



A HUMAN RESOURCES STUDY OF THE HOME BUILDING AND RENOVATION SECTOR FOR NEW BRUNSWICK Phases I and II

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Introduction

1.0 Introduction

This report presents findings from Phases I and II of a four phased human resources sector study of the Home Building and Renovation (HBR) Sector of New Brunswick. In particular, it covers the following topics:

- ▲ Current sales values and GDP, by type of home building and renovation company and trade;
- ▲ Importance of the sector to the economy of New Brunswick (in terms of GDP and employment);
- ▲ Structure in terms of number, types, size, and geographic location of home building and renovation companies and trades people;
- ▲ Aggregate employment by sector;
- ▲ Employment trends such as seasonality, business versus independent operator, employees versus sub-contracting;
- ▲ Current employment levels by type (full-time, part-time, seasonal, self-employment, etc.) and sector;
- ▲ Characteristics of human resources (education, age, gender, etc.);
- ▲ Legislative and regulatory environment facing the HBR sector;
- ▲ General industry trends including a general overview of the underground economy; and
- ▲ Growth trends in the HBR sector.

One critically important question in the HBR sector is the proportion of the work activities of individuals in trades' occupations that are in the HBR sector. Data are not available to answer this question and the answer is not contained in this report. The question would need to be answered through a survey of enterprises in the Trade Contracting industry.

GDP/Sales Value – Home Building and Renovation

2.0 GDP/Sales Values – Home Building and Renovation

2.1 Capital Expenditures on Residential Construction (CANSIM 441)

Capital expenditures on residential construction in New Brunswick are available from Statistics Canada. Annual data from 1990 to 2000 are presented in this report. Residential construction is defined as follows by Statistics Canada:

“Includes all buildings intended for private occupancy whether on a permanent basis or not. Dwellings are divided into the following types: single-family, mobile, cottage, semi-detached, row house and apartment building.”¹

Residential capital expenditures are divided into the following categories:

- ▲ Capital expenditures on new housing excluding cottages and mobile homes;
- ▲ Improvements; and
- ▲ Other capital expenditures, including Conversions, Acquisition Costs, Cottages and Mobiles.

Minor residential repairs that do not require a building permit are not included in residential capital expenditures reported by Statistics Canada.

A few definitions will assist in the interpretation of the economic data on home building and renovation.

1 Statistics Canada, Catalogue No. 64-001, p. 80.

Glossary of Terms

Improvements - Major renovations that require a building permit. Improvements include additions and alterations. Investment in Improvements is recorded in CANSIM matrix 441-D849340.

Conversions – Dwellings added to the housing stock by conversion of existing dwellings. Investment in Conversions is recorded in CANSIM matrix 441-D849338.

Acquisition Costs – Include legal fees, surveying fees and accrued interest. Investment in Acquisitions Costs are recorded in CANSIM matrix 441-D849339.

Minor Repairs – Expenditures on repairs and maintenance for which no building permit is required. Common examples are painting, roofing and tiling. Investment in Minor Repairs are recorded in CANSIM matrix 439-D849551

Capital spending on residential construction in New Brunswick is illustrated in Table 2.1. Note that values in the exhibit are in current dollars and do not remove inflation.

Table 2.1
Total Capital Expenditures on Residential Construction, New Brunswick
\$Millions (Current Dollars)

Year	Tot. Cap. Exp., New Housing	Improvements	Other, Conversions, Mobiles	Tot. Cap. Exp., New plus Improvements, Plus Other
1990	\$215	\$277	\$37	\$529
1991	\$201	\$273	\$25	\$499
1992	\$233	\$292	\$24	\$549
1993	\$264	\$270	\$26	\$561
1994	\$264	\$289	\$39	\$592
1995	\$180	\$259	\$41	\$480
1996	\$216	\$282	\$45	\$542
1997	\$239	\$300	\$54	\$594
1998	\$214	\$290	\$34	\$538
1999	\$228	\$326	\$53	\$607
2000	\$296	\$340	\$45	\$681



The table shows that total capital spending on residential construction has fluctuated over the 11-year period. Nearly \$681 million was spent in 2000, 29% more than the \$529 million in 1990. The lowest level of spending was \$480 million recorded in 1995.

Capital spending on new housing, excluding cottages and mobile homes, fluctuated over the period but stood at its highest level in 2000 at \$296 million, following three periods of decline and growth. The most dramatic decline over the period occurred in 1995 (a decrease in spending by 32%). Overall, spending over the period increased by 38%, from \$215 million to \$296 million.


It should be noted that while the average value per house increased by only 2% over the decade (from \$80 to \$82 thousand), the average for 1999 was slightly less than the highest level achieved in 1997 of nearly \$89 thousand. The number of housing starts fluctuated throughout the period but did not recover from a high of almost 4 million units in 1993 (versus 3 million in 1999). Exhibit 2.3 in Section 2.3 adjusts residential construction values to remove the effect of rising prices.

Data on the number of residential renovations were not available.

Capital spending on improvements (major renovations) fluctuated throughout the 1990s, dipping from \$277 million in 1990 to \$259 million in 1995, followed by a period of general recovery. By 2000, major renovation expenditures had increased to \$340 million, up 31% from the lowest point of the decade in 1995 (\$259 million).

Following a period of decline in capital spending on “Other” (cottages, mobile homes and conversions) from 1990 to 1992, this category increased from nearly \$24 million to \$54 million by 1997. Spending dropped by 37% in 1998 but quickly rebounded in 1999 to 1997 levels. Spending in 1999 of \$53 million was the highest over the period but dropped again in 2000, bringing the total to a level only 22% greater than the 1990 level.

In summary, with the exception of the “Other” category (cottages, mobile homes and conversion), spending in each of the categories was higher in 2000 than 1990 levels. This fueled a 29% increase in total capital spending in the province, an increase of \$152 million, from \$529 million in 1990 to \$681 million in 2000. New residential construction was the most dynamic category with spending in 2000



standing at 38% higher, or \$81 million more than 1990 levels.

It is not unreasonable to assume the drop in spending during the earlier part of the decade was in part due to recessionary pressures from mid-1990 through to the first quarter of 1991. A similar trend existed in 1995, where consumers dramatically reduced new home purchases (a drop of \$84 million from \$264 to \$180 million) and improvements (decreased by \$30 million from \$289 to \$259 million).

2.2 Expenditures on Repairs and Maintenance – Residential Housing

Total spending on home building and renovations includes spending on minor repairs that do not require building permits. These expenditures must be added to residential capital expenditures to obtain estimates of total spending on residential construction. Spending on minor repairs is presented in Table 2.2.

Table 2.2
Repairs and Maintenance Expenditures in Housing
New Brunswick
\$Millions

1990	\$ 77
1991	\$ 85
1992	\$ 90
1993	\$102
1994	\$100
1995	\$ 94
1996	\$110
1997	\$111
1998	\$129
1999	\$140

Table 2.2 shows that spending on repairs and maintenance increased steadily from \$77 million in 1990 to \$140 million in 1999. Total spending on repairs and maintenance is broken into spending by house owners and by landlords.



This division of spending is illustrated in Exhibit 2.1.

Exhibit 2.1
Expenditures on Repair and Maintenance, New Brunswick

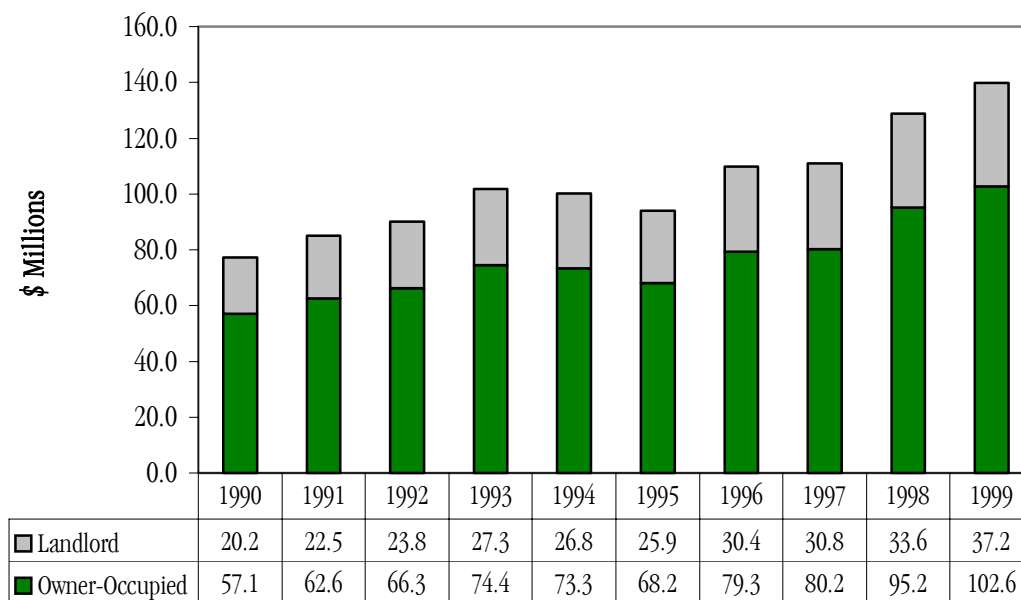


Exhibit 2.1 shows that expenditures on maintenance and repair by landlords and homeowners both increased by 84% and 80% over the period, respectively.

2.3 Total Expenditures on Residential Construction

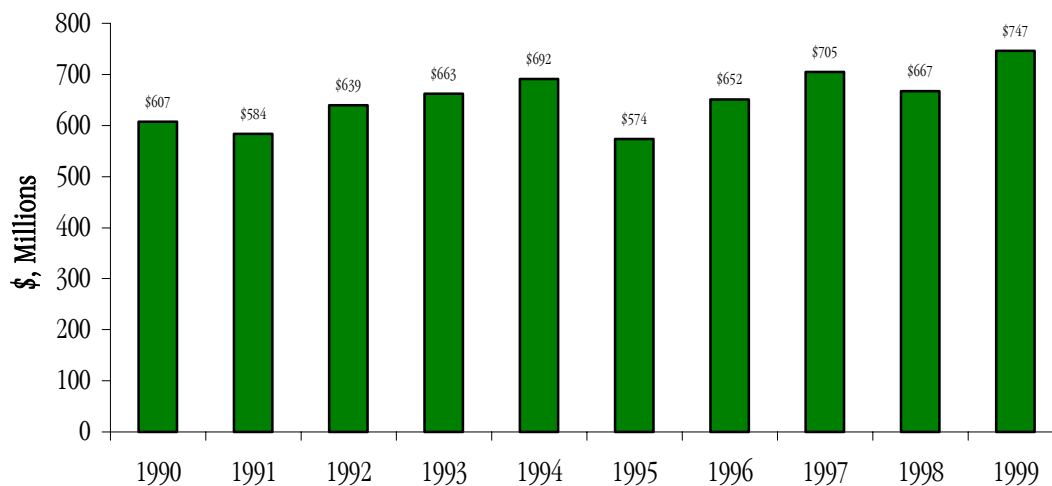
Total expenditures on residential maintenance and repairs are estimated by combining total capital expenditures on residential construction with expenditures on repairs and maintenance. These estimates are illustrated in Exhibit 2.2.

