had only five or six. This is a good job; it pays \$30 per hour. Now we are doing presentations in the schools. We are promoting the trade now. It has to start from school."

Employer engagement with high schools

In order to promote the engagement of employers with high schools, a Nova Scotia provincial association is conducting a pilot project called *Building Futures for Youth*, which supports Grade 11 students in exploring careers in construction by providing a summer co-op program. The project was introduced in 2008 and, although it is a program that is not targeted specifically to girls, specific efforts have been made to ensure that girls are matched with appropriate same-sex mentors. Employers also receive support to ensure that appropriate mentoring is provided to these female teens and that the program works to ensure that youth are receiving a genuine learning and training experience.

“Industry supports this by providing places, by taking mentorship training, and by supporting their learning objectives. The association helps them with it. We are rolling out a pilot in 2009. We did not have enough kids in 2008 to fill all 15 places, but we are planning to have 45 kids in three schools next time. (It is not just for girls.)”

Efforts to increase the professional appeal of trades

There was discussion by some informants about how the professionalization of the trades is being advanced in various jurisdictions across Canada to improve the image of careers in the trades. One approach to the problem of supply is to increase the flexibility of educational pathways from the trades to higher levels of education. This approach was taken in British Columbia where, “Thompson River University has started the first degree program in construction management for those with an apprenticeship who want to start their own business.” In Ontario, there are plans underway to develop a trades college to professionalize the trades.

The other approach that is being taken in Canada is called trades modularization. This involves breaking the trades into smaller trades certificates or modules. Some of the informants interviewed expressed that they thought that allowing individuals to earn a certificate for specific skills could increase the appeal of the trades and make these careers more accessible. Others saw modularization as a significant disadvantage to those entering the trades, since individuals who take the path to a single skills certificate will not be as mobile and will earn a much lower wage than if they pursued the path to journey person. See the focus group results in Section 5.4 for two examples of women who reported that they were not earning a living wage working in a narrow skills niche.

Partnerships

Informants described various partnerships that have been developed to promote the trades and to increase the appeal of construction careers to women.

One small-size employer in British Columbia described a partnership between the Thompson River University and the local YMCA. The partnership does not target girls specifically; however, it has been very successful in raising the profile of the construction trades in the community, while also providing students with valuable skills and generating an important revenue stream for a local community organization. This approach is perceived as something that is increasing the appeal of construction careers to young women.

“The Thompson River University program has been building a house each year for 17 years. The trades and technology program is very well established. We sell the house to the YMCA for their fundraiser. It’s been their largest single fundraiser for the last 12 years. In the last four to five years there have been several girls in the framing class and one or two in first year electrical and plumbing.”

Informants described how a number of large-size employers have partnered with women’s community organizations such as *Women Building Futures* and the Vermillion/YWCA Skills Training Centre to support the training and preparation of tradeswomen for work in construction. One owner company invites women training in the trades in the Alberta *Women Building Futures* program to visit the construction project. The company supports the *Women Building Futures* program with donations

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and by employing graduates. It is also encouraging the program to expand its operations into other locations. One large-size employer that sponsors the *Women Building Futures* program said that it regularly sends job opportunities to that program and to other women's employment programs.

Another informant described a youth program that, in partnership with the provincial association and with several community initiatives, encourages girls to enter the trades. This informant worked with a local *Women in Trades and Technology Trades* training program to involve girls in a three-day work experience. Employers who provide the three-day work experience are also partners in this venture. The program leads to employment for some youth.

In 2008, a local construction association in Ontario partnered with the YWCA to introduce 30 low income and abused women to builders to see a demonstration of the trades. The initiative will be repeated and expanded in future.

5.2.3.2 Demand

Recruitment strategy

Very few employers described their companies as having an active strategy for recruiting women. One medium-size employer said that the company advertises itself as an equal opportunity employer, while others stated that they know they could advertise in this way but do not. One informant stated that he kept "a tight connection with a pre-employment program for electrical workers. They know we're a good company for diverse recruitment and are actively recruiting women. People sign up for programs and the trainer knows that we're actively recruiting."

Many employers said that recruitment was not their responsibility. It was the opinion of some employers that small companies are at a disadvantage when it comes to recruiting non-traditional workers due to lack of company infrastructure. One informant in an owner company said that, "For small contractors [the hiring of women] is not on the radar at all. There is no radar for the issue among them. We meet regularly with contractors and unions and talk about key performance indicators."



Informants had mixed opinions about quotas. A lot of objections to hiring quotas were expressed due to the thinking that this has not worked in the past, and it could lead to the hiring of women who are not really interested in construction careers. Some informants stated that it could also cause a backlash for women. Others argued that it would be more effective to change construction workplaces in ways that increase the attraction of women to construction, rather than hiring women into unfriendly workplaces that would be unlikely to retain them.

Employment support

The British Columbia Construction Association is an example of an association that has taken direct action to solve the problems of recruitment and hiring that limit the entry of women into the construction trades. The successful *STEP for Women* program (described in Section 4) provides employment placement service, ongoing supports and networking to women in the construction trades. The program was modeled on another successful program called *ISTEP (Immigrant Skilled Trades Employment Program)*. *STEP for Women* is supported with government funding.

A labour informant in Newfoundland described a workplace program that is being run on a contract basis by the Carpenters Millwrights Union to help women apprentices find the right training, to track the number of female apprentices in the province and to support women in achieving inter-provincial journey person status. The program includes a range of components, as described below.

“There’s a huge mentoring/coaching component for both the employer and the apprentice. There’s also a training component, like health and safety training, but for gender sensitivity. It’s for the full province, from the Labour Market Agreement for Training, which is a federal/provincial agreement. It’s through the Department of Education.”

Encouraging union membership

In one province, an association informant described a new initiative intended to get more women into unions. “Work is being done in the owner/client community. They’re trying to work with unions on a targeted recruitment to get women to join the union. It’s not formal, like a strategic document, but there are discussions occurring.” It appears that owner companies are taking the lead in this type of initiative. An informant in an owner company stated that they work continuously with unions and contractors to encourage the hiring of women.

5.2.3.3 Retention

Industry informants identified a number of industry practices that have been introduced by employers to improve the retention of women in the construction industry. Employers noted that there is a strong case to be made for an investment of resources in changes to support workforce retention. As one labour informant argued, “I’m convinced that there’s been a lot of effort wasted on recruitment because the facilities and attitudes in the workplace haven’t been changed.”

Preparation of women for construction workplaces

The *Women Building Futures* program is an example of a program that rigorously prepares women for the construction industry and provides them with the ongoing supports needed for them to deal with the challenges of the workplace and see their apprenticeship through to its completion.

HR practices

One informant who worked in partnership with the provincial construction association was employed in a federally funded program to promote youth employment. Office space was provided by the association; and this improved this informant’s ability to work and partner with member employers because he was perceived as someone affiliated with the association.

This informant reported that some companies are so eager to hire women that they do not adequately screen women applicants. “Some companies flat out will take women if they apply, period. But we need good hires, good fits, and to plan for barriers to promote retention. Therefore they should be doing pre-screening and reference checks.” In Saskatchewan, a toolkit is being introduced to support construction employers in the development of recruitment and good hiring practices. It is hoped that this toolkit will be widely adopted in Canada.

“The message is if we want good workers, we have to invest in people. We are rolling out a four-module toolkit for construction to support companies in strategic planning of the company re: workforce needs. Re: recruiting practices, we explain what questions can be asked based on Human Rights. We suggest where they can find employees – at career fairs, resume banks, and networking.”

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The Saskatchewan toolkit is a human resources best practice that defines the best companies as those who:

- Recognize the importance of HR practices and have HR staff who work directly with field staff. HR specialists conduct performance evaluations with senior staff or project managers to identify issues and problems that indicate the need for support.
- Conduct an initial interview with apprentices and offer a good placement with a journeyman who is a good match for the new employee. This is especially important for women.
- Provide an orientation meeting to present the company profile, clear expectations, introduce new employees to the company website and assign them to a person who will be responsible for them.
- Have follow-up meetings and conduct performance reviews at three and six months and consult with the employee as to when they do the school portion of their apprenticeship.
- Identify and work through any problems during the first meeting with the employee about any barriers that may need to be addressed, for example, due to parenting and transportation needs.

Several companies described the HR practices they use to retain staff.

“HR tries to meet with female employees, for retention. We meet with all our employees, but more often with the women because of the concerns. It’s not traditional, so we have to deal with it. We schedule the process. We’d usually meet every four months. It’s formal and informal. She – the HR person – sits down with them here or goes onsite. We’ve also tried some group meetings, but it’s hard to get everyone together. We’ve been having individual meetings for 20 years.”

Smaller sized employers are unlikely to have specialized HR staff other than an owner. One small-size employer who has retained three women tradespersons for a number of years described the careful introduction to the workplace he provides for each new employee.

“On the first day I tell them what they can expect from me and what I expect of them. I tell them they can’t phone in sick Monday because they were drinking on the weekend. I pay full benefits and understand that employees need days off for sickness if their kids are sick. It’s a non-union shop. I make a special condition with the one who is a single mom because she is so good and has a young child who needs to get to daycare. I don’t allow the women to shy away from the heavy work. I tell them you’re one of the guys and you’ll do what they do, including digging ditches or whatever else, as needed. I offer to all that they can stay with me to journeyman and beyond that it’s up to them.”

Workplace respect

At the top of the list of practices described by employers who had introduced changes to increase the retention of women were family-friendly policies and workplace-respect policies. One employer tied workplace respect to professionalization.

“It’s trying to break the boys’ club attitude. Not everyone’s comfortable just being one of the boys. Like at Hibernia 15 year ago. It was about being able to throw back as good as they gave. Those companies that have been successful create a feeling among the crew that they represent the firms, and that there are professional standards that need to be adhered to. I know one contractor who fines the guys for swearing.”

The Construction Owners Association of Alberta (COAA) *Respect in the Workplace* policy was mentioned by a number of informants in various provinces across Canada. It is available as a toolkit for free download on the COAA website. Informants from five large-size companies spread out across Canada indicated they were currently adapting and implementing this policy, or one like it.

"We modified the COAA material, which was based on input from owners, employers, and unions. We put together a video and interviewed a number of existing staff to get staff's ideas. We introduced a hotline one year ago. It's a confidential phone line. Complaints get passed to me and then to the appropriate HR person. The majority of complaints were from women, both those received face to face and anonymously. They were about safety too. The complaints were resolved successfully."

One employer explained that in his company the policy is being introduced in a collaborative way to ensure broad buy-in.

"Then there's a Respect in the Workplace policy and training program. Again, it's a collaboration in the same subcommittee, with the building trades union and the industrial construction associations. It's based on the COAA model, out in Alberta. We're using it as best practice. We could do as an owner said, you must do it, but we're working collaboratively. It's great to have buy-in from the outset. The Respect in the Workplace is in early stages of development."

An owner indicated that construction industry owners are encouraging employers to adopt the COAA policy and are paying for training. Some owners are also using the contract bidding process to require that the policy be adopted. This is expected to have repercussions that will extend even to the smaller subcontractors.

"Respect in the Workplace has been instituted through a partnership between our company and COAA. It is being implemented on a project-by-project basis. Employers will implement because it is required by owners in the bidding process. Small-size employers will be brought in as well through the same process."

Family-friendly policies

Many informants acknowledge the need for family-friendly policies. There were infrequent reports by informants that in some companies flexible hours have been introduced for workers. When this is the case, there may only be a limited number of flexible positions available and intense competition for them. One informant stated that self-employed sub-contract employees can have much more flexibility in their hours.

Husband-and-wife teams

One employer in a remote region of Canada's North also described the success of hiring husband-and-wife teams as a retention strategy. "What I have done is have husband-wife teams. It's working well for us. They go to the same site. They work together. I've been doing this for six years and more people are interested."

Data collection

In a number of provinces, larger employers indicated that they are collecting baseline data on the number of women in the construction trades because of the need to report on key performance indicators. This is being done to assess whether the apprenticeship hiring targets stipulated in work contracts are being met. These data also provide a baseline from which employer retention can be measured.

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Mentoring/networking/affiliation groups

A number of association informants indicated that they had started a women's group or council in their association to build opportunities for women to move into other roles in the industry and to progress in their careers. These affiliation groups provide women with opportunities to meet, to network and to learn together. One of the groups described offers Gold Seal certificates and another periodically organizes a conference for women.

Partnerships

Partnerships are frequently a component of the changes that are attracting broad interest and uptake.

In New Brunswick, a large-size employer described a collaborative agreement to improve the attraction and retention of women in onsite construction. It is hoped that such collaborative measures can be used to contribute higher rates of apprenticeship completion by women.

"It's an agreement of employer associations, the building trades unions, and industrial contractors. It's about how to work together on our construction site. It covers attraction and retention. It's an appendix to all the other collective agreements. We work collaboratively to develop the labour management standards and programs for attracting and retaining the necessary labour, retention, productivity onsite, and safety. We're setting an apprentice ratio standard, of apprentices to journeypersons. In that clause, it says every reasonable effort [will be made] to ensure that women are given apprenticeship opportunities. When we put out contracts, it's part of their key performance indicators. They have a commitment to work toward it, and it's developed through a committee about how to prepare the workforce for a more diverse labour force. There's been no negative feedback."

Another partnership was described between Labour and the COAA *Opportunities for Women in Construction* project.

"The partnership is still young. It has two major parts: 1) it works with employers to make sure workplaces accommodate and welcome women, generally and with site infrastructure. Respect at work is part of this, which includes gender, race, religion, disabilities, how to deal with people with respect; and, 2) it also makes positions available to women. So the program works with employers."

5.2.4 Other recommended changes

Industry informants provided many ideas for changes to increase women's participation in construction, particularly in the trades. Some informants had suggestions about the role employers can play in introducing changes to improve the retention of women in construction and about the roles various other organizations can play in that change along with government.

5.2.4.1 Increase supply

Since a good number of employers do not believe that the construction industry needs to change to encourage an increase in women's participation, it is important to highlight the fact that the following suggestions currently have only limited buy-in in the industry. A lot of emphasis was placed in industry interviews on the problem of supply, that is, on the interest of women in careers in construction and in the construction trades in particular. Experts in industry see that gender-role stereotyping, the social valuing of a post-secondary degree and diploma education streams over apprenticeship and the corresponding devaluation of apprenticeship training have strong negative effects on the interest of girls and women in the construction trades. Many industry informants are adamant that the change that is needed is less in the construction industry and more in Canadian society – in public attitudes, in schools, with teachers and with guidance counsellors, who are failing to promote career opportunities in the construction industry to youth generally, and girls specifically.

Recruitment tools

As a means of strengthening recruitment, an association informant recommended that employers should develop recruitment tools and mount them on their websites to allow individuals – male or female – to evaluate their interest in a career in construction.



Increase pre-employment training

Several informants indicated that there is far more demand for trades training than there are available college seats. In one community college program there is a two-to-three-year waiting list. Increased pre-employment training was recommended; and, employers agreed that without pre-employment training, women would less likely be hired in construction because they often have had no prior exposure.

Change the image of industry

Regardless of their thoughts about the need for workplace changes, many informants agree that the public image of construction needs to change. Most argue that this requires direct contact with the school system as early as elementary school in order to reach parents and youth. Many informants are hopeful that there is a way of effecting change and generating more interest by working through the education system to change the minds of parents, guidance counsellors and teachers about the appeal of careers in the industry.

“The big thing is marketing. We have not marketed industry careers properly. We have to understand the target audience better and go into forums to reach counsellors and parents. We’ve been attending an annual conference of guidance counsellors for a number of years and want to present to them. We have to target people and get our foot in the door.”

“The only barrier is the guidance counsellors. The big thing is how do you reach young high school students. We have to go into the schools and promote the industry to everyone. I met a young woman who said she wanted to go into construction but her parents had forced her to study medicine. Immigrants today don’t want their kids to go into construction. They want them to go into the high professions, but the trouble is, the high professions are flooded.”

“When I go to a community college, I’m supposed to speak for 20 minutes, and it’s three hours later when I leave. The interest is there when you start to talk. The pre-employment program is 40 weeks, and it’s got 90 people. It’s important to get out to the high schools. Once isn’t enough. We need to win over teachers and the education system. It’s a cultural shift that the trades are okay.”

Several employers suggested that the image of the trades as a “vocation of last resort” must be replaced with public representations of work in the construction industry as a career of which both companies and individuals are very proud.

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Another suggestion from some informants was that the construction industry must “learn to position itself to attract young workers.” A number of industry informants working in youth employment programs are clearly building knowledge in this area that could be useful to the industry at large.

Many informants still argued that messaging to change the image of the industry must, most importantly, reach parents.

“Advertising campaigns are not enough. The attention span of kids today is less than a second. Advertising has no impact. For example, when WCB played safety ads in the movie theatres kids watching laughed; they thought the ads were funny. We have to find and educate parents and get the message across that a career in construction pays, is long term, and has a future.”

Many employers argued that efforts are needed to convey to the public that construction is a career path with many opportunities for promotion, specialization, further education and self-employment.

“It’s the image that construction isn’t a place to go unless there’s nowhere else. That’s a huge mountain to overcome in the industry. You make a good living, and it’s a lot of fun, a great future. We have to explain that simply because you train as a pipefitter, you don’t have to work on the tools for 40 years, and you can still work in construction, and enter buying, procurement, even owner. Lots of opportunities exist. It’s simplistic, but a lot of young people don’t realize it. They think, ‘weld for 40 years,’ but you’re able to pursue other things.”

Industry informants agreed that gender stereotypes pose an enormous barrier that works against their efforts to change the image of the construction industry for girls and women.

Union hiring

One association informant argued that unions are in a strong position to contribute to change even though, historically, they have not targeted specific populations for membership.

“There’s the hiring hall. The union has to hire women. They might have a fair amount of control. Unions have led the way in a lot of social change. They might be able to influence things faster.”

“Unions need to rejig membership intake practices to identify and grow certain groups: women, Aboriginal peoples, and a variety of others.”

“Unions have prided themselves on not discriminating. So when there’s a discussion about women in the workplace, the unions say we don’t discriminate. The labour movement never really had this issue because they didn’t create it. So if employers think there are not enough women in the workplace, they hire women, and then they’re in the union, usually three months’ probation.”

Industry action

Industry informants were confident that the construction industry will take a straightforward action-oriented approach to these issues to make changes happen. Some informants suggested that it is important to make use of media, including association union websites and newsletters, and the Construction Sector Council’s network. Others proposed that the industry should come together and wage a long-term media campaign of its own to work on the problem of supply.

5.2.4.2 Increase demand

Mandate change

Owners advocated for the adoption by employers of a key performance indicator that would require the hiring of women to be tracked against an established benchmark.

Change industry attitudes

Many employers stated that industry attitudes need to change in order for more women to be given a chance to enter the industry. One association informant suggested that it will take a lot of work to change industry attitudes.

“Recruitment is one thing, but the barriers need to be addressed first. We need a change model for the attitudes of employers and the workplace and tradespersons. There’s a stereotype about what construction is, and that it’s male dominated. Most have come through the trades, as I have, and it’s really significantly male dominated. Attitudes in the career path need adjusting for employers and workers. We need results-based programs to change attitudes. It’s a huge undertaking.”

Hire more women in management roles

One employer recommended that more women must be selected for supervisory roles in construction, observing that this appears to make it easier for new women who are hired.

“I have been in HR for 35 years in construction. The presence of female tradespersons and women in safety and women supervisors is recent. With a number in there, it makes it easier for the next one to come along.”

5.2.4.3 Promote workplace change to improve retention

Leadership

One of the informants employed in a larger company expressed that employers have a key role to play in making changes in this area. As one informant saw it,

“Construction industry employers need to take a leadership role. Offer training for managers. Become flexible workplaces. Identify the top employers for women. Offer daycare subsidies and concierge services (help arrange appointments, daycare, care for elderly parents).”

Structured training in apprenticeship

Informants recommend that apprenticeship training be more structured, with more guarantees that the apprentices will be given the opportunities they need to advance in their trade.

“If it doesn’t have a proven training path, it’s harder to succeed for all, but especially for women. Say I work in a steel mill. And there isn’t the greatest training, but I get by because I’m one of the guys. For a woman, if there’s no structure, there’s a disconnect, a gender gap. She’ll have a harder time getting to the point I got to because there’s no training method. When there’s structure and it’s followed, there’s more mentoring and oversight.”

Tool to assess women-friendly workplaces

The development of a tool was recommended for employers, “to allow the evaluation of business practices from women’s perspective, something like a self-assessment tool that allows an employer to ask, are we woman-friendly?”

“We need to become more flexible in the workplace for women with kids by offering part-time work and part-time benefits. We just did that last year. We have one woman who only works part-time, 9 to 2:30 pm.”

Several informants acknowledged that family-friendly policies are thought of as accommodations for women only because women typically assume an unequal share of the responsibility for childcare.

“We’ve become a country with a huge number of single parents, male or female, families. We have to accommodate that. Around here, construction never

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accommodated the employee, though it does more today. Like overtime, it doesn't work today with any of the young people. They recognize that there's life outside of work. I have three fathers who are single parents, and one woman. I accommodate that. It doesn't really take anything. If anything, because of the flexibility, they give us more, though that's not why we do it. It's as simple as recognizing that it's a snow day. The daycare and the school are closed, but the job site's open. Billy Bob calls and says it's a snow day, the kids aren't in school, I have to stay home. That's new to us in the industry. With our median age, it's the two-parent family, and dad goes to work."

Nothing conclusive was said about daycare, although it was raised several times, and one informant recommended that employers should provide supports to women in locating daycare. Another argued that the labour pool is reduced when employers ignore the childcare issues of parents, including women.

"Do construction jobs have daycare? Is it the responsibility of employers to provide that? To date there hasn't been a willingness to go there. So married women with no kids or single women with no kids end up being the pool for industrial construction."



Address work conditions that affect women

Many employers today are acknowledging and grappling with the known barriers women face in construction workplaces. Many of the informants interviewed recognize the issues at stake clearly.

"Most companies won't have supports in place. There is a feeling that women want to be treated like men so there is no support structure."

"Construction industry needs to seriously address changes in employment conditions that affect women. For example, most of our construction sites have outdoor toilets, limited access to communication, and don't understand yet why they must accept women going home or coming in late in order to take care of a sick child."

"There's washroom accommodations. As crude as it sounds, construction men typically accommodate a lot more than women. We had to open our eyes, that we had a wash car with five toilets for 100 persons. We needed plan B. When you see 2% in the hard trades, that's a small number we have to accommodate. There's a cost, but it's not huge."

It is difficult to draw a conclusion based on the interviews about whether the age of construction co-workers is tied to the treatment of women on construction work sites. Certainly, many employers suggested that it is older male tradespersons and older men in unions who are resisting change and holding onto old attitudes that exclude women. Generally speaking, younger owners and younger construction workers are much more accepting of women in construction workplaces than the older generation. Some of the women who participated in the focus groups argued that they found some older men very supportive and less competitive toward them because they know that there is no threat or competition for their jobs.

Education

Age aside, education about workplace respect policy is the key measure recommended by informants to change the attitudes of employers and union members.

“It’s about preparing the workforce with sensitivity training, not just about gender. There’s Respect in the Workplace. We have to prepare the existing workforce for the injection of any new population – women, Aboriginal people, people from other countries, and so on. Existing employees need to prepare and understand. Women coming in need awareness of what the workplace is like. Both sides need to be aware. And aware of the appropriate protocol. So cultural sensitivity training.”

Generic approach

Employers emphasized strongly and many times in the interviews that when workplace policies are introduced they must not target women.

“Our policy is meant to be gender neutral. Workplace Respect Policy is open to all. The benefits of different schemes – part-time and full-time – are for everyone. Maternity leave has been topped up. When they come back after maternity leave, they have to be in the same or in a higher-level position. We don’t favour one gender over another. Take affirmative action in the U.S. to assure that Blacks were hired. One African American said it was the worst thing they could have done because it was not well received by co-workers and if an individual failed, they wrecked the whole program.”

Many informants stated that employers must put the practices in place to demonstrate the value placed on employees and employers’ commitment to workplace respect and safety.

5.2.5 Needed supports for change

When asked, many informants had no suggestions about the supports industry may need to introduce to increase the rate of women’s participation in the construction industry. This is consistent with the fact that many employers believe that the key problem is one of supply, and that changes in industry are not necessary.

5.2.5.1 Business case for diversity

A number of the employers interviewed proposed that it would be helpful to develop and to promote the business case for hiring women in construction.⁸ Employers made a number of suggestions to support their argument that there is a business case for hiring women. A number of employers argued that the preparation and hiring of women helps to ensure that demand for labour in the construction industry can be met domestically. Some employers argued also that it is a competitive advantage for workplaces to hire women because this increases the range of viewpoints available and can raise the standards of the workplace.

“I think that it’s good for the trades, I really do. For the balance of the job site. Say, in project managers. We’re missing out on a lot of good minds. Like women in engineering. Where were those minds going to before? We need to open it up to good people.”

Another employer stated that, the way he saw it,

“Construction is a guy’s world so when a woman shows she can do something as well or better the guys are challenged, they want to be as good or better. It’s competition.”

⁸ The Hypatia Association (Armour, Carmody and Clark, 2006) produced a report titled, *In the picture, a future with diversity...* (vol. 3) based on the findings of a literature review, focus groups, and interviews that were conducted to build a resource book of workplace strategies aimed at building a diverse workplace.

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From a cost perspective, other employers offered that they saw no negative economics based on hiring women over men. One stated,

“The accommodation we’re making is for the younger workers. For time off involving women, for the doctor or March break, we accommodate. There’s no cost to scheduling. Accommodation costs are minimal. Putting a wall in the wash car, there’s no money in that to speak of.”

Some disagreement was voiced about the need to develop a business case for the hiring of women.

“The business case for hiring women is can you do the job? If you can, your gender doesn’t matter. There may still be some dinosaurs around who disagree but not men in my generation and younger.”

5.2.5.2 Leadership

The need for change champions was emphasized by a small number of informants who argued that industry owner companies should take leadership in hiring and in workplace change, using contractual obligations as a mechanism to promote change. Two informants discussed this as follows:

“We need to amend the paradigm. We need strong workforce policy to be adopted across the board. We need a zero tolerance policy to disrespect shown to anyone. This is about Respect in the Workplace best practice guidelines, which COAA has developed. This is a tested guideline, which includes a training program. Uptake by employers – typically this can only happen at the insistence of owners who bring the program in and administer it. It needs to be mandated, just like safety is mandated and supported by legislation.”

“So I think clients, the owners, need to drive policies and measures, and to ‘hold the industry to account’ to grow the population [of women]. For example, say we want to double the size in the next three years. We need to be prepared to fund that, directly or indirectly. What that looks like is, for one, is being willing to pay for the contractor to bring a first-year apprentice onsite and train them. It’s one thing to say ‘train them, but not on my site.’”

5.2.5.3 The role of stakeholders

Industry associations

The suggestion was made for employers to join and get involved in their associations and in initiatives that are being promoted by their associations.

Partnerships

Many informants recommended multilateral partnerships between government, associations, the Apprenticeship Board, educational institutions, community agencies and industry stakeholders.

Employers called for continued support for community-based organizations to promote the increased inclusion of women in construction. The recommendation was made for employers to get involved with youth and with women through these organizations.

5.2.5.4 The role of government

One informant proposed that government could help by making funds available to send known and trusted employees out for education. Another informant described how during the recession there had been a surplus of administrative staff who were women. Instead of being made redundant, these women were offered the opportunity to train in heavy equipment operation. The women accepted and the effort was so successful that, at that operation, in 2005, there were 23% female heavy equipment operators.

Incentives

Some informants stated that employers need the help of government to bring about workplace changes. As one said, “We can’t do it ourselves. We’ve been trying.” Although many informants were in favour of hiring incentives, opinions were mixed. One informant suggested the various forms this might take.

“If there was some financial benefit to hiring women it would help, yes. Money, if it’s not abused, can make a difference. There could be tax benefits, and recognition. There could be programs that provide money for daycare, subsidies [for] daycare paid to the women or subsidies to employers to provide childcare (where applicable). Programs could benefit the employee. There could be programs that sponsor training, or pay for tools, work boots, transportation, or the interim license for those with lower income; the expense of entry-level equipment can be a barrier for some. Infrastructure would be needed to manage all this.”

One employer made mention of the fact that tax incentives would not work as well for companies reliant on the union for hiring.

“Tax breaks are a good incentive to hire women as apprentices over other people. But hiring is controlled by the unions in union shops. Where I am it’s mostly non-unionized so incentives could have an effect.”

One employer disagreed with the idea of funding incentives, saying, “It doesn’t seem to drive a lot of change in industry, just look at apprenticeships.” Another employer suggested a cost-sharing approach based on a partnership between government and industry.

Wage subsidization

The other approach that was suggested to boost the hiring of women in construction was wage subsidization.

“Re: subsidies, that’s a very important part of the reasons for hiring women. They’re not as experienced as men in the trade. You could hire them for the first three months, and give them a chance to prove themselves. Women gain experience and hours for their journey certificate, and to know where she lacks experience and what to work on. Maybe the federal government could pay more to get the experience, cover their full wage for three months in the higher-paying occupations.”

Support for education

Several informants argued the need for funding for local associations to help them expand their educational work in schools. Associations have limited funds because they are paid by members’ dues.

“Industry could help tremendously to do some education by visiting schools. But employers and builders are busy. It’s not easy for them to take time to do this. Incentives to support that would help. Associations can help. If industry were more involved, it could help. If industry was compensated for helping out it would be better than throwing money at programs that don’t work. But for-profits are not eligible for lots of funding, that’s a barrier. If there was money available, we could do more PR (X days per month). We could make sure that the imagination of youth was sparked so they start thinking about the possibilities and saying, I can see myself doing this job and loving it. It’s this encouragement of the possibilities that is missing. Career companies are in the business of training. The imagination is not being engaged.”

The education of union members and employees on the *Respect in the Workplace* policy is another potentially expensive proposition. One informant suggested that Human Resources and Skills

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Development Canada (HRSDC) could provide or pay for the training of union members by perhaps setting up a group of trainers who could go to workplaces and introduce human resources and workplace respect good practices.

"I want to see the unions administer the training to every one of their members. They would need to make it a mandatory part of initiation and to backfill with existing members. Some key players in Canada haven't bought in completely. The reasons why it's not happening in unions and contractors are time, the manpower, or the training."

5.2.5.5 Coordination and continued funding

One informant suggested that it would be helpful if there could be more coordination of all the initiatives that are spread out across the country.

One association informant said that all of the various programs in Canada are funded separately and none of them receives enough funding. Continued funding of programs making a difference is crucial.

5.2.5.6 Forums for employers to share best practice

Among many of the informants interviewed, not much was known about practices that exist to increase retention in construction workplaces. As one association informant put it, "retention comes down to the individual employer. There are programs to introduce young women to the trades, but I haven't heard a lot about successful retention programs."

Several informants suggested that employers in the industry need to exchange best practices. One informant said that, "I'm not sure what changes are needed in the area of hiring but, if someone gave us ideas, we might try them."



5.3 Key findings: interviews with industry informants

5.3.1 Women's representation in skilled trades and construction management

- Most employer, association and labour informants had not observed any significant increase in the percentage of women employed in the construction trades.
- Most employer, association and labour informants had observed growth in women's representation in construction management occupations, but not as forepersons.
- Most of the micro- and small-size employers (up to 99 employees) interviewed did not employ any women tradespersons. Most medium- and large-size employers (100 or more employees) employed some women tradespersons (1% to 10%), with higher rates of women employed in medium-size companies.
- Small- and medium-size employers in a few cases employed women in onsite construction management, but all of the large-size companies employed women in onsite management positions (the range was 1% to 30%).

5.3.2 Limited supply

5.3.2.1 Barriers that limit the success of efforts to increase supply

- Educational and career pathways
 - Youth are not being introduced early enough to the trades.
 - The educational pathways that should be connecting youth with career opportunities in the trades are generally weak for youth. Even when these pathways are working, they are not working as well for girls.
 - Construction industry careers, the trades in particular, are not being represented accurately to youth and to parents as careers with progression opportunities over the lifespan.
- Stereotypes
 - Negative stereotypes of work in the construction industry – as dirty and discriminatory toward women – limit the interest of women in construction.
 - Gender stereotypes continue to pose a significant barrier to the successful promotion of construction careers to girls and women, particularly to girls.

5.3.2.2 Strategies and good practices to increase supply

- Promote careers in construction
 - Some industry employers and many associations are very involved in ongoing work promoting construction careers to students at high schools, colleges and trade fairs.
 - The local efforts of construction associations to promote careers in construction to high school and college students are reportedly showing local results. There were no reports of activity to promote careers in the trades to university students.
- Affect public perception of careers in construction
 - Fight the stigma of the trades as “second-class” occupations.
 - A number of approaches to trades professionalization are being developed in Canada. There are mixed opinions about the costs and benefits of some of these approaches, but the key rationale for them is that professionalization will help promote the trades and improve the skilled labour force.
- Fix broken educational and career pathways
 - An accurate understanding of occupations in construction as careers with lifelong career progression opportunities must be promoted to girls and to youth, parents and women.
 - Rebuild pathways to the trades by changing the image of the industry held by those in the education system, which is failing to promote the trades to youth (particularly to girls) effectively.
 - Careers in construction should be introduced to youth no later than Grade 8.
- Expose youth to construction careers (taster experiences)
 - In Nova Scotia, a project linking employers with high schools to provide high school students with a work experience in construction responds to the unique challenges faced by girls in the construction industry. Same-sex mentors are provided for girls and gender-specific mentoring support is given to employers. This is an apprenticeship and work co-op good practice.

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- Use recruitment tools
 - Recruitment tools could be mounted on employers’ websites to enable prospective employees to evaluate their interest in work in various occupations in the construction industry.
- Prepare for employment in the industry
 - Increase the pre-employment training available to women.
- Partner with organizations
 - Many types of partnerships were described to support an increase in the participation of women in construction. Partnerships are being forged between employers, associations, community-based women’s organizations, colleges and sometimes with labour organizations.
- Utilize industry strengths
 - Harness the highly developed capacity of labour unions to introduce and to promote progressive change to the area of recruitment and hiring.
 - Utilize the construction industry’s propensity to take practical action to make the changes that are needed on these issues.

5.3.3 Limited demand

5.3.3.1 Barriers that limit demand

- Perceptions of women’s abilities
 - Biases in hiring limit the hiring of women in construction, particularly in the trades.
 - Many industry informants agreed that most women are suited to the lighter trades based on physical demands and on working conditions.
 - Many industry informants suggested that women have unique abilities that make them a good fit with construction management occupations and occupations like safety inspection. It is not known from this research whether this is limiting the hiring and retention of women or causing them to be promoted more often than their male counterparts, or both.
 - Many informants stated that residential and commercial construction sites are workplaces that are more suitable for women and provide better training opportunities for women.
- Strategies and capacity for change
 - Employers with an active agenda to hire more women appear to be doing so, but most employers do not have a strategy to increase the hiring of women.
 - Many employers do not see the recruitment of women to the industry as their responsibility. The majority of associations and labour organizations are not involved in practices to increase women’s hiring or retention in the industry.
 - Small employers lack the HR infrastructure to support the recruitment of non-trationals.
 - A barrier to the hiring of more women in unionized shops is that the availability of unionized women is subject to union bylaws and to the women represented by unions.
- Availability of data to measure change
 - Workforce composition data were available from most employers but not from most construction associations or unions.

5.3.3.2 Strategies and good practices to increase demand

- Employer-union partnerships for change
 - Only one informant described a partnership that was formed between an employer and a labour union to increase the number of women union members.
- Contribution of associations
 - Some associations have introduced women’s affinity groups to build opportunities for women to network and to move into other industry roles.
- Development and sharing of good practices
 - A number of provincial construction associations have taken the lead in developing good practices to promote the employment and retention of women. These practices have, in some cases, been packaged in a format (for example, online) that allows them to be made available for adoption across the country.
 - Some larger employers have introduced a system to track the hiring of women to monitor and report on their hiring performance.
- Industry readiness
 - According to industry informants, the reluctance of employers to hire women must change for the participation of women to increase significantly.
 - The business case for diversity, including the hiring of women, needs to be developed, in particular, that there are minimal costs and also competitive advantages to doing so.
- Hiring strategies
 - Industry informants maintained that an active recruitment strategy is needed to increase the hiring of women.
 - Some informants argued for mandatory increases in hiring. Opinion was much divided on hiring quotas. Many believe this will not lead to the hiring of women who will be retained by the industry.
 - The retention of women should be considered a key performance indicator. Incentives to employers would be most helpful if they were based on the retention of women, rather than just on the hiring of women.
- Use of key indicators
 - Employer tracking and reporting of the number of women hired and retained is needed to measure progress toward the goal of increasing the representation of women in construction.
- Workplace hiring and HR policies
 - The hiring of more women in construction management is recommended based on merit and experience, not on gender alone.
 - The promotion of industry-specific HR good practices is recommended. This includes hiring based on appropriate screening practices and not just on gender.

5.3.4 Workplace conditions and retention

5.3.4.1 Barriers to workplace change

- Industry acknowledgement of workplace and employment conditions that affect women
 - Some industry informants observed that women enter the trades but most do not stay for longer than five years or make them careers.

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- Industry informants disagreed about whether there are workplace problems of bullying and harassment targeting women.
- High rates of turnover of women in the construction trades were attributed to women leaving to start families and inflexible workplaces that made it difficult for them to return.
- Cost
 - Some employers indicated that some of the changes that are needed to accommodate women (for example separate washrooms) can be achieved at a minimum of expense.
- Workplace policies
 - It appears that very few employers have developed HR practices to retain women employees.

5.3.4.2 Strategies and good practices for improvement in workplace conditions and retention

- Exposure to construction workplaces
 - Most industry informants expressed that women need exposure to work in construction workplaces to establish in advance whether the conditions will be tolerable.
- Appropriate preparation of women for industry workplaces
 - Programs that prepare women for apprenticeship often also incorporate preparation for the handling of work conditions after women are hired. The *Women Building Futures* program in Alberta is seen by industry in that province as doing a successful job of this.
- Assessment of workplaces
 - Tools exist that can be used by employers to assess the friendliness of workplaces to women.
 - Employer buy-in for workplace changes to increase women's representation is not assured. Employers do not all agree that women's representation would be increased if there were changes made in industry workplaces.
- Industry and workplace change strategy
 - Some informants argued that champions are needed to lead change and that industry owners are well positioned to take on this role using contractual obligations to mandate changes with smaller employers.
 - A generic approach to workplace change is necessary to avoid backlash toward women.
 - Employees must all be educated and also engaged in workplace change.
- Workplace policies
 - Good HR practices specific to the construction industry are being developed in Saskatchewan. They will be published as a toolkit and made widely available.
 - Some large employers are introducing workplace respect policies. The COAA *Respect in the Workplace* policy has been adopted or adapted by a number of large construction companies across Canada.
 - Not many examples were reported of family-friendly workplace policies and practices; however, when such allowances were referred to, they did not extend to all employees.
- Innovative approaches
 - Employers who hire husband-and-wife teams find this is a successful practice that helps to retain women (for example in Northern Canada).



5.3.5 Supports for change

5.3.5.1 Forums to share best practices

- Some employers called for a forum for the sharing of best practices.
- There were calls for more tracking and coordination of the initiatives that are being developed in different jurisdictions across the country.
- Industry associations are a ready network for sharing information about good practices. It was recommended that employers all get involved with their local industry associations.

5.3.5.2 Partnerships

- There appears to be a trend toward the use of multi-stakeholder partnerships in support of new developments in recruitment and hiring practices, workplace respect and strategies for retention.
- Industry informants stated that it is important for employers to continue to support existing community organizations that prepare women for work in the construction industry and develop strategies to promote their inclusion.

5.3.5.3 Funding

- To help reduce the costs of education in new workplace policies, the government could provide funding for a team of trainer/educators that could be called upon to provide education to employers.
- Hiring incentives are generally well regarded, but some employers warn that they can be abused.
- Funding could be provided to allow employers to build their workforce by sending trusted employees out for education instead of just rewarding new hires.
- Wage subsidization was recommended to support the hiring of women apprentices.
- Incentives could be provided by government to encourage the provision of daycare and other benefits to employees.
- The continued funding of initiatives that are already in place across Canada was recommended.

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5.4 Perspectives of women working in construction

In this section of the report, the focus group results are reported and recommendations are offered based on those results.

5.4.1 Number of women in construction

When asked about the number of other women they worked with, about half of the 32 focus group participants reported they currently did not work with any other women. One participant said that, after 20 years on the job, she was still the only woman out of 85 tradespeople. Another stated that her experiences were more varied, and the companies she had worked for over time had employed between one woman and 25% women.

There was discussion among participants about whether there are more women working in some types of construction, but no conclusions were reached. One participant who worked in infrastructure reported that a very small number of women work in highway maintenance. Some participants said there are more women in commercial construction than industrial construction because “industrial is a bit harder to break into” and tougher on women.

Participants shared experiences about how women are treated in various types of construction. One participant in industrial construction reported that, on every new project she works on, it takes a quarter of the men more than a month to speak to her “like I’m a human.” Every new project her company takes means facing this challenge again. She does not have this problem with three-quarters of the men on her company’s crew, however. Another participant said that industrial construction is extremely hard for men as well.

One participant argued that industrial and commercial construction sites are difficult workplaces for women. She described an experience on a commercial construction site when a male co-worker said something about another woman on the job site.

*“Look, there’s another *! and *! over there.’ He said, ‘why don’t you go over and talk to her, you must be uncomfortable.’ And I had to grit my teeth because it’s an hour-and-a-half drive out of there with him and nothing but woods so I couldn’t say what I wanted to say. I gritted my teeth and I said, I’m not uncomfortable, are you?”*

Some other participants who were employed in commercial and industrial construction said they had no negative experiences like those described. Some participants suggested that residential construction may offer women a more positive experience; one participant spoke about her experiences with tenant improvement, observing that the men with whom she worked in tenant improvement were more polite than those in residential construction.

5.4.1.1 Scrutiny

Many participants described the pressure of the scrutiny under which they work as women on construction work sites because of their small number. On the job, women in the trades said they were very aware that their performance had repercussions for other women. They explained that, “when you mess up, every time another woman comes along, the employers say, ‘Oh, we had another woman and it didn’t work out.’” Some said they met the challenge “to represent” other women with pride.

5.4.1.2 Working with other women

Some of the participants in the focus groups actually worked together on job sites. One female tradesperson who worked in a small residential construction company described how well she got along with two other women who worked for her company, although they all had very different styles in the workplace. Another participant expressed that when she had once worked with an experienced woman for a period, this other woman was able to point out to her when the men were taking advantage of her on the job. This was not only helpful, she felt safer in the workplace

due to the presence of this more experienced woman. Another participant described how she had appealed to her employer not to lay a female co-worker off before that co-worker had earned the hours she needed to apply to join the union.

A number of women also voiced their intolerance of women in the workplace who took too much of an interest in the male workers, dressed provocatively or acted helpless, for example, by asking for help carrying their tools. One participant indicated that their reputations were threatened by this sort of behaviour on the job. This highlighted the fact that not all women who come onto construction job sites are prepared for the expectations of both the men and the women employed there.

Some participants in the British Columbia focus groups were aware of the call for a “critical mass” of up to 15% of women on construction work sites. Opinions were mixed about the value of working with other women in construction workplaces. One participant stated working with other women did not make any difference to her, since she became a welder in part because she relates better to men. One participant said she had entered the trades because she did not want to work with women. Another said that she had worked on jobs where half the employees were women and other jobs where almost none of the employees were women, and she did not notice the difference.

5.4.2 Why women’s participation is not increasing more significantly

Focus group participants discussed the reasons why the rate of women’s participation in the construction trades is not increasing more significantly.

5.4.2.1 Supply

Gender stereotypes

Many of the participants agreed that gender stereotypes and lack of information had prevented them from learning about non-traditional occupations in their youth. Participants argued that in some regions of the country gender stereotypes are stronger. One participant gave the following example to illustrate how peer pressure reinforces gender stereotypes:

“I very particularly talk to the girls about, girls, this is a job for you. And usually, if they’re standing close to a boy, they blush, they drop their head, and they won’t even engage. So somehow, in high school, it is not acceptable. And I want to say, do you know how much money you can make? How good of a life you can have for yourself, if you changed your idea of what is acceptable for women to do?”

Weak pathways to careers in construction

Many participants reported that they had not been made aware of career opportunities in the construction industry or in the trades in their youth, nor had they had any information about how to enter these careers. Many were never told about opportunities in construction when they were in high school.

Participants spoke about how difficult it had been to get into high school shop classes. One participant explained how important her high school shop classes had been to her decision to enter the trades, despite the fact that her instructor did not encourage her.

One participant commented that because her high school marks were high, it was simply assumed she would go to university. Participants objected to the fact that the trades are treated as a path for individuals who do not go to university or choose a prestigious profession. They emphasized that it is necessary to build respect for the trades and recognition of the education, skills and intelligence that are needed to work in the trades.

There was some discussion about the important role played by parents in steering their children along various educational and career pathways. One participant talked about the fact that her parents had actively discouraged her from a career in the trades because they did not want her to “be blue collar.” It was only in mid-adulthood, when she was free to decide for herself, that she

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decided to take up a trade. Another said that her mother had encouraged her to find out about college programs when she was at a loss in choosing a career, and this was how she came to find out about careers in the trades for women.

Need for more public visibility

Some participants spoke about how, on the rare occasions when they had been visible to the public, it drew attention because of the very small number of women in the trades. One commented on the importance of this kind of public exposure for increasing the number of women in the industry. However, participants discussed the fact that work in construction always takes place “behind the scenes.” This makes it difficult for the public and young women to see that there are women working in the construction trades and that these careers are an option for them too. Participants recommended that women tradespersons should visit schools to speak and be seen by young people.

Education and training

Some of the participants who entered the trades at an older age found in-class learning to be more difficult than learning on the job because they had been out of school for some time. This was even true for some who had done very well in high school.

One participant indicated that one of her in-class instructors had told her she “shouldn’t bother with the trades.” Another apprentice’s instructor told her that she was taking a man’s position. Many indicated, however, that they had not had any negative experiences with their instructors and that the instructors had “always stood behind” them.

5.4.2.2 Demand

Discrimination in hiring

Participants more often described cases of discriminatory practice in hiring for construction jobs. One participant said that even very strong women candidates who applied for work at her company did not get hired. They speculated that employers think women will be more trouble than men. A participant described the bias they had observed in hiring this way:

“I think there are still a lot of employers out there, small businesses, large businesses, all over the place, that still, if they had a bunch of resumes come in to apply for a position ... they’re more inclined to choose a man for that position than a woman. Even if the woman is more qualified, more fitting, more suited, completely capable, they’re going to be more inclined to choose a man.”

Discrimination in hiring is sometimes based on the idea that men should be the family breadwinners. The following incident was described by one participant to illustrate:

“I had an employer, my first day on the job, take me in to his office, close the door, without my union rep, and say to me, how do you feel about taking the food out of some man’s family’s mouths? And I looked at him and I said, well, I’m a single parent. Who do you think feeds my family? Well, he says, you’re a woman. You could have a man support you.”

More than one participant said she had been asked during hiring whether she was planning to have children, which is an illegal question to ask during a job interview. One was asked about this in the six-month probation period. Another participant said that when she was interviewed to join a union, she was asked about her plans to have children and was told about a female apprentice who had damaged her apprenticeship by getting pregnant.

Participants reported that discrimination in hiring is sometimes also expressed in the assumptions made about the motivation of women seeking work on construction sites. Participants agreed that many construction employers believe that women apply for work in construction because they are looking for husbands. A further variation on this theme is the fact that several small-size employers told prospective employees that their wives did not want them to hire a woman.

Gender-based hiring

Some participants said they knew employers who had begun hiring women because they thought they would be good workers. One woman reported that she was hired because her company had become so frustrated with unreliable employees that they decided to hire a woman. Another participant reported that she was the first woman hired by her company and because the company saw she was a hard worker, they hired the next several women who applied. However, all of these women were either terminated or left the company, which illustrated that simply hiring women just on the basis that they are women is not sufficient. On the one hand, these stories are positive because they reflect the fact that the attitudes of some employers can change. However, participants worried about this, perhaps because of their vulnerability as the only woman on the work site. As one participant put it, “The fact that we’re women is secondary to the fact that we do a good job.”



Another participant described how an employer had terminated another woman just short of the employment period required to apply for union membership. Others in the group observed that it looks good for employers to hire women, even if they don't keep them because it appears as though they made an effort. This could conceivably be a way of beating contractual requirements to hire women, if women are hired but not retained. This is the reason that it is important to have the retention of women reflected as a key performance indicator.

Hiring of apprentices

Woman apprentices face specific challenges in finding employers to hire them. One participant described the difficulty she had in trying to find work in the early years of her apprenticeship, and explained that she had only worked four months in the first year. The cyclical nature of work in construction can add to the challenges of securing employment. As well, if an apprentice has a difficult time in one company and tries to find another employer, they might have a difficult time getting rehired. This may be more difficult in small communities where employers know each other.

Union hiring halls

Opinions on and experiences with the fairness of hiring practices in unions varied among participants. Many stated that union hiring halls worked fairly well and that their unions had served them well in finding employment, with one participant reporting that she had never been unemployed because the union has always found her work. One woman noted that her union had also stepped in on her behalf when she encountered unfair hiring and lay-off practices at her site.

Some participants thought that women were less likely to be sent out on jobs and more likely to sit on the hiring list. In one group, significant negative experiences with unions were described by a number of participants, who declared that they had encountered so much sexism in unions that they did not plan to join a union. The other factor that influenced women's desire to belong to a union was whether the union had enough work for members or whether more work was going to non-union workers.

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One participant described the sense of exclusion she experienced in unions in the following way: "It's the brotherhood still. And they're keeping it that way. They say all the right political things but they don't act on it. When you go to apply you might as well have tossed it in their garbage can."

5.4.2.3 Workplace retention

Participants discussed the impact that negative workplace experiences have on the retention of women in construction. One participant stated that quitting is sometimes the only option.

"Sometimes you actually have to quit. You do. There's just nothing to do. You can try to deal with it. You can try to talk with your next person up, your supervisor or foreman, but they might be like whatever, and really this is a huge reality that women end up quitting, not continuing with trades because it really just is inhospitable."

Another woman said that harassment was the reason that she left her first trade. Participants discussed how much they enjoyed their trades but that people being inappropriate all the time is stressful and wears women in the trades down.

There was strong agreement among B.C. participants that the industry is inhospitable, and not just for women. Participants agreed that this also affects the retention of men in the industry.

"They do the same thing to the guys that they do to us. I've watched them shred guys on site and I've stood back and gone, 'He's a nice guy, what's wrong with you guys.' I've watched guys walk away from this job, too, because of it."

Opinion was divided about how the age of male co-workers affects the difficulties women experience on construction job sites. Some participants said they found it was easier to work with younger men because they are more accepting of women in construction. One participant suggested that this is because younger men are more used to seeing women on job sites. Another participant said she found it easier working with older men since younger men may be in competition with her for her job. Other women observed, as well, that they found older male co-workers are willing to adapt when they realize that having a woman on the work site can be successful.

Gender stereotypes and double standards

Tradeswomen described the reactions they often received from male workers. One gave the following example:

"They think they're trying to be nice when they say, 'We don't really think this is a good place for you,' and 'we don't really know if you could handle it.' They think that they're trying to be nice to us..."

Participants said that many men lack first-hand experience with capable women in the trades; they have only heard about negative incidents involving female tradespersons.

One participant said she dislikes it when co-workers ask to talk to her "as a woman," expecting her to discuss the fight he had with his wife that morning. Another participant said that there is a double standard in this since men talk about their wives and families on the job site, but the expectation is that women should not discuss their families at work.

One woman said that while she had to spend a couple of months proving that she was not there "to screw around," this led to respect, to better jobs and to her employer being more open-minded.

Female tradespersons stated that for women to survive in construction, "you have to work harder" and "you have to work smarter." Women coming to a construction job site are expected to prove themselves in ways that are not expected for men.

"When you're new to a place and they don't know you, they will push your buttons every which way they can. And if you can just prove yourself in your work, that's all you have to do. The thing is, you have to prove yourself every time you walk

in. It doesn't matter how long you've been doing it, when you walk into a job where there are different people that you haven't met before, you are instantly being tested. And a guy comes on and it's just like okay, do this, and nobody asks him anything."

Harassment

Participants indicated that they experienced various forms of gender-based discrimination on job sites. One participant said that these kinds of problems still come up after 20 years in the same job, and this reinforces her conviction that she has to continue to work harder to prove herself and to be stronger than the men who cause problems. There was agreement that it only took a small number of men on job sites to ruin the environment for women. One participant explained, "Ninety-five percent are wonderful, tolerant, accepting men who have mentored me and taught me everything I know. There's always been the 5% that I will not forget and they have tainted it, absolutely."

Detailed accounts of sexual assault were not elicited in the focus groups, but one participant recounted an incident in which a co-worker grabbed her in front of his crew. Another participant said, "I was told it was o.k. for a man to slap my butt because after all I am in their world. I said, I don't bloody well think so. Every woman that comes after that the guys are going to think that they can do that." Reference was also made to the case of a woman on a construction site who touched men inappropriately.

The focus groups provided an opportunity for participants to share strategies for handling harassment. One female tradesperson described how she finally left an industrial job site completely because she was being harassed by a couple of male co-workers. She expressed regret in retrospect that she had not dealt with the problem since her friends continued working on the project and were having trouble with the same men, who had since been promoted. This participant said that at the time it was happening she was unclear whether she had grounds to take action on these men's behaviour.

Women who experience sexual harassment can be hesitant to address it because it would cause upheaval in their workplaces and backlash against them.

"Sometimes it's very, very difficult to do that when the environment is so fragile. You've got one tradeswoman and a whole bunch of guys. That environment is very fragile because it's imbalanced, and if this woman, for any reason, brings up a situation or something that's happened, you watch that hornet's nest shift, eh? Now you're the target. You'll be lucky if you get one or two that'll be there for you out of all of them."

One respondent argued that although it is difficult for women to speak up about harassment, taking a stand was necessary, since it was important to maintain self-confidence and not to have "a chip on your shoulder, which are things co-workers can sense." One participant with two decades of experience on the tools advised that women should document the time, date and other details of any incidents of harassment. She encouraged women to become aware of and make use of workplace policies, and she recommended that situations should not be allowed to escalate to the point where they interfere with a woman's work or life.

There was a lot of discussion among focus group participants about the pressure on women in the trades to fit into construction workplaces and to take on the characteristics of male construction workers. Participants debated the importance of standing up to unacceptable behaviour versus the need for women in construction workplaces to act as if they cannot be goaded into reacting to how they are treated. One participant stated that if a woman is harassed, "Having him charged is the worst thing you could do, you'd be blackballed. I wouldn't be able to work anywhere in the province." This is the reason participants also argued that workplace policies must respond to sexual behaviour in a way that is generic; that is, workplace policies must communicate that they are

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designed to apply to both men and to women, so that women are not perceived as “the problem” or the sole reason for their introduction.

A number of participants stated they had never been in a situation that they could not handle by themselves by dealing directly with the person instigating the harassment. One participant responded that “she sings a humorous and degrading song in my head” and walks away. She said that her strategy was to embarrass those who behaved inappropriately, and this strategy worked well for her.

One participant argued that, although she admired women for using wit and developing toughness, she did not plan to become hardened in order to cope with work in the construction trades.

“If you want to go into the trades I’ve heard that you have to have that attitude. I think that ends up excluding a whole lot of women because they think they have to be that way. I’m not that way, and a lot of women are not like that. I think it’s fantastic, and I love it, but it’s not me. So you have to have other tactics, also. Or, you have to hope that you don’t have to do that. I think that if the onus is on you, like the woman or whoever to have that, to be able to get through it, that’s just not fair.”

She said she admired women who regularly confront situations; but she explained that not all women are willing to make these adaptations, and it is clearly not the responsibility of women to correct these problems in the workplace.

Offensive language

Swearing and offensive language on construction job sites was the subject of lively discussion among participants in all of the focus groups. Although participants described themselves as trying hard to fit into the workplace, their male co-workers often expected that women’s introduction into the workplace signaled that they could not continue behaving in the ways they always had. One participant gave an example of this:

“Their girlfriend’s on the job. Grrr. The wife’s on the job. Grrr. My mom’s on the job, I can’t swear. My little sister’s on the job. She doesn’t belong here. What do they do with us? Who are you? How do I treat you? I can’t swear anymore.”

A number of participants stated that they swore too, and this communicated that they could fit into the workplace. One participant said it was likely she initiated some of the worst inappropriate language herself, since she wasn’t bothered by it.

Several participants described how it was often necessary, particularly at the outset of a new job, to reassure male co-workers that swearing was not an issue to them. One participant said to one of her co-workers, “I’m not here to change anything. I’m here to make some money. Say whatever you want. Don’t make it personal, and we’ll get along good.” Another participant described her approach as follows:

“You have to stop genderizing yourself. On my job site I was no longer a woman and I was no longer a man, I was a construction worker who would go out there and do the same job as everybody else. And my boys don’t talk any different. I don’t expect them to change who they are because I’m on site. I’m not going to change who I am for you. I may not like the way you talk. I may not like the way he talks. But at the end of the day I have a paycheck.”

However, not all of the participants were tolerant of all language on the job site. Some participants recounted instances when offensive language crossed the line of tolerability, and they took action with a co-worker to stop it. One participant described a time when she asked her co-worker to stop using a term that offended her. Although he didn’t change his behaviour, he tried for a time to do so.

Several other participants reported instances in which they successfully confronted their male co-workers about the use of offensive sexual language. One participant said she always let a new

crew know that she would not tolerate some words. When a co-worker used the term despite this, her display of outrage prompted him to apologize and admit that “he had just wanted to see how far he could push her.”

One participant recounted a time when crew members had screamed sexual language at her when she arrived on a job site, and she shut it down with a display of sarcastic wit. Another participant argued that some of the sexist language she heard on the job site targeted her as a woman and should be looked in the same way one would look at racist language.

Fitting in

Participants argued that women’s ability and willingness to “fit in,” including tolerating the treatment women receive in construction workplaces, was related to their retention on jobs and in the industry. Those who did not fit in often left.

“They push you to the point of breaking. And that’s just the way it goes. Unfortunately, I mean, they were all nice women, but I knew they wouldn’t have made it. Unfortunately, they found out the hard way.”

“It’s so rarely about the actual work. I love the work. You just need a couple of those guys that don’t think you belong there, to start wrapping it up. And it’s never been about the work, or heavy lifting or anything. What people think it might be with women and trades, the barriers? It’s the culture. It’s not physical, it’s sociology.”

One participant who had been a female tradesperson for a number of years talked openly about her unwillingness to adapt to the workplace in all ways. As she explained it,

“Not everyone is willing to let go of a lot of really great feminine qualities you have to sometimes let go of. And that was one thing, like okay, I want the money and I want to do well, and I enjoy it, but I’m not willing to let go of my ideals. Like not putting up with bullying and being reasonable about your safety. Not putting money always before your human needs. It’s an industry that can be really harsh. It’s like, you’re workers, and you’re a machine. And a lot of guys accept that. And personally, just as my own personal view, is that I don’t think that that’s – nothing to do with gender – I don’t think that’s right. I think that industry should back down from that and have more human needs met.”