The exhibit shows that total residential expenditures on building and repairs in New Brunswick fluctuated throughout the period, hitting a 10-year low in 1995 but reaching \$747 million in 1999. The



average level of spending over the period was \$653 million.

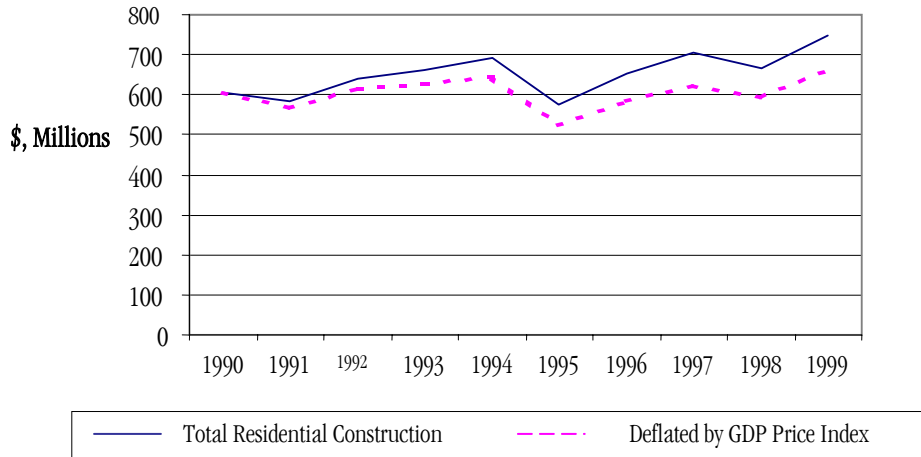
Exhibit 2.2
Total Value of Residential Construction



The data presented in this section are in current dollars and do not account for inflation. Exhibit 2.3 shows the total value of residential construction in “real” terms, that is, adjusted for inflation.



Exhibit 2.3
Nominal and Real Expenditures on Residential Construction
New Brunswick



The exhibit shows that the real value of residential construction was somewhat lower than the value in current dollars. In 1999, the total value of residential construction was \$746.5 million in current dollars but only \$660.1 million in real terms. The real value in 1999 was only about 9% higher than that in 1990 in real terms versus the current dollar value that was 23% higher than in 1990.

2.4 Total GDP in New Brunswick and Expenditures on Residential Construction

The contribution of residential construction to the economy as measured by Gross Domestic Product (GDP) is presented in Table 2.3. The table shows that expenditures in residential construction were on average 4.2% of total GDP for the province over the period, with the highest contribution in 1990, 1993 and 1994. Total provincial GDP grew faster than did the residential construction, leading to a decline in the sector's share by 1999.



Table 2.3
Gross Domestic Product, New Brunswick, Current \$Millions

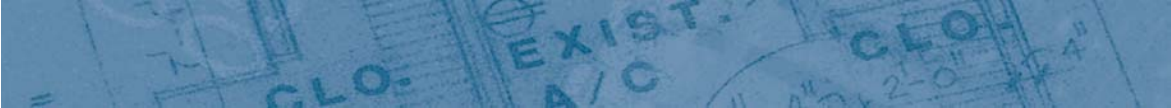
	Total GDP	Total Res. Construction	%
1990	\$13,437	\$606.8	4.5
1991	\$13,624	\$584.8	4.3
1992	\$14,029	\$639.4	4.6
1993	\$14,676	\$662.8	4.5
1994	\$15,261	\$691.6	4.5
1995	\$16,349	\$573.6	3.5
1996	\$16,580	\$651.6	3.9
1997	\$16,779	\$704.7	4.2
1998	\$17,457	\$667.0	3.8
1999	\$18,390	\$746.5	4.1

2.5 The Macroeconomic Impacts of the Housing Sector

A 1997 publication by the Canada Mortgage and Housing Corporation and Informetrica provides an overview of the contribution of the housing sector to the economy. It does this by using “The Informetrica Model” (TIM) to simulate the impact of a temporary increase in housing activity in the economy in 1998 over the two-year period 1999-2000. It examines the impacts of new housing and renovations separately and compares the impacts on a fast growing economy to a slow growing economy. The impact of inflation is removed from the estimates to show the affect of the housing sector on the economy in real dollars.

Direct and indirect impacts of an increase in spending on the housing industry are estimated. Direct impacts on producers of residential structures are estimated as well as indirect impacts on firms that supply goods and services to residential housing producers. For example, concrete used to build or renovate houses results in increased production by cement producers who in turn require more raw material from quarries and sandpits.

Induced impacts on consumers, businesses and governments associated with increases in incomes attributable to direct and indirect impacts are estimated in the CMHC/Informetrica simulation.



Estimates produced by The Inforemetrica Model (TIM) are subject to two caveats that could offset impacts projected by the model. These caveats are described as follows in the CMHC/Inforemetrica publication.

“Reasonably, one might expect that an exogenous shock at one point could lead to an offsetting negative shock at a later time. CMHC initiatives in the mid-1970’s that spurred housing construction for a couple of years were quickly followed by sharp reductions on the grounds that the market had been ‘over built’”. Similarly, these simulations do not consider directly the ‘financing’ of the exogenous shock. Arguably, this could have contemporaneous as well as lagged effects on non-housing spending.”
(“Macroeconomics Impacts of the Housing Sector”, the Canada Mortgage and Housing Corporation and Inforemetrica Limited, October 14, 1997).

Assuming the economy is performing at a high level, the cumulative multiplier impact of increased spending on new housing is 20% higher than the value of the initial spending and the impact of increased renovation spending is 11% higher than the value of the initial spending. (*“Macroeconomics Impacts of the Housing Sector”, the Canada Mortgage and Housing Corporation and Inforemetrica Limited, October 14, 1997, Table 10, pp. 15-16*).

The contribution of a \$1 increase in spending on residential construction to Gross Domestic Product by industry is depicted in Table 2.4.

Table 2.4 shows that Gross Domestic Product (GDP) in the residential construction industry increases by \$0.34 for every dollar of incremental spending on new housing. That is, labour income, self-employment income and returns to capital in the residential construction industry increase by \$0.34 for every dollar of incremental spending on new housing. GDP in the renovations sector of the residential construction industry increases by \$0.26 for each dollar of incremental spending on renovations. These data show that the direct impact of new housing on the economy is substantially higher than that of the renovations sector.

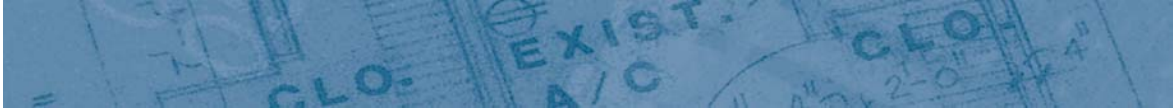


Table 2.4
Contribution to Gross Domestic Product at Factor Cost
New Housing and Renovations
Incremental Spending of \$1 in Residential Construction, 1986 Prices

	New Housing	Renovations
Residential Construction	0.34	0.26
Other Construction	0.00	0.00
Non-Construction	0.33	0.36
Forestry	0.01	0.01
Wood Industry	0.05	0.06
Metal Fabricating	0.02	0.02
Cement and Clay Products	0.02	0.02
Transportation Industries	0.02	0.02
Professional Services	0.04	0.03
Wholesale Trade	0.06	0.06
Finance, Business	0.02	0.02
Other Industries	0.10	0.11
Total Economy	0.66	0.62

The indirect impact of increased spending on residential construction on industries other than residential construction is \$0.33 for every dollar of incremental spending on new housing and \$0.36 for renovations. The Wholesale Trade, the Wood Industry and Professional Services are the industries that experience the largest increase in income and profits as a result of increased spending in residential construction.

Incremental employment in the Construction Industry from a \$1 billion expenditure in residential construction was estimated in the TIM model to be 4,650 or about 0.5 person years per \$100,000 in expenditure. Incremental employment in the total economy from a \$1 billion expenditure in residential construction was estimated to be 15,350, or about 1.5 person years per \$100,000 in expenditure.

Structure of the HBR Sector

3.0 Structure of the HBR Sector

Companies in the new home building and renovation sector of the economy can be divided into two components:

- ▲ Establishments primarily engaged in Residential Building and Development; and
- ▲ Establishments that provide Trade Contracting services to residential builders and renovators.

The Statistics Canada Business Register provides information on the number of companies in New Brunswick in the Residential Building and Development and Trade Contracting industries. The Business Register uses the Standard Industrial Classification (SIC) system. Establishments involved in Residential Building and Development are included in SIC code 4010. This code includes establishments involved in single family housing (4011), other multiple housing (4012) and residential renovation (4013).

3.1 Number of Active Residential Building and Development Companies

The number of active Residential Building and Development companies in the province in 1999 and 2000 is shown in Table 3.1. The companies are categorized by the number of employees per company depicted in the top row. The first category of companies has 0 employees; that is, they are sole proprietors, including partnerships, with no employees.

Table 3.1
Number of Active Residential Building and Development Companies
New Brunswick, SIC 4010

	0	1-4	5-9	10-19	20-49	50-99	100-199	Total
1999	390	579	140	53	22	0	0	1,184
2000	503	561	155	54	28	0	0	1,301

The table shows that there were slightly over 1,300 active Residential Building and Development companies in 2000, 10% more than in 1999. Over 43% of the companies employ one to four people,

while an additional 39% of the companies have no employees. In total, 82% of companies had less than 5 employees.

There were no firms with more than 50 employees active in 2000.

3.2 Number of Trade Contracting Companies

The number of Trade Contracting companies in New Brunswick in 1999 and 2000 is illustrated in Table 3.2. It is important to note that Trade Contracting companies work in both the residential and non-residential sectors. These companies can be general contractors or sub-contractors. Over one-third of Trade Contracting companies have no employees and another 45% have between one and four employees.

	0	1-4	5-9	10-19	20-49	50-99	100-199	200-499	Total
1999	772	1,383	266	159	125	17	5	0	2,727
2000	1,007	1,328	312	164	141	19	8	0	2,979

3.3 Area Breakdown of Firms in the Business Register

3.3.1 Residential Building Construction

A breakdown of the firms in residential building construction by area within New Brunswick in 2000 is provided in the North American Industry Classification System (NAICS). This breakdown is provided in Table 3.3 below.

These regions are as follows:



- ▲ Northeast (Gloucester, Northumberland and Restigouche counties);
- ▲ Southeast (Albert, Kent and Westmorland counties);
- ▲ Southwest (Charlotte, Kings and Saint John counties);
- ▲ Central (Queens, Sunbury and York counties); and
- ▲ Northwest (Carleton, Madawaska and Victoria counties).