Physical strength

Participants discussed how the difference between men’s and women’s physical strength is used against them in the workplace. For example, two participants had been told they should not be in the trades if they couldn’t meet all the physical demands. One participant stated that,

“I had a guy tell me one time that if you can’t bend inch and a quarter pipe, then you shouldn’t be in the trade. And he doesn’t know one woman who can bend inch and a quarter pipe. Well, first of all, I can bend inch and a quarter pipe, and I’m about 30 pounds smaller than most of the other guys that were working. And secondly, I know guys who cannot do it. And it’s not about strength. It’s about technique and having the right tools and a little bit of brains.”

Because employers do not typically utilize the unique strengths of crew members, women in the trades are asked to do things they are physically unable to do, even when there are other crew members present who can complete the tasks.

“For example, the 6’5” guy can lift the 3’ 10” conduit up to the ceiling and they lift better. But there are some foremen that will say, no, it doesn’t matter. You get on top of the ladder with the conduit and make the 6’5” guy sweep the floor, just to

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prove a point. Just to hear me say I can't do it so they can say you can't do your job. So you just do it. You have to do it until it kills you. And they want you to get hurt so you have to say I'm hurt and can't do it."

An apprentice described how she was told she needed to take on additional responsibilities if she expected to receive the next apprenticeship raise, but those responsibilities mostly involved physical tasks she was unable to perform. The apprentice could not see a way around the obstacles and gave up on the raise. She found she was effectively barred from advancing in her chosen trade of cabinetmaking.

Punishment of "unique" strengths

Participants discussed the fact that employers seem to recognize the strengths women bring to work in construction. Some participants had been told by their employers that their presence improved the workplace culture, since men responded to the presence of women by swearing less and by behaving more respectfully. However, elsewhere in the focus group discussions, women described these changes as unwelcome to their male co-workers.

Some of the women had also heard from employers that they are more careful and precise in their work; however, they reported that employers and foremen often wanted the work completed at the "lowest standard of quality" to reduce time and costs. One participant said she had been reprimanded by a supervisor for welds that looked too nice. There were reports from participants that the demonstration of their "unique strengths" also drew negative attention from male co-workers.

"We want it to be done exactly the right way, we don't cut corners, we don't slap it together and close the door. When people open our work, it has to look good. Because that's a judgment of how professional we are. Whereas the guys sort of slap things together and close the doors. So when they started bringing women on crew, the guys would open the doors and say, 'I can't put any crap in there because it looks so good.'"



Safety

Participants observed that women in the trades were often more interested in workplace safety than their male co-workers. This is one area where participants reported they did not try to fit in or imitate their male co-workers. Several participants stated they had worked in unsafe workplaces. One participant said she was ridiculed by her co-workers for wearing safety gear while working with hazardous substances. Another described how she had to use safety gear that did not fit properly because the company had fired their safety official.

One woman had been laid off for refusing to tolerate unsafe working conditions, and others reported that some employers considered it acceptable to refuse to do unsafe work. There was some agreement that the companies that do not care about safety are likely to be similarly apathetic with regard to workplace conduct.

One participant explained that women need smaller safety gear, giving an example of a time when she had struggled with chemical safety gloves that slipped off her hands while she was touching dangerous materials because they were too large. Others explained that they would like access to women's coveralls, and one participant discussed the possibility of coveralls that "zip around the waist."

Physical facilities

There was strong agreement in the British Columbia focus groups that the physical facilities available on many jobs range from unpleasant to inappropriate for women. One participant expressed that porta-potties are not sufficiently sanitary for either men or for women on a site and that efforts should be made to address this universal health issue by providing a trailer unit with running water. Although not all women agreed that they needed separate facilities, many felt that separate bathroom facilities are necessary for a variety of reasons, including the fact that they use them to change their clothing, to get out of earshot of offensive talk on breaks and to avoid the rude comments written on the walls of the men's washroom.

Barriers to progression in training

Some participants in apprenticeships also reported that they had not been given a broad range of experiences on the job site that allowed them to fully develop the skills needed to complete their exams and to advance in their trade. One apprentice described how she had a difficult time on the job where the crew was unwilling to answer questions and to give her the opportunity to learn the range of tasks and skills required.

Participants discussed the financial difficulties associated with apprenticeship. When women are advised to try a second or third trade if their first choice is not a fit, the advice may not be practical due to the financial hardships of apprenticeship training. For some women the income received in apprenticeship acts as a barrier to starting or continuing an apprenticeship in the trades. This is likely to be particularly problematic for women with family responsibilities and limited financial resources. One participant described how, when she left her first trade to retrain in a second trade, this involved a significant step down from a good wage. This can be a real barrier for women supporting families.

Several participants also argued that women have a tough challenge in apprenticeship because employers may not be eager to support their progression and the wage increases that accompany that progression.

"They're going to keep your rate down as long as they can so they don't have to pay you what they have to pay a man to do your job. And they're going to put a man through quicker than they're going to put a woman through."

Several participants spoke about women apprentices who, for a number of reasons (such as inadequate physical strength or the specialization of the work done by an employer), had received trades training in skills that were so narrowly specific that they find it difficult to find continuing employment and to earn a good wage. One participant indicated that she had found niche skills that she could manage to do physically for which there was good demand, but taking this route meant she could not earn enough to support herself and her children, so she had to move back home. The experiences of the participants who commented on this suggest that overspecialization can lead to limited employment opportunities and even to attrition. These dangers of a lack of breadth in training suggest that women must have access to broad and comprehensive skills training opportunities while they are apprentices.

Leadership and support from management

Participants stated that positive workplaces for women are the product of management. "It really has to start at the management level, where they see the value of having women on crew; they don't see us as a problem that they have to solve." One participant expressed that it is important to know

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that management is available and willing to discuss workplace issues as they come up, particularly if those in management are not often on the work site.

Barriers post-pregnancy

According to many participants, construction workplaces are often not supportive of women with children. Participants indicated that women in the trades who get married and have children often find it difficult to “get your head back in the game” after a period away from the trades. However, participants also knew of women who left the industry to have children and then returned to the trades because employers offered them part-time work to allow them to re-enter the workforce.

Women's affiliation groups

Several participants discussed the barriers they faced in organizing a group in their company to support women in the trades. In one case, a participant was told that information could not be distributed by employers or unions to women only. In this particular situation, information was distributed to individual women using postcards that directed women to a website where more information could be obtained. Another participant overcame similar barriers by allowing men to attend the group, although its focus was to support women. She described the resistance to women's networking and mentorship in her union as a fear that perhaps women were “trying to take over.”

5.4.3 Necessary changes

5.4.3.1 Increase supply: strengthen educational pathways

Participants said that high school students are not informed about careers in construction and that the trades are not promoted as strongly to women and girls as they are to men and boys. The suggestion was made that youth in high schools be introduced to exercises that explore how gender stereotypes can limit their career choices.

B.C. focus group participants discussed the need to reach youth in high school and elementary school in order to generate interest and awareness of careers in the trades at an early age. Participants said it is important to reach girls with information about opportunities in the trades at an age “before the boys tell them that it's not okay, like by Grade 8.”

5.4.3.2 Increase demand: employment and hiring

Participants said that they believe employers' responses to and expectations of women who are looking for an apprenticeship position are different from their expectations of male apprentices. One participant observed that employers seem to want an assurance in advance that women will succeed.

“I think from employers there is some bias there. If a man steps onto the work site and asks for an opportunity to work in an entry-level position with the goal of becoming an apprentice, I think they feel more secure taking the man... With the women they want a little more guarantee that this is what they can do and want to do before they will invest time in training them.”

Hiring quotas

Participants disapproved of the idea of hiring quotas for women. This was primarily because of backlash and “negative attention” they believed this would produce and concerns that their contribution and skills would be less valued. One cautioned against setting targets to increase the percentage of women on construction job sites without changing the work site culture.

“Hiring, let's say, 15% women, doesn't necessarily change what we're trying to change. It puts a bunch of people in a situation that hasn't changed. And that is not going to change it. If you're trying to change people's attitudes and their beliefs and their behaviours, it doesn't do that. It takes a lot more than that to change that.”

However, participants commented on the fact that targets to increase women in the police force in British Columbia have been successful; and the sizable presence of policewomen on police forces likely helps challenge the gender stereotypes that limit the career choices of youth.

Hiring incentives

Participants were supportive of incentives to support the hiring of women. One participant explained that companies are primarily concerned with the “bottom line,” and an incentive for hiring women “at least opens the door.”

One participant suggested that incentives should also help women who are trying to secure work in construction to get a start in their trade or in starting their own business.

“Lots of guys have guy connections, and they give each other tools and they give each other breaks on finding jobs. And girls just don’t have that, especially if you’re just starting out. So I think that if there are incentives or any sort of money, it should go into women, for starting out, opening their own companies and maybe getting tools or welding trucks or whatever your trade is.”

5.4.3.3 Improve work conditions

Workplace policies

One woman with many years of experience said that when she started her career there were no policies in place to respond to discrimination; however, since then, she had seen employers bring in programs, policies and training sessions to indicate that such behavior would not be tolerated. She described these policies as huge improvements over how things once were.

Others also emphasized the need for workplace policies to support women. One of the participants said her union was introducing a workplace inclusion policy from the United States. However, participants underlined the fact that policies only make a difference if they are implemented and enforced. Some of the focus group participants had attended workplace orientation sessions on larger jobs that informed them of company policies on safety, alcohol and drugs, and harassment and discrimination. One described an orientation session in which it was explained that harassment and “whistling at people” would not be acceptable. However, one participant commented that no information was provided to explain whether such policies are actually followed or monitored.

Several participants stated that before they started on a job, their employer instructed the men on the job site about how to respond to a woman entering the work environment. One woman reported that her co-workers had spoken to her about that meeting with their employer, and her lead hand blamed her for the two hours of lost productivity that the meeting had cost him. Another participant said that a meeting was held at her work site to determine whether or not it would be “acceptable to hire a woman.” There was general consensus that workplace policies should not be introduced and discussed in ways that single women out, since this can increase the challenges women face in the workplace.

Education

One participant noted that the RCMP moved from employing only a very small number of women to employing approximately half women and attributed this success to the education and retraining of men. She provided the example of how police receive training to alter the way officers treated men and women in domestic abuse cases. Another said that the construction industry, “should really be modeling themselves after other successes.”

One female tradesperson argued that lots of men are good people; however, they say things that are inappropriate because they do not know that it is inappropriate. Participants emphasized the necessity of educating men, both employers and co-workers, to treat women equally and stated that it might be possible to involve some of the men in leading workplace change, since many men are

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already supportive of having women in the industry. Some participants stated that without education about respect in the workplace, other changes designed to increase women's participation in construction will not have much chance of success.

Family-friendly policies

Participants discussed the need for family-friendly work policies that would allow more flexibility for women with children, understanding that such policies also benefit single fathers. Participants emphasized repeatedly that it is important not to target women in changes to workplace policy, since this encourages expression of resentment toward women onsite. Changes must be generic and not be seen to be motivated only by the fact that there are women on construction work sites.

One participant who was a single parent was told by her boss on her first day of work that if she needed a day off for her child, she could tell him and leave. She attributed his understanding and flexibility to the fact that he was also a single parent. Another participant described the arrangements that were made by her employer to allow her to return to work after starting a family. However, more participants reported having the opposite experience and one said she felt she was "penalized for having kids."

Participants reported that most construction workplaces do not have family-friendly policies. One participant stated that she had been unable to find a daycare that was available at 6:00 a.m., and thus her mother-in-law had to retire to care for her child. Participants indicated that flexible hours are unusual and unlikely to become more common in future, particularly in industrial or commercial construction. One participant, however, suggested that residential construction might be more flexible in this regard.

Progression opportunities

Participants spoke about the opportunities for advancement for women in the construction industry. There was general agreement that there were many opportunities, and a couple of participants noted that they were waiting for people to retire from those positions. Many felt that those who have abilities advance in the construction industry. Another commented that those who care end up running jobs and that women tend to care.

One participant indicated that one of her supervisors was eager for her to assume supervisory responsibilities because she was a woman, since he believed that women "have the best reviews." Another said that she had been running jobs even as a second-year apprentice.

5.4.3.4 Supports

Locating employment

Some of the experienced participants in the focus groups indicated that they could rely on networking with other co-workers and with people with whom they had attended school to find work. Some said this was the only reliable method of finding work.

However, more participants talked about the challenges of locating work. One participant explained the difficulty she had finding her first job after her first level of modular training. There had been no supports available from her training program, and she eventually found work by calling all of the shops in the phone book for her trade. "So there was no connection for me, there was no pointing me in the right direction. When it came down to it, I definitely felt completely on my own when I was out there looking for my first employment."

Another participant talked about the challenges of maintaining employment.

"I really want to try an experiment, just to change my name and use like Jack. No, seriously. I'm unemployed right now, and I've applied for jobs, like many of us have. Well over 100 resumes, probably close to 200 now, all across Canada for many, many jobs. Many, many positions for which I'm totally qualified,

overqualified, that's exactly what I do. I'm not necessarily a labourer, but I could do it for \$10 an hour. I just received one phone call two days ago."

Participants stressed the importance of supports to help them secure and maintain employment.

Mentorship

Some of the informants interviewed emphasized that mentoring is vital for women to be retained in the industry. Concern was also voiced by a number of participants that mentorship on the job site could increase the likelihood that women in the trades will be perceived as not fitting in.

Women's affiliation groups

Women in one of the focus groups talked about the value of the focus group to them because they do not often have an opportunity to speak to one another about the challenges they face in their careers. Participants in a unionized context felt it was important to organize a group for women despite resistance to this idea.

5.5 Key findings: focus groups with women in construction

5.5.1 Limited supply

5.5.1.1 Barriers that limit supply

- Educational pathways
 - Many girls are not receiving information or encouragement about career paths in construction while in high school or later.
 - The closure of high school shop classes is a broken link in the educational pathway to work in construction.

5.5.1.2 Recommendations to increase supply

- Promotion
 - To help overcome the power of socialization and the invisibility of women in the trades, female tradespersons should have a role in speaking to young people about careers in construction. Flexible arrangements with employers and funding to cover lost wages will be needed to support this.
- Educational and career pathways
 - Construction trades/management must be presented as career opportunities for girls and women, and children should learn about these opportunities throughout their education from a young age.
- Union membership
 - Employers should support employees in meeting the time requirements that enable them to join unions.
- Financial incentives
 - Financial incentives are supported to help women get started in the construction trades or toward self-employment and to help women overcome the financial barriers experienced during apprenticeship.

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5.5.2 Limited demand

5.5.2.1 Barriers that limit increased demand

- Hiring practices
 - Discriminatory hiring practices appear to be preventing women from securing and maintaining employment in construction.
 - Women apprentices face added challenges in finding employers who are willing to hire them.
 - Discrimination in hiring combined with difficult workplaces implies that many women require support and assistance to find and maintain employment.
 - Women working in construction want employers to know that hiring women based on gender alone is not an effective hiring strategy.
 - While some participants believe union hiring practices made hiring decisions fairer for everyone, including women, others argued that discrimination affects the hiring process within the unions.

5.5.2.2 Recommendations to increase demand

- Hiring quotas could be effective, although there are some concerns that they could also produce a backlash against women on construction sites.
- Incentives to promote the hiring of women are viewed favourably by women working in construction.

5.5.3 Work conditions and retention

Workplace conditions are likely key factors in the attrition of female tradespersons. Although some women are promoted and move into other positions within the industry, it is likely that many others are not retained long enough to take advantage of the opportunities for advancement.

5.5.3.1 Workplaces and work conditions

- Barriers in apprenticeship
 - Women experience discrimination in both the school-based and work-based portions of their apprenticeships, which is consistent with other research on apprenticeship.
 - Low wages in apprenticeship are a barrier for single mothers.
- Gender segregation
 - In construction workplaces, women work under the pressure of intense scrutiny with the understanding that their performance has repercussions for other women.
 - Unsafe working conditions likely contribute to the attrition of women trades workers.
 - Women experience discrimination and harassment on job sites, including sexual harassment.
 - The lack of recourse to address discrimination and harassment appears to be the cause of some women leaving construction jobs and the industry.
 - There can be very little support from management when an incident like sexual assault occurs.
 - Women are expected to “fit in” on construction job sites, and this often includes being expected to tolerate behaviour and language many women find unacceptable.

- Emphasis on differences in ability
 - Although employers appear to recognize women’s strengths as workers, these same attributes are “differences” that are likely to be punished by male co-workers and may not be conducive to the way work is being done.
 - Employers do not typically utilize the unique strengths of individuals and this contributes to the fact that physical strength is used against women to prevent them from progressing in their trade.
- Family-friendly policies
 - Women who start families often find it hard to return to work in construction because of the lack of flexible hours and other arrangements that allow them to fulfill parenting responsibilities.

5.5.3.2 Recommendations for workplace change to improve retention

- Apprenticeship
 - Apprenticeship monitoring is needed to ensure that employers comply with the requirements of apprenticeship with regard to pay raises, as well as to provide apprentices with the opportunities to acquire skills and to release employees for study periods.
 - Some mechanism is needed to ensure that employers provide apprentices with the opportunities to master the range of skills necessary to advance in their trade.
- Good practices and workplace policy
 - Good human resource policies and supportive management are necessary to create a positive workplace culture.
 - Workplace policies should be introduced to encourage inclusive and respectful workplaces. However, policies must be enforced in order to be meaningful.
 - There is a need for the improvement of workplace safety across the industry.
 - Safety gear must fit the person wearing it; smaller gear is needed due to women’s smaller size.
 - Required clothing, such as coveralls, could be improved so that they are appropriate to the employees wearing them.
 - Flexible hours are needed by employees (not just women) with parenting responsibilities.
 - Separate washroom facilities are required by many women.
- Workplace change strategies
 - Workplace change must be led and supported by management. Women cannot be held responsible for bringing about necessary changes in the workplace based on increased numbers.
 - Workplace policies must be communicated to everyone within the organization. Many women will not be retained unless men on job sites are educated and workplace culture improves.
 - Women need to be educated in how to handle incidents that threaten their safety and performance.
 - It is very important for workplace change to avoid targeting women as the reason for the change.

06 CONCLUSIONS

Despite slow increases in the participation of women in the construction sector, women only constituted 12.6% of the Canadian construction industry workforce in 2006 and 4% in the construction trades. There was a slight increase in the representation of women in some trades between 2001 and 2006; however, the representation of women in many trades was still less than 2% in 2006. The number of women in registered apprenticeships tripled between 1996 and 2007; however, growth in the proportion of women in registered apprenticeships was small (7.5% in 1996 and 10.6% in 2007). There was zero growth in the rate of female apprenticeship completions (1.8% in 2007 compared to 1.7% in 1996). The rate of women's participation in the construction industry in Canada resembles that in many industrialized nations around the globe, with the exception of Germany where the percentage of both men and women employed in the construction industry is markedly higher than in other countries.

Many industry informants interviewed for this research agreed that women have aptitudes and abilities that make them best suited to professions such as engineering, the lighter construction trades, and occupations that involve skills such as customer relations, human relations, communication, project management, site inspection, and health and safety. This may account for higher levels of women employed in construction engineering, inspection, and health and safety inspection, and lower rates of women employed in the construction trades. Many girls also see themselves as lacking the intelligence and the ability for science, trades and technology careers and do not receive any exposure to these skills areas to build confidence or to encourage an exploration of these areas of opportunity.

Twenty-three percent (23%) of young women surveyed for the 2008 Construction Sector Council Women in Construction Survey, who were not employed in construction, indicated they were at least *slightly* likely (18% were *fairly* or *very* likely) to consider a career in construction in future in either the trades or in management, with more expressing an interest in management careers. This report provides information about the age, marital status, education, income, and geographic location of these women that can be used to target women and to generate more interest among the remainder of women who are not reached with information about construction careers. Half of the young women surveyed by the 2008 Construction Sector Council Survey had never received any information about careers in the construction trades or in construction management, and most were not well informed about the salaries women earn in construction trades/management.

Two-thirds of Canadian high school girls plan to complete university, and very few (4% of girls and 12% of boys) expect their highest educational attainment will be an apprenticeship. The low levels of youth interest in the trades highlights the problem of supply that the construction industry faces in Canada and elsewhere around the globe. It is well documented by international research that girls are being systematically streamed away from science, trades and technology careers by the very educational pathways that are intended to expose them to available career opportunities in sectors such as the construction industry. Many young women and men choose to enter a trades apprenticeship as a second or third career choice after working or pursuing higher education. More systematic and purposeful recruitment of female (and male) trades apprentices from this pool of candidates is suggested in addition to efforts to repair educational pathways to these occupations.

Critical mass theory suggests that although increased recruitment may increase the number of women in previously segregated occupations, their retention likely depends on more than just an increase in their number. Scott Moss (2004) argued that the percentage of women in the workplace can be taken as a proxy for employers' treatment of women and, further, that women not only choose rationally to enter workplaces that support a diversity of both genders in order to avoid discrimination, they also exit workplaces in which they experience discrimination. These arguments are supported by the findings of the 2008 Construction Sector Council Women in Construction Survey, which found that three-quarters of the young women surveyed rated being treated equally at work, the equal representation of women, opportunities for advancement, and flexible work hours as highly influential considerations in career decision making.



The key questions addressed in interviews with industry informants and with women working in construction trades/management were:

- 1) Why is women's participation not increasing more significantly in construction trades/management?
- 2) What good practices exist to support the increased participation of women in construction?
- 3) What else is recommended to support women's increased participation in the construction trades/management?
- 4) What supports do employers need to support increased rates of women's participation in the construction industry?

The conclusion that was reached based on interviews with industry informants was that many large- and medium-size construction companies are making inroads in hiring women in non-traditional construction occupations; fewer small-size employers (less than 100 employees) employed women in these occupations, although those that did reported that this was working well. Most medium- and large-size employers (100 or more employees) employed some tradeswomen (the range was 1% to 10%), with the highest rate of women in medium-size companies. Large-size companies were the most likely to employ women in onsite construction management (the range was 1% to 30%). These findings may suggest trends but cannot be generalized to the whole population of construction employers in Canada without systematic quantitative data collection.

This research provided three broad answers as to why the rate of women's participation in the construction industry has not increased more significantly. Information and recommendations about the good practices that are needed by industry to address the problems of supply, demand and retention were also compiled.

6.1 Supply

Many employers pointed to the very limited supply of girls and women interested in and adequately prepared for construction workplaces to account for limited increases in women's employment in the construction industry. Most industry experts observed that social biases at work, such as

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negative career stereotyping and gender stereotyping, are persistent barriers to growth in the rate of women's participation in construction. Focus group findings verified that women are still experiencing the effects of gender stereotypes, reinforced by the fact that, as girls, they often received no exposure to opportunities in trades careers.

Informants suggested a number of solutions to the problem of supply.

- Informants want to see continuing promotional work to fix broken educational pathways and the biases and perceptions of industry careers as “second class” and as dead-ended, rather than as careers that provide lifespan progression opportunities. Industry employers and association representatives observed that their presentations to high school youth and young women in colleges appear to be producing some encouraging local results.
- Women in construction argue the invisibility of women in the trades supports the gender stereotyping of careers in the trades and that the solution to this is for women to take a role in the work of promoting these careers. Women employed in the construction trades would need flexibility in work hours and financial remuneration for lost work time to enable this. The research highlighted the fact that there are no systematic data to reflect the prospect of women's success in various construction careers that would provide girls and women with reliable information to support arguments for the appeal of these occupations. Data to reflect the career progression of women in construction careers are not available.
- Some industry informants recommended increasing pre-apprenticeship programming to prepare a greater number of women to enter the trades. Many also emphasized that women must be exposed to construction workplaces prior to taking up careers in the industry in order to decide whether the work conditions are tolerable. Also emphasized was the need for pre-apprenticeship programming that prepares women appropriately so that they are prepared for the challenges of work in largely gender-segregated workplaces. Industry in Alberta has made large financial commitments to support programming of this kind where the *Women Building Futures* program not only provides work-hardening preparation as part of pre-apprenticeship training, but also provides continuing support to women after they are hired. Adequate pre-screening and work-hardening in pre-apprenticeship programming selects out those women who are not suited to work in the gender-segregated trades, and can also provide assurances to employers that the women they are hiring are prepared adequately for the work.

6.2 Demand

Focus group findings suggested that there are barriers that limit women's entry into the construction industry. These barriers include discrimination in hiring and barriers in education and training in trades apprenticeships. There are a number of questions to consider on the demand side of the discussion about women's participation in construction, particularly in the trades. For example, is industry really convinced that women belong equally in all of the construction trades? Many industry informants suggested that the majority of women are best suited to the lighter trades and that women generally have the skills that make them a good fit to work on the management side, such as project management, site supervision, costing and estimating, and safety and inspection. The focus on women's “unique strengths” likely provides a clue to understanding not only the limited growth in the participation rates of women in many trades, but also the higher rates of women's participation in some other occupations such as health and safety, and inspection. It is likely, too, that employers' understanding of women's abilities influences not only the hiring of women but also the willingness of employers to make investments to retain women in the construction trades.

Some industry informants are pressing for changes on the demand side that would require employers to commit to hiring more women. These informants argued that a clear recruitment

strategy is needed to increase the hiring of women, while many employers stated that they do not believe it is the job of employers to recruit women to the construction industry. Industry informants disagreed about the desirability of hiring quotas. Construction owners suggested that they are in the position to take leadership on the hiring of women because hiring quotas could be required in bidding on industry contracts. Most industry informants believed that the hiring of women could be increased if financial incentives were offered to employers. However, some industry experts warned that such incentives could be abused and that the real indicator of improved hiring is the retention of women, not just increased hires.

6.3 Retention

The limited retention of women in the trades likely accounts for the limited representation of women in the trades and also in onsite management, since trades careers are the pathway to work in onsite construction management. Data were not available to reflect the retention rates of women or of men in construction trades and in onsite management. However, findings showed that although some women are promoted into positions that allow them to work off job sites, and a few persist, many women are not being retained. Industry informants reported that most women do not tend to stay in the trades longer than five years and that many leave to start families and then are unable to return because of inflexible work policies that make it difficult to fulfill parenting responsibilities.

Focus group participants provided another picture of the problem of retention: unsatisfactory work conditions that lead women to leave the industry. Many employers were not convinced there are significant problems of gender-based harassment and bullying on job sites. However, many women who participated in focus groups described problems of harassment and bullying, unsafe working conditions on the job, and lack of workplace policies and management support to provide recourse to address such workplace problems when they occur. Some women in the trades also described barriers to union membership by employers who appeared not to be supportive of the aspirations of tradespersons to gain union status. There was one reported case as well of union resistance to women's efforts to organize a woman-only support group in their trade.

Women in the trades who participated in focus groups also reported that there are fairly serious barriers to women's progression in the industry's apprenticeship system and in union membership that contribute to the attrition of women. Women trades apprentices need assurances from employers that they will be given access to the opportunities needed to acquire the skills they are required to master in order to advance in their chosen trade. Monitoring is also needed to ensure that the wage increases outlined in apprenticeship contracts are being awarded appropriately and that women are given the work release to enable them to complete the in-school portions of apprenticeship.

Some industry stakeholders, particularly those employed in larger companies and in industry associations, called for improved working conditions to support the retention of skilled construction women. Descriptions of needed workplace changes by women in the trades who participated in focus groups were echoed in industry informants' calls for workplace safety, workplace respect and family-friendly policies, stronger leadership by employers and management, good hiring and HR practices to assure that women are not hired on the basis of gender only, careful education of all employees in new policies and practices, followed by monitoring to ensure that policies make a meaningful difference. The good practices and recommendations that have been documented by this research have also received support in other Canadian research literature.

06 CONCLUSIONS

6.4 Good practices

Women who participated in focus groups had little to no exposure to the good practices that were described by industry informants, which suggests that such changes are in the very early stages of development and uptake by employers. A widespread campaign to promote these practices across Canada will be needed for change to occur at all levels of industry. Multi-stakeholder partnerships are playing an increasing role in supporting the development of good practices and standards and may prove useful in this effort. The network of local construction associations, in conjunction with provincial associations, could also act as a distribution system to enable information about good practices to reach small- and medium-size employers. It is likely based on what was heard in industry informant interviewing that employer uptake will not be uniformly strong across the industry.

Good practices to increase supply:

- Employers and industry association representatives actively promote careers in construction by giving presentations at high schools, colleges and trades fairs.
- Programs that have been developed to expose girls to work in trades and technology include the Saskatchewan *Girls Exploring Trades and Technology* camps and the Toronto *Discover Engineering* program.
- Employers and industry associations provide funds for scholarships for women entering or advancing in construction careers.
- Pre-apprenticeship programs provide training to prepare women for entry to the construction trades. The British Columbia Institute of Technology *Trades Discovery Program* is an example of this.
- In Alberta, employers have partnered with community organizations to provide significant funding to support the preparation of women for the skilled trades. Examples include the *Women Building Futures* program and the Vermilion/YWCA Skills Training Centre.

Good practices to support hiring/employment:

- Some pre-apprenticeship programs provide support to women apprentices that extends beyond training to hiring and maintaining employment. The *Women Building Futures* program in Alberta and the *Women Unlimited* project in Nova Scotia are both examples of this.
- Another approach to the provision of support to women seeking employment in construction is the *Skilled Trades Employment Program* (STEP for Women) in British Columbia. This program, which was initiated by the British Columbia Construction Association, with funding by the provincial government, provides mentorship, places women in employment and provides ongoing employment support.

Good practices to increase retention:

- Various toolkits are being developed and made available via the Internet to support the spread of good industry practices and standards. Two examples are the Construction Owner's Association of Alberta (COAA) *Respect in the Workplace* toolkit – a standardized policy that enables companies to assess worksites; to promote awareness, training and communication; and to develop mechanisms to address bullying, harassment and violence – and the human resources toolkit under development in Saskatchewan to improve the hiring and retention of women employees.
- The tracking of women hired in construction and the development of indicators to reflect the number of women hired and retained by employers was recommended.

Industry informants and women in the trades who participated in focus groups identified a number of supports that could be helpful in efforts to increase women's participation in the construction



trades and onsite management. Many employers did not have ideas to offer about the supports employers might need. Industry informants called for forums to share best practices and for more tracking and coordination of initiatives that are being introduced across the country. Funding in the form of hiring incentives payable to employers was viewed favourably by industry informants, but some employers warned about the potential for abuse. Other suggestions were to provide incentives for retention rather than hiring and to provide incentives to support the retraining of already trusted (existing) employees. Other forms of funding were proposed as well, including incentives to encourage the provision of daycare and other employee benefits and the subsidization of apprentice wages, as well as the provision of funding to develop a team of federal trainers who could be called upon by industry across the country to provide education in new workforce policies.

Several key issues were emphasized related to change management.

- Both informant interviews and focus groups emphasized that a generic approach to workplace changes should be taken to avoid targeting women and to prevent backlash for women. A thorough understanding of the precarious position of women in gender-segregated workplaces is needed to introduce workplace changes, even those that are expected to improve the number of women and to improve conditions that affect women adversely.
- A business case for diversity should be developed and used, consistent with one developed by the European Commission (2005), as the basis for an industry-wide drive for changes in this area.
- All of the interventions that support changes in supply, demand and retention will need to be in place and working together for real change to occur. Clearly, it will be necessary to harness the construction industry's propensity for action-oriented strategy in order to initiate and maintain momentum toward the changes recommended in this research.

REFERENCES

- A Commitment to Training and Employment for Women (ACTEW) (2007, December). *Women in the labour market: Employment facts from ACTEW*. Toronto, Ontario: Author.
- Adeyemi, A.Y., Ojo, S.O., Aina, O., & Olanipekun, E.A. (2006). Empirical evidence of women under-representation in the construction industry in Nigeria. *Women in Management Review*, 21(7), 567-577.
- Agapiou, A. (2002). Exploring the attitudes of school-age children, their parents and educators to career prospects in Scottish construction industry. *Equal Opportunities International*, 2(8), 18-29.
- Anderson, L.S., & Gilbride, K.A. (2004). *Discover engineering follow-up surveys: Assessment/evaluation of recruitment programs*. Paper presented at the CCWESTT Conference, Brock University, Ontario.
- Anderson, L.S., & Gilbride, K.A. (2003). Pre-university outreach: encouraging students to consider engineering careers. *Global Journal of Engineering Education*, 7(1), 87-93.
- Anderson, L.S., Gilbride, K.A., & Stewart, M.F. (2006). *Image of engineering among Canadian secondary school students*. Paper presented at the CCWESTT Conference, Calgary, Alberta.
- Andrews, C.L., Mecum, S., & Wilkins, L. (2003). *Recruiting women to the trades: Marketing strategies that work!!* Maui Economic Development Board, Women in Technology Project.
- Andrews, C.L., & Wilkins, L. (2001). *Aiming at systemic change by addressing equity head on*. Maui, Hawaii: Women in Technology Project, Maui Economic Development Board.
- APCO worldwide. (2004, January). *Promoting skilled trades and apprenticeship project. Phase I Report Summary*. Ottawa, Canada: Canadian Apprenticeship Forum.
- Armour, N. (2003). *Changing lanes: Women in science and technology*. Presentation at the Gender and Science and Technology (GASAT) Association G11 Conference: Gender – Science, Technology and Economic Paradigm Shift, in Mauritius.
- Armour, N., Carmody, C., & Clark, D. (2006, January). *In the picture... a future with women in trades, science and technology*. Volume three. Halifax, Nova Scotia: Hypatia Association.
- Armour, N., Carmody, C., Clark, D., Manicom, A., & Nicoll, E. (2001). *The Hypatia Project: Promoting women in science and technology*. Nova Scotia: The Secondary School Hypatia Working Groups.
- Arslan, G., & Kivrak, S. (2004, November). The lower employment of women in Turkish construction sector. *Building and Environment*, 39(11), 1379-1387.
- BC Construction Association (BCCA). (2008, June). Step for Women Pilots Mentoring Project. *Bulletin*, 9,1, 1.
- Bell, D., & Bezanson, L. (2006, July). *Career Development Services for Canadian Youth: Access, Adequacy and Accountability. Pathways to the Labour Market. Series – No11. Work Network*. Ottawa, Canada: Canadian Policy Research Networks Inc.
- Bell, D., & O'Reilly, E. (2008, February). *Making bridges visible: An inventory of innovative, effective or promising Canadian school-to-work transition practices, programs and policies*. Ottawa, Canada: Work and Learning Knowledge Centre.
- Bennett, J.F., Davidson, M.J., & Gale, A.W. (1999). Women in construction: A comparative investigation into the expectations and experiences of female and male construction undergraduates and employees. *Women in Management Review*, 14(17), 273-291.
- Berger, J, Motte, A., & Parkin, A. (2007). *The price of knowledge. Access and student finance in Canada (3rd Ed.)*. Ottawa, Canada: Canada Millennium Scholarship Foundation. Available online at: <http://www.millenniumscholarships.ca/en/research/PriceKnowledge.asp>

Bezanson, L. (2008, March). *Career development. From under-represented to inclusive: Opening doors to post-secondary participation*. Ottawa, Canada: Canada Millennium Scholarship Foundation.

Boland, B. (2005, April). *At a snail's pace: The presence of women in trades, technology and operation in Newfoundland and Labrador*. St John's, Newfoundland: Women in Resource Development Committee.

Braundy, M. (2004). What needs to change to get more women into apprenticeship? – No more lip service! (Revised). Originally published in (1994) J. Scane, P. Staton, and M. Schneider (Eds.), *Strategies That Work: Women in Trades, Technology and Applied Science*. Toronto: Green Dragon Press. Available (revised) online at: http://www.men-women-tools.ca/documents/What_needs_to_Change.htm

Braundy, M. (Forthcoming, 2009). *Men and women and tools: Reflections on male resistance to women in trades and technology*. Black Point, Nova Scotia: Fernwood Publishing.

Brisbois, R., Orton, L., & Saunders, R. (2008, April). *Connecting supply and demand in Canada's youth market. Pathways to the Labour Market Series – No18. CPRN Research Report*. Ottawa, Canada: Canadian Policy Research Networks.

Browarski, S. (2007, December). *From baby boom to labour crunch: Quebec's impending labour shortage*. Ottawa, Canada: Conference Board of Canada.

Canadian Apprenticeship Forum. (2004a, January). *Assessing and completing apprenticeship training in Canada: Perceptions of barriers. A consultation report*. Ottawa, Canada: Author.

Canadian Apprenticeship Forum. (2004b, January). *Assessing and completing apprenticeship training in Canada: Perceptions of barriers experienced by women. A consultation report*. Ottawa, Canada: Author.

Canadian Apprenticeship Forum, & Skills/Compétences Canada. (2006, December). *Building Canada's future*. Final report. Ottawa, Canada: Canadian Apprenticeship Forum.

Canadian Apprenticeship Forum, & Skills/Compétences Canada. (2005, October). *Skilled trades and apprenticeship awareness and perception study*. Ottawa, Canada: Canadian Apprenticeship Forum.

Canadian Coalition of Women in Engineering, Science, Trades, and Technology. (2004, November). *Women in SETT (Science, Engineering, Trades, and Technology) Building Communities Phase I final report*. Mississauga, Ontario: Author.

Canadian Council of Professional Engineers. (2006, November). *Canadian engineers for tomorrow: Trends in engineering enrolment and degrees awarded 2001 to 2005*. Ottawa, Canada: Author.

Canadian Human Rights Commission. (1999). The compliance audit update: Abstract from December 1999, Volume 9, Number 12 issue of the bulletin. Valuing Diversity: Employment Equity in Canada's Changing Workforce. Available online at: http://www.chrc-ccdp.ca/publications/compliance_audit-en.asp

Canadian Labour Congress. (2008, January). *A campaign for women's economic equality. Equality once and for all! Women in the workforce: Still a long way from equality*. Ottawa, Canada: Author.

Charnow Lior, K., & Wortsman, A. (2006, March). *Renewing apprenticeship: Innovative approaches*. Toronto, Ontario: The Toronto Training Board.

Chen, M., & Carr, M. (2004). Globalization, social exclusion, and gender. *International Labour Review*, 143(1-2).

REFERENCES

- Chileshe, N. (2007, September). *Gender influences on factors affecting career decision-making within the South African construction industry*. Paper presented at the Built Environment Education Annual Conference (BEECON), Where Industry and Practice, the Professions and Education Meet.
- Clark, D., Martell, A., Wentzell, B., & Wheaton, M. (2009, January). *On the level: Women working in trades and technology. An employer's guide to creating respectful workplaces*. Halifax, Nova Scotia: Hypatia Association.
- Conference Board of Canada. (2007). *Ontario's looming labour shortage challenges: Projections of labour shortages in Ontario, and possible strategies to encourage unused and underutilized human resources*. Ottawa, Canada: Author. Available online at: http://workforcecoalition.ca/go/wpcontent/uploads/2008/03/conference_board_report.pdf
- Conference Board of Canada. (2005, September). *The labour market information (LMI) program: Acting on human resource information to build and maintain capacity in the Canadian construction industry*. Ottawa, Canada: Author. Available online at: <http://sso.conferenceboard.ca/e-Library/temp/BoardWise2PIEODLKBHDMCLMDCCDGHCM200810720820/060-06%20LabourMkt%20Info%20Prgm-CS.pdf>
- Construction Owners Association of Alberta. (2004). *Workplace Respect model policy*. Available online at: <http://www.coaa.ab.ca/BESTPRACTICES/WorkforceDevelopment/RespectintheWorkplace/ModelPolicyandToolkit/tabid/122/Default.aspx>
- Construction Owners Association of Alberta. (2005) *Workplace Respect toolkit*. Available online at: <http://www.coaa.ab.ca/BESTPRACTICES/WorkforceDevelopment/RespectintheWorkplace/ModelPolicyandToolkit/tabid/122/Default.aspx>
- Construction Sector Council. (2009, July). *Construction looking forward: National summary. An assessment of labour markets from 2009 to 2017*. Ottawa, Canada: Author.
- Construction Sector Council. (2004a, Winter). *Future labour supplies for Canada's construction industry*. Ottawa, Canada: Author.
- Construction Sector Council. (2004b, Winter). *Training Canada's construction workforce: Meeting the industry's needs*. Ottawa: Author.
- Craw, M., Clarke, L., Jefferys, S., Beutel, M., Roy, K., & Gribbling, M. (2007, February). *The construction industry in London and diversity performance*. London, England: Greater London Authority.
- Cumming, J.J. (1997). Attracting girls and women students to non-traditional areas. *Queensland Journal of Educational Research*, 13.
- Eisenberg, S. (1999). *We'll call you if we need you: Experiences of women working construction*. Ithaca, New York: Cornell University Press.
- Equal Opportunities Commission. (2006, March). *Free to choose: Tackling gender barriers to better jobs. One year on progress report – EOC's Investigation into training and workplace segregation of women and men*. Manchester, Great Britain: Author.
- Equal Opportunities Commission. (2005a, March). *Free to choose: Tackling gender barriers to better jobs. England final report. EOC's Investigation into training and workplace segregation of women and men*. Manchester, Great Britain: Author.
- Equal Opportunities Commission. (2005b, March). *Action for change: How training providers can break down gender segregation in vocational education and training. Practical guidance based on examples of actions taken by training providers to open up non-traditional opportunities for women and men*. Manchester, Great Britain: Author.

- Etzkowitz, H., Kemelgor, C., Neuschatz, M., Uzzi, B., & Alonzo, J. (1994). The paradox of critical mass for women in science. *Science*, 266(5182), 51-54.
- European Commission. (2008, October). *Continuing the diversity journey: Business practices, perspectives, and benefits*. Luxembourg: European Communities.
- European Commission. (2005). *The business case for diversity: Good practices in the workplace*. Luxembourg: European Communities.
- Fielden, S.L., Davidson, M.J., Gale, A.W., & Davey, C.L. (2000). Women in construction: The untapped resource. *Construction Management & Economics*, 18(1), 113-121.
- Fielden, S.L., Davidson, M.J., Gale, A.W., & Davey, C.L. (2001). Women, equality and construction. *Journal of Management Development*, 2(4), 293-305.
- Gale, A. (1994). Women in non-traditional occupations: The construction industry. *Women in Management Review*, 9(2), 3-14.
- Glass, J. (2004). Blessing or curse? Work-family policies and mother's wage growth over time. *Work and Occupations*, 31, 3, 367-394.
- Greed, C. (2002, December). Women in the construction professions: Achieving critical mass. *Gender, Work and Organization*, 7(3), 181-196.
- Greed, C. (2000). Women in the construction professions: Achieving critical mass. *Gender, Work and Organization*, 7(5), 181-196.
- Greene, C.K & Stitt-Gohdes, W. (1997). Factors that influence women's choices to work in the trades. *Journal of Career Development*, 23(4), 265-278.
- Helwig, A.A. (1998) Occupational aspirations of a longitudinal sample from second to sixth grade. *Journal of Career Development*, 24, 4, 247-265.
- Hypatia Project. (2002, February). *Choosing future occupations in science, technology and trades: Perceptions of high-school students*. Nova Scotia: The Secondary School Hypatia Working Groups.
- Insightrix Research Inc. (2007, February). *Saskatchewan advanced education and employment: Graduate outcomes of 2004-2005 class*. Saskatoon, Saskatchewan: Author.
- K. Tompkins and Associates, Ltd. (2008, March). *Pre-trades training for northern women: An inventory of existing pre-trades training programs for women in the Yukon Territory, the Northwest Territories, and Nunavut Territory*. Yellowknife, Northwest Territories: The Adult Learning, Literacy, and Essential Skills Program, Human Resources and Social Development Canada.
- K. Tompkins and Associates Ltd. (2006, June). *Preparing northern women for careers in trades and technical occupations in the Northwest Territories and Nunavut: A preliminary model for program development and delivery. Final report*. Yellowknife, Northwest Territories: Northwest Territories Federation of Labour.
- K. Tompkins and Associates Ltd. (2005, April). *We can hold up the world! Women in trades and industry occupations in the Northwest Territories and Nunavut*. Yellowknife, Northwest Territories: Northwest Territories Federation of Labour.
- Kanter, R.M. (1977). Some effects of proportions on group life: Skewed sex ratios and responses to token women. *American Journal of Sociology*, 82(5), 965-990.
- Lagesen, V.A. (2007). The strength of numbers: Strategies to include women in computer science. *Social Studies of Science*, 37(1), 67-92.
- MacDonald, A. (2006). *Alberta's labour shortage: Just the tip of the iceberg*. Ottawa, Canada: Conference Board of Canada.

REFERENCES

- Madsen, K. (1999). *Yukon women in apprenticeship and trades*. Whitehorse, Yukon Territory: Northern Research Institute. Available online at http://www.education.gov.yk.ca/pdf/women_in_apprenticeship_report.pdf
- Manicom, A., Armour, N., Sewell, R., & Parsons, D. (2004a, December). *In the picture... a future with women in trades, science and technology. Volume one*. Halifax, Nova Scotia: Hypatia Association.
- Manicom, A., Armour, N., & Parsons, D. (2004b, December). *In the picture... a future with women in trades, science and technology. Volume two*. Halifax, Nova Scotia: Hypatia Association.
- Mayer, H., & Braid, K. (2007, April). *A winning ticket: Women in trades in British Columbia and Yukon*. Paper presented at the Conference, Tradeswomen: A Winning Ticket, Vancouver, British Columbia.
- McLean, D. (2003). *Workplaces that work: Creating a workplace culture that attracts, retains and promotes women*. Ottawa, Canada: Federal/Provincial/Territorial Ministers Responsible for the Status of Women.
- Miller, L., Pollard, E., Neathey, F., Hill, D., & Ritchie, H. (2005). *Gender segregation in apprenticeships*. Manchester, England: Equal Opportunities Commission.
- Misko, J. Nguyen, N., & Saunders, J. (2007). *Doing an apprenticeship: What young people think*. Adelaide, Australia: National Centre for Vocational Education Research (NCVER).
- Moss, S.A. (2004). Women choosing diverse workplaces: A rational preference with disturbing implications for both occupational segregation and economic analysis of law. *Harvard Women's Law Journal*, 27(1), 1-88.
- Müller, Hans-Werner. (2007). *Compendium of good practices of diversity and non-discrimination in European crafts, small and medium sized enterprises and their organizations*. Brussels, Belgium: (UEAPME).
- Mutandwa, E. Sigauke, N., & Muganiwa, C. (May 2008). Urban women's participation in the construction industry: An analysis of experiences from Zimbabwe. *Journal of International Women's Studies*, 9(3), 256-268.
- New Zealand Council for Education Research. (2008, September). *Trading choices: Young people's career decisions and gender segregation in the trades*. Ministry of Women's Affairs, Government of New Zealand.
- Ontario's Workforce Shortage Coalition. (2008). *The challenge ahead: Averting a skills crisis in Ontario. Report on Consultations across Ontario*. Available online at: <http://workforcecoalition.ca/about-the-coalition/>
- Orton, L. & Harvey, A. (2008, October). *Enhancing the flow of supply and demand information among training institutions, students, and employers. CPRN Research Report*. Ottawa, Canada: Canadian Policy Research Networks.
- Overend, V., Emerson, C.J., & Hollett, S. (2008, May). *Success in trades and technology: Welcoming women into trades and technology workplaces – A checklist of strategies and employers workshops*. Paper presented at the 12th CCWESTT Conference, Guelph, Ontario.
- Pereira, A., Shinewald, B., Wise, A., Yates, S., & Young R. (2007, June). *Moving in the right direction: Labour mobility, labour shortage and Canada's human potential*. Vancouver, British Columbia: Action Canada.
- Polsler, G. & Paier, D. (2003). Determinants of the vocational orientation of girls. *An empirical analysis of Styrian schools. Summary report*. Graz, Niesenbergergasse: Zentrum für Bildung und Wirtschaft.

Powell, A., Bagilhole, B. M., & Dainty, A. R. J. (2006). The problem of women's assimilation into U.K. engineering cultures: Can critical mass work? *Equal Opportunities International*, 25(8), 688-699.

Prairie Research Associates, Inc. (2002, October). *Gender equality in the labour market final report: Lessons learned*. Statistics Canada Catalogue no. SP-AH149-10-99E. Ottawa, Canada: Evaluation and Data Development, Strategic Policy, Human Resources Development Canada.

Pyper, W. (2008, October). Skilled trades employment. *Perspectives*. Statistics Canada. Catalogue no. 75-001-X. Ottawa.

Saunders, R. (2006, October). *The labour crunch: waste not, want not. CPRN Policy Brief. Canadian Policy Research Networks*, 8. Ottawa, Canada: Canadian Policy Research Networks. Available online at: http://www.cprn.org/documents/47476_en.pdf

Saunders, R. (2008, September). *Pathways for youth to the labour market: A synthesis report. Pathways to the Labour Market Series – No/9*. CPRN Research Report. Ottawa, Canada: Canadian Policy Research Networks.

Scullen, J. (2008, January). *Women in male dominated trades: It's still a man's world*. Regina, Saskatchewan: Saskatchewan Apprenticeship and Trades Certification Commission.

Shannon, M., & Kidd, M.P. (2001). Projecting the trend in the Canadian gender wage gap 2001-2031: Will an increase in female education acquisition and commitment be enough? *Canadian Public Policy*, 37(4), 447-467.

Solvig Norman Open School BC & Lindsay Langill Industry Training Authority. (2006, March). *Alternative trades training: Best practices from across Canada*. British Columbia: Industry Training Authority.

Statistics Canada. (2008, September). *The Daily: Registered apprenticeship training programs*. Available online at: <http://www.statcan.ca/Daily/English/080919/do80919a.htm>

Statistics Canada. (2006, March). *Women in Canada: A gender based statistical report (5th Ed.)*. Minister of Industry. Statistics Canada Catalogue no. 89-503-XIE. Available online at <http://www.statcan.ca/english/freepub/89-503-XIE/0010589-503-XIE.pdf>

Thurairajah, N., Amaratunga, D., & Haigh, R. (2007, September). *Women's educational attainment and their experiences in construction education*. Paper presented at the Built Environment Education Annual Conference (BEECON), Where Industry and Practice, the Professions and Education Meet.

WageGap Reduction Initiative. (2007). *Resource Guide: How to recruit and retain women workers in non-traditional workplaces*. New Brunswick: Author.

Watt-Malcolm, B. (2005, June). *Employers and Canada's policy initiatives to promote women in the skilled trades*. Paper presented at the IWPR Eighth International Women's Policy Research Conference, When Women Gain, So Does the World, Washington, DC.

Wheaton, M. (2008, November). *Working it out. Women describe their employment experiences in trades and technology*. Halifax, Nova Scotia: Hypatia Association.

Whitlock, M. (2002). Women's experience of non-traditional employment: is gender equality in this area a possibility? *Construction Management and Economics*, 20(5), 449-456.

Women in Leadership Foundation. (2007, September). *Women in construction trades: A strategic plan to promote women*. Vancouver, British Columbia: Industry Training Authority of British Columbia.

Women in Resource Development Committee. (2006, June). *A gender lens on apprenticeship: The impact on gender sensitivity training on apprenticeship*. Ottawa, Canada: Canadian Apprenticeship Forum. Available online at: http://www.caf-fca.org/conf2k6/pres/MonJune5/CS_201_A.pdf

REFERENCES

Women in Resource Development Committee (2002, June). *Apprenticeship report*. St. John's, Newfoundland: Author.

Yoder, J.D. (1991). Rethinking tokenism: Looking beyond numbers. *Gender and Society*, 5(2), 178-192.

Zywno, M.S., Gilbride, K., & Gudz, N. (2000). Innovative outreach programs to attract and retain women in undergraduate engineering programs. *Global Journal of Engineering Education*, 4(3), 293-302.

Zywno, M., Gilbride, K., Hiscocks, P.D., Waalen, J.K., & Kennedy, D.C. (1999). Attracting women into engineering – A case study. *IEEE Transactions on Education*, 42(4).

APPENDIX A: RESEARCH QUESTIONS AND METHODS OF DATA COLLECTION

Research questions	Data collection methods
<p>i. What is the current level of women's participation in construction occupations in Canada?</p> <p>ii. How does this compare to global trends in women's participation in the construction sector?</p>	<p>Literature review</p> <p>Secondary data analysis</p>
<p>iii. Are there differences in the retention rates of men and women in apprenticeships in construction?</p>	<p>Secondary data analysis</p>
<p>iv. How do Canadian women aged 18-34 choose careers? Are there differences between younger and older women?</p> <p>v. What is the level of interest in and choice of construction occupations (including both trades and management) and what can be learned about the factors that influence those choices?</p>	<p>Key informant interviews</p> <p>Survey</p>
<p>vi. What is latest knowledge about the barriers/factors that account for the limited increases in Canadian women's participation in the construction trades/onsite management despite successful programs to improve?</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups</p>
<p>vii. What workplace or training program characteristics contribute to an increase in women choosing, entering, and persisting in construction occupations?</p> <p>viii. Is there evidence of cultural changes in the workplace that are contributing to an increase in women's participation?</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups</p>
<p>ix. What practices have been developed to increase women's participation in construction in Canada? What is the success of these practices?</p> <p>x. What good practices have been developed to increase women's participation in construction internationally?</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups</p>

APPENDIX B: PROPORTION OF FEMALE APPRENTICESHIP REGISTRATIONS IN CANADA, 1996-2007

Major trade group*	Gender	Year													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007		
Total major trades groups	Both sexes	165,325	171,180	175,960	186,385	199,075	215,245	231,415	250,795	267,775	293,835	328,165	358,555		
	Female	12,480	13,305	14,365	15,675	17,465	20,030	21,760	24,280	25,775	28,755	32,960	38,070		
	% Female	7.5	7.8	8.2	8.4	8.8	9.3	9.4	9.7	9.6	9.8	10.0	10.6		
Building construction trades	Both sexes	32,530	32,135	32,555	35,610	38,120	40,935	46,225	52,355	58,965	66,675	75,575	80,205		
	Female	860	825	840	890	970	1,175	1,320	1,480	1,645	2,035	2,530	2,950		
	% Female	2.6	2.6	2.6	2.5	2.5	2.9	2.9	2.8	2.8	3.1	3.3	3.7		
Electrical, electronics and related trades	Both sexes	28,270	28,205	28,840	30,475	32,555	36,435	39,645	42,415	45,430	49,435	54,395	59,945		
	Female	540	550	610	660	735	890	1,010	1,055	1,110	1,205	1,425	1,770		
	% Female	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.4	2.4	2.6	3.0		
Metal fabricating trades	Both sexes	33,840	35,875	38,055	40,390	44,105	47,425	49,905	52,695	54,655	60,370	68,770	76,685		
	Female	430	470	565	630	705	855	970	1,030	1,095	1,325	1,760	2,110		
	% Female	1.3	1.3	1.5	1.6	1.6	1.8	1.9	2.0	2.0	2.2	2.6	2.8		
Motor vehicle and heavy equipment trades	Both sexes	35,580	37,950	38,595	39,865	41,975	43,940	46,155	49,885	52,835	57,755	64,930	69,875		
	Female	660	705	750	810	825	905	995	1,085	1,155	1,360	1,645	1,915		
	% Female	1.9	1.9	1.9	2.0	2.0	2.1	2.2	2.2	2.2	2.4	2.5	2.7		
Industrial and related mechanical trades	Both sexes	14,235	14,670	14,905	16,020	16,555	17,725	18,590	19,690	19,890	21,055	23,170	24,125		
	Female	220	220	235	250	255	285	315	350	355	385	445	470		
	% Female	1.5	1.5	1.6	1.6	1.5	1.6	1.7	1.8	1.8	1.8	1.9	1.9		
Other trades	Both sexes	3,120	3,490	4,000	4,230	4,675	5,460	6,225	6,995	8,120	9,045	11,715	15,615		
	Female	680	875	1,275	1,420	1,780	2,300	2,810	3,475	4,115	4,915	5,980	8,115		
	% Female	21.8	25.1	31.9	33.6	38.1	42.1	45.1	49.7	50.7	54.3	51.0	52.0		
Food services	Both sexes	16,885	18,035	18,175	18,910	20,120	22,155	23,345	25,275	26,235	27,470	29,615	32,100		
	Female	9,090	9,660	10,090	11,020	12,190	13,620	14,340	15,815	16,300	17,530	19,180	20,735		
	% Female	53.8	53.6	55.5	58.3	60.6	61.5	61.4	62.6	62.1	63.8	64.8	64.6		

Source: Statistics Canada, Registered Apprenticeship Survey Data
 * Trades groups are based on National Occupational Classification (NOC)

APPENDIX C: PROPORTION OF FEMALE APPRENTICESHIP COMPLETIONS IN CANADA, 1996-2007

Major trade group*	Gender	Year													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007		
Total major trades groups	Both sexes	16,075	16,370	16,465	18,545	18,395	18,475	16,690	18,520	19,705	20,555	20,855	24,495		
	Female	1,940	1,905	1,985	2,070	2,155	2,065	1,585	2,020	2,185	2,225	2,235	2,780		
	% Female	12.1	11.6	12.1	11.2	11.7	11.2	9.5	10.9	11.1	10.8	10.7	11.3		
Building construction trades	Both sexes	2,290	2,005	1,925	2,180	2,025	2,080	2,045	2,550	2,590	2,965	3,190	3,915		
	Female	40	35	30	30	25	15	30	50	50	45	55	70		
	% Female	1.7	1.7	1.6	1.4	1.2	0.7	1.5	2.0	1.9	1.5	1.7	1.8		
Electrical, electronics and related trades	Both sexes	2,830	2,565	2,500	2,760	2,700	3,105	3,090	2,835	3,520	3,755	4,110	4,580		
	Female	35	20	35	50	55	60	60	45	75	60	85	70		
	% Female	1.2	0.8	1.4	1.8	2.0	1.9	1.9	1.6	2.1	1.6	2.1	1.5		
Metal fabricating trades	Both sexes	3,365	3,630	3,880	4,225	4,230	4,195	3,845	4,445	4,785	4,735	4,605	5,355		
	Female	25	30	50	55	35	60	45	45	75	80	90	85		
	% Female	0.7	0.8	1.3	1.3	0.8	1.4	1.2	1.0	1.6	1.7	2.0	1.6		
Motor vehicle and heavy equipment trades	Both sexes	3,405	3,655	3,750	4,230	4,870	4,545	3,955	4,275	4,130	4,470	4,425	5,340		
	Female	45	40	45	50	65	70	75	70	60	70	70	95		
	% Female	1.3	1.1	1.2	1.2	1.3	1.5	1.9	1.6	1.5	1.6	1.6	1.8		
Industrial and related mechanical trades	Both sexes	1,440	1,545	1,490	2,220	1,870	1,805	1,630	1,930	2,055	1,955	1,985	2,125		
	Female	20	15	15	20	15	30	20	20	20	30	20	20		
	% Female	1.4	1.0	1.0	0.9	0.9	1.7	1.2	1.0	1.0	1.5	1.0	0.9		
Other trades	Both sexes	205	265	290	355	320	300	290	360	360	365	445	475		
	Female	30	40	105	120	105	75	125	210	190	205	265	295		
	% Female	14.6	15.1	36.2	33.8	32.8	25.0	43.1	58.3	52.8	56.2	59.6	62.1		
Food services	Both sexes	2,540	2,700	2,625	2,575	2,585	2,445	1,835	2,130	2,265	2,315	2,100	2,705		
	Female	1,740	1,730	1,705	1,740	1,855	1,765	1,230	1,585	1,715	1,735	1,645	2,140		
	% Female	68.5	64.1	65.0	67.6	71.8	72.2	67.0	74.4	75.7	74.9	78.3	79.1		

Source: Statistics Canada, Registered Apprenticeship Survey Data

* Trades groups based on National Occupational Classification (NOC)

APPENDIX D: FEMALE LABOUR FORCE PARTICIPATION BY INDUSTRY SECTOR (CANADA CENSUS 2001 AND 2006)