These region names are not the same as those given by Statistics Canada. We have deemed our own designations to be more meaningful than those used by Statistics Canada in its publication. Statistics Canada uses Campbellton-Miramichi for what we call Northeast, Moncton-Richibucto for Southeast, Saint John-St. Stephen for Southwest, Fredericton-Oromocto for Central, and Edmundston-Woodstock for Northwest.

There were 1,301 firms listed in residential building construction in the province as defined by the NAICS system (NAICS 23121) in 2000. NAICS 23121 includes establishments involved in single family housing, other multiple housing and residential renovation. The regional breakdown of these companies is depicted in Table 3.3.

Table 3.3
Number of Firms in Residential Building Construction, NAICS 23121, 2000
New Brunswick

Northeast	291
Southeast	337
Southwest	271
Central	255
Northwest	146
Total	1,301

The table shows that the Southeast region of New Brunswick has the largest number of residential building construction firms (337 out of 1,301 or 26%). The Northeast, Southwest and Central regions have about the same number of firms while the Northwest has the least number of firms.



3.3.2 Trade Contracting

The number of establishments in Trade Contracting as defined by NAICS by county within New Brunswick in 2000 is depicted in Table 3.4.

Northeast	564
Southeast	836
Southwest	649
Central	462
Northwest	362
Total	2,872

The table shows that over 52% of the firms in Trade Contracting industries are found within the Southeast and Southwest areas.

Some, but not all, of the firms and people employed in the Trade Contracting sub-sector are involved in residential building. Some people work part of the time in both residential and non-residential building. Obtaining accurate estimates of these proportions is difficult and one of the greatest challenges for analysts in this field.

Labour Force and Employment

4.0 Labour Force and Employment

4.1 Data Sources and Systems

Chapter 3 presented data on the number of establishments in New Brunswick in the Residential Building and Development and Trade Contracting industries. The data were based on the Statistics Canada Business Register.

It was noted above that SIC 4010 comprises the Residential Building and Development sector while Trade Contracting is coded as SIC 4200. Land developers are not included in SIC 4010. The SIC code for land developers is 4491.

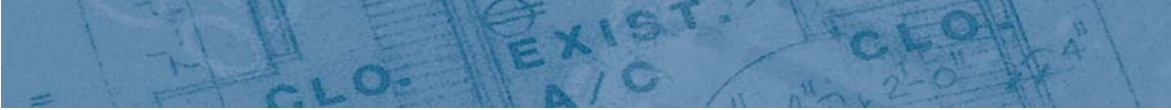
Chapter 4 provides comprehensive information on the labour force and employment by industry and occupation. This information comes from a variety of sources. A brief overview of the sources and classification systems used in this chapter is presented here.

4.1.1 Classification Systems

Data on the labour force and employment are classified in two ways – by industry and by occupation. Industry classifications group companies and enterprises according to the activities in which they are engaged. This report focuses on the Residential Building and Development and Trades Contracting segments of the construction industry.

Occupational classifications group individuals according to the kind of work they perform regardless of the industry in which they work.

The Standard Industrial Classification (SIC) system has been used in Canada to group companies and enterprises into industries for many years. The SIC system is being replaced in Canada, as well as Mexico and the United States, by a new industry classification system called the North American Industry Classification System (NAICS). The NAICS system takes a somewhat different approach to grouping companies and enterprises than did the SIC system. Under the NAICS system, companies and enterprises using similar production processes are grouped together.



The Standard Occupation Classification (SOC 91) system is used in Canada to classify occupations according to the kind of work performed. In the SOC 91, occupation titles are classified on the basis of the education, training or skill level required to enter the job, as well as the kind of work performed as determined by the tasks, duties and responsibilities of the occupation.

The National Occupational Classification (NOC) system classifies occupations according to a comprehensive index of 25,000 job titles. It describes duties, skills, interests, aptitudes, education requirements and working settings for occupations in the Canadian labour market.

The Government of Canada uses the Standard Occupational Classification (SOC 91) system for the Census and the Labour Force Survey, and publishes data for the SOC and NOC structures. The NOC is also used for a wide variety of special surveys. For example, it is used in the study of worker mobility, technological change, administrative data and other indicators of labour market behaviour. The NOC system is used by Human Resources Development Canada and is parallel to Statistics Canada's Standard Occupational Classification (SOC 91) system.

The NOC system provides a consistent description of occupational profiles that is part of a foundation for organizing effective labour market information. Governments, companies and educators use the information extensively and in many applications to plan their future needs. This system is not used in any of the information sources included in this report.

4.1.2 Information Sources

Information on the labour force and employment for individuals in Residential Building and Development and Trade Contracting comes from several of sources including:

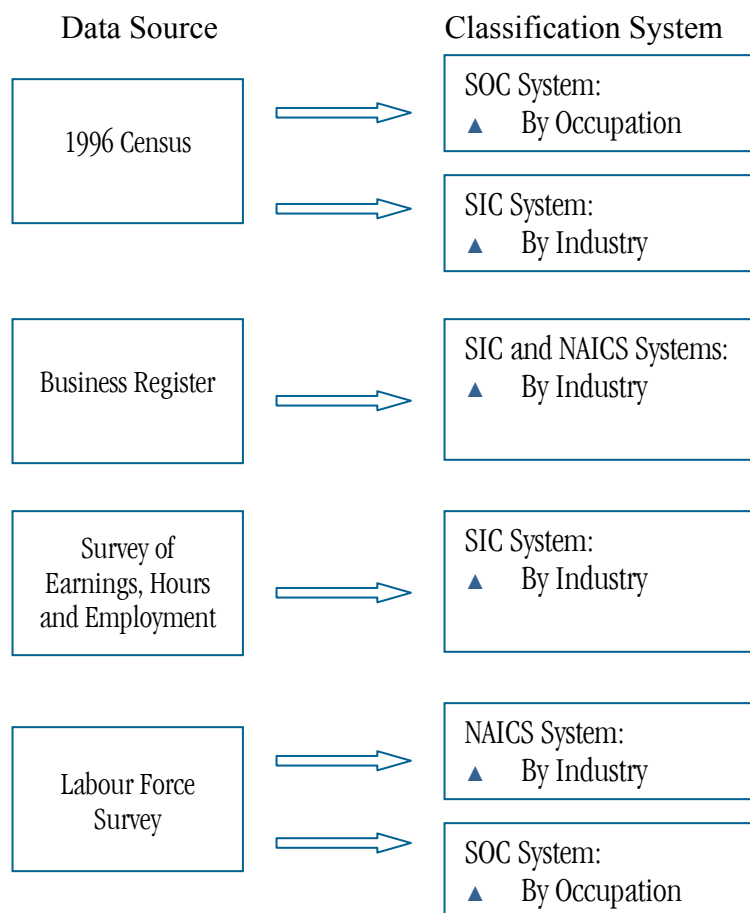
- ▲ The Business Register;
- ▲ The Census;
- ▲ The Survey of Employment, Payrolls and Hours (SEPH); and
- ▲ The Labour Force Survey (LFS).



Information on the labour force and employment from these sources is classified either by industry or occupation. The Business Register and SEPH classify data by industry using the SIC and NAICS classification systems. Eventually the NAICS system will be used exclusively by both data sources.

Data from the 1996 Census is classified by occupation and by industry. The SOC 91 system is used to classify occupational data and the SIC system is used to classify industry data. It is anticipated that the 2001 Census will use the NAICS classification system as it becomes the sole system used to classify labour force and employment data by industry in Canada. Detailed breakdowns of the labour force and employment by industry (SIC) and occupation (SOC 91) can be obtained from the 1996 Census.

A visual depiction of the relationship between data sources and classification systems is presented below.



The relationship between classification systems and data sources is illustrated in the table below.

OVERVIEW OF CLASSIFICATION SYSTEMS AND DATA SOURCES				
DATA SOURCE/CLASSIFICATION SYSTEM	SIC	NAICS	SOC	NOC
Business Register	X	X		
Census	X		X	
Survey of Employment Payroll and Hours	X			
Labour Force Survey		X	X	

4.2 The Business Register

The Business Register provides data on the number of active establishments and employment by industry division. The estimate of the number of employees in the Residential Building and Development (SIC code 4010) and the Trade Contracting industries (SIC code 4200) is presented in Table 4.1.

Table 4.1
Number of Employees
Statistics Canada Business Register
New Brunswick

	SIC Code 4010	SIC 4200
Stats. Can. Bus. Reg., 1999	4,345	14,724
Stats. Can. Bus. Reg., 2000	4,740	16,365

The breakdown of employees by sub-industry group within the Residential Building and Development industry also is available from the Business Register. This breakdown for 2000 is presented in Table 4.2.



Table 4.2
Number of Employees
Statistics Canada Business Register, SIC Code 4010
New Brunswick, 2000

	Employees
Single Family Housing (4011)	3,280
Apartment & Other Multiple Housing (4012)	95
Residential Renovation (4013)	1,366
Total Residential Building and Development (4010)	4,740

This table shows that about 69% of the total number of employees were in Single Family Housing and about 29% were in Residential Renovation. Only 2% of employees were in the Apartment and Other Multiple Housing industry.

Section 2 showed that expenditures on “Improvements” (major renovations that require a building permit) are greater than those on new housing (\$340 million versus \$296 million in 2000 as shown in Table 2.1). In addition, significant expenditures are made on minor renovations (\$140 million in 1999 as shown in Table 2.2). Although total expenditures on improvements and renovations exceed those on new housing by a factor of 1.6 (\$480 million versus \$296 million), the number of employees in renovation is only 42% of the number recorded for new single family housing.

Part of the explanation for this discrepancy is that homeowners supply some of the labour involved in renovations. Another reason, however, is that the underground economy is most significant in the renovations sector of the home building industry. As a result, the number of people working in the home renovations industry is significantly underestimated in the official data. This issue will be discussed in depth later in this report.

The breakdown of employment by size of establishment for 1999 and 2000 for Residential Building and Development establishments is presented in Table 4.3.



Table 4.3
Number of Employees by Employee Size Range
Residential Building and Development, SIC 4010
New Brunswick

	0	1-4	5-9	10-19	20-49	50-99	100-199	Total
1999	390	1448	980	769	759	0	0	4,345
2000	503	1403	1085	783	966	0	0	4,740

Source: Business Register, Statistics Canada

The table shows that companies with less than five employees provided 40% of the total employment. Employment in the 5-9 and 20-49 categories was spread fairly. No companies employed more than 50 people.

The number of employees in the Trade Contracting sector in 1999 and 2000 is presented in Table 4.4.

Table 4.4
Number of Employees by Employee Size Range, Trade Contractors, SIC 4200
New Brunswick

	0	1-4	5-9	10-19	20-49	50-99	100-199	Total
1999	772	3,458	1,862	2,306	4,313	1,267	748	14,724
2000	1,007	3,320	2,184	2,378	4,865	1,416	1,196	16,365

Source: Business Register, Statistics Canada.