Industry category	Census 2001		Census 2006	
	Canada	Female (%)	Canada	Female (%)
All industries*	15,576,565	46.6	16,861,185	47.3
11 Agriculture, forestry, fishing and hunting	567,665	28.9	523,650	29.6
21 Mining and oil and gas extraction	169,975	16.1	238,810	18.3
22 Utilities	118,790	25.1	132,950	24.7
23 Construction	879,245	11.8	1,069,095	12.2
31-33 Manufacturing	2,174,290	29.4	2,005,980	29.1
41 Wholesale trade	686,530	32.1	739,305	33.1
44-45 Retail trade	1,754,885	54.6	1,917,170	55.2
48-49 Transportation and warehousing	774,220	25.1	820,195	25.0
51 Information and cultural industries	417,285	47.2	417,320	46.0
52 Finance and insurance	635,630	64.1	689,210	63.2
53 Real estate and rental and leasing	259,355	44.9	303,510	45.4
54 Professional, scientific and technical services	982,300	44.2	1,122,445	44.6
55 Management of companies and enterprises	15,325	55.3	20,530	49.3
56 Administrative and support, waste management and remediation services	605,915	45.5	722,695	44.6
61 Educational services	1,021,020	66.0	1,150,535	67.0
62 Health care and social assistance	1,511,355	81.7	1,716,255	82.1
71 Arts, entertainment and recreation	303,860	48.0	346,315	48.7
72 Accommodation and food services	1,046,040	59.7	1,126,695	60.4
81 Other services (except public administration)	748,395	51.5	819,880	53.2
91 Public administration	904,480	46.9	978,615	47.2

Source: Statistics Canada, Census 2001 and Census 2006, Labour Force, 15 years and over

* Categories are based on North American Industry Classification System (the category, "Industry – not applicable" was excluded)

APPENDIX E: FEMALE LABOUR FORCE PARTICIPATION BY OCCUPATIONAL CATEGORY (CANADA LABOUR FORCE SURVEY, 2001-2007)

National occupations classification	Proportion of females in the labour force (%)							
	2000	2001	2002	2003	2004	2005	2006	2007
C Natural and applied sciences and related occupations	20.9	21.0	21.7	22.2	21.2	20.9	22.0	22.1
H Trades, transport and equipment operators and related occupations	6.2	6.5	6.6	6.6	7.1	6.6	6.6	6.9
Contractors and supervisors in trades and transportation	5.9	6.0	6.4	7.7	5.6	5.1	4.6	5.1
Construction trades	2.8	2.8	3.1	3.6	3.0	3.8	3.4	4.0
Other trades occupations	5.1	5.2	5.7	5.0	6.0	5.6	5.0	5.4
Transportation and equipment operators	7.8	8.5	7.2	7.4	8.2	7.4	7.5	8.2
Trades helpers, construction, and transportation labourers and related occupations	10.0	11.0	11.8	12.0	12.8	11.7	13.3	12.8
I Occupations unique to primary industry	20.3	19.0	19.7	20.0	19.3	20.0	20.6	20.0
J Occupations unique to processing, manufacturing and utilities	32.6	31.7	32.1	31.6	31.5	31.3	31.5	31.2
Machine operators and assemblers in manufacturing, including supervisors	31.1	30.0	30.7	30.5	30.2	29.6	29.5	29.4
Labourers in processing, manufacturing and utilities	39.3	39.2	38.7	36.6	37.4	38.4	39.4	38.3

Source: Statistics Canada Labour Force Survey

Note: National Occupational Classification for Statistics (NOC and NOC-S)

APPENDIX F: FEMALE PARTICIPATION IN MAJOR TRADES GROUPS AND NATURAL SCIENCES (CANADA CENSUS 2001 AND 2006)

Occupational category	Labour force 2001		Female participation rate 2001		Labour force 2006		Female participation rate 2006	
	Labour force	Participation	Participation (%)	Participation	Labour force	Participation	Participation (%)	
C Natural and applied sciences and related occupations	1,003,810	215,615	21.5	242,225	1,108,045	242,225	21.9	
C0 Professional occupations in natural and applied sciences	548,165	122,650	22.4	135,875	603,075	135,875	22.5	
C1 Technical occupations related to natural and applied sciences	455,645	92,975	20.4	106,350	504,975	106,350	21.1	
H Trades, transport and equipment operators and related occupations	2,294,620	161,465	7.0	175,690	2,550,295	175,690	6.9	
H0 Contractors and supervisors in trades and transportation	123,595	8,190	6.6	8,130	125,245	8,130	6.5	
H1 Construction trades	351,380	11,235	3.2	17,590	436,455	17,590	4.0	
H2 Stationary engineers, power station operators and electrical trades and telecommunications occupations	172,805	7,135	4.1	6,170	179,255	6,170	3.4	
H3 Machinists, metal forming, shaping and erecting occupations	218,230	8,420	3.9	9,355	221,830	9,355	4.2	
H4 Mechanics	345,355	7,015	2.0	7,490	377,030	7,490	2.0	
H5 Other trades	133,660	33,970	25.4	26,760	130,625	26,760	20.5	
H6 Heavy equipment and crane operators, including drillers	109,815	2,450	2.2	3,100	116,360	3,100	2.7	
H7 Transportation equipment operators and related workers, excluding labourers	508,150	48,190	9.5	55,455	561,365	55,455	9.9	
H8 Trades helpers, construction, and transportation labourers and related occupations	331,635	34,860	10.5	41,635	402,135	41,635	10.4	

Source: Statistics Canada, Census 2001 and 2006, Labour Force, 15 years and over

Note: Occupational categories are based on National Occupational Classification (NOC) and National Occupational Classification for Statistics (NOC-S)

APPENDIX G: PROPORTION OF FEMALE LABOUR FORCE PARTICIPATION BY OCCUPATION (CANADA CENSUS 2001 AND 2006)

Occupation/trade	Census 2001			Census 2006			2001 - 2006 Increase or decrease (%)
	Both sexes	Female	Female (%)	Both sexes	Female	Female (%)	
A371 Construction managers	55,540	3,725	6.7	58,320	4,635	7.9	18.5
A372 Residential home builders and renovators	28,050	1,555	5.5	34,465	2,215	6.4	15.9
C031 Civil engineers	37,955	3,965	10.4	42,360	5,175	12.2	16.9
C032 Mechanical engineers	30,515	2,020	6.6	36,045	3,200	8.9	34.1
C033 Electrical and electronics engineers	31,640	2,995	9.5	32,705	3,265	10.0	5.5
C051 Architects	12,800	2,570	20.1	13,960	3,515	25.2	25.4
C052 Landscape architects	2,415	715	29.6	1,620	680	42.0	41.8
C053 Urban and land use planners	6,660	2,215	33.3	8,085	3,265	40.4	21.4
C054 Land surveyors	8,095	650	8.0	9,905	800	8.1	0.6
C131 Civil engineering technologists and technicians	10,930	1,285	11.8	12,915	1,590	12.3	4.7
C132 Mechanical engineering technologists and technicians	11,370	910	8.0	13,220	910	6.9	-14.0
C134 Construction estimators	12,045	1,120	9.3	14,455	1,525	10.5	13.5
C151 Architectural technologists and technicians	6,165	1,530	24.8	8,220	2,605	31.7	27.7
C152 Industrial designers	9,795	2,140	21.8	10,250	2,635	25.7	17.7
C153 Drafting technologists and technicians	30,840	7,165	23.2	33,530	8,635	25.8	10.8
C154 Land survey technologists and technicians	3,995	530	13.3	4,475	705	15.8	18.8
C155 Mapping and related technologists and technicians	6,130	2,130	34.7	6,985	2,350	33.6	-3.2
C162 Engineering inspectors and regulatory officers	4,310	695	16.1	3,550	720	20.3	25.8
C163 Inspectors in public and environmental health and occupational health and safety	13,640	4,100	30.1	20,080	6,940	34.6	4.5
C164 Construction inspectors	9,165	640	7.0	14,310	1,755	12.3	75.6
H011 Supervisors, machinists and related occupations	6,855	555	8.1	7,745	480	6.2	-23.5
H012 Contractors and supervisors, electrical trades and telecommunications occupations	12,090	870	7.2	11,225	555	4.9	-31.3

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Proportion of female labour force participation by occupation (Canada Census 2001 and 2006) (continued)

Occupation/trade	Census 2001			Census 2006			2001 - 2006
	Both sexes	Female	Female (%)	Both sexes	Female	Female (%)	Increase or decrease (%)
H013 Contractors and supervisors, pipefitting trades	4,595	200	4.4	5,050	130	2.6	-40.9
H014 Contractors and supervisors, metal forming, shaping and erecting trades	7,695	250	3.2	7,940	210	2.6	-18.6
H015 Contractors and supervisors, carpentry trades	14,885	330	2.2	14,590	495	3.4	53.0
H016 Contractors and supervisors, mechanic trades	17,050	820	4.8	18,165	1,075	5.9	23.1
H017 Contractors and supervisors, heavy construction equipment crews	23,630	800	3.4	21,425	665	3.1	-8.3
H019 Contractors and supervisors, other construction trades, installers, repairers and servicers	20,200	880	4.4	24,335	1,200	4.9	13.2
H1 Construction trades	351,385	11,240	3.2	436,455	17,590	4.0	26.0
H11 Plumbers, pipefitters and gasfitters	61,130	870	1.4	72,655	1,300	1.8	25.7
H111 Plumbers	36,300	470	1.3	44,820	850	1.9	46.5
H112 Steamfitters, pipefitters and sprinkler system installers	20,125	290	1.4	22,190	370	1.7	15.7
H113 Gasfitters	4,705	110	2.3	5,650	80	1.4	-39.4
H12 Carpenters and cabinetmakers	147,340	3,230	2.2	181,905	4,725	2.6	18.5
H121 Carpenters	125,435	1,890	1.5	157,530	2,870	1.8	20.9
H122 Cabinetmakers	21,895	1,340	6.1	24,375	1,855	7.6	24.3
H13 Masonry and plastering trades	54,445	1,035	1.9	72,725	2,235	3.1	61.7
H131 Bricklayers	16,065	225	1.4	18,885	210	1.1	-20.6
H132 Concrete finishers	9,465	90	1.0	11,440	140	1.2	28.7
H133 Tilesetters	6,065	190	3.1	8,365	440	5.3	67.9
H134 Plasterers, drywall installers and finishers, and lathers	22,855	540	2.4	34,040	1,445	4.2	79.7
H14 Other construction trades	88,475	6,100	6.9	109,165	9,325	8.5	23.9
H141 Roofers and shinglers	16,825	285	1.7	22,140	460	2.1	22.7
H142 Glaziers	7,795	420	5.4	10,500	420	4.0	-25.8
H143 Insulators	7,570	350	4.6	8,975	630	7.0	51.8
H144 Painters and decorators	41,620	4,550	10.9	50,225	7,045	14.0	28.3

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Proportion of female labour force participation by occupation (Canada Census 2001 and 2006) (continued)

Occupation/trade	Census 2001			Census 2006			2001 - 2006
	Both sexes	Female	Female (%)	Both sexes	Female	Female (%)	Increase or decrease (%)
H145 Floor covering installers	14,665	495	3.4	17,330	775	4.5	32.5
H211 Electricians (except industrial and power system)	61,370	1,365	2.2	72,390	1,140	1.6	-29.2
H212 Industrial electricians	29,450	470	1.6	29,960	495	1.7	3.5
H311 Machinists, and machining and tooling inspectors	53,510	2,965	5.5	52,075	2,590	5.0	-10.2
H312 Tool and die makers	17,910	690	3.9	17,220	750	4.4	13.1
H321 Sheet metal workers	19,410	430	2.2	21,320	665	3.1	40.8
H322 Boilermakers	4,030	125	3.1	3,830	95	2.5	-20.0
H323 Structural metal and platework fabricators and fitters	10,640	380	3.6	11,535	505	4.4	22.6
H324 Ironworkers	9,980	170	1.7	12,450	385	3.1	81.5
H325 Blacksmiths and die setters	1,210	45	3.7	870	40	4.6	23.6
H326 Welders and related machine operators	101,530	3,615	3.6	102,520	4,325	4.2	18.5
H411 Construction millwrights and industrial mechanics (except textile)	66,955	850	1.3	75,900	1,140	1.5	18.3
H412 Heavy-duty equipment mechanics	42,430	785	1.9	39,140	420	1.1	-42.0
H413 Refrigeration and air conditioning mechanics	14,540	195	1.3	22,240	320	1.4	7.3
H421 Automotive service technicians, truck mechanics and mechanical repairers	126,905	1,875	1.5	149,995	2,550	1.7	16.9
H611 Heavy equipment operators (except crane)	75,270	1,695	2.3	82,725	2,235	2.7	20.0
H621 Crane operators	12,150	225	1.9	13,620	250	1.8	-0.9
H622 Drillers and blasters - Surface mining, quarrying and construction	3,325	50	1.5	2,995	85	2.8	88.7
H821 Construction trades helpers and labourers	112,650	7,345	6.5	166,095	12,130	7.3	12.0
H822 Other trades helpers and labourers	12,555	1,000	8.0	10,320	875	8.5	6.4
I016 Supervisors, landscape and horticulture	8,370	1,220	14.6	9,435	1,345	14.3	-2.2
I212 Landscaping and grounds maintenance labourers	88,070	13,230	15.0	114,495	20,055	17.5	16.6

Source: Statistics Canada, Census 2001 and Census 2006
 Note: Trades groups based on National Occupational Classification (NOC)

APPENDIX H: NEW ZEALAND HUMAN RIGHTS COMMISSION RECOMMENDATIONS

The following recommendations were included in the 2008 New Zealand report, *Trading Choices: Young People's Career Decisions and Gender Segregation in the Trades*.

1. Work with Modern Apprenticeship Co-ordinators in developing strategies to encourage the recruitment of young women, Māori, Pacific people and people with disabilities into Modern Apprenticeships as supported by Section 15 of the Modern Apprenticeship Training Act 2000.
2. Encourage the Government to promote Modern Apprenticeships to **parents** as a pathway for young women, Māori, Pacific people and people with disabilities in any industry.
3. Support current industry initiatives (Industry Training Organisations and industry representatives) regarding the recruitment of young women, Māori, Pacific people and people with disabilities through **secondary schools** for Modern Apprenticeships.
4. Encourage the Tertiary Education Commission to make **reporting against targets** for more diverse participation, a contractual requirement for Modern Apprenticeship Co-ordinators as supported by Section 13(1) of the Modern Apprenticeship Training Act 2000.
5. Ask the Tertiary Education Commission to ensure prospective Modern Apprenticeship Co-ordinators undertake **training** in diversity and gender awareness before undertaking co-ordinator roles.
6. Work with '**champions**' of equity issues within Industry Training Organisations to provide ideas, 'role models' and best practice for reducing barriers to participation.
7. Support the provision of **incentives**, including financial incentives, for the recruitment of young women, Māori, Pacific people and people with disabilities, where particular Industry Training Organisations have made a commitment to diversity.
8. Support the Industry Training Federation (ITF) in its continued 'show-casing' of **case studies** addressing equity issues.
9. Support a **review of the funding criteria** for Modern Apprenticeships so that it aligns with the intentions of the Industry Training Act 1992, Section 13b, which specifically encourages the promotion of training to people to whom such training has not traditionally been available.
10. Ensure that **information** and **marketing** of the Modern Apprenticeship scheme is relevant to community groups that focus on employment issues for women, Māori, Pacific Peoples, ethnic minorities and people with disabilities.
11. Encourage the Associate Minister for Education (Tertiary Education), who has responsibility for the Modern Apprenticeships scheme to lead initiatives to increase participation rates of diverse groups.
12. Encourage relevant **Government departments** to increase the number of **public sector** apprenticeships of women, Māori, Pacific people and people with disabilities.

APPENDIX I: PATHWAYS TO CAREERS IN CONSTRUCTION

Career aspirations and choices are closely tied to the decisions young people and adults make about education and training. In turn, the participation of women in the labour force is closely tied to levels of educational attainment. In 2006, 61% of Canadians 15 years or older who held an apprenticeship or trades certificate or diploma were male; 39% were female. However, when educational attainment statistics were examined in the field of construction alone, females 15 years and older held only 1% of total apprenticeship and trades certificates/ diplomas and college/CEGEP or other non-university certificates/diplomas. Canadian males hold 99% of these credentials in the field of construction.

A question that is frequently asked about plans to increase the rate of women's participation in the construction industry is: What is the number of women who have an interest in careers in the construction industry? To understand more about the career choices of Canadian youth, secondary data analyses were performed on data from the Canada Millennium Scholarship Foundation Survey of Secondary School Students (2005) and the Canadian Apprenticeship Forum (CAF) Survey.

Educational attainment

Millennium Scholarship Foundation Survey of Secondary School Students

To explore a number of questions related to the educational and future decision making of students in secondary school, secondary data, drawn from the Canada Millennium Scholarship Foundation Survey of Secondary School Students (2005), was analysed. This survey was administered in different formats to students in grades 6 to 8 and grades 9 to 12 in British Columbia, Alberta, Manitoba, New Brunswick, and Newfoundland and Labrador. Students were fairly evenly distributed across all these grade levels. The final sample of survey participants included 14,329 students. Half of the participants were female and 11% of the total sample was Aboriginal.

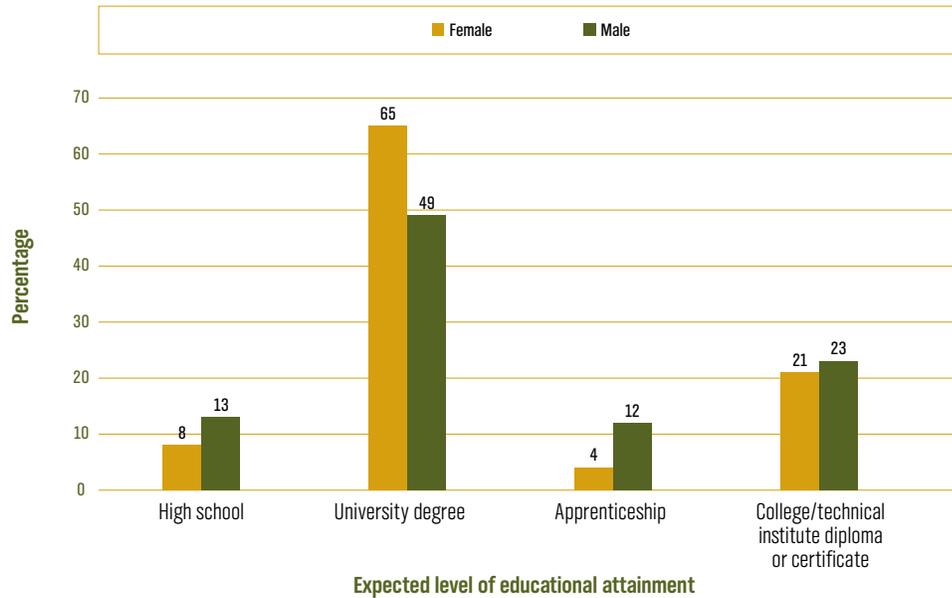
The survey asked students about their parents' education, school experiences, educational aspirations, parental expectations for their education, and the grade they were in when they first made a decision about continuing with post-secondary education. Students in grades 9 to 12 were asked additional questions about their knowledge of financing for post-secondary education, and about the returns and value of post-secondary education. Secondary analyses for this project were performed only on questions related to students' educational aspirations, parental education, parental expectations, and the time when the decision was first made about pursuing post-secondary education.

Students' educational aspirations

When asked about the highest level of education they expected to complete, more female students (65% of females; 49% of males) indicated that they expected to complete a university degree. Almost a quarter of the whole sample of students (21% of females; 23% of males) expected to complete a college diploma or certificate. A small proportion of students (8% of females; 13% of males) expected high school to be the highest level of education they would complete in their lifetime. The smallest percentage of students in any category, however, was the percentage of female students (4%) who expected to complete an apprenticeship in the future. More boys (12%) than girls (4%) said they expected to complete an apprenticeship in future (Figure 1).

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Figure 1: Students' expectations for their future educational attainment



Note: Percentages may not add to 100 due to rounding and missing responses.

Aboriginal students' educational aspirations differed in some ways from those of non-Aboriginal students. More Aboriginal students (16% of females; 23% of males) expected high school to be the highest lifetime level of education they would attain, compared to 7% of female and 12% male non-Aboriginal students. A smaller proportion of Aboriginal students – female (53%) and male (36%) – expected to complete a university degree, compared to non-Aboriginal female (67%) and male (50%) students. About a quarter of Aboriginal students (23% of females and 24% of males) expected to earn a college credential, similar to non-Aboriginal female (21%) and male (23%) students. Six percent (6%) of female Aboriginal students and 12% of males expected to complete an apprenticeship, compared to 3% of female and 12% of male non-Aboriginal students.

Parental expectations

Differences could be observed between the reported expectations of parents and the students' expectations for their own highest level of future educational attainment. The expectations of students who expected to complete university or college more often matched their parents' expectations for their educational attainment, compared with students who expected to complete an apprenticeship. Eighty-seven percent (87%) of students who expected to earn a university degree reported that their parents had similar expectations of them, while 70% of students who expected to earn a college diploma or certificate reported that their parents also expected them to achieve a college-level education. By contrast, just over half the students who expected to complete an apprenticeship reported that their parents expected them to do the same (50% of females; 56% of males). Some of the students who expected their highest level of future educational attainment to be an apprenticeship reported that their parents expected them to earn a university (17%) or college (16%) credential instead, and 12% of these students reported that their parents expected them only to go as far as high school.

Parental education

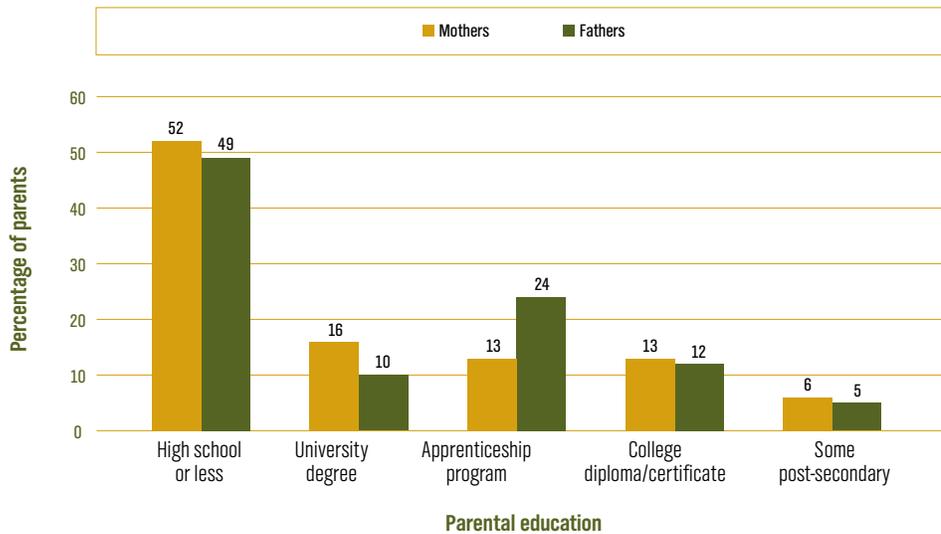
There is ample evidence to suggest that parental education is a strong predictor of students' decisions about post-secondary education (Berger, Motte, and Parkin, 2007). When the parental education of students was compared for various levels of educational aspiration, the finding was

that the parents of students who expected to complete college or university credentials had more education than those of students who aspired to complete an apprenticeship.

Compared to students who expected to complete an apprenticeship, more students who expected to complete university had parents who had also completed university (37% of mothers; 35% of fathers) or college (13% of mothers; 14% of fathers) than students who expected to complete an apprenticeship or a college credential (Figure 2). A third of the students who planned to complete university had parents (37% mothers; 35% fathers) who had completed high school or less, while only 3% had mothers and 12% had fathers who had completed an apprenticeship or received some apprenticeship training.

Fewer students who expected to complete a college credential had parents (22% mothers; 20% fathers) who had completed a university degree compared to students who expected to complete university, and a similar proportion had parents who had completed a college credential (13% mothers; 15% fathers). Compared to students expecting to complete university, more students who expected to complete a college credential had parents (53% mothers; 46% fathers) who had a high school education or less. A similar proportion had parents who had completed an apprenticeship or received some apprenticeship training (3% mothers; 15% fathers) compared to students who expected to get a university degree.

Figure 2: Educational attainment of parents of female students who expected to complete an apprenticeship



Note: Percentages may not add to 100 due to rounding.

Compared to students who were planning to complete university or college, female students who were planning to complete apprenticeships less often had parents who held a university degree (16% mothers; 10% fathers), while a similar proportion had parents who held a college credential (13% mothers; 12% fathers). About half of respondents planning to complete apprenticeships had parents (52% mothers; 49% fathers) who had completed high school or less, similar to students who planned to complete a college credential. Somewhat more female students who were planning to complete an apprenticeship had parents (13% mothers; 24% fathers) who had some apprenticeship training or a completed apprenticeship compared to students who expected to complete university or college.

The overall finding of these comparisons supports what is known from previous research, namely that parental educational is predictive of students' educational aspirations. Parents appear to encourage their children to attain levels of education either similar to or higher than their own.

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These findings should be considered in conjunction with findings related to the influence parents reportedly have on students' educational decision making, which are reported in the next section.

Pathways to post-secondary education

Students in all grades were asked what they expected to do right after graduating from high school. Thirty-nine percent (39%) of students expected to start university immediately after completing high school, 17% expected to start college immediately, and 6% planned to start an apprenticeship immediately. Seventeen percent (17%) of students expected to take time off to work before continuing their studies, and 14% expected to take time off before work and further studies. Only 4% planned to start work immediately with no plans for further study, and a very small percentage (1%) expected to start a family immediately.

Somewhat more female than male students expected to go to university right after high school (46% of females; 32% of males). Consistent with this, somewhat fewer female students (14% compared to 20% of male students) planned to take some time off to work before continuing their studies.

Factors that influence students' educational decisions

Students in all grades were asked when they first made a final decision about continuing in some form of post-secondary education. Notable is the fact that 10% fewer female students (27%) compared to male students (37%) made a decision about their future education in Grade 6. By Grade 9, 52% of female students and 62% of male students had reached a decision about their future education. Twenty-eight percent (28%) of female students and 23% of male students had not reached a decision.

Table 1: Factors that affect students' decisions about what to do after high school

Strongly influential people and other factors	Female students who expect to complete an apprenticeship (%)	Female (%)	Male (%)
Friends	27	23	20
Parents	59	59	56
Guidance counsellors	14	12	11
Teachers	17	19	17
University or college representatives	20	22	17
Brothers or sisters	28	26	23
Role model that is admired	27	30	26
Creative talent or ability	48	43	43
Enjoyment of a course at school	48	57	57
Success in a course at school	52	59	50
Personal interests	74	79	73
Likely financial rewards	44	47	53
Cost of post-secondary	37	35	31
Program entrance requirements	47	44	39
Likelihood of employment based on a particular post-secondary program	47	48	43

The survey asked students in grades 9 to 12 the extent to which various people and factors influenced their decisions about what they planned to do right after high school. Students' plans after completing high school do not equate to career decisions, but the question included several options suggesting that the question was related to preparation for future work. Several observations can be made about the results (Table 1). First, quite a number of factors can strongly influence students' decisions about what they will do after high school. Second, a very similar proportion of male and female students reported that the people and factors mentioned in the survey had a strong if not very strong influence on their decisions about the education they expected to get in future.

A fairly equal proportion of female (79%) and male students (73%) indicated that their personal interests had a strong influence on their decision about what they wanted to do after high school. The next greatest percentage of male and female students indicated that their strongest influences were parents and their enjoyment or success in a course at school. Slightly more female students (53%) than male students (47%) indicated that the likelihood of financial rewards was a strong or very strong influence on their decisions. Other factors such as the likelihood of employment after post-secondary education, program entrance requirements, a personal talent, and the cost of post-secondary education were rated as strongly influential factors by 30% to 45% of both male and female students. More than half the students, both female (57%) and male (57%), indicated that the enjoyment of a course in school was a strong or very strong influence on their decision about what they would do beyond high school. Somewhat fewer female students who expected to complete an apprenticeship indicated that their success in a course in school (52%) or enjoyment of a course at school (48%) was a strong influence on what they decided to do after high school. A possible contributor to the fact that fewer girls who had decided to complete an apprenticeship after high school reported that a course they had taken in school contributed to this decision, may be the fact that not all schools provide female students with the opportunity to sample courses in apprenticeable programs.

Canadian Apprenticeship Forum Survey of Apprentices

Gender analyses were performed on secondary data drawn from the Canadian Apprenticeship Forum Survey of Apprentices to explore questions related to the characteristics and experiences of apprentices in training. Apprentices taking in-class training in public and private institutions were surveyed between 2006 and 2007 to investigate the factors that influence decisions to enter registered apprenticeships, the difficulties of entering an apprenticeship, costs and financial supports available to apprentices, and the expected benefits of completing an apprenticeship program. The survey was commissioned by the Canadian Apprenticeship Forum as part of a larger study about returns on investment in apprenticeship training.