A total of 16,365 people were employed in the Trade Contracting sector in 2000, up 11% from the previous year. Trade contractors with no employees accounted for only 6% of the total. Trade contractors with 50-99 and 100-199 employees each provided 7-8% of the total. The 20-49 category provided the greatest employment when compared with the others at 28% of the total.

4.3 The Census – Labour Force

The labour force by industry division is available from the Census. The latest estimate is from the 1996 Census. Census data on Residential Building and Development (SIC 4010) and Trade Contracting

(SIC 4200) in New Brunswick are presented in Table 4.5.

Table 4.5
Labour Force, 1996 Census, New Brunswick
SIC 4010 & 4200

	Labour Force
SIC 4010 (Residential Building and Development)	4,645
SIC 4200 (Trade Contracting Industries)	13,600

These data indicate that approximately 4,600 individuals were in the Residential Building and Development industry labour force in 1996. An additional 13,600 individuals were in the Trade Contracting industry. It is important to note that no information exists on how many individuals in the Trade Contracting industry worked in residential construction or what proportion of their work was in this industry.

A comparison of data from the Business Register and the Census is provided in Table 4.6.

Table 4.6
Comparison of 1996 Census and Statistics Canada Business Register
Labour Force, New Brunswick

	SIC Code 4010	SIC 4200
1996 Census, L.F. > 15 yr.	4,645	13,600
Business Register, 1999	4,345	14,724
Business Register, 2000	4,740	16,365

The estimates provide a measure of confidence that the labour force in the Residential Building and Development industry of New Brunswick (SIC code 4010) was in the 4,300 to 4,600 range in the 1996-1999 period while employment in Trades Contracting (SIC code 4200) was in the 14,000 to 15,000 range.



4.4 The Survey of Employment, Payrolls and Hours (SEPH) - Employment

The Survey of Employment, Payrolls and Hours (SEPH) conducted by Statistics Canada provides monthly employment data by industry as defined in the Standard Industrial Classification (SIC) system.

Yearly employment levels can be estimated from SEPH data by calculating average monthly employment. Yearly employment for 2000 was about 2,300 in the Residential Building and Development industry (SIC code 4010).

There appears to be an inconsistency between employment of about 2,300 estimated from the Survey of Employment, Payrolls and Hours (SEPH) and estimates from the 1996 Census and the Statistics Canada Business Register. The Business Register shows a labour force of 4,740 for SIC 4010 (Residential Building and Development industry) in 2000 while the 1996 Census showed a labour force of 4,645.

Part of the discrepancy is explained by differences in the scope of the data. The Business Register includes owners of unincorporated companies and self-employed individuals who record sales subject to the HST. The Census includes all individuals who report that they are part of the labour force of the Residential Building and Development industry (SIC 4010) at the date the Census was completed. Self-employed individuals and owners of unincorporated businesses are included in both the Business Register and the Census but not in the SEPH.

4.5 The Number of Employees by Area

The breakdown of employment in residential building construction by area within New Brunswick in 2000 is available from data classified according to the North American Industry Classification System (NAICS).

The area breakdown is presented in Table 4.7.



Table 4.7
Employment in Residential Building Construction
NAICS 23121, 2000
New Brunswick

Northeast	924
Southeast	1,258
Southwest	1,127
Central	868
Northwest	562
Total	<hr/> 4,740

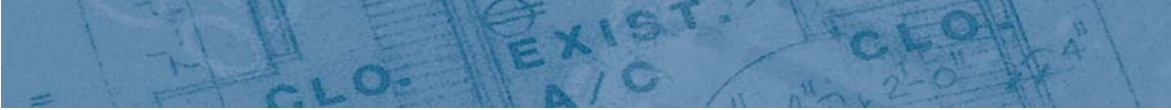
The table shows that employment in the Southeast area was 1,258, accounting for 27% of the total. Approximately one-quarter (1,127 or 24%) of residential construction employment was in the Southwest area of the province in 2000. The Northeast and Northwest areas were evenly matched at about 19%, and 12% was in the Northwest area of the province.

The breakdown of employment in Trade Contracting by area within New Brunswick in 2000 is depicted in Table 4.8.

Table 4.8
Employment in Trade Contracting Industries,
NAICS 232
New Brunswick, 2000

Northeast	4,025
Southeast	6,313
Southwest	5,108
Central	3,145
Northwest	2,004
Total	<hr/> 20,597

The table shows that employment in Trade Contracting was highest in the Southeast (31%) and lowest in the Northwest (10%).



Employment by detailed industry division and area in 2000 is presented in Table 4.9. The table shows that the proportion of individual trades accounted for by each area is fairly uniform. For example, the highest concentration is found in the Southeast (31%), versus 25% for the Southwest, 20% for the Northeast, 15% for the central area and 10% for the Northwest.

While the Southeast accounted for higher proportions of most of the trades, it accounted for proportionately fewer carpet and resilient flooring workers and commercial refrigeration specialists (11% of the total) and other building equipment installers (6%). The Northwest area, conversely, accounted for only 10% of the total employment yet accounted for 33% of the other building structural workers, 28% of commercial refrigeration installers and 28% of residential and commercial paving contractors.



Table 4.9
Employment in the Construction Industry
NAICS 231210 and 232
New Brunswick, 2000

	Total	Northeast	Southeast	Southwest	Central	Northwest
231210 - Residential Building Construction	4,740	924	1,258	1,127	868	562
232110 - Site Preparation Work	2,762	788	643	681	362	289
232210 - Forming Work	204	54	89	42	10	11
232220 - Concrete Pouring & Finishing Work	882	248	332	169	34	98
232230 - Struct. Steel & Pre-cast Concrete Erection Work	354	87	215	8	6	37
232240 - Crane Rental Services	148	29	31	37	17	32
232250 - Framing & Rough Carpentry Work	240	46	80	53	53	7
232290 - Other Building Structure Work	69	6	19	14	9	23
232310 - Masonry Work	631	66	193	238	91	42
232320 - Glass and Glazing Work	89	13	51	6	18	1
232330 - Roofing & Related Work	740	122	302	197	90	30
232340 - Metallic & Other Siding Work	241	20	133	38	25	26
232390 - Other Building Exterior Finishing Work	37	10	20	7	1	0
232410 - Drywall & Plaster Work	678	46	452	94	65	22
232420 - Terrazzo & Tile Work	119	6	75	13	20	5
232430 - Carpet & Resilient Flooring Work	563	58	63	237	191	13
232440 - Insulation Work	224	50	38	87	28	21
232450 - Building Painting & Paperhanging Work	721	77	194	263	132	55
232460 - Finish Carpentry & Wood Flooring Work	703	100	200	170	125	108
232490 - Other Building Interior Finishing Work	6	0	5	0	1	0
232510 - Electrical Work	2,660	459	883	666	395	257
232520 - Plumbing, Heating, Air-Conditioning Installation	2,397	512	769	532	411	173
232530 - Automatic Sprinkler System Installation	68	5	60	0	1	3
232540 - Commercial Refrigeration Installation	74	6	8	22	18	21
232550 - Elevator & Escalator Installation	46	0	15	29	3	0
232590 - Other Building Equipment Installation	302	9	17	193	75	9
232910 - Fencing & Interlocking Stone Contracting	132	35	53	23	20	2
232920 - Residential & Commercial Paving Contracting	521	169	73	92	43	145
232990 - All Other Special Trade Contracting	254	83	44	74	37	15
Totals	20,597	4,025	6,313	5,108	3,145	2,004
Trade Totals (Series 323)	15,857	3,101	5,055	3,982	2,278	1,443

4.6 Employment by Industry and Occupation

4.6.1 Introduction

This section of the report combines data by industry classified by the SIC system and the data by occupation classified by the SOC 91 system. Section 4.6.2 examines the occupational make-up of the Residential Building and Development (SIC 4010) industry segment. Section 4.6.3 focuses on selected occupations in the Trades, Transport and Equipment group of SOC 91 and documents the number of individuals in each occupation that work in selected industry segments.

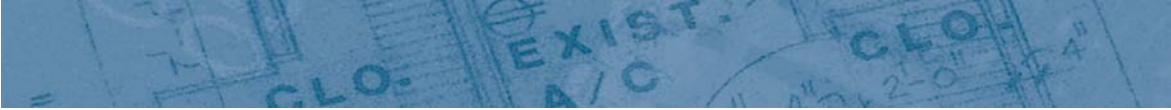
4.6.2 Occupational Profile of Residential Building and Development (SIC 4010)

The occupational profile of Residential Building and Development (SIC 4010) in 1996 is presented in Table 4.10.

Table 4.10
Occupational Profile of the Residential Building and Development Industry
Major Occupational Group
SIC 4010, 1996 Census, New Brunswick

A	Management occupations	640	12.4%
B	Business, finance and administrative occupations	310	6.0%
C	Natural and applied sciences and related occupations	85	1.6%
D	Health occupations	15	0.3%
E	Occupations in social science, government service, etc.	20	0.4%
F	Occupations in art, culture, recreation and sport	-	-
G	Sales and service occupations	110	2.1%
H	Trades, transport and equipment operators	3,870	74.7%
I	Occupations unique to primary industry	25	0.5%
J	Occupations unique to processing	105	2.0%
	Total	5,180	100%

Note: The total in the table is the Census population of individuals in SIC code 4010 which is higher than the Census labour force of 4,645 (Table 4.6).



The table shows that three-quarters of the individuals who indicated in the 1996 Census that they worked in the Residential Building and Development industry were in the Trades, Transport and Equipment Operators Occupational Group (Major Occupational Group H of the SOC 91 system). Management occupations accounted for 12% of Census respondents while Business, Finance and Administrative occupations accounted for 6%. In total, these three occupational groups accounted for 93% of Census respondents who indicated that they were in the Residential Building and Development labour force. The remaining 7% of respondents were spread fairly evenly among the remaining six Major Occupational Groups.

A brief overview of each occupation listed in Table 4.10 is presented next.

Management Occupations (Major Group A)

About 97% of the 640 individuals who identified Management as their broad occupational category under SIC 4010 were in three sub-groups: Residential Home Builders and Renovators (340), Construction Managers (265) and Senior Managers (15).

Business, Finance and Administrative Occupations (Major Group B)

Four sub-groups accounted for nearly 90% of the 310 individuals who identified occupations in business, finance or administration. Bookkeepers (70) and Secretaries (70) had the greatest number of individuals followed by General Office Clerks (40) and Accounting Clerks (40), Administrative Officers (40) and Payroll Clerks (10). A variety of other types of clerks were also found in this group.

Trades, Transport and Equipment Operators (Major Group H)

Nearly 90% of the individuals in this group were found in three sub-categories: 2,185 in Construction Trades, 930 in Helpers and Labourers, and 280 in Carpentry Contractors and Supervisors. Over 1,900 of the 2,185 were carpenters with another 105 as painters.



Industry Participation of Trades, Transport and Equipment Operators

Occupations of particular interest to this study are in the broad occupational category Trades, Transport and Equipment Operators and Related Occupations of SOC 91. Individuals in this occupational group work in a wide variety of industries, including Residential Building and Development (SIC 4010). Occupations in this broad occupational category are primarily concerned with contracting, supervising and doing trades work; and supervising and operating transportation equipment and heavy equipment.