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Table 2: Representation of females in apprenticeship by trade

Apprenticeship	Females (% by trade)	Apprenticeship	Females (% by trade)
Automotive service technician	7	Landscaper	57
Cabinetmaker	50	Machinist	16
Carpenter	3	Metal fabricator	43
Construction electrician	6	Motorcycle mechanic	50
Cook	49	Painter/decorator	13
Electronics technician	36	Partsperson	22
Electronic assembler	60	Plumber	2
Hairstylist	92	Refrigeration and air conditioning mechanic	2
Heavy-duty equipment technician	2	Tilesetter	11
Industrial instrument mechanic	7	Tool and die maker	19
Industrial mechanic (millwright)	7	Welder	6

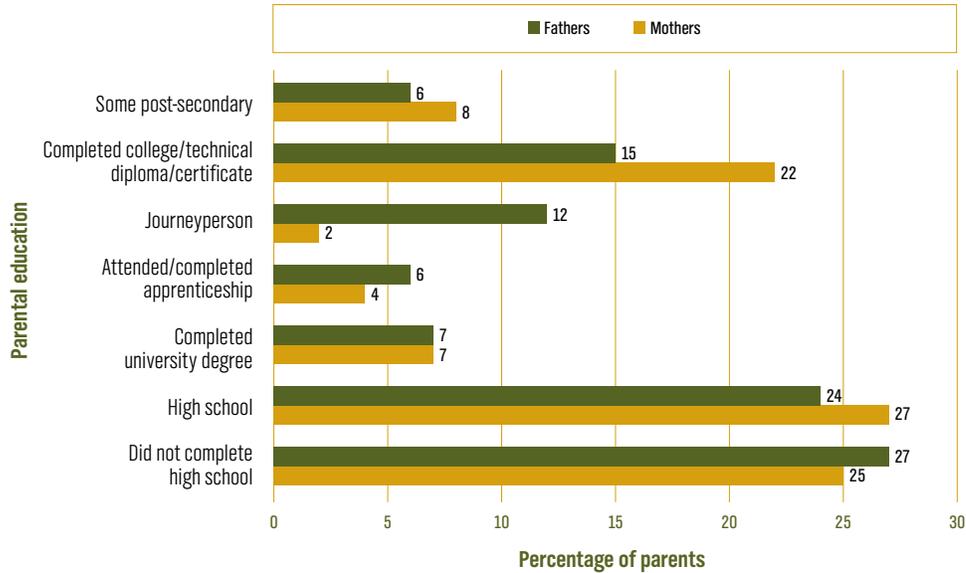
Of the total sample of 2,244 apprentices, 11% were female and 87% were male (2% did not identify their gender). Seven percent (7%) of survey respondents were Aboriginal (11% of female survey respondents and 7% of male respondents). Almost all of the apprentices surveyed (93%) were less than 44 years of age. The average age of female apprentices was 30 years; male apprentices were 27 years on average. In the survey sample as a whole, 90% of apprentices had at least completed high school.

A large majority of apprentices of both genders (96% females; 97% males) indicated that they expected to complete their apprenticeships. The distribution of women apprentices in the various trades categories is presented in Table 2. The trades in which none of the female apprentices surveyed were registered are not listed in Table 2. Female apprentices represented at least 45% of apprentices in the following programs: cabinetmaker, cook, electronic assembler, hairstylist, motorcycle mechanic, and landscaper. Between 15% and 44% of apprentices in the following programs were female: electronics technician, machinist, metal fabricator, partsperson, and tool and die maker. Female apprentices represented less than 15% of apprentices in the following programs: automotive service technician, carpenter, construction electrician, heavy-duty equipment technician, industrial instrument mechanic, industrial mechanic (millwright), painter/decorator, plumber, refrigeration and air conditioning mechanic, tilesetter, and welder.

Parental education of female apprentices

Similar to the findings of the Millennium Scholarship Foundation Secondary School Survey, the CAF Survey of Apprentices found that very few female apprentices had parents who were journeypersons (2% mothers; 12% fathers) or who had attended or completed an apprenticeship (4% mothers; 6% fathers). About half (51 to 52%) of the female apprentices surveyed had parents with a high school education or less. About a fifth had parents (15% mothers; 22% fathers) who held a college credential, and less than a tenth had parents (6% mothers; 8% fathers) who held a university degree (Figure 3).

Figure 3: Educational attainment of parents of female apprentices



Note: Percentages may not add to 100 due to rounding, and missing and “do not know” responses.

Pathways to registered apprenticeship

Only 7% of female apprentices had earned a university degree or diploma in the past, but 35% had earned some post-secondary credits. Twenty-six percent (26%) had previously completed a college-level certificate, diploma, or applied degree. Seven percent (7%) of female apprentices had completed another apprenticeship and 8% were journeypersons. Forty-five percent (45%) had done some previous apprenticeship training.

Apprentices were asked whether they had taken any trades, technical, or pre-apprenticeship programs before registering in their current apprenticeship programs. The results are presented in Table 3. Of the total sample of 2,244 apprentices, about 35% of female and male respondents had taken none of these programs prior to registering in their current apprenticeship programs. The genders were not different in this regard.

Table 3: Programs taken prior to entering registered apprenticeship

Programs taken or completed previously	Female apprentices (%)	Male apprentices (%)
Trade or vocational or technical high school program	21	31
High school apprenticeship program	15	9
High school co-op program or work experience program (e.g., OYAP, RAP, etc.)	29	35
Pre-apprenticeship exploratory program (e.g., <i>Women in Trades and Technology</i>)	8	6
College trade program (e.g., cook)	15	22
Private school (e.g., hairdressing)	4	3

APPENDIX I: PATHWAYS TO CAREERS IN CONSTRUCTION

When asked about prior work experience, 85% of female and 75% of male apprentices indicated that they had worked full-time during the time between high school and the start of their apprenticeship. Almost 50% of female and 60% of male apprentices had worked in less than five jobs since high school. The remainder had worked five or more jobs since leaving high school.

Almost half (47%) of the female apprentices surveyed indicated that it had been 10 years or more since they had attended high school. For another 21%, it had been between five and 10 years since high school, and for a further 29% of female apprentices, it was less than five years since they had completed high school. A smaller proportion of male apprentices (33%) indicated that it had been as long as 10 years since they attended high school. For about a third of male apprentices, it had been between five and 10 years (32%) or less than five years (33%). These results are consistent with the fact that the surveyed female apprentices were several years older on average.

Apprentices were most heavily represented in the following order: 1) by students who had chosen to work right after completing high school; 2) by students who chose to go to college after high school; and, 3) by students who chose to attend university after high school. When asked whether an apprenticeship had been their first choice after completing high school, 70% of female apprentices and 60% of male apprentices indicated that it had not been their first choice. This is consistent with the information gathered about apprentices' previous education. When asked what their first choice had been following high school, 38% of female apprentices responded that work had been their first choice, 34% said college, and another 20% said university. Similarly, 44% of male apprentices stated that work had been their first choice, 33% indicated college, and 17% said university. Even after having possibly completed a degree, certificate, or diploma, these individuals eventually chose to enter apprenticeships.

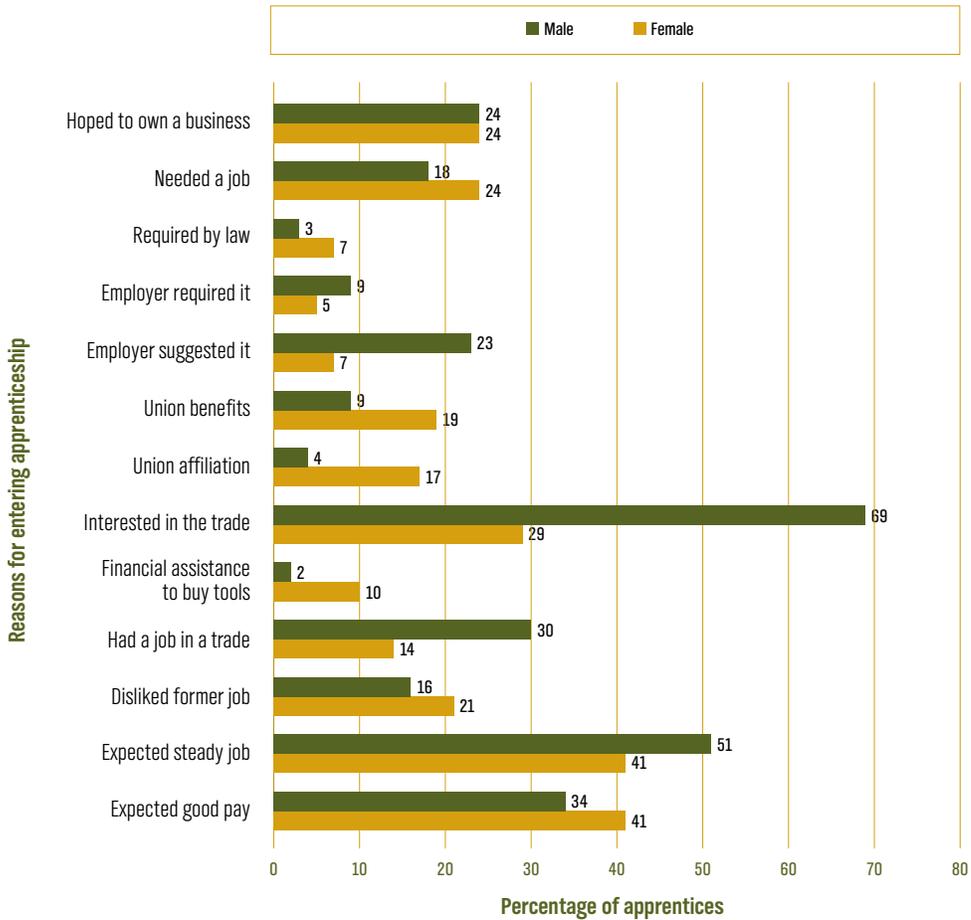
Factors that influenced the decision to enter a registered apprenticeship

Apprentices were asked whether they knew people, such as parents, close relatives, friends, or co-workers, who worked in the skilled trades. Many of the apprentices knew people who did.

The frequency was fairly similar for both genders. About a quarter of female apprentices and a third of male apprentices had a parent who worked in a skilled trade. Forty percent (40%) of female apprentices and 44% of male apprentices indicated that they had another close relative who worked in a skilled trade. Fifty-five percent (55%) of female and 61% of male apprentices had a friend working in the skilled trades, and 36% of female and 32% of male apprentices had a co-worker who worked in the skilled trades.

Apprentices identified many reasons (Figure 4) for having registered in their training programs. Almost half of female apprentices indicated that their expectation of good pay and a steady job were major reasons. A good proportion of male apprentices also gave these reasons, although slightly more males said that their expectation of a steady job was a major reason, while slightly fewer males than females said that their expectation of good pay was a major reason. About a third (30%) of female apprentices stated that their interest in the trade was a major reason and another quarter of female apprentices said that they had needed a new job or hoped to own their own business. About a fifth of female apprentices said that union affiliation, union benefits or disliking their last job was a major reason for entering a registered apprenticeship. More male apprentices (almost 70%) stated that their interest in a particular trade was a major reason for registering in their current apprenticeship program. More male apprentices stated that they had a job in a trade previously and an employer had suggested that they enter a registered apprenticeship.

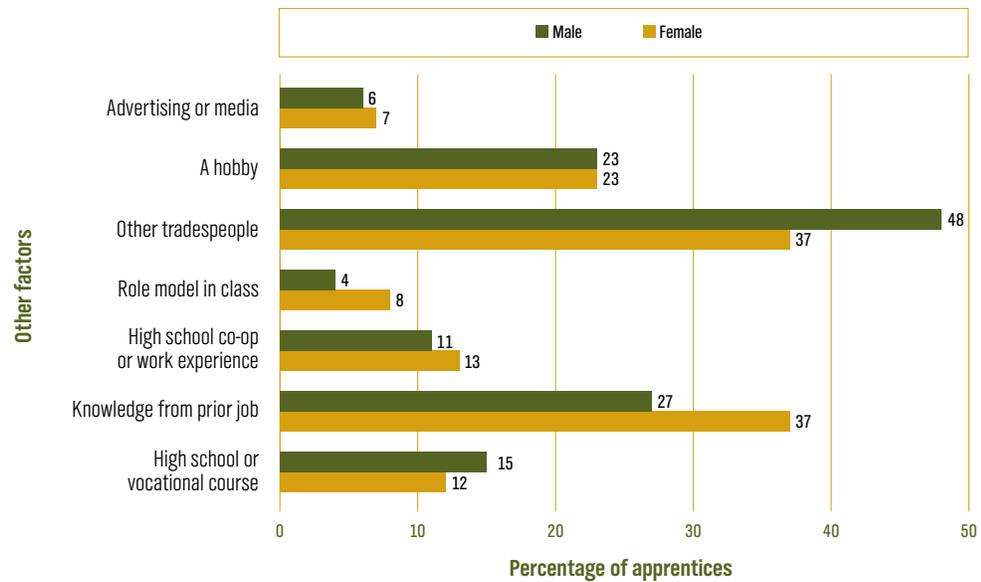
Figure 4: Reasons for registering in the current apprenticeship program



The survey asked about other factors (Figure 5) that influenced apprentices' decision to register in their apprenticeship program. The factors that were strongly influential were similar for male and female apprentices. The three factors that were considered very influential by the most apprentices were knowing other tradespeople, knowledge from another job, and having a related hobby. Apprentices were asked about any counselling they had received related to entering an apprenticeship, and whether that counselling positively or negatively influenced their decision to enter an apprenticeship (Table 4). The majority of female apprentices had mainly received counselling related to entering a registered apprenticeship program from family or friends, someone working in the trade or an employer.

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Figure 5: Other factors that influenced decision to enter an apprenticeship



Very few of the surveyed apprentices, male or female, received counselling that negatively influenced their decision to enter a registered apprenticeship. Somewhat more male apprentices received positively influential counselling from family (64%) or other tradespeople (60%), but roughly half the female apprentices surveyed received counselling that had a positive influence on their decision from these sources.

Table 4: Influence of counselling received by female apprentices

Source of counselling	None received (%)	Positive influence (%)	Negative influence (%)
High school guidance counsellor	60	14	2
High school teacher	58	18	2
College or university teacher or placement officer	65	12	2
Someone working in a trade	31	49	2
Family or friends	26	52	3
An employer	37	43	1
A union	73	5	-
A joint training committee	71	5	-
Support and assistance organization	71	5	-
Canada Employment Centre	67	9	-
A provincial government apprenticeship or career counsellor	64	13	1
Internet	56	18	1
Other media including TV/radio/newspaper	62	13	-
College or training institution	55	23	-

Experiences securing an apprenticeship

Survey respondents were asked about their satisfaction with various aspects of the process they went through to enter a registered apprenticeship. The survey asked respondents how satisfied they were with the entry requirements, the cooperation of the sponsoring employer, finding a sponsor to sign them up, and the cooperation of government apprenticeship consultants. A large majority of female (94%) and male (93%) apprentices indicated that they were satisfied with the entry requirements. Most were also satisfied with the cooperation of the sponsoring employer (92% females; 84% males), the cooperation of government apprenticeship consultants (82% females; 76% males), the fact that they had to find a sponsor to sign them onto a registered apprenticeship (85% females; 78% males), and the level of difficulty of finding an employer for the apprenticeship (87% females; 91% males).

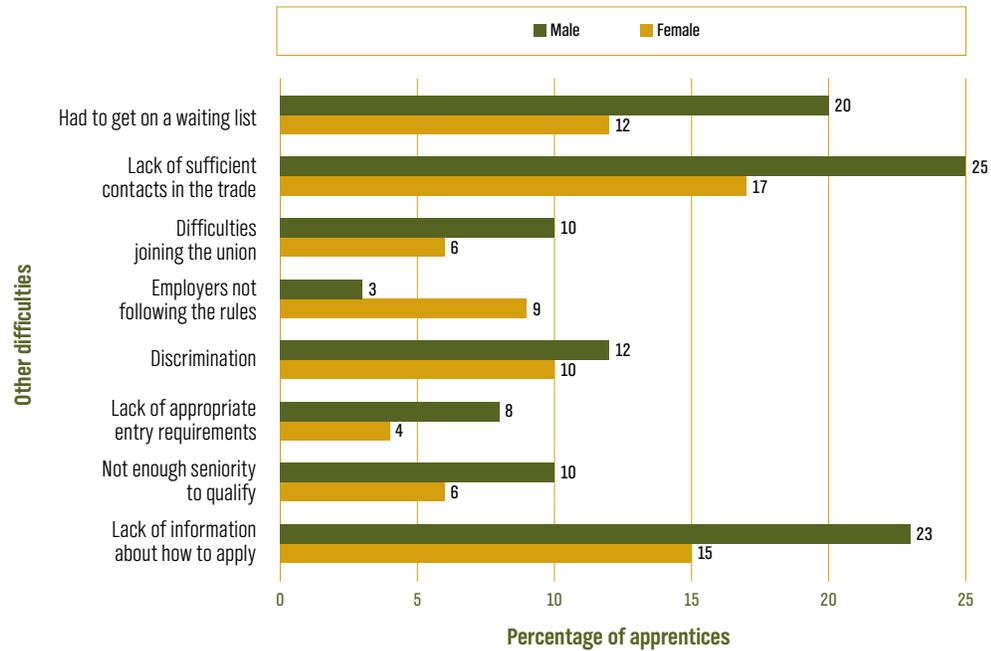
Table 5: Circumstances that contributed to the difficulty of finding a sponsor

Considerably influential or very influential	Female apprentices (%)	Male apprentices (%)
No one was hiring apprentices	89	65
There was no work in the trade at the time	43	37
Had insufficient experience in the trade	53	59
Discrimination based on race, gender, ethnicity or disability	30	13

Of those respondents who had difficulties entering apprenticeships, 20% of female and 20% of male apprentices indicated that they had difficulty finding an employer to sponsor their apprenticeship. Respondents were asked to what degree a number of circumstances – no one was hiring, no work in the trades, insufficient experience and discrimination – contributed to their difficulty finding an employer to sponsor their apprenticeship. Respondents' ratings of the contribution of these circumstances to their difficulties are presented in Table 5. Female apprentices reported difficulty finding a sponsor due to a slowdown in hiring (89%) and a slowdown in their trade (43%) (compared to 65% and 37% of males respectively). A similar proportion of male (59%) and female (53%) apprentices attributed the difficulty of finding a sponsor to having insufficient experience in the trade. More female (30%) than male (13%) apprentices indicated that discrimination based on race, gender, ethnicity or disability had contributed to their difficulty.

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Figure 6: Other factors that created difficulties entering apprenticeships



Finally, the CAF survey asked respondents to identify other difficulties they encountered while setting up their current apprenticeship. Up to a quarter of apprentices rated the factors listed in Figure 6 considerably or very influential on their decision to enter an apprenticeship. These other factors included difficulty getting on a waiting list (12% females; 20% males), lack of information about how to apply (15% females; 23% males), lack of contacts in the trades (17% females; 25% males), lack of seniority (6% females; 10% males), lack of appropriate entry requirements (4% females; 8% males), employers not following the rules (9% females; 3% males), difficulty in joining the union (6% females; 10% males), and experiences of discrimination (10% females; 12% males).

APPENDIX J: WOMEN IN CONSTRUCTION SURVEY

INTRODUCTION

The purpose of this survey is to understand the factors that influence women's career choices and obtain women's opinions about careers in the construction industry, either in the construction trades or in construction management.

S1. Please confirm your age.

- a. Less than 18 years THANK AND TERMINATE
- b. 18 to 19 years
- c. 20 to 24 years
- d. 25 to 29 years
- e. 30 to 34 years
- f. 35 years+ THANK AND TERMINATE

EDUCATION

1. What is the highest level of education you have completed?
 - a. Less than High School
 - b. High School Diploma or equivalent
 - c. Some College or University courses (no Certificate, Diploma, or Degree)
 - d. Apprenticeship Certification
 - e. Apprentice Journeyman
 - f. Public or Private Community College – Certificate or Diploma
 - g. University – Bachelor's Degree (e.g., B.A., B.Sc., B.Ed.)
 - h. Master's Degree (e.g., M.Ed., M.A., M.Sc., M.B.A.,)
 - i. Professional Degree (e.g., M.D.)
 - j. Doctoral Degree (e.g., Ph.D., Ed.D., Sc.D.)
 - k. Other Specify _____

2. Are you currently enrolled in an education or training program?
 - a. Yes (Continue)
 - b. No, but plan to in the future (skip to Q4)
 - c. No, and do not plan to in the future (skip to Q5)

3. Please indicate what education or training program you are enrolled in currently?
 - a. High School upgrading
 - b. Apprenticeship Certification
 - c. Apprenticeship Journeyman
 - d. Public or Private College – Certificate or Diploma program
 - e. University – Bachelor's program
 - f. University – Master's program
 - g. University – Doctoral program
 - h. Other Professional Degree (e.g., MD)
 - i. Courses or training to upgrade (not for a certificate, diploma, or credential)
 - j. Other. Specify _____

APPENDIX J: WOMEN IN CONSTRUCTION SURVEY

4. What is the highest level of education or training you plan to complete in the future?
- No further plans at present
 - High School Diploma or equivalent
 - Apprenticeship Certification
 - Apprenticeship Journey person
 - Public or Private College – Certificate or Diploma program
 - University – Bachelor’s Degree
 - University – Master’s Degree
 - University – Doctoral Degree
 - Other Professional Degree (e.g., MD)
 - Courses or training to upgrade or develop skills (not for a certificate, diploma, or credential)
 - Other. Specify _____
5. Were you ever a registered trades apprentice?
- Yes
 - No

CAREER DECISIONS

6. How much does each of the following considerations influence your choice of career?
[RANDOMIZE STATEMENTS]
- Scholarship opportunities
 - The required training or education is inexpensive
 - Opportunity to train on the job while earning an income
 - Possibility of promotion
 - Salary
 - Benefits
 - Long-term security
 - Flexible work hours
 - Enjoyment of daily work tasks
 - The career matches my skills or aptitudes
 - Prestige of the career
 - Availability of women role models
 - Opportunity to be a role model
 - Women are equally represented
 - Women are treated equally
 - Opportunity to be self-employed

RESPONSE OPTIONS:

- No influence
- Slightly influential
- Fairly influential
- Very influential

7. Thinking of your choice of career, how appealing or unappealing is each of the following to you personally? [RANDOMIZE STATEMENTS]
- a. Work in an office or similar setting
 - b. Work involves interacting with customers or the public
 - c. Work involves being physically active
 - d. Working with my hands
 - e. Work requires creativity
 - f. Travelling is a required part of the work
 - g. Relocation to another part of the province or country to get work

RESPONSE OPTIONS:

Very Unappealing
Fairly Unappealing
Slightly Unappealing
Neither Appealing nor Unappealing
Slightly Appealing
Fairly Appealing
Very Appealing

8. How much has each of the following actually influenced your decision to enter a particular career? [RANDOMIZE ITEMS]
- a. Parents
 - b. Spouse or life partner
 - c. Family members not including parents or spouse/partner
 - d. Friends
 - e. Job fair in high school
 - f. Job fair in college or university
 - g. Experience in co-op, summer job, or youth apprenticeship
 - h. A course in high school
 - i. A course in college or university
 - j. Teacher (high school, college, university)
 - k. High School guidance counsellor
 - l. Counsellor in an adult career service, college, or university
 - m. Being offered a job or training opportunity
 - n. Media (e.g., newspapers, television, magazines, advertising)

RESPONSE OPTIONS:

No influence
Slightly influential
Fairly influential
Very influential

APPENDIX J: WOMEN IN CONSTRUCTION SURVEY

9. Please indicate whether you think the following workplace characteristics are more likely in small, medium, or large-size companies? [RANDOMIZE ITEMS]

- a. Higher salaries
- b. More job security
- c. Better benefits
- d. More opportunities for promotion
- e. Better education and training opportunities
- f. More flexible hours
- g. Better representation of women
- h. Policies are more supportive of women
- i. Supervisors can be more flexible with employees

RESPONSE OPTIONS:

- Small (less than 100 employees)
- Medium-size (100-499 employees)
- Large-size (500+ employees)
- No difference based on size

10. How appealing or unappealing is each of the following to you personally? [RANDOMIZE STATEMENTS]

- a. A career in a construction trade (e.g., Electrician, Plumber, Welder, Roofer, Bricklayer, Landscaper, etc.)
- b. A career in a construction management occupation (e.g., Project Manager, Manager, Supervisor, Estimator, etc.)

RESPONSE OPTIONS:

- Very Unappealing
- Fairly Unappealing
- Slightly Unappealing
- Neither Appealing nor Unappealing
- Slightly Appealing
- Fairly Appealing
- Very Appealing

11. Have you ever received information from any of the following sources about career opportunities for women in the construction trades (e.g., Electrician, Plumber, Welder, Roofer, Bricklayer, Landscaper, etc.) or in construction management occupations (e.g., Project Manager, Manager, Supervisor, Estimator, etc.)? (CHECK ALL THAT APPLY) [RANDOMIZE ITEMS]
- a. Media (advertising, TV, movies, etc.)
 - b. Parents
 - c. Family members not including parents
 - d. Teacher
 - e. High School guidance counsellor
 - f. A counsellor in adult career services, college, or university
 - g. Someone I knew in the construction industry
 - h. Friends
 - i. A course in high school
 - j. A course in college or university
 - k. High School job fair or industry presentation at my school
 - l. College or university job fair
 - m. Other. Specify_____
 - n. I did not receive information from any source

12. To what extent did each of the following encourage or discourage you from considering a career in a construction trade (e.g., Electrician, Plumber, Welder, Roofer, Bricklayer, Landscaper, etc.) or in a construction management occupation (e.g., Project Manager, Manager, Supervisor, Estimator, etc.)? [RANDOMIZE ITEMS]
- a. Parents
 - b. Other family members not including parents or spouse/partner
 - c. Spouse or life partner
 - d. Friends
 - e. Teacher
 - f. High School guidance counsellor
 - g. Counsellor in a college, university, or community career service
 - h. Someone who worked in the construction industry
 - i. High School job fair or industry presentation at my school
 - j. College or university job fair
 - k. Being offered a work or training opportunity
 - l. Mentorship program
 - m. Media (e.g., newspapers, television, magazines, advertising)

RESPONSE OPTIONS:

- Strongly discouraged
- Fairly discouraged
- Slightly discouraged
- Neither encouraged nor discouraged
- Slightly encouraged
- Fairly encouraged
- Strongly encouraged

APPENDIX J: WOMEN IN CONSTRUCTION SURVEY

13. Do you currently work in a construction trade (e.g., Electrician, Plumber, Welder, Roofer, Bricklayer, Landscaper, etc.) or in a construction management occupation (e.g., Project Manager, Manager, Supervisor, Estimator, etc.)?
- Yes (GO to Question 16)
 - No (Continue)
14. [ONLY IF "NO" IN Q13] Did you ever consider entering a career in a construction trade (e.g., Electrician, Plumber, Welder, Roofer, Bricklayer, Landscaper, etc.) or in a construction management occupation (e.g., Project Manager, Manager, Supervisor, Estimator, etc.)?
- Yes
 - No
15. [ONLY IF "NO" IN Q13] Regardless of past decisions, how likely are you to consider each of the following in the future? [RANDOMIZE STATEMENTS]
- A career in a construction trade (e.g., Electrician, Plumber, Welder, Roofer, Bricklayer, Landscaper, etc.)
 - A career in construction management (e.g., Project Manager, Manager, Supervisor, Estimator, etc.)

RESPONSE OPTIONS:

Very unlikely
Fairly unlikely
Slightly unlikely
Neither likely nor unlikely
Slightly likely
Fairly likely
Very likely

16. Have you known any women who worked in the construction industry, in a construction trade or in construction management?
- Yes
 - No
17. Has any member of your family worked in the construction industry, in a construction trade or in construction management?
- Yes
 - No
18. Please rate how strongly you agree or disagree with the following statements. [RANDOMIZE STATEMENTS]
- Where I live, there are lots of jobs in construction for women
 - There is job security in the construction industry
 - I have the skills or aptitude for work in construction
 - Women do not earn good salaries in construction
 - Women have good opportunities for advancement in the construction industry
 - Women and men do not have equal talent for the construction trades (e.g., Electrician, Plumber, Welder, Roofer, Bricklayer, Landscaper, etc.)
 - Women and men have equal talent for construction management occupations (e.g., Project Manager, Manager, Supervisor, Estimator, etc.)
 - Not many employers in construction want to hire women

- i. Work in construction is not physically difficult for women
- j. It is difficult for women to succeed in male-dominated occupations
- k. It is possible to work flexible hours in construction
- l. It is possible to train on the job in the construction industry while earning an income
- m. Work in construction can be dangerous

RESPONSE OPTIONS:

- Disagree strongly
- Disagree moderately
- Disagree slightly
- Neither agree nor disagree
- Agree slightly
- Agree moderately
- Agree strongly

WORK AND EMPLOYMENT

19. What was your main activity in 2008, that is, the activity you spent the most time on?

- a. Full-time employment
- b. Part-time employment
- c. Full-time school
- d. Part-time school
- e. Working and going to school
- f. Caring for family
- g. Looking for employment
- h. Other. Specify_____

20. How many jobs do you have currently?

- a. None (Go to Question 23)
- b. One
- c. Two
- d. Three
- e. More than three jobs

[DO NOT ASK Q21 IF Q19 EQUALS 'CARING FOR FAMILY' OR 'LOOKING FOR EMPLOYMENT']

21. Which of the following best describes your main job currently? Your main job is the one where you work the most.

- a. Self-employed
- b. Permanent full-time employment
- c. Permanent part-time employment
- d. Temporary employment (I do occasional work or I am hired for a limited time period)
- e. Seasonal employment (I am employed only during a certain time of year)
- f. Other. Specify_____

APPENDIX J: WOMEN IN CONSTRUCTION SURVEY

22. On average, how many hours do you work each week (all jobs combined)?
- Less than 15 hours per week
 - Between 16 and 30 hours per week
 - Between 31 and 40 hours per week
 - Between 41 and 50 hours per week
 - More than 50 hours per week
23. How satisfied or dissatisfied are you/were you in your current (or most recent) occupation or main job?