Occupations of special interest are:

- ▲ Contractors and Supervisors, Electrical Trades and Telecommunications Occupations, including such occupations as Electrical Contractor and Electrical Foreman / Woman, Construction;
- ▲ Contractors and Supervisors, Pipefitting Trades, including occupations such as Plumbing Contractor;
- ▲ Contractors and Supervisors, Carpentry Trades;
- ▲ Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers, containing occupations primarily concerned with supervising bricklayers and stone masons, roofers, cement finishers, tile setters, lathers, plasterers, drywall installers and finishers, glaziers, heat and frost insulators, painters and decorators, floor covering installers and other installers, repairers and servicers;
- ▲ Construction trades occupations of carpentry, plumbing, pipefitting, masonry, plastering, cement finishing, tile setting, roofing, glazing, painting, insulating and installing floorcovering;
- ▲ Electrical trades including Stationary Engineers, Power Station Operators and Electrical Trades and Telecommunications Occupations; and
- ▲ Trades helpers, construction, and transportation labourers and related occupations. This occupational category includes Construction Trades Helpers and Labourers and contains occupations primarily concerned with assisting skilled trades persons and performing manual work at construction sites.

Individuals in Trades, Transport and Equipment Operators occupations work in the Building,

Developing and General Contracting and Trade Contracting industries and in other industries. The industry breakdown for selected occupations within this broad occupational group is presented in Table 4.11.

Table 4.11
Industry Participation for Selected Occupations
Occupation Group H, SOC 91
Trades, Transport and Equipment Operators
New Brunswick

	Major Group 40 Bldg., Dev. & Gen. Contr.	Major Group 42 Trade, Contr.	Other Ind.	All Ind.
H012 Contractors and Supervisors, Electrical	-	210	195	405
H015 Contractors and Supervisors, Carpentry Trades	275	160	180	615
H019 Contractors and supervisors, Other Const. Trades	10	285	110	405
H111 Plumbers	15	600	150	765
H112 Steamfitters, Pipefitters, Sprinkler System Installers	45	235	610	890
H121 Carpenters	2,030	1,420	1,790	5,240
H122 Cabinetmakers	15	80	245	340
H131 Bricklayers	15	245	70	330
H132 Cement Finishers	-	80	65	145
H134 Plasterers, Drywall	30	290	40	360
H141 Roofers and Shinglers	25	270	35	330
H144 Painters and Decorators	100	620	365	1,085
H211 Electricians	40	960	420	1,420
H413 Refrigeration/ Air Cond.	-	140	80	220
H418 Elevator Mechanics	-	30	5	35
H523 Other Trades	-	-	100	100
H531 Residential and Commercial Installers	70	270	190	530
H623 Water Well Drillers	-	35	-	35
H821 Construction Labourers	970	1,110	2,265	4,345
Totals	3,640	7,040	6,915	17,595

Source: 1996 Census.

Note: There are some discrepancies in the Census data on the number of individuals by occupation and industry. For this reason some data in Table 4.11 conflicts with data in Table 4.12. For example, Table 4.11 reports 2,030 carpenters while Table 4.12 reports 2,225.

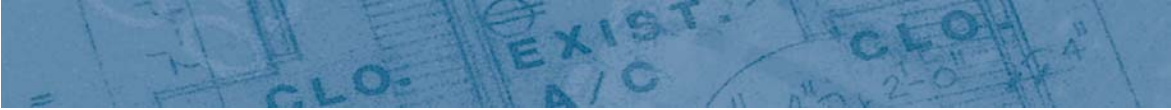


Table 4.11 shows that there were almost 18,000 people in the selected occupations recorded in the 1996 Census. Approximately 21% of these individuals indicated that they worked in the Building, Developing and General Contracting industry. The Trade Contracting industry employed 40%, nearly twice as many as in the Building, Developing and General Contracting industry. A total of 39% of individuals in Trades Occupations worked in industries other than Building, Developing and General Contracting and Trades Contracting.

Carpenters are the largest occupational group in Trades occupations, accounting for almost one-third of individuals in the occupations profiled in Table 4.11. More carpenters were involved in the Building, Developing and General Contracting industry (39%), with the remainder spread fairly evenly across the Trades Contracting (27%) and other industries (34%).

Construction labourers are the second most numerous Trades occupation, accounting for 21% of individuals in the occupations identified in Table 4.11. Over 78% of construction labourers worked outside the Building, Developing and General Contracting industry.

Table 4.12 provides a breakdown by occupation between Residential Building and Development (SIC 4010) and Non-Residential Building and Development (SIC 402).



Table 4.12
Participation by Industry Division, SIC 40
Selected Occupations in Occupation Group H
Trades, Transport and Equipment Operators
New Brunswick

	Major Group 40 Bldg., Dev. & Gen. Contr.	4010 Res. Bldg. & Dev.	402 Non-Res. Bldg. & Dev.
H012 Contractors and Supervisors, Electrical	-	-	-
H015 Contractors/Supervisors, Carpentry Trades	290	250	35
H019 Contractors, supervisors, Other Const. Trades	25	10	15
H111 Plumbers	15	10	-
H112 Steamfitters, Pipefitters, Sprinkler System Installers	50	50	-
H121 Carpenters	2,225	1,925	300
H122 Cabinetmakers	15	15	-
H131 Bricklayers	15	10	10
H132 Cement Finishers	10	10	-
H134 Plasterers, Drywall	40	35	-
H141 Roofers and Shinglers	25	15	-
H144 Painters and Decorators	110	105	10
H211 Electricians	40	25	15
H821 Construction Labourers	1,210	905	300

Note: There are some discrepancies in the Census Canada data on the number of individuals by occupation and industry. For this reason some data in Table 4.11 conflicts with data in Table 4.12.

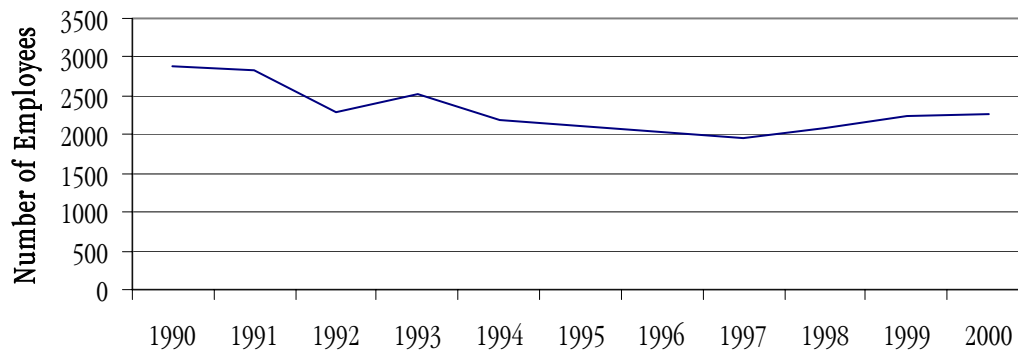
Table 4.12 shows that 83% of selected Trades occupations in the Building, Developing and General Contracting industry indicated that Residential Building and Development was their main employment base. The proportion of Carpenters was slightly higher than the average at 87% while the proportion of Construction Labourers was somewhat lower at 75%.

4.7 Employment and Unemployment

Data on the number of employees by month in the Residential Building and Development industry are contained in the Survey of Employment, Payrolls and Hours (SEPH, Statistics Canada, CANSIM Matrix 4341). Yearly employee levels can be estimated from SEPH data by calculating average monthly employment. The average annual number of employees from 1990 to 2000 is presented in

Exhibit 4.1.

Exhibit 4.1
Employees in Residential Building and Development,
New Brunswick



The exhibit shows that average monthly employment declined from about 2,800 in 1990 to nearly 2,300 by 2000. It is interesting to note these data are not consistent with the GDP data in Exhibit 2.3 that showed an overall increase in the real value of residential construction over the period punctuated by several short decline periods (90-91, 94-95 and 97-98). Overall, employment decreased from 1990 to 2000.

The annual average labour force, employment and unemployment for Trades, Transport and Equipment Operators, Major Group H of the SOC 91, is available from the Labour Force Survey. This group was chosen because it contains 75% of the Residential Building and Development (SIC 4010) labour force (from Table 4.10).

These averages are presented in Table 4.13. This table shows that the labour force in Trades and Related Occupations increased in the late 1980s to 64,000 in 1990, declined but remained fairly consistent from 1992 to 1996 (approximately 59,000), then increased to another four years of fairly consistent levels averaging 64,000. The size of the labour force in 2000 was nearly the same as that seen in 1990. The unemployment fluctuated throughout the period and, in general, peaked every three years beginning in 1987. The 1999 and 2000 rate of 12.9% was the lowest level recorded over the 1987-2000 period.



Table 4.13
Annual Averages for Major Group H
Trades, Transport and Equipment Operators
New Brunswick

	Labour Force D989611	Employment D989621	Derived Unemployment	Unemployment Rate
1987	62,700	52,900	9,800	15.6%
1988	63,600	54,300	9,300	14.6%
1989	61,700	53,100	8,600	13.9%
1990	64,000	54,400	9,600	15.0%
1991	60,800	50,800	10,000	16.4%
1992	58,600	49,600	9,000	15.4%
1993	59,500	50,900	8,600	14.5%
1994	59,000	50,100	8,900	15.1%
1995	59,500	51,300	8,200	13.8%
1996	58,400	50,200	8,200	14.0%
1997	63,500	53,900	9,600	15.1%
1998	64,400	54,600	9,800	15.2%
1999	63,000	54,900	8,100	12.9%
2000	63,800	55,600	8,200	12.9%

Note: Unemployment derived by subtracting employment from the labour force
Source: Labour Force Survey, CANSIM, Statistics Canada

The 1996 Census provides labour market information on the Residential Building and Development industry (SIC 4010). This information is presented in Table 4.14.

Table 4.14
Labour Force Activity
Residential Building and Development industry (SIC 4010)
New Brunswick, 1996 Census

Total Labour Force	4,645	89.6%
Employed	3,350	64.6%
Unemployed	1,290	24.9%
Not in the Labour Force	540	10.4%
Population Sub-Total	5,185	100.0%

The table shows that over 10% of respondents who indicated that they were part of the Residential

Building and Development industry (SIC 4010) indicated that they were not actively seeking work. The unemployment rate among respondents who indicated that they were in the labour force was nearly 25%.

The 1996 Census also provides detailed data on labour force activity by occupation. Table 4.15 provides information for selected occupations in Major Group H of the SOC 91 (Trades, Transport and Equipment Operators).