RESPONSE OPTIONS:

- Very dissatisfied
- Fairly dissatisfied
- Slightly dissatisfied
- Neither satisfied nor dissatisfied
- Slightly satisfied
- Fairly satisfied
- Very satisfied

24. Which of the following income groups would best represent your expected gross annual income for 2008? Please indicate your personal income, not your household income.
- Less than \$19,999
 - \$20,000-\$29,999
 - \$30,000-\$39,999
 - \$40,000-\$49,999
 - \$50,000-\$59,999
 - \$60,000-79,999
 - \$80,000 or more

BACKGROUND INFORMATION

25. What is your marital status?
- Single
 - Married/Common law
 - Divorced/Separated
 - Other
26. Do you have dependent children living with you?
- Yes
 - No
27. Are you Native or Aboriginal (First Nations, Métis, or Inuit)?
- Yes
 - No
28. What is your citizenship status?
- Canadian Citizen
 - Refugee
 - Permanent Resident or Landed Immigrant
 - Temporary Worker
 - Other

29. What is the highest level of education completed by your mother or female guardian?
- Less than High School
 - High School Diploma or equivalent
 - Some College or University courses (No Certificate, Diploma, or Degree)
 - Apprenticeship Certification
 - Apprentice Journeyperson
 - Public or Private College – Certificate or Diploma
 - University – Bachelor’s Degree
 - Master’s Degree
 - Doctoral Degree
 - Other Professional Degree
 - Other
30. What is the highest level of education completed by your father or male guardian?
- Less than High School
 - High School Diploma or equivalent
 - Some College or University courses (No Certificate, Diploma, or Degree)
 - Apprenticeship Certification
 - Apprentice Journeyperson
 - Public or Private College – Certificate or Diploma
 - University – Bachelor’s Degree
 - Master’s Degree
 - Doctoral Degree
 - Other Professional Degree
 - Other
31. In what province or territory of Canada do you live (or if you are temporarily not living in your home province but plan to return there, what is your home province)?
- Newfoundland and Labrador
 - Nova Scotia
 - Prince Edward Island
 - New Brunswick
 - Quebec
 - Ontario
 - Manitoba
 - Saskatchewan
 - Alberta
 - Nunavut
 - Northwest Territories
 - Yukon
 - British Columbia
32. To the best of your knowledge, which of the following best describes the place where you live?
- Rural/Small Town (population: less than 10,000)
 - Town or small city (population: 10,000 up to just under 50,000)
 - Metropolitan centre (population: 50,000 up to just under 250,000)
 - Large metropolitan centre (population: 250,000 or more)

We thank you for your time and interest in completing this survey for the Construction Sector Council. (END OF SURVEY)

APPENDIX K: CHARACTERISTICS OF RESPONDENTS EMPLOYED IN CONSTRUCTION TRADES/ MANAGEMENT

Characteristics	Employed in construction trades/management (%)	Not employed in construction trades/management (%)
Age	n = 93	n = 1,197
· 18-19 years	15	12
· 20-24 years	41	36
· 25-29 years	28	28
· 30-34 years	16	24
Education	n = 93	n = 1,197
· High school or less	35	32
· Some college or university	17	26
· Apprenticeship certification	11	1
· Journeyperson	0	0.3
· College credential	18	22
· University undergraduate degree	15	16
· University graduate degree	4	2
Educational status and plans	n = 93	n = 1,197
· Currently enrolled in education	36	29
· Plans to continue education in future	45	37
· No plans to continue education	19	34
Educational aspirations	n = 75	n = 788
· No further plans	4	4
· High school or equivalent	17	7
· Apprenticeship certification	9	3
· Apprenticeship journeyperson	11	2
· College credential	19	28
· University degree	31	40
· Other professional degree	4	5
· Upgrading (non-credential)	5	9
Maternal/female guardian's education	n = 93	n = 1,197
· High school or less	37	42
· Some college or university	15	14
· Apprenticeship certification or journeyperson	5	2
· College credential	17	24
· University degree	24	18

Continued on next page

Characteristics of respondents employed in construction trades/management (continued)

Characteristics	Employed in construction trades/management (%)	Not employed in construction trades/management (%)
Paternal/male guardian's education	n = 93	n = 1,197
· High school or less	43	46
· Some college or university	13	12
· Apprenticeship certification or journeyperson	8	8
· College credential	8	13
· University degree	25	18
Living in rural/urban settings	n = 93	n = 1,197
· Rural or small town	22	20
· Town or small city	28	25
· Metropolitan centre	20	28
· Major metropolitan centre	30	28
Income (all jobs combined)	n = 93	n = 1,197
· < \$20,000	25	45
· \$20,000 to \$29,999	20	22
· \$30,000 to \$39,999	18	14
· \$40,000 to \$49,999	13	10
· \$50,000 or more	24	9
Main job	n = 76	n = 770
· Self-employed	11	6
· Permanent full-time employment	51	54
· Permanent part-time employment	28	27
· Temporary employment	1	8
· Seasonal employment	9	4
Hours worked per week (all jobs combined)	n = 82	n = 883
· < 15 hours	11	13
· 16 - 30 hours	11	21
· 31 - 40	32	42
· 41 - 50	28	18
· More than 50 hours	18	6
Number of jobs	n = 93	n = 1,197
· None	12	26
· One	59	63
· Two	23	9
· Three	5	1
· More than three	1	0

Note: Percentages may not add to 100 due to rounding and "do not know" responses.

APPENDIX L: CHARACTERISTICS OF RESPONDENTS WHO HAD CONSIDERED A CAREER IN CONSTRUCTION

Characteristics	Respondents who had considered a career in the construction trades or construction management	
	Yes (%)	No (%)
Age	n = 274	n = 923
· 18-19 years	10	13
· 20-24 years	37	35
· 25-29 years	33	27
· 30-34 years	21	26
Education	n = 274	n = 923
· High school or less	40	29
· Some college or university	23	27
· Apprenticeship certification or journeyperson	2	1
· College credential	22	22
· University degree	12	21
Educational aspirations	n = 216	n = 572
· No further plans	2	4
· High school or equivalent	7	6
· Apprenticeship certification or journeyperson	7	4
· College credential	34	29
· University degree	10	46
· Upgrading (non-credential)	37	10
Maternal or female guardian's education	n = 274	n = 923
· High school or less	47	41
· Some college or university	12	15
· Apprenticeship certification or journeyperson	0	2
· College credential	23	21
· University degree	16	19
Paternal or male guardian's education	n = 274	n = 923
· High school or less	46	46
· Some college or university	13	12
· Apprenticeship certification or journeyperson	9	7
· College credential	15	13
· University degree	14	19
Living in rural/urban settings	n = 274	n = 923
· Rural or small town	20	19
· Town or small city	25	25
· Metropolitan centre	31	27
· Major metropolitan centre	25	29

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Characteristics of respondents who had considered a career in construction (continued)

Characteristics	Respondents who had considered a career in the construction trades or construction management	
	Yes (%)	No (%)
Dependent children	n = 274	n = 923
	40	32
Income (all jobs combined)	n = 274	n = 923
· < \$20,000	44	46
· \$20,000 to \$29,999	27	20
· \$30,000 to \$39,999	14	14
· \$40,000 to \$49,999	10	10
· \$50,000 or more	6	10
Main job	n = 171	n = 599
· Self-employed	9	6
· Permanent full-time employment	54	54
· Permanent part-time employment	23	28
· Temporary employment	10	8
· Seasonal employment	5	4

Note: Percentages may not add to 100 due to rounding and "do not know" values.

APPENDIX M: CHARACTERISTICS OF RESPONDENTS LIKELY TO CONSIDER CAREERS IN CONSTRUCTION IN THE FUTURE

Characteristics	Fairly or very likely to consider a career in the future in:	
	Construction trades (%)	Management (%)
Age	n = 59	n = 106
· 18-19 years	2	6
· 20-24 years	37	41
· 25-29 years	42	31
· 30-34 years	19	23
Education	n = 59	n = 106
· High school or less	48	36
· Some college or university	24	23
· Apprenticeship certification or journeyperson	3	2
· College credential	19	22
· University degree	5	14
Educational aspirations	n = 49	n = 82
· No further plans	4	2
· High school or equivalent	4	0
· Apprenticeship certification or journeyperson	16	9
· College credential	41	38
· University degree	29	40
· Upgrading (non-credential)	6	10
Mother/female guardian's education	n = 59	n = 106
· High school or less	42	47
· Some college or university	22	13
· Apprenticeship certification or journeyperson	0	0
· College credential	17	21
· University degree	19	19
Father/male guardian's education	n = 59	n = 106
· High school or less	46	46
· Some college or university	22	16
· Apprenticeship certification or journeyperson	9	8
· College credential	14	13
· University degree	10	16
Living in rural/urban settings	n = 59	n = 106
· Rural or small town	24	15
· Town or small city	27	30
· Metropolitan centre	32	28
· Major metropolitan centre	17	26

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Characteristics of respondents likely to consider careers in construction in the future (continued)

Characteristics	Fairly or very likely to consider a career in the future in:	
	Construction trades (%)	Management (%)
Number of jobs	n = 59	n = 106
· None	31	19
· One	59	70
· Two	10	10
· Three	0	1
Dependent children	n = 59	n = 106
	42	37
Income (all jobs combined)	n = 59	n = 106
· < \$20,000	56	40
· \$20,000 to \$29,999	24	26
· \$30,000 to \$39,999	14	20
· \$40,000 to \$49,999	2	9
· \$50,000 or more	5	7
Main activity in 2008	n = 59	n = 106
· Full-time employment	42	56
· Part-time employment	14	9
· Full-time school	14	12
· Part-time school	2	1
· Working and going to school	5	6
· Caring for family/homemaker	22	15
· Looking for employment	2	1
Main job	n = 35	n = 78
· Self-employed	3	9
· Permanent full-time employment	54	56
· Permanent part-time employment	40	22
· Temporary employment	3	8
· Seasonal employment	0	5

Note: Percentages may not add to 100 due to rounding and "do not know" values.

APPENDIX N: ATTITUDES OF THOSE INTERESTED IN CAREERS IN CONSTRUCTION TRADES/MANAGEMENT

Attitudes and beliefs	Considered a career in construction trades/management			Fairly or very likely to consider a career in the construction trades			Fairly or very likely to consider a career in construction management		
	Yes	No	Agreed (%)	Likely	Unlikely	Agreed (%)	Likely	Unlikely	Agreed (%)
	n	n		n	n		n	n	
1. Where I live, there are lots of jobs in construction for women	n = 77 42 (ns)	n = 210 34 (ns)		n = 23 52*	n = 184 28*		n = 36 56*	n = 160 30*	
2. There is job security in the construction industry	n = 81 75***	n = 192 53***		n = 25 80**	n = 172 49**		n = 37 84***	n = 139 48***	
3. I have the skills or aptitude for work in construction	n = 98 80***	n = 323 22***		n = 33 88***	n = 285 19***		n = 54 80***	n = 250 18***	
4. Women do not earn good salaries in construction	n = 38 45*	n = 141 30*		n = 23 56*	n = 163 29*		n = 31 58**	n = 149 27**	
5. Women have good opportunities for advancement in the construction industry	n = 67 54 (ns)	n = 179 50 (ns)		n = 29 72**	n = 151 43**		n = 39 72**	n = 134 43**	
6. Women and men do not have equal talent for the construction trades (e.g., electrician, plumber, welder, roofer, bricklayer, landscaper, etc.)	n = 127 23 (ns)	n = 336 19 (ns)		n = 32 28 (ns)	n = 282 17 (ns)		n = 52 39***	n = 247 16***	
7. Women and men have equal talent for construction management occupations (e.g., project manager, manager, supervisor, estimator, etc.)	n = 137 96**	n = 358 87**		n = 31 94 (ns)	n = 309 87 (ns)		n = 56 95*	n = 265 85*	
8. Not many employers in construction want to hire women	n = 85 86**	n = 222 72**		n = 29 86 (ns)	n = 187 72 (ns)		n = 49 86**	n = 151 68**	
9. Work in construction is not physically difficult for women	n = 71 35 (ns)	n = 258 28 (ns)		n = 28 68***	n = 215 22***		n = 43 58***	n = 191 22***	
10. It is difficult for women to succeed in male-dominated occupations	n = 102 78**	n = 294 65**		n = 27 78 (ns)	n = 254 68 (ns)		n = 49 84**	n = 214 65**	
11. It is possible to work flexible hours in construction	n = 89 63***	n = 198 45***		n = 25 84***	n = 173 42***		n = 46 70***	n = 135 39***	
12. It is possible to train on the job in the construction industry while earning an income	n = 113 97***	n = 229 81***		n = 26 100**	n = 211 80**		n = 43 95**	n = 176 78**	
13. Work in construction can be dangerous	n = 150 97***	n = 380 88***		n = 38 97 (ns)	n = 322 89 (ns)		n = 59 100**	n = 280 88**	

* p < .05, ** p < .01, *** p < .001, (ns) = non-significant

APPENDIX O: ASSOCIATIONS AND ORGANIZATIONS SUPPORTING CANADIAN WOMEN IN CONSTRUCTION

Canadian Association of Women in Construction

<http://cawic.ca>

Canadian Coalition of Women in Engineering Science and Technology (CCWESTT)

(*Women in SETT* initiative)

<http://www.cccwestt.org>

Canadian Construction Women

<http://www.constructionwomen.org>

Construction Owners Association of Alberta (COAA)

<http://www.coaa.ab.ca/>

Engineers Canada, *Women in Engineering* – information about mentoring programs provided on the websites of some provincial associations

http://www.engineerscanada.ca/e/pr_women.cfm

Hypatia Association: Gender Equity in Science and Technology

<http://www.hypatiaassociation.ca/>

Ontario's Workforce Shortage Coalition

<http://workforcecoalition.ca/>

Society for Canadian Women in Science and Technology

<http://www.scwist.ca/>

Women Entrepreneurs of Canada (WEC) – links women entrepreneurs; provides research on women entrepreneurs; promotes entrepreneurship among women

<http://www.wec.ca>

Women's Economic Equality (WEE) Society

<http://weesociety.ca/index.php/site/about/>

Women's Enterprise Center

<http://www.womensenterprise.ca>

Women in Leadership Foundation

<http://www.womeninleadership.ca/>

Women in Trades and Technology (WITT)

<http://www2.siastr.sk.ca/witt/saskwitt.htm> (SASKWITT)

<http://www.ssane.com/koot-witt/> (Kootenay WITT)

<http://www.yukonwitt.org/CommunityVisits/tabid/58/Default.aspx> (YukonWITT)

APPENDIX P: EXCERPTS FROM *FREE TO CHOOSE: TACKLING GENDER BARRIERS TO BETTER JOBS* (EOC, 2005A)

The United Kingdom Equal Opportunities Commission (EOC) released several reports (EOC, 2005a, 2005b, & 2006) to document the findings of a multi-phase project called *The Free to Choose: Tackling Gender Barriers to Better Jobs Project*. This project investigated the segregation of men and women in work and training, identified key systemic barriers to the equal participation of non-traditionals in vocational education, and developed a comprehensive action plan to address systemic barriers. The following passages have been extracted from the EOC (2005a) report titled, *Free to Choose: Tackling Gender Barriers to Better Jobs. England Final Report - EOC's Investigation into Workplace Segregation and Apprenticeships*.

Phase 1: Key recommendations

The U.K. Government's planned overhaul of the apprenticeship scheme should include actions that address systemic barriers to taking on non-traditional recruits. As part of this, the apprenticeship scheme should be made more transparent through *better data collection*, and immediate action should be taken to *put all existing gender data on apprenticeship frameworks and pay in the public domain*.

1. A national strategy should be developed, driven by a high-level alliance across government, to ensure a consistent approach from all relevant parties to tackling gender segregation in training and work.

This should incorporate effective incentives for leveraging real change, including targets for measuring progress. It should initially focus on apprenticeships and vocational education but the government should look more widely, with the EOC and employers, at ways of tackling occupational segregation.

Incentives for change

- The government should set a high-level target or targets to break down occupational segregation in apprenticeships and vocational education.
- This should be backed up by a range of effective incentives and levers for change at each operational level, from the Department for Trade and Industry (DTI), Department for Education and Skills (DfES) and Learning and Skills Councils (LSC) to schools and employers which might include: tightening up inspection requirements across all levels of the delivery chain, from the DTI to schools and training providers, and the introduction of equality indicators across sectors to measure the extent of gender segregation.
- Specific incentives should be offered, either through LSC funding or in the form of tax breaks, for employers who offer apprenticeships training to women in skill shortage sectors (linked to offer and completion). At the trainee level, there should be incentives for trainees to make atypical choices (also linked to entry and completion).

Procurement

Government can lead by example and

- identify the extent of gender segregation across the public sector;
- provide a breakdown of the apprenticeship scheme – by number, sector, gender, disability and age; and,
- introduce greater accountability on equality by requiring contractors to signal their commitment to supporting and delivering apprenticeships through their supply chain with equality clauses integral to apprenticeship targets.

2. The government's planned overhaul of the apprenticeship scheme should include actions that address systemic barriers in the frameworks for atypical recruits.

As part of this, the apprenticeship scheme should be made more transparent through better data collection and immediate action should be taken to put all existing gender data on apprenticeship frameworks and pay in the public domain.

- Steps should be taken as a matter of some urgency to put data on registrations (and ideally completions) by gender, separately for all apprenticeship frameworks, in the public domain.
- An initial audit of pay rates for apprentices should be published and made available to Connexions and schools as a matter of urgency and this should be followed by subsequent monitoring.
- Regular surveys of employment and apprenticeship training patterns, pay gaps, qualification levels and skills shortages by gender, race and disability, should be published regularly.
- Creating more government-funded, project-based apprenticeship groups and group training schemes, rather than just single employer placements for sectors dominated by small businesses providing a stable location, and mentoring and support for atypical trainees and single-sex groups, to encourage retention in non-traditional sectors.
- Increasing flexible delivery to meet the needs of women, Black and ethnic minorities, and disabled trainees.
- Ensuring that youth apprenticeships are structured and delivered with the clear objective of breaking stereotypes. This is an exciting opportunity to shape youth apprenticeships as taster courses, with young people experiencing a range of different vocational opportunities with at least one atypical taster course and with exposure to good role models and careers advice.
- Offering short non-traditional taster courses and accreditation of prior experience for adult apprenticeships, which are likely to be attractive to those returning to the labour market, and to people currently in work.
- Extending the national minimum wage (NMW) to apprenticeships.

Other recommendations

1. Learning and Skills Councils should:

- Collect and make available annual data on apprenticeship frameworks by sector, gender, race and disability.
- Set national and local targets or other effective incentives to reduce gender segregation on apprenticeships.
- Introduce training for employers and providers to improve recruitment practices, and training and workplace culture.
- Promote the positive outcome of local initiatives.
- Facilitate national dissemination of local successes.

2. Sector Skills Councils should:

- Make gender targets an integral part of sector recruitment targets – and not an add-on.
- Conduct regular audits of pay rates across apprenticeship sectors and publish these.

APPENDIX P: EXCERPTS FROM FREE TO CHOOSE: TACKLING GENDER BARRIERS TO BETTER JOBS (EOC, 2005A)

- Develop and deliver project-based apprenticeship groups for small employers who are reluctant to train, as an alternative to single-employer placements.
- Run campaigns that re-package the five sectors considered by this report for atypical target audiences including young people in schools.

3. The Adult Learning Inspectorate should:

- Focus on the achievement of individual providers in attracting and retaining atypical apprenticeships.
- Conduct area inspections by Adult Learning Inspectorate (ALI) and the Office for Standards in Education, Children's Services and Skills (Ofsted) to report on gender patterns in recruitment across whole LSC areas.

4. Connexions should:

- Ensure that the current review of the careers guidance process includes a commitment to offer wider choice to young people and support for those who choose non-traditional careers.
- Provide information on atypical work sectors to young people making vocational choices, including the different financial rewards for apprenticeship and employment.

5. Schools should:

- Put more focus on challenging stereotyped subject choices and targeting boys and girls directly with information about a wide range of opportunities including non-traditional training and work, or work experience.
- Set gender targets as part of the entry targets for vocational General Certificates of Secondary Education (GCSE).

6. The Confederation of British Industry, Federation of Small Businesses and Trades Union Congress should:

- Promote the reduction of occupational segregation – not just as an equality issue, but also as a productivity and business issue among employers.

Phase 2 – Occupational segregation and barriers to change

Phase 2, which is the main focus of the *Free to Choose: Tackling Gender Barriers to Better Jobs England Final Report*, was designed to gather further evidence on: the reasons for occupational segregation and the barriers to change, especially in terms of the attitudes, aspirations and experiences of young people; delivery and practice in education, careers advice and training; and, the practices and attitudes of employers. We also wanted to identify strategies and solutions to remove these barriers, focusing on best practice, and in England to provide additional evidence on segregation in wider vocational education and training, at the request of the Secretary of State for Education and Skills.

Findings: Barriers to change

The investigation looked at the components of the current “education to training to work” system which are behind this gender segregation. This is what we found:

- an education system that fails to support entry to non-traditional employment via vocational routes;
- an apprenticeship and vocational training system that fails to support non-traditional recruits;
- a lack of coordinated and consistent action among employers; and,
- lack of a national strategy to tackle occupational segregation.

Delivering change: Recommendations of the investigation

Individuals, employers and the economy would all benefit from reduced gender segregation, and there is a balance to strike in sharing the costs and responsibilities of achieving it. Breaking down these barriers will require a national agenda with actions for educators, trainers, employers and unions coordinated at high level by government. The action required is comprehensive and far-reaching.

1. Delivering an education system that widens choice and supports vocational routes into non-traditional employment

- The government needs to put in place a new national agenda that opens up choice and opportunity and challenges the myths and stereotypes that form from an early age.
- Every school child should be entitled to a personal careers interview with a teacher or adviser who has been trained to open up choices, challenge gender stereotyping and promote non-traditional work opportunities.
- Careers education should become statutory and subject to inspection on gender equality.
- There should be a new strategic focus in work-related learning on widening opportunity, with work experience policy and practice revised so that each pupil is offered two placements, one a non-traditional one.

To address the difficulties in securing work experience placements:

- Every employer in the sectors covered by this investigation should be encouraged to offer at least one non-traditional placement.
- Sector Skills Councils (SSCs) should work with Education Business Partnerships and school coordinators to source college-simulated work environments and project-based apprenticeships and training for non-traditional placements.
- Steps should be taken to improve policy, delivery and practice for the new youth vocational options to address the emerging gender splits.
- The interventions, such as trying out work before making a final choice and financial incentives, that girls and boys said would encourage them to choose atypical training or work, should be tested.

2. Delivering an apprenticeship and vocational training system that encourages the take-up of atypical recruits

The government's ongoing development of the apprenticeship scheme should include actions to address the systemic barriers to taking on atypical recruits.

- Vocational training schemes, whether apprenticeships or beyond, should be designed with the needs of atypical trainees in mind, using best practice identified in this investigation. This would mean: tasters for young and adult apprenticeships; that young people and adult women trainees have more support to find adequate work placements, possibly through small employers sharing trainees and by project-based training; and, there being support networks for atypical trainees about training and apprenticeship schemes.
- Sector Skills Councils (SSCs) should use partnership agreements between employers and training providers to: deliver skills needed for the sector to address gender segregation, make gender targets an integral part of sector recruitment targets, and develop project-based apprenticeship groups for small employers as an alternative to single employer placements. SSCs should be able to draw down public funding via these agreements to meet equality objectives, including both encouraging women to apply for non-traditional training and tackling what employers should do.

APPENDIX P: EXCERPTS FROM FREE TO CHOOSE: TACKLING GENDER BARRIERS TO BETTER JOBS (EOC, 2005A)

Learning and Skills Councils, SSCs and training providers should work with employers to:

- “rebrand” training and work opportunities and redefine skills in male-dominated sectors in ways that will resonate with both sexes, not just their traditional audience; and,
- test the interventions that employers said may encourage them to take on more minority-gender apprentices and trainees.

3. Delivering proactive action by employers that is joined up and sustained

The reduction of occupational segregation, not just as an equality issue but also as a business and productivity issue, should be promoted among employers in the sectors covered by this investigation, by the Confederation of British Industry (CBI), Trade Union Congress (TUC) and their learning and skills partners, and employers should be encouraged to:

- train, recruit and retain women in non-traditional sectors;
- re-skill women employees – the extension of Employer Training Pilots provides the opportunity for a new national focus on the in-house training of women in non-traditional skills; and,
- offer at least one non-traditional work experience placement.

In addition, these actions should be taken:

- Business leaders and major employers should support and promote better, more flexible employer practices that would help and encourage more women to enter male-dominated sectors.
- Trade unions should expand their efforts to challenge occupational segregation by increasingly including this on the agenda in collective bargaining, for example when negotiating re-training.
- Given that companies are now reporting on human capital where this is material to their performance as part of *Accounting for People*, the reporting should include progress toward gender equality recognizing that good equality practice is material to good performance.

4. Delivering national strategies to put tackling segregation at the heart of policies to raise productivity and skills

- The government should develop the national strategy, driven by a high-level alliance and linked to key economic and skills strategies, to promote joined-up delivery of action to tackle gender segregation in training and work.
- The strategy should incorporate effective incentives for leveraging real change, including targets, with monitoring and evaluation for measuring progress. The strategy should provide the framework for acting on the recommendations of both phases of this investigation with dedicated funding and resource support.
- Challenging job segregation should be built into national procurement policy.
- The Treasury’s Women in Enterprise Initiative should include a focus on attracting women into the sectors that are experiencing skills shortages. In particular, this focus should be included in the Small Business Service Plan that will detail concrete steps to meet the new Women in Enterprise target.
- The National Childcare Strategy should highlight the benefits of attracting more men into childcare.

Measuring change

It is important as part of the government's national strategy and action plan to monitor progress on maximizing individual choice and potential and for meeting employer and economic need.

We suggest that this monitoring and evaluation should focus by gender on:

- qualifications, knowledge and skills acquired in school – academic and vocational subject and option choices, work experience placements, qualifications gained
- post-school destinations – work, further education or vocational training, higher education, other destinations
- job choice – at entry to the workforce, on returning
- pay rates – on entry to work, after re-entry

Examples of best practice

1. Examples of U.K. Learning and Skills Council (LSC) good practice include:

- encouraging employers/work-based training providers to make a commitment to interviewing non-traditional applicants who meet their selection criteria;
- developing local marketing activities, such as publicity materials and drama productions to raise awareness and take-up of opportunities;
- LSCs working with partner organisations such as SSCs to provide hands-on activities, work experience and taster days; and,
- providing mentoring and support programs for non-traditional trainees.

2. Some training providers encourage and facilitate participation by non-traditional trainees by:

- setting more flexible training hours to fit around women's caring responsibilities;
- subsidizing childcare, either directly or via an allowance, to offset costs;
- offering personal development modules to help non-traditional trainees build confidence and assertive behaviour;
- dedicating a staff member to helping non-traditional trainees find work placements and supporting them through the placements;
- encouraging employers to offer flexible-hours placements to accommodate caring responsibilities, as does the Women's Training Network in the ICT industry;
- offering men-only introductory childcare courses, and those aimed at increasing participation by Black and ethnic minority males; and,
- using single-gender training to open up training possibilities to women from a wider range of backgrounds, such as those whose religions make it difficult for them to mix with men.

3. Some examples of career services' good practice include:

- undertaking group work with 12-year-old children to challenge and discuss attitudes and the influence of community, friends and parents;
- running evening sessions with Year 11 children and their families, and encouraging parents to sit in on interviews to encourage support for non-traditional choices;
- involving male childcare workers, and others in non-traditional occupations, in *What's My Line*-style quizzes in schools;
- producing promotional material – posters, mousemats, leaflets, to get across the message, *You can dare to be different!*; and,

APPENDIX P: EXCERPTS FROM FREE TO CHOOSE: TACKLING GENDER BARRIERS TO BETTER JOBS (EOC, 2005A)

- initiating an action-based pilot project to implement positive career choice, free from gender bias or stereotypes.

4. Some employers are:

- offering flexible hours to accommodate caring [there is evidence that small employers and large employers across all the investigation sectors have been able to meet different working patterns, often to the benefit of their clients and business];
- providing travel and childcare support;
- establishing buddying and mentoring to address isolation and lack of confidence;
- setting clear expectations of standards of behaviour for employees (e.g., one large construction employer tackled persistent harassment by getting rid of the offending male employee); and,
- establishing good links with local schools including offering work experience placements, single-gender taster days and open days.

APPENDIX Q: EXCERPTS FROM ACTION FOR CHANGE: HOW TRAINING PROVIDERS CAN BREAK DOWN GENDER SEGREGATION IN VOCATIONAL EDUCATION AND TRAINING (EOC, 2005B)

A 2005 report from the U.K. Equal Opportunity Commission (EOC), titled, *Action for Change: How Training Providers can Break Down Gender Segregation in Vocational Education and Training*, describes the objectives and phases of the *Freedom to Choose* project. That project set out, first, to identify actions that could be taken to help break down gender stereotyping in the U.K. apprenticeship framework, and, second, to identify barriers to wider change and actions to address gender stereotyping, with support from U.K. Learning Skills Councils. The report documents good practice for promoting change and provides information about the following:

- action points and initiatives that training providers can take to involve stakeholders (including non-traditional recruits, schools, careers advice agencies, employers and business);
- ways in which training can be structured to ensure non-traditional trainees are adequately represented and supported; and,
- details of organisations and resources that can assist in breaking down gender stereotypes in training provision.