Table 4.15
Labour Force Characteristics, Detailed Occupation
Selected Occupations, Trades, Transport and Equipment Operators
1996 Census, SOC 91, New Brunswick

	Employed	Unemployed	Not in Labour Force	Totals
H012 Contractors & supervisors, electrical trades	365	45	20	430
H015 Contractors & supervisors, carpentry trades	510	105	15	630
H019 Contractors & supervisors, other const. trades	335	75	30	440
H111 Plumbers	625	145	40	810
H112 Pipefitters & sprinkler system installers	785	105	25	915
H121 Carpenters	3,615	1,620	490	5,725
H122 Cabinetmakers	285	50	10	345
H131 Bricklayers	190	135	10	335
H132 Cement finishers	100	45	20	165
H133 Tilesetters	65	10	-	75
H134 Plasterers, drywall installers	190	175	50	415
H141 Roofers & shinglers	220	115	35	370
H142 Glaziers	115	30	15	160
H143 Insulators	155	70	10	235
H144 Painters & decorators	740	345	120	1,205
H145 Floor covering installers	265	35	15	315
H211 Electricians	1,165	255	90	1,510
H413 Refrigeration & air conditioning mechanics	180	40	10	230
H418 Elevator mechanics	25	20	10	55
H523 Other trades	100	-	-	100
H531 Residential & commercial installers	360	170	40	570
H821 Construction trades labourers	2,315	2,025	955	5,295
Totals	12,705	5,615	2,010	20,330



The table shows that the total labour force for the selected occupations was 20,330 with 5,615, or 28%, unemployed. Approximately 10% in Trades occupations indicated that they were not in the labour force.

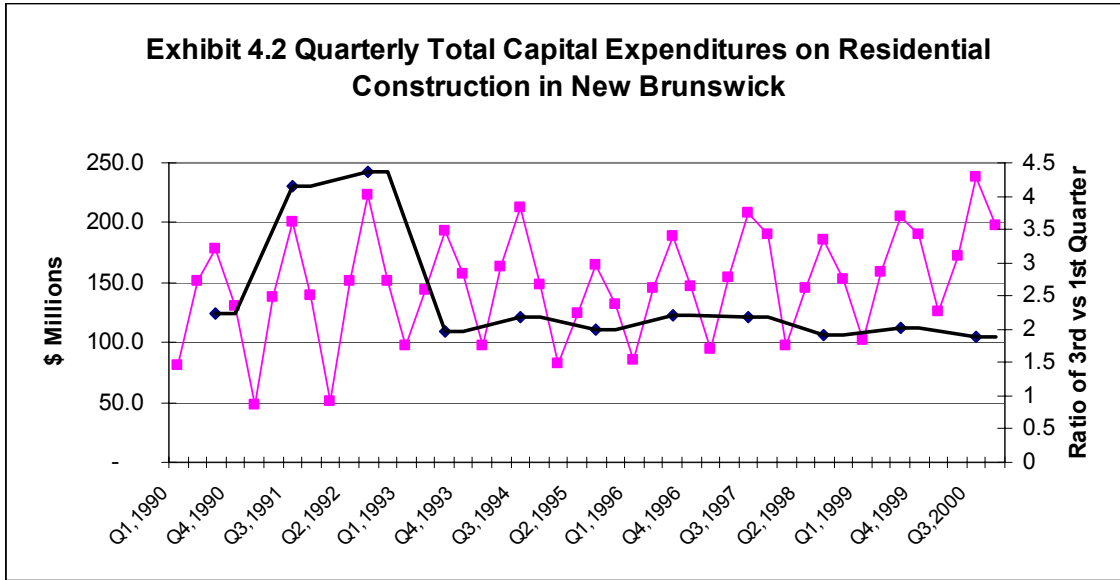
Unemployment rates for selected trades within this overall total are presented in Table 4.16. The table shows that there was considerable variation in unemployment rates, ranging from nearly 11% for Electrical Contractors and Supervisors to over 42% for Plasterer and Drywall Installers.

Table 4.16
Unemployment Rate, Selected Occupations
Trades, Transport and Equipment Operators
Major Group H, SOC 91
1996 Census, New Brunswick

H012 Contractors & supervisors, electrical trades	10.5%
H015 Contractors & supervisors, carpentry trades	16.7%
H019 Contractors & supervisors, other const. trades	17.1%
H111 Plumbers	17.9%
H121 Carpenters	28.3%
H122 Cabinetmakers	14.5%
H131 Bricklayers	40.3%
H132 Cement finishers	27.3%
H134 Plasterers, drywall installers	42.2%
H141 Roofers & shinglers	31.1%
H144 Painters & decorators	28.6%
H211 Electricians	16.9%
H821 Construction trades labourers	38.2%

4.8 Seasonality and Attachment to the Labour Force

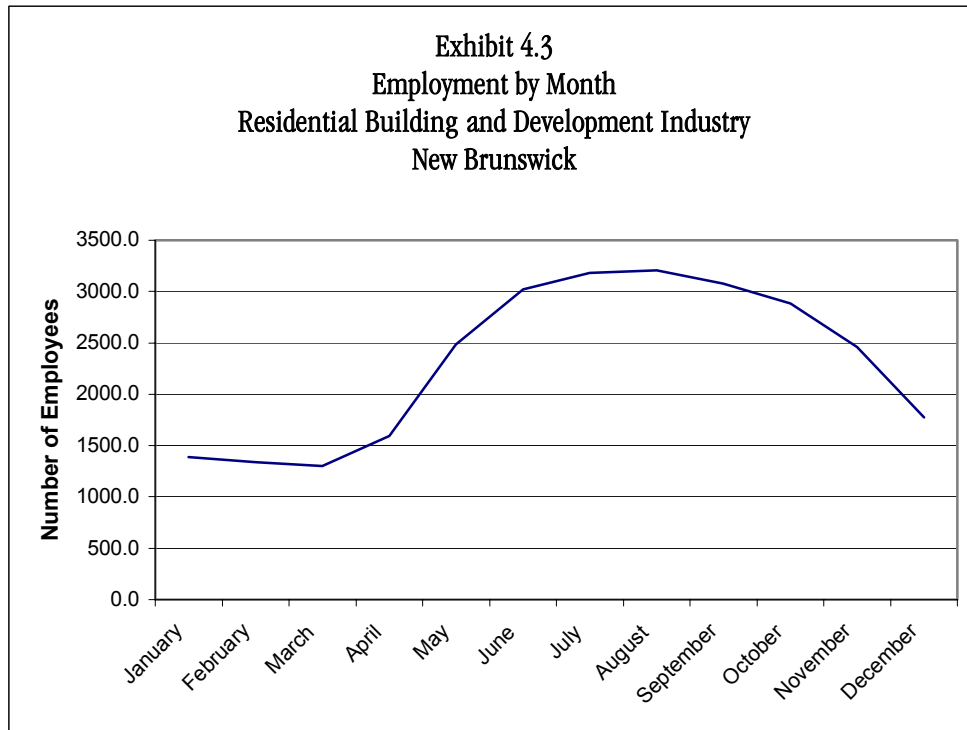
Exhibit 4.2 illustrates the seasonality in residential construction spending in New Brunswick. The exhibit is based on the Statistics Canada data series “Capital Expenditures on Residential Construction” (CANSIM 441-D849354).



Spending peaks in the third quarter and reaches a low point in the first quarter. There was less seasonality after 1993. Spending in the third quarter was nearly 4.5 times higher than in the first quarter from 1991 and 1992 compared to a range of 2.0 to 1.9 from 1993 to 2000 (shown as the dark line).

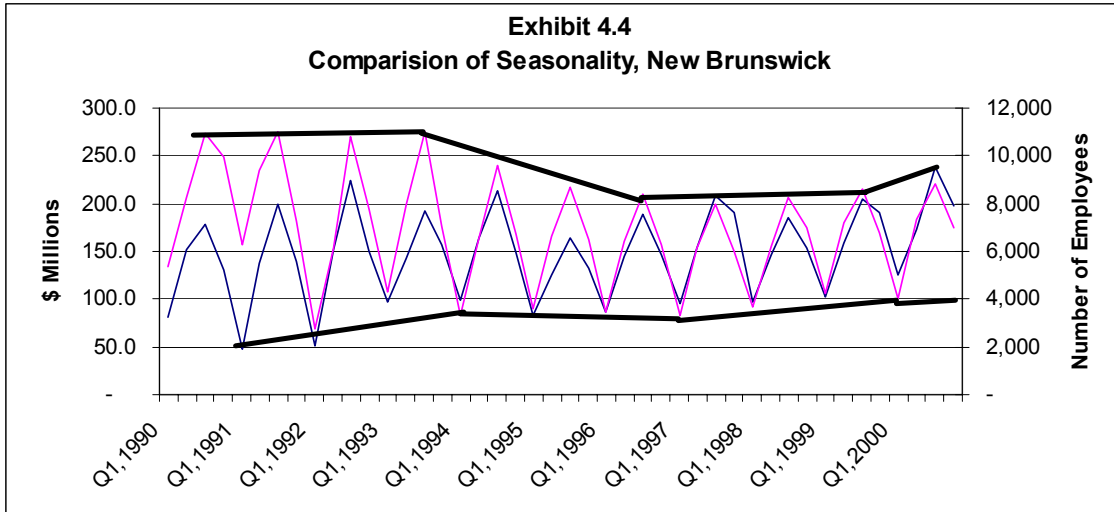
The seasonal variation in employment in the Residential Building and Development industry can be determined from the monthly data contained in the Survey of Employment, Payrolls and Hours². Seasonality is illustrated in Exhibit 4.3.

² The Survey classifies data by industry based on the SIC and SOC systems. It does not, however, include firms with zero employees. For this reason, the total counts do not reflect the sector total. The data is the only source to accurately track employment patterns by month. We are using the data here not to measure the total seasonal fluctuation of the workforce, but as a proxy for this by presenting trends in seasonality.



The graph demonstrates that over the past decade the average employment in the January to March period was approximately 40% below the peak levels experienced during the July to September period.

A comparison of seasonality between expenditures in Home Building and Renovations (CANSIM 441-D849354) and employment (SEPH - CANSIM Matrix 4341) is illustrated in Exhibit 4.4. Both data sources show a very similar pattern of seasonality. The dark border lines illustrate a finding presented in Exhibit 4.2. There is less seasonality after 1993 as demonstrated by the narrowing of the band in the graph.



The 1996 Census also provides data on seasonal work activity by occupation for 1995. Table 4.17 provides information for the nine largest occupations in Major Group H of the SOC 91 (Trades, Transport and Equipment Operators).

Table 4.17
Total Work Activity by Detailed Occupation, 1995, Top Ten Trades and Total All Trades
Based on 1996 Census, New Brunswick

	26 Weeks or Less	>26 Weeks	Av. Weeks Worked
H012 Contractors and supervisors, electrical trades etc	55	325	44.2
H015 Contractors and supervisors, carpentry trades	165	290	36.4
H019 Contractors and supervisors, other construction trades	185	190	33.1
H111 Plumbers	160	475	40.1
H112 Steamfitters, pipefitters and sprinkler system installers	225	540	38.2
H121 Carpenters	2,895	1,770	29.3
H144 Painters and decorators	725	335	25.6
H211 Electricians (except industrial and power system)	500	815	36.3
H531 Residential and commercial installers and servicers	320	160	28.3
H821 Construction trades helpers and labourers	3,765	765	21.5
Totals	8,995	5,665	

Approximately 61% of the individuals (8,995) in the ten occupations indicated that they worked 26



weeks or less in 1995 while 39% worked more than 26 weeks (5,665). There was considerable variation among the occupations in terms of the number of weeks worked per year. For example, 86% of the electrical trade contractors worked more than 26 weeks while 83% of construction labourers worked 26 weeks or less. Individuals in the above occupations worked between 21.5 (labourers) and 44.2 weeks (electrical trade contractors).

The 1996 Census also provides data on the number of hours worked by occupation in a reference week. Table 4.18 provides information for selected occupations in Major Group H of the SOC 91 (Trades, Transport and Equipment Operators).

Table 4.18
Hours Worked by Detailed Occupation, 1995 (1996 Census)
Top Ten Trades and Total All Trades, New Brunswick

	<30 Hours (part-time)	30+ (full time)	Average Hrs Wkd
H012 Contractors & supervisors, electrical trades etc	25	320	43.9
H015 Contractors & supervisors, carpentry trades	40	455	43.6
H019 Contractors & supervisors, other construction trades	20	305	41.8
H111 Plumbers	90	505	39.9
H112 Steamfitters, pipefitters & sprinkler system installers	25	725	41.1
H121 Carpenters	350	3,065	40.8
H144 Painters & decorators	135	565	36.6
H211 Electricians (except industrial and power system)	55	1,050	41.4
H531 Residential & commercial installers and servicers	25	325	44.5
H821 Construction trades helpers & labourers	410	1,745	38.2
Total	1,175	9,060	

The table shows that the average number of hours worked for individuals in Major Group H of the SOC 91 (Trades, Transport and Equipment Operators) ranged from 36.6 hours for painters to nearly 40 hours for electrical and carpentry trades contractors. About 89% of workers worked more than 30 hours per week (9,060 out of 10,235) and would be classified as full-time while only 11% worked less than 30 hours and were part-time.

Most of the larger occupations worked more than 40 hours per week.

4.9 Employment Status

The 1996 Census also provides data on employment status by occupation. Table 4.19 provides information for selected occupations in Major Group H of the SOC 91 (Trades, Transport and Equipment Operators). Note that individuals in Major Group H of SOC 91 work in a wide variety of industries, including Residential Building and Development (SIC 4010).

Table 4.19
Employment Status by Detailed Occupation, 1995
Major Group H
Based on 1996 Census, New Brunswick

	Employees	Self-Employed (incorporated)	Self-Employed (unincorporated)
H012 Contractors & supervisors, electrical trades	310	50	40
H015 Contractors & supervisors, carpentry trades	400	75	135
H019 Contractors & supervisors, other const. trades	285	45	75
H111 Plumbers	580	75	115
H112 Pipefitters & sprinkler system installers	885	-	10
H121 Carpenters	4,570	135	525
H122 Cabinetmakers	275	-	60
H131 Bricklayers	295	-	30
H132 Cement finishers	145	-	-
H133 Tilesetters	60	10	15
H134 Plasterers, drywall installers	310	10	35
H141 Roofers & shinglers	310	10	15
H142 Glaziers	135	10	-
H143 Insulators	225	-	-
H144 Painters & decorators	930	30	115
H145 Floor covering installers	225	-	70
H211 Electricians	1,245	55	120
H413 Refrigeration & air conditioning mechanics	205	15	-
H418 Elevator mechanics	40	-	-
H523 Other trades	65	-	30
H531 Residential & commercial installers	445	20	55
H821 Construction trades labourers	4,230	25	75
Totals	16,170	565	1,520



The table shows that 89% of individuals in Major Group H of the SOC 91 (Trades, Transport and Equipment Operators) indicated that they were employees, while 11% indicated that they were self-employed. About 73% of the self-employed were unincorporated and 27% were incorporated.

Once again, there was considerable variation in the proportion of the occupations that were employees and those that were self-employed. All roofers, labourers and residential installers are employees. The highest numbers of self-employed individuals are found within the trades of construction contractors, tilers and cabinetmakers (ranging from only 66% to 70% indicating they were employees, respectively).

The Census data also show the number of self-employed tradesmen that had paid help. About 60% of incorporated self-employed individuals in Major Group H had paid help while only about 37% of unincorporated self-employed individuals had paid help.

The 1996 Census also provides data on the employment status for individuals who indicated that they were part of the Residential Building and Development industry (SIC 4010). These data are presented in Table 4.20.

Table 4.20
Employment Status by Detailed Occupation, 1995
Residential Building and Development Industry (SIC 4010)
Based on 1996 Census

Employees	4,250	82.0%
Self-employed (incorporated)	355	6.8%
-Without paid help	100	1.9%
-With paid help	255	4.9%
Self-employed (unincorporated)	565	10.9%
-Without paid help	285	5.5%
-With paid help	280	5.4%
Unpaid family worker	15	0.3%
Sub-Total	5,185	100.0%

The table shows that 82% of individuals in the Residential Building and Development Industry (SIC 4010) indicated that they were employees while 18% indicated that they were self-employed. About 61%

of the self-employed were unincorporated and 39% were incorporated.

4.10 Incidence of Sub-Contracting

The incidence of sub-contracting by work activity in residential construction in Atlantic Canada is available from a labour study completed for the Canadian Home Builders Association. This information is provided in Table 4.21.

The exhibit shows that only 10% to 11% of wood and vinyl siding work activities are sub-contracted. Other activities, mostly completed by home builders and renovators, include: framing, building stairs and doors, installing windows and finish carpentry. Only 14% to 23% of these work activities are sub-contracted. About three-quarters of work activities associated with building cabinets, painting and drywall are sub-contracted. Most electrical work (89%) is sub-contracted as is plumbing (97%), heating (97%) and excavation.

Table 4.21
Percentage of Individual Work Activities
Subcontracted by Builders and Renovators in Atlantic Canada

Work Activity	Atlantic
Excavation	100
Footings	69
Foundation:	
- concrete	82
- wood	31
- foam blocks	36
- conc. Blocks	100
Damp-proofing	46
Weeping tile	40
Concrete floor	89
Framing	19
Roof shingles	43
Doors & windows	14
Siding:	
- metal	47
- vinyl	10



- wood	11
- brick	92
- stucco	92
Stairs	20
Plumbing	97
Heating	97
Ventilation	91
Electrical	89
Insulation	49
Air/vapour barrier	38
Drywall	75
Drywall finishing	88
Finish carpentry	23
Fireplace	93
Cabinets	74
Wall finish:	
- painting	75
- ceramic	85
- paneling	28
- wallpaper	96
Ceiling finish:	
- paint	74
- stucco	90
Floor finish:	
- carpet	100
- hardwood	51
- sheet goods	86
- ceramic	84
- tile	87

Source: CHBA Labour Study

Characteristics of Human Resources

5.0 Characteristics of Human Resources

The 1996 Census provides data on the characteristics of human resources in residential construction. A number of these characteristics are presented in Section 5 including:

- ▲ Age Profile;
- ▲ Highest Level of Schooling;
- ▲ Major Field of Study;
- ▲ Mobility Status;
- ▲ Employment Income; and
- ▲ Visible Minorities and Gender.

Sections 5.1 and 5.2 of Chapter 5 present data on the Age Profile and Highest Level of Schooling of individuals by industry. Data are provided for individuals in the Residential Building and Development industry as classified by the SIC system.

The remaining sections of Chapter 5 present data on all the factors listed above for selected Trades occupations (Major Group H) classified by the SOC 91 system.

5.1 Age Profile of the Residential Building and Development Industry (SIC 4010)

The age profile of individuals in the Residential Building and Development industry (SIC 4010) is presented in Table 5.1.



Table 5.1
Age Profile
Residential Building and Development industry (SIC 4010)
New Brunswick, 1996 Census

	#	%
15-19 years	170	3.3%
20-24 years	470	9.1%
25-34 years	1,255	24.3%
35-44 years	1,535	29.7%
45-54 years	1,160	22.4%
55-64 years	535	10.3%
65 years and over	50	1.0%
Sub-Total	5,175	100%

The table shows that about 37% of the workforce was less than 35 years old, 30% was between 35 and 44 years old and about 34% was over 45 years of age. Over 11% of workers were 55 and over.

5.2 Highest Level Of Schooling

The highest level of schooling achieved by individuals in the Residential Building and Development industry is presented in Table 5.2.

Table 5.2
Highest Level of Schooling
Residential Building and Development industry (SIC 4010)
New Brunswick, 1996 Census

	#	%
Less Than Grade 9	805	15.5%
Grades 9-13 Without Secondary School Graduation Certificate	1,315	25.3%
Grades 9-13 With Secondary School Graduation Certificate	755	14.5%
Trades Certificate Or Diploma	340	6.6%
Other Non-University Education Only	1,595	30.7%
University Without Bachelor's Degree Or Higher	275	5.3%
University With Bachelor's Degree Or Higher	105	2.0%
Sub-Total	5,190	100.0%



The table shows that about 16% of the individuals indicated that they had less than a Grade 9 education and 25% reached between grade 9 and grade 13 but did not graduate from high school. Only 7% of respondents earned a trade certificate while about 31% received non-university education. About 7% of the individuals attended university and almost 2% held a Bachelor's degree.

The percentage of individuals (41%) that did not complete high school is high by most industry standards, and is usually taken as an indicator of current or potential literacy issues.

5.3 Age Profile for Selected Trades Occupations

The age profile of occupations in Major Group H of SOC 91 also is available. These data are presented in Table 5.3.

Table 5.3
Age Profile
Trades, Transport and Equipment Operators
Major Group H, SOC 91
1996 Census, New Brunswick

	15-19 years	20-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65 years & over	Average age
H012 Contractors and supervisors, electrical trades	0	0	35	160	140	65	10	45.2
H015 Contractors and supervisors, carpentry trades	0	15	110	210	200	75	10	43.4
H019 Contractors and supervisors, other const. trades	20	45	30	110	155	35	10	41.6
H111 Plumbers	10	45	215	185	170	90	50	42.2
H112 Pipefitters and sprinkler system installers	0	15	60	370	330	105	0	44.4
H121 Carpenters	70	470	1,145	1,845	1,130	550	20	39.7
H122 Cabinetmakers	15	25	115	90	60	30	0	37.8
H131 Bricklayers	10	0	50	105	120	45	0	43.9
H132 Cement finishers	10	25	20	60	25	0	0	36.5
H133 Tilesetters	0	0	20	25	10	25	0	42.9
H134 Plasterers, drywall installers	0	15	150	95	60	40	0	38.9
H141 Roofers and shinglers	15	50	115	105	45	0	0	33.6
H142 Glaziers	0	10	60	55	10	15	0	37.0
H143 Insulators	0	15	80	75	45	15	0	38.2
H144 Painters and decorators	70	170	320	270	180	85	0	35.6
H145 Floor covering installers	10	45	125	65	45	15	0	34.4
H211 Electricians	10	95	475	440	350	45	0	37.9
H413 Refrigeration and air conditioning mechanics	0	30	90	60	25	10	0	34.6
H418 Elevator constructors and mechanics	0	0	0	15	10	10	0	45.5
H523 Other trades and related occupations	0	0	35	30	30	0	10	39.8
H531 Residential and commercial installers	20	90	125	155	90	40	10	37.4
H821 Construction trades helpers and labourers	320	750	1,290	1,150	595	225	10	34.2

The table shows that the average age of individuals varied from a low of 33.6 years for roofers and shinglers to over 45 years for electrical contractors and supervisors and elevator trades. The two largest trades, carpenters and labourers, had a relatively young labour force with 32% and 55% less than 35 years of age, respectively. The labourer and cement finisher trades had the highest percentage of

workers less than 19 years of age (7% each versus many trades with 0% to 3%). The oldest trades were tilesetters, elevator constructors and plumbers, with 31%, 29% and 20% respectively of their workers being 55 years and older.