1. Involving stakeholders

a) What training providers can do to attract non-traditional recruits

- Implement measures ('targets') to recruit atypical trainees and monitor applications by gender. (*See Practice in Action 1*)
- Work with schools and careers advice agencies to increase participation of trainees in non-traditional sectors. (*See Practice in Action 1, 2 and 3*)
- Offer training places to all atypical recruits who meet the key selection criteria. (*See Practice in Action 3*)
- Monitor assessment tests by gender to ensure tests are not acting as a barrier to recruitment of atypical trainees. (*See Practice in Action 1 and 3*)
- Improve access to information about training opportunities and Apprenticeship places, by working in partnership with the Sector Skills Councils (SSCs) and other key stakeholders such as the Regional Development Agencies. (*See Practice in Action 4*)
- Provide taster sessions as part of the Entry2Employment programme, which prepares young people of school age for entry into work or apprenticeships. (*See Practice in Action 5*)
- Work with schools to give hands-on opportunities for young people to experience different vocational areas, including taster days or weeks, summer schools or student apprenticeships. (*See Practice in Action 2, 6, 7, and 9*)
- Include within the mainstream curriculum work that challenges occupational stereotypes held by young people, prior to making training schemes choices. (*See Practice in Action 2, 7, and 8*)

APPENDIX Q: EXCERPTS FROM *ACTION FOR CHANGE: HOW TRAINING PROVIDERS CAN BREAK DOWN GENDER SEGREGATION IN VOCATIONAL EDUCATION AND TRAINING* (EOC, 2005B)

1. Involving stakeholders	
a) What training providers can do... to attract non-traditional recruits	
Practice in Action 1	<ul style="list-style-type: none"> ▸ <i>monitoring</i> ▸ <i>setting targets</i> ▸ <i>steadily increasing targets</i>
Practice in Action 2	<ul style="list-style-type: none"> ▸ <i>proactive promotion to non-traditional gender</i> ▸ <i>taster opportunities</i> ▸ <i>informal/fun settings</i>
Practice in Action 3	<ul style="list-style-type: none"> ▸ <i>targeting female recruits</i> ▸ <i>guaranteed places</i> ▸ <i>assessment to ensure correct entry level</i>
Practice in Action 4	▸ <i>improving the information available to non-traditional recruits</i>
Practice in Action 5	▸ <i>offering work experience as part of E2E and promoting it widely</i>
Practice in Action 6	<ul style="list-style-type: none"> ▸ <i>events and away days as a taster</i> ▸ <i>female role models</i>
Practice in Action 7	<ul style="list-style-type: none"> ▸ <i>taster days for schools</i> ▸ <i>talks to single sex groups</i> ▸ <i>student apprenticeships</i>
Practice in Action 8	▸ <i>discussion to challenge stereotypes, broaden horizons</i>
Practice in Action 9	▸ <i>making the training environment more familiar</i>

b) What training providers can do to get employers on board

- Work with employers to increase their awareness of equal opportunity issues, especially in recruitment and selection. Atypical trainees often face discriminatory attitudes that block access to work placement opportunities. (See *Practice in Action 10 and 11*)
- Encourage employers, especially those in the private sector, to implement equal opportunities policies and conduct training on these policies for managers. This will meet their legal obligations as well as provide the organisational advantages of a diverse workforce. (See *Practice in Action 11*)
- Promote the business case for diversity to employers, highlighting the advantages that women can bring to a business. Our research found that 70% of employers thought atypical recruits could bring positive benefits to the business, and 80% said a better gender mix would create a better range of skills and talents. (See *Practice in Action 12*)
- Challenge negative views among employers about recruiting atypical apprentices – Consider providing help with resources if cost is raised as a barrier.
- Liaise with placement employers to encourage them to adopt flexible working practices that accommodate the particular needs of women trainees. (See *Practice in Action 13*)
- Encourage employer involvement in courses to raise their awareness of atypical trainees and to increase students' employability. (See *Practice in Action 14*)

1. Involving stakeholders	
b) What training providers can do... to get employers on board	
Practice in Action 10	<ul style="list-style-type: none"> ▸ <i>free seminars for employers</i> ▸ <i>best practice</i>
Practice in Action 11	▸ <i>resources and helpline for employers</i>
Practice in Action 12	▸ <i>turning shortage into a marketing tool</i>
Practice in Action 13	▸ <i>flexible work hours negotiated with employers</i>
Practice in Action 14	<ul style="list-style-type: none"> ▸ <i>funding</i> ▸ <i>involving employers</i> ▸ <i>increasing employability of students</i>

2. Reviewing the structure of training programs

b) What training providers can do to support and enable atypical recruits to participate in training

- Consider providing single-sex training courses in non-traditional skills to encourage more atypical candidates to undertake training without the fear of being undermined, ridiculed, or isolated. (See *Practice in Action 17, 18 and 20*)
- Use women-only training to target women from minority ethnic backgrounds who for religious or cultural reasons are unable to train with men. (See *Practice in Action 21*)
- Publicity material for courses should feature and explicitly welcome the atypical gender. Materials only featuring one gender or ethnic group can send a signal that the course is not suitable for or welcoming to those who are not featured.
- Set up support mechanisms such as mentoring to prevent work-based apprentices feeling isolated, thus reducing the chances of them failing to complete their training. (See *Practice in Action 15, 19 and 22*)
- Provide flexible course hours to fit in with women's childcare arrangements or other responsibilities. Women with children are often excluded from training because of inflexible course hours. This may require ensuring start/finish times fit around school hours and allowing time off during local school holidays. (See *Practice in Action 20*)
- Consider subsidizing childcare, either by offering on-site childcare or a childcare allowance paid to a childcare provider to offset the cost to trainees. (See *Practice in Action 20*)
- Offer personal development modules that help atypical trainees build confidence and assertive behaviour that is often needed to succeed in non-traditional industries. (See *Practice in Action 20*)
- Look at providing pre-entry skills training in basic numeracy, literacy and English as a second language, to create an inclusive learning environment. (See *Practice in Action 16*)
- Dedicate resources to helping atypical trainees find work placements, as this has been identified as a major barrier to completing non-traditional qualifications. Women in non-traditional training often find it harder to secure work placements than men due to discriminatory or stereotypical attitudes.
- Look at extra provision that may enable atypical trainees to compete better in the job market. This should include all aspects of the job application process, including writing letters and CV's, completing application forms and practising interview skills. (See *Practice in Action 18 and 20*)

APPENDIX Q: EXCERPTS FROM ACTION FOR CHANGE: HOW TRAINING PROVIDERS CAN BREAK DOWN GENDER SEGREGATION IN VOCATIONAL EDUCATION AND TRAINING (EOC, 2005B)

- Offer single-sex introductory courses, to encourage more of the non-traditional sex to apply for training places. (See *Practice in Action 17, 18 and 20*)
- Employ members of the non-traditional sex as trainers and in development roles to help encourage and support atypical trainees. It is important that trainees have someone they can identify with and feel comfortable to approach to discuss issues. (See *Practice in Action 19 and 20*)
- Get involved in setting up project-based training to increase recruitment, training and support of non-traditional apprentices. (See *Practice in Action 22*)

2. Reviewing the structure of training programs	
What training providers can do... to support and enable non-traditional recruits to participate in training	
Practice in Action 15	▶ <i>providing ongoing support via mentors</i>
Practice in Action 16	▶ <i>offer basic skills training</i>
Practice in Action 17	▶ <i>men only introductory childcare courses</i>
Practice in Action 18	▶ <i>women only construction courses</i> ▶ <i>support with basic and job search skills</i>
Practice in Action 19	▶ <i>same sex trainers and mentors</i>
Practice in Action 20	▶ <i>flexible course hours</i> ▶ <i>personal development</i> ▶ <i>childcare facilities</i> ▶ <i>business support</i>
Practice in Action 21	▶ <i>meeting the needs of Black and ethnic minority women</i>
Practice in Action 22	▶ <i>project-based training</i> ▶ <i>supporting non-traditional trainees in a group</i> ▶ <i>environment</i> ▶ <i>providing flexibility in work-based training</i>

3. U.K. organizations and resources that can assist training providers to challenge gender stereotypes

JIVE – www.jivepartners.org.uk

JIVE (Joint Interventions) Partners is a national European Social Fund project led by Bradford College, which aims to create cultural change in engineering, construction and technology by addressing the barriers that prevent women from pursuing careers in these sectors. Working with LSCs, training providers, careers professionals and employers, JIVE has a range of strategies designed to help girls succeed in male-dominated sectors.

U.K. Resource Centre for Women in Science, Engineering and Technology –

www.ukrc4setwomen.org

UKRC is a dynamic hub that provides accessible, high quality information and advisory services to employers, professional bodies, Sector Skills Councils, careers professionals and higher and further education to promote best practice in the recruitment, retention and progression of women in SET and the built environment.

Let's Twist Project – www.letstwist.bradfordcollege.ac.uk

A national project run by Bradford and Ilkley College to encourage and support women and girls into engineering and construction careers.

The GERI project – www.geriproject.org

The GERI (Gender Equality and Race Inclusion) consortium was formed to help LSCs, training providers, schools, careers advisers and employers to tackle gender and ethnic stereotyping.

Women in science, engineering and technology – www.ukrc4setwomen.org

Government-run campaign that provides posters, videos, magazines and teaching materials.

Women and Manual Trades – www.wamt.org

Produces videos and teaching packs.

WISE – www.wisecampaign.org.uk

WISE (Women Into Science and Engineering) promotes these sectors as career options to girls and women across the U.K., through brochures, posters, websites, a video, hands-on courses and presentations. The campaign works with teachers, careers advisers, parents, employers, politicians and the media.

Gender and achievement website – <http://nationalstrategies.standards.dcsf.gov.uk/genderandachievement>

Department for Education and Skills website for teachers, local education authorities and others with an interest in gender differences and related areas of achievement.

Science Year – www.scienceyear.com

Initiative to raise awareness among young people aged 10–19 of the wide range of subjects and careers that are underpinned by science and technology.

Investigation recommendations

Phase 2 of the Equal Opportunity Commission's (EOC) investigation into occupational segregation identified many actions training providers can take to address gender stereotyping with the support of U.K. Learning and Skills Councils (LSCs), including:

- developing training schemes to meet the particular needs of non-traditional trainees including flexible working hours, single sex training, and support mechanisms/mentoring of non-traditional trainees;
- improving access to information about training opportunities, by working in partnership with key stakeholders including Sector Skills Councils (SSCs);
- providing taster sessions including the Entry2Employment programmes;
- working with schools to provide opportunities for young people to experience different vocational areas such as taster days;
- devising pilot schemes to test the interventions that employers said may encourage them to take on more minority-gender apprentices and trainees;
- working with employers to 'rebrand' training and work opportunities and re-define skills in male-dominated sectors in ways that will appeal to both sexes;
- working with employers to increase their awareness of equal opportunities issues and the business case for diversity;
- dedicating resources to helping non-traditional trainees find work placements; and,
- employing members of the non-traditional sex as trainers and in development roles.

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LSCs can further promote equality through the requirements they place on, and the support they provide to training providers, including:

- collecting and making available to young people annual data on Apprenticeship frameworks by sector, gender, race and disability, along with apprenticeship pay rates;
- setting national and local measures (targets) or Equality and Diversity Impact Measures (EDIMs) to reduce gender segregation in Apprenticeships;
- introducing training for employers and training providers to improve recruitment practices and training and workplace culture;
- promote the positive outcomes of local initiatives (EOC, 2005a); and,
- facilitate national dissemination of local successes (EOC, 2005a).

APPENDIX R: WOMEN IN LEADERSHIP FOUNDATION ACTION PLAN

The following excerpt⁹ is from the Women in Leadership Foundation report titled, *Women in Construction Trades: A Strategic Plan to Promote Women*.

Recommendations and action steps to attract/recruit women

I. Employers and unions

External communications

1. Give presentations in schools about working in the trades
 - Incorporate a stronger message marketing trades to girls in generic trades presentation
2. Promote your company as a female friendly company that values equal opportunity when going to schools with speakers, advertising at career fairs, and posting job ads
 - Strive to achieve a better female/male ratio on site
 - Highlight equal opportunity values when filling out questionnaire for top 100 Best Employer list
 - Utilize WITT's Strategies Checklist to create a work environment welcoming to everyone
3. Modify company websites, have realistic pictures of women working in the trades
 - Inform those responsible for hiring to portray realistic pictures of trades women

Professional development

4. Ensure there are career development/advancement opportunities available to women
 - Employ or promote use of apprenticeship counsellors
 - Establish an apprenticeship contract signed by employer and apprentice
 - Educate trades women how to promote themselves at their job

Incentives

5. Break down stereotypes by employing more women on site
 - Increase numbers of female workers ideally to at least 15%
 - Employ more women in leadership roles
 - Offer more up front training and skills development at the beginning of work contract

II. Schools and educational institutions

Elementary and high school education

6. Promote trades at elementary school, make young girls aware that trades are a possibility for them in the future.
 - Partner with Industry Training Authority (ITA) and industry to provide resources and tools to create a Tool Box Presentation for all elementary school age girls
 - Hold a conference with schools from all over B.C. highlighting careers in trades
7. Encourage girls to take trades courses in high schools
 - Develop a poster campaign in partnership with BCIT, ITA and industry employers highlighting female role models in construction trades
 - Partner with ITA at career fairs and have construction trades discussion groups targeting girls

⁹ Excerpted with permission from the Women in Leadership Foundation.

APPENDIX R: WOMEN IN LEADERSHIP FOUNDATION ACTION PLAN

8. Employ more women teaching the trades
 - Distribute the limited number of opportunities evenly between men and women
9. Amend trades class curriculums to include a visit from a female journey person
 - Build partnerships with employers and government to facilitate trades women visiting the classrooms. For example, engage employers to fund their tradeswomen to go into schools.
 - In partnership with government and employers develop a speaker's network of trades women available to go into schools.
 - In partnership with government and employers create a standard presentation for all speakers
10. Promote the idea of women in the trades to all high school career counsellors
 - Launch an email campaign to all high school career counsellors outlining the benefits of encouraging girls to go into the trades
 - Send out women in trades promotional DVD to all career counsellors

Colleges/educational institutions

11. Address lack of awareness on how to get funding for training
 - Put information about funding on college/educational institution websites
 - Identify other sources of funding
 - Partner with BC Construction Association's *Step for Women* and Canadian Construction Women to create a tool-kit highlighting sources of funding and post sources on all industry related websites
 - Encourage students to apply for funding
12. Ensure there are continuous employment training programs and/or workshops for women (BCIT/ACCESS) about working in the construction trades. Include an opportunity to try working with tools and have specific initiatives targeting Aboriginal and immigrant women.
 - Ensure when funding levels drop that employment training programs are not the first cut
 - Roadmap where trades jobs can lead in the future (utilize industry websites such as Vancouver Regional Construction Association)
 - Partner with Canadian Coalition of Women in Engineering, Science, Trades and Technology
13. Ensure trades teacher training is more accessible to trades people
 - Increase access to teaching trades programs by creating better transfer agreements for people with trades qualifications

III. Government/Industry Training Authority (ITA)

14. ITA: Strengthen promotional programs aimed at encouraging girls to take trades classes in the schools
 - Direct funds towards a promotional DVD and poster campaign highlighting success stories of women working in construction trades to be used as part of a larger marketing campaign
 - Increase female participation in ACE-IT programs
15. ITA: Put resources towards the creation of a standard presentation highlighting women in construction trades
 - Partner with BCCA *Step for Women* and Canadian Construction Women
16. B.C. Government: Finance incentives so women can get the experience to get their foot in the door.
 - Increase tax credit amount for all apprentices and for employers who hire apprentices
17. B.C., Federal and Local Government: Create more daycare spaces/have better access to daycare
 - Increase provincial and local government funding for daycare options, and in particular fund centers to open earlier
18. B.C., Federal and Local Government: facilitate the employment of more female trades teachers
 - Increase funding to trades programs in schools, colleges and educational institutions

IV. Working in partnership: employers, schools/educational institutions, and government/ITA

Information dissemination

19. Disseminate more information about jobs/what it is like in trades / Provide information about the challenges that women will face working in the construction trades but don't instill fear.
 - Advertise the trades to women through a marketing campaign that showcases women in the trades
 - Promote the opportunities in other lesser known trades / Promote opportunities to try new things

Mentoring programs, female role models and women's networks

20. Increase exposure to female mentors and mentoring programs
 - Showcase more female role models in the industry
 - Encourage the development of mentorship relationships
21. Development and fund mentoring opportunities for women in construction
 - Partner with BCCA *Step for Women* and utilize electronic mentorship programs to reach women all over B.C.
 - Offer bonuses to trades women who act as mentors
 - Partner with the 'Skills Task Force' of the local Board of Trades and Chamber of Commerce
22. Create a women's network of trades women, fund monthly meetings of this network.
 - Partner with BCCA *Step for Women* and Canadian Construction Women and provide resources

APPENDIX R: WOMEN IN LEADERSHIP FOUNDATION ACTION PLAN

Funding

23. Find ways to fund women's apprenticeship programs
 - Disseminate information on funding opportunities
24. Fund an initiative for female trades people to act as role models by tradeswomen going into high schools 3-4 women at a time. As part of this joint initiative, prepare a video of female tradeswomen working on site which can be circulated to high schools and colleges/training institutes.
 - Ensure honorariums are provided to female trades workers for their time
 - Partner with Skills B.C.
25. Offer more scholarship opportunities for trades education
 - Provincial government match scholarship funding provided by employers
 - Continue scholarship initiatives such as Secondary School Apprenticeship Scholarship

Recommendations and action steps to retain women

I. Employers and unions

Internal communications

1. Treat women exactly as men are treated on site
 - Do not single women out as different in any way on the job site
 - Utilize WITT's Strategies Checklist
2. Recognize strength does not have to be a limitation; everyone has their abilities and their strengths
 - Partner with Health Canada and Work Safe B.C. to provide funding for strength training such as fund memberships at the YWCA
3. Develop clear anti-bullying initiatives with clearly stated consequences if these policies are violated
 - Use term anti-bullying instead of anti-harassment
 - Ensure anti-bullying initiatives are enforced
4. Address the lack of individual recognition on job sites
 - Create recognition programs for workers

Professional development

5. Create an environment of success and equal opportunity for all workers
 - Pay for training and pay for overtime
 - Address lack of support at training level from employers
 - Train supervisors to understand the value of equity
 - Provide an education allowance
 - Increase follow up/feedback between employee and employer
 - Offer career development programs – give women an idea of where they might want to go – life beyond the tools – instructing, inspecting, managerial roles, etc.
 - Provide language training pertinent to job site for immigrant workers on site

Retention strategies for women

6. Utilize retention strategies for women

- Ensure more women on site to avoid isolation and support women indirectly
- Utilize the buddy system – Put women working where there are other women
- Promote female role models to encourage younger workers
- Develop female-friendly workplaces

Incentives

7. Provide excellent incentive options

- Provide better daycare options/flexible work schedule
- Offer a good benefits package
- Create incentive programs such as paid family days
- Ensure pay equity/diversity of work/good working environment

II. Schools and educational institutions

Colleges/training institutes

8. Reduce wait times to gain access to trades courses, particularly beyond level one of apprenticeships

- Increase funding and resources for trades programs

9. Teach conflict resolution and communication training as part of the trades course curriculum

- Increase funding and resources for trades programs

III. Government/Industry Training Authority (ITA)

10. B.C., Federal and Local Government: Provide better daycare options

- Federal, Provincial and Local Governments to fund more daycare options by creating more daycare spaces available and funding earlier opening hours

11. Finance incentives so women can get work experience

- Increase tax credit amount for all apprentices and for employers who hire apprentices

IV. Working in partnership: employers, schools/educational institutions, and government/ITA

Information dissemination

12. Liaise with networks for Aboriginals, women, immigrants, and youth

- Disseminate poster campaign, DVD promoting women in trades and work in collaboration to promote women in construction trades

Mentoring programs, female role models and women's networks

13. Investigate ways to change social attitudes and to counteract the stereotypes that exist in the trades

- Work towards hiring 15% more women in construction trades by 2009

14. Provide life-long learning opportunities

- Partner with training institutions, private sector and government agencies to provide life-long learning opportunities for women working in construction trades

APPENDIX R: WOMEN IN LEADERSHIP FOUNDATION ACTION PLAN

Funding

15. Fund an ongoing women's network of trades women that starts in training, and continues into entry level career. Fund an annual forum for this women's network
 - Partner with BCCA *Step for Women* and Canadian Construction Women and provide resources
16. Create and fund mentorship programs
 - Partner with BCCA *Step for Women* and Canadian Construction Women and provide resources
17. Support and fund apprenticeship counsellors to assist apprentices and build relationships with industry stakeholders
 - Update and disseminate apprenticeship handbook

APPENDIX S: INFORMATION LETTERS USED IN RECRUITMENT OF PARTICIPANTS

Information letter sent to industry employers



Hello,

The Construction Sector Council is conducting a study called the State of Women in Construction in Canada. One goal of the research is to identify the changes that are possible to increase women's participation in the construction trades and in onsite construction management occupations. It is expected that by increasing the rate of women's participation, the construction industry will be supported in replenishing the skilled workforce that is due to retire over the next decade. The Educational Policy Institute (EPI Canada) has been contracted by the Construction Sector Council to conduct interviews with key informants in the construction industry to identify the following:

- 1) successful practices that have been developed by industry employers to increase the rate of women's participation in the construction trades and in onsite construction management;
- 2) challenges facing employers in making changes to increase women's participation in the construction trades and in onsite construction management;
- 3) changes that are possible and likely in future to increase the rate of women's participation in the construction trades and in onsite construction management;
- 4) the needs of construction industry employers to support such changes.

EPI Canada is conducting individual telephone interviews with construction industry employers and others working in the industry. Understanding the experience of construction industry employers across Canada is very important to the success of this research. Your input would be valuable to this study. We are inviting you to take part in a telephone interview that we suggest will be 30 to 45 minutes in length, to be scheduled at your earliest convenience. A copy of the interview questions is included at the end of this letter. Please send us an e-mail suggesting some times when you are available for an interview.

Women in Construction: key informant interview questions

The following interview questions were designed to gather information about the changes that are possible to increase women's participation in the construction trades and onsite construction management in Canada.

1. Approximately how many people did your company employ in the last 12 months? _____ How many are employed in i) the construction trades _____ and ii) in onsite construction management? _____
2. Approximately what percentage of those employed in the skilled trades in your company in the last 12 months were women? _____ What about in management occupations? _____
3. Have you seen any change in the percentage of women employed in the construction trades or in onsite construction management in your company?
4. Has your company introduced any recruitment, hiring, workplace, or retention practices to increase women's participation in the construction trades or in onsite construction management? If so, what were the changes, how successful were they, and why?

APPENDIX S: INFORMATION LETTERS USED IN RECRUITMENT OF PARTICIPANTS

5. What do you think employers need to do to recruit, hire, and retain women in construction trades and onsite management?
6. What do you see as the main reasons why the percentage of women in construction is not increasing more significantly in the construction trades or in onsite construction management?
7. What do you think women need to do to be successful in construction trades or management occupations?
8. Are you aware of recruitment, hiring, workplace, or retention practices that have been introduced by other industry employers – or other organizations – to increase women’s participation in the construction trades or in construction management? If so, what were the changes, how successful were they, and why?
9. What help does the industry need to support changes in the workplace that could increase women’s participation in the construction trades and in onsite construction management?
10. Can you recommend the names of any other industry employers, contractors, or union representatives who would be interested in speaking to us for this research?

Information letter sent to industry associations and labour organizations



Hello,

The Construction Sector Council is conducting a study called the State of Women in Construction in Canada. One goal of the research is to identify the changes that are possible to increase women's participation in the construction trades and in onsite construction management occupations. It is expected that by increasing the rate of women's participation, the construction industry will be supported in replenishing the skilled workforce that is due to retire over the next decade. The Educational Policy Institute (EPI Canada) has been contracted by the Construction Sector Council to conduct interviews with key informants in the construction industry to identify the following:

- 1) successful practices that have been developed by industry employers or other industry organizations to increase the rate of women's participation in the construction trades and in onsite construction management;
- 2) challenges facing employers and other organizations in making changes to increase women's participation in the construction trades and in onsite construction management;
- 3) changes that are possible and likely in future to increase the rate of women's participation in the construction trades and in onsite construction management;
- 4) the needs of the construction industry to support such changes.

EPI Canada is conducting individual telephone interviews with construction industry employers and others working in the industry. Understanding the experience of construction industry employers and those in other key organizations across Canada is very important to the success of this research. Your input is valuable to this study. We are inviting you to take part in a telephone interview that we suggest will be 30 to 45 minutes in length, to be scheduled at your earliest convenience. A copy of the interview questions is included at the end of this letter. Your participation is completely voluntary and confidential. Your name and the name of your organization will not appear in any report of our findings. Please send us an e-mail suggesting some times when you are available for an interview if you can participate.

Women in Construction: key informant interview questions

The following interview questions were designed to gather information about the changes that are possible to increase women's participation in the construction trades and onsite construction management in Canada.

1. In the last 12 months, approximately how many members did your organization represent?
2. In the last 12 months, approximately what percentage of your membership were women?
3. Have you seen any change in the percentage of women in your membership?
4. Has your organization introduced any recruitment or retention practices to increase women's participation in the construction trades or in onsite construction management?
If so, what were the changes, how successful or unsuccessful were they, and why?
5. What do you think employers need to do to recruit and retain women in construction trades and onsite management?

APPENDIX S: INFORMATION LETTERS USED IN RECRUITMENT OF PARTICIPANTS

6. What do you see as the main reasons why the percentage of women in construction is not increasing more significantly in the construction trades or in onsite management?
7. What do you think women need to do to be more successful in construction trades or onsite construction management?
8. Are you aware of recruitment, hiring, workplace, or retention practices that have been introduced by other organizations to increase women's participation in the construction trades or in construction management? If so, what were the changes, how successful or unsuccessful were they, and why?
9. What kinds of help or support does the industry need to support changes that would increase the percentage of women employed in construction trades and in onsite construction management?
10. Can you recommend the names of any other industry owners, contractors, or union representatives who would be interested in speaking to us for this research?

Information letter sent to focus group participants



Hello,

The Construction Sector Council is conducting a study called the State of Women in Construction in Canada. A key goal of the research is to identify the changes in recruitment, hiring, workplace practices, and retention that are possible to increase women's participation in the construction trades and in onsite construction management occupations much more than we have seen to date.

EPI Canada is conducting 2 hour focus groups with women working in the construction trades and in onsite construction management. A draft copy of the focus group questions is attached to this invitation. Your participation is completely voluntary and confidential; your name will not appear in any report of our findings. We will cover the costs of transportation to the focus group.

Focus group questions

1. In a word or two, what comes to mind when you think of women working in the construction trades?
2. In your workplace approximately how many of the tradespeople and onsite managers or supervisors are women?
3. In the time you have been working in construction have you noticed any increase in the number of tradeswomen, female journeymen, or women in onsite management?
4. What do women experience in recruitment or hiring for the trades or onsite management? What are the challenges? What is working well?
5. What do women experience in construction workplaces as tradeswomen or onsite managers or supervisors? What are the challenges? What is working well?
6. What are the challenges faced by women who are registered trades apprentices in construction workplaces?
7. What is your sense of the opportunities for promotion for women in the construction trades and for women in onsite construction management?
8. Why do you think women's participation in construction trades/management is not increasing more significantly (according to statistics)?
9. What needs to change to improve the workplace experience of tradeswomen and onsite managers in construction workplaces? What role could employers play? What role could labour unions play?

APPENDIX T: ESTIMATED RATE OF WOMEN'S PARTICIPATION IN CONSTRUCTION TRADES AND ONSITE MANAGEMENT: INDUSTRY EMPLOYERS

Employer size	Employees (#)	Tradespeople employed (#)	Women tradespeople employed		Number employed in onsite management*	Number of women in onsite management		
			(#)	(%)		(#)	(%)	
Micro-size employers (0-9 employees)	6	4	0	0	2	0	0	
	8	5	0	0	2	0	0	
	5*	5	5	100**	1	1	100	
	60	n/a***	n/a	0	n/a	0	0	
	60	10	0	0	12	0	0	
Small-size employers (10-99 employees)	65	n/a	n/a	0	15	0	0	
	26	8	0	0	4	0	0	
	23	7	0	0	1	0	0	
	15	4	0	0	1	1	100	
	50	46	0	0	2	0	0	
	20	2	0	0	2	2	100	
	15	9	2	22	4	1	25	
	Medium-size employers (100-499 employees)	175	140	n/a	2	21 foremen/supervisors 14 onsite managers	0	0
		230	200	16	8	10	6	40
		300	60	n/a	5	30	0	0
250		200	1	<1	20	n/a	2	
100		30	3	10	3	0	0	
1,000		308	3	1	n/a	n/a	30	
1,285		1,000	14	1	65	n/a	1	
9,700		3,800	n/a	3	61	n/a	13	
600		350	8	2	100 field managers 80 operations managers	4	4	
> 500		388	n/a	2	40	10	12	
7,500	5,500	n/a	<3	375	n/a	2		
11,000	n/a	n/a	<2	200	n/a	<3		
15,000	n/a	n/a	<3	foremen engineers, costing, service	30	15		
					n/a	1		
						10 - 15		

* Onsite managers included foremen, site supervisors, superintendents, project managers, estimators, safety and quality managers, etc.

** This company was owned by two women whose mission it is to help women in construction.

***n/a: Data were not available.

APPENDIX U: ESTIMATED RATE OF WOMEN'S PARTICIPATION IN CONSTRUCTION TRADES AND ONSITE MANAGEMENT: INDUSTRY ASSOCIATIONS AND LABOUR UNIONS

Associations	Companies represented (#)	Members (#)	Women (%)
	485	4,000	0.15
	360	n/a*	10
	6,060	n/a	n/a
	170	4,000	n/a
	1,000	n/a	n/a
	175	3,500	n/a
	900	n/a	n/a
	700	n/a	n/a
	600	n/a	n/a

Labour unions	Members (workers) (#)	Women (%)
	60,000	n/a
	1,900 (in construction)	1
	20,000	3-5**
	35,000	2
	25,000	1
	6,000	<2
	100,000	<2

* n/a: Data were not available.

** The percentage of women varied greatly by trade.

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- the British Columbia Institute of Technology (BCIT) Trades Discovery for Women program and coordinator Tamara Pongracz for their support in arranging focus groups at BCIT in March 2009 with women employed in the construction trades or onsite management, and;
- the Partners Building Futures program, and staff Doug Homer and Donna Bennett, who provided their time and support in arranging a focus group at New Brunswick Community College in April 2009 with women who had been part of the program.

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