5.4 Highest Level of Schooling for Selected Trades Occupations

The educational profiles of occupations in Major Group H of SOC 91 are presented in Table 5.4.

Table 5.4
Highest Level of Schooling
Trades, Transport and Equipment Operators
Major Group H, SOC 91
1996 Census, New Brunswick

	Less than Grade 9	Grades 9-13 without secondary school graduation certificate	Grades 9-13 with secondary school graduation certificate	Trades certificate or diploma only	Other non-university without certificate or diploma	Other non-university with certificate or diploma	University without bachelor's degree or higher	University with bachelor's degree or higher	Total
H012 Contractors & supervisors, electrical trades	10	40	45	65	10	215	20	10	415
H015 Contractors & supervisors, carpentry trades	110	85	85	60	35	160	55	15	605
H019 Contractors & supervisors, other const. trades	90	75	40	15	10	115	50	10	405
H111 Plumbers	40	25	25	75	45	520	25	10	765
H112 Pipefitters & sprinkler system installers	50	70	45	160	15	510	20	-	870
H121 Carpenters	735	1,245	875	395	355	1,370	215	50	5,240
H122 Cabinetmakers	45	75	100	-	15	65	15	20	335
H131 Bricklayers	35	35	25	60	-	160	-	-	315
H132 Cement finishers	15	45	35	15	-	30	10	-	150
H133 Tilesetters	35	20	-	-	-	15	-	-	70
H134 Plasterers, drywall installers	120	90	70	15	-	35	20	-	350
H141 Roofers & shinglers	45	90	115	15	20	30	20	-	335
H142 Glaziers	25	40	35	10	-	30	-	-	140



H143 Insulators	30	55	30	30	-	70	10	-	225
H144 Painters & decorators	170	275	195	35	55	180	165	-	1,075
H145 Floor covering installers	30	80	75	20	20	65	-	10	300
H211 Electricians	-	40	55	100	70	1,015	120	10	1,410
H413 Refrigeration & air conditioning mechanics	-	40	45	-	-	120	10	-	215
H418 Elevator constructors and mechanics	-	-	15	-	-	10	10	-	35
H523 Other trades & related occupations	10	30	20	10	10	15	10	-	105
H531 Residential & commercial installers	115	140	95	10	10	125	35	-	530
H821 Construction trades helpers and labourers	825	1,320	760	150	280	620	275	115	4,345
Total	2,535	3,915	2,785	1,240	950	5,475	1,085	250	18,235

Roughly 14% of the individuals in occupations profiled in the above table had less than a grade nine education. Over one-third (37%) completed grades 9-13 but 58% of these individuals did not graduate. Only 7% of individuals held a trade certificate or diploma. Nearly 35% percent of individuals received non-university education only, and 85% of these individuals received a certificate or diploma. Only 7% percent of individuals attended university but only 19% of this group earned a Bachelors degree.

5.5 Major Fields of Study for Selected Trades Occupations

The major fields of study for occupations in Major Group H of SOC 91 are presented in Table 5.5.

Table 5.6
Mobility status
Trades, Transport and Equipment Operators
Major Group H, SOC 91
1996 Census, New Brunswick

	Non-Movers (did not move)	Migrants (Moved Out of the Census Division)			External Migrants (from outside Canada)	Total
		Non-Migrants (moved but remained in Census Division)	Intraprov'l Migrants (from same province / territory) (Internally)	Interprov'l Migrants (from different province / territory) (Internally)		
H012 Contractors & supervisors, electrical trades	330	35	35	10	-	410
H015 Contractors & supervisors, carpentry trades	400	155	40	15	-	610
H019 Contractors & supervisors, other const. trades	295	60	25	25	-	405
H111 Plumbers	525	150	40	50	-	765
H112 Pipefitters & sprinkler system installers	655	195	35	-	-	885
H121 Carpenters	3,725	1,030	320	135	30	5,240
H122 Cabinetmakers	250	35	35	20	-	340
H131 Bricklayers	215	80	30	-	10	335
H132 Cement finishers	80	40	20	-	-	140
H133 Tilesetters	65	-	-	-	-	65
H134 Plasterers, drywall installers	225	105	20	15	-	365
H141 Roofers & shinglers	200	100	25	-	-	325
H142 Glaziers	80	45	15	10	-	150
H143 Insulators	130	70	10	15	-	225
H144 Painters & decorators	625	290	100	55	15	1,085
H145 Floor covering installers	225	40	30	-	-	295
H211 Electricians	950	270	150	45	10	1,425
H413 Refrigeration & air conditioning mechanics	105	75	40	10	-	230
H418 Elevator constructors & mechanics	10	20	10	10	-	50
H523 Other trades & related occupations	75	15	-	-	10	100
H531 Residential & commercial installers	360	110	50	10	10	540
H821 Construction trades helpers & labourers	2,900	970	305	140	25	4,340
Total	12,425	3,890	1,335	565	110	18,325



The table shows that over two-thirds (68% or 12,425) of the individuals did not move. An additional 21% (3,890) of the individuals were non-migrants or moved but stayed within the Census Division. Of the 11% (2,010) who were migrants (moved outside their Census Division), two-thirds (1,335) moved within the province while 28% (565) of the migrants moved from another province.

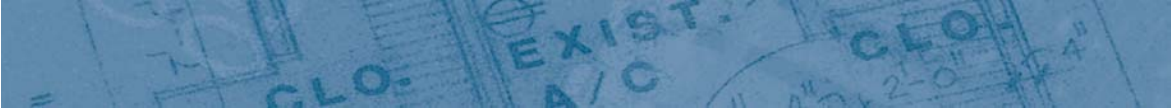
5.6 Employment Income of Selected Trades Occupations

Table 5.7 presents data on employment incomes by occupation.

Table 5.7
Employment Income
Trades, Transport and Equipment Operators
Major Group H, SOC 91
1996 Census, New Brunswick

	Average Employment Income \$
H012 Contractors and supervisors, electrical trades	\$44,321
H015 Contractors and supervisors, carpentry trades	\$29,902
H019 Contractors and supervisors, other const. trades	\$35,385
H111 Plumbers	\$27,899
H112 Pipefitters and sprinkler system installers	\$48,149
H121 Carpenters	\$27,911
H122 Cabinetmakers	\$23,963
H131 Bricklayers	\$32,781
H132 Cement finishers	\$0
H133 Tilesetters	\$0
H134 Plasterers, drywall installers	\$30,462
H141 Roofers and shinglers	\$41,332
H142 Glaziers	\$0
H143 Insulators	\$0
H144 Painters and decorators	\$24,277
H145 Floor covering installers	\$21,432
H211 Electricians	\$31,269
H413 Refrigeration and air conditioning mechanics	\$0
H418 Elevator constructors and mechanics	\$0
H523 Other trades and related occupations	\$0
H531 Residential and commercial installers	\$28,951
H821 Construction trades helpers and labourers	\$28,894
Weighted Average	\$30,081

The table shows that Pipefitters and Sprinkler System Installers enjoyed the highest average incomes of any occupation followed by Electrical Contractors and Supervisors and Electricians. Floor Covering Installers, Carpenters, Cabinetmakers and Painters were among the occupations with the lowest average incomes.



It should be noted that average employment income is derived by multiplying wages by the number of weeks worked. For this reason, wage rates and the number of weeks worked per year both influence average employment incomes.

5.7 Visible Minorities and Gender of Selected Trades Occupations

The 1996 Census showed that only 1% of the individuals in Trades occupations were from a visible minority (110 out of 18,320). Roughly three-quarters of visible minorities, or 80 individuals, were black. Approximately 4% of the total individuals in Trades occupations were female (730 in total). Of these, 480 were construction labourers (accounting for 11% of the labour force in this occupation), 105 were painters/decorators (10%) and 10 females each worked either as glaziers (7% of the labour force) or in other construction trades (10%).

6.0 Legislative and Regulatory Environment

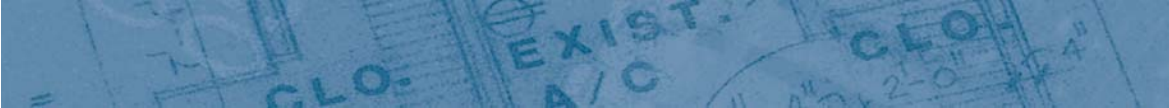
This chapter of the report is based exclusively on an article by Greg Lampert and Steve Pomeroy entitled “Canada’s Housing System: The Public Policy Environment for Housing in Canada”, Greg Lampert and Steve Pomeroy, September, 1998.

6.1 Overview

Greg Lampert and Steve Pomeroy provide an overview of the significance of legislation and regulations to the home building industry in Canada as follows:

“... public policies involve and reflect the legislative decisions and actions of all three levels of government. They include specific housing legislation, such as the National Housing Act (NHA), as well as legislation, regulations and initiatives at the federal, provincial and municipal levels of government which regulate matters such as property rights, financial institutions, consumer protection, health and safety standards, property development and a host of other things. Generally speaking, these public policies fall into two broad categories:

- ▲ *The first relates to the regulation and control of the physical characteristics of property, and improvements. The purpose of this legislation is to ensure that buildings meet certain minimum standards with respect to design, construction standard, occupant and worker health and safety, and the environment. Much of this legislation falls within the provincial domain; however, it is greatly influenced by the actions of both the federal government and inter-government agencies.*
- ▲ *The second relates to, or facilitates, the planning construction, purchase, financing, and management of housing – including assisting those who cannot obtain suitable housing at a cost they can afford. The purpose of this legislation is to provide a framework within which the provision of essential elements of the system can operate effectively – and an environment which promotes*



competition, efficiency and innovation. At the enabling level, federal legislation is important here, although a body of provincial legislation also falls under this category” (Source: Canada’s Housing System: The Public Policy Environment for Housing in Canada, Greg Lampert and Steve Pomeroy, September, 1998, pp. 12-13).

Public sector activities in the process of development, building and transfer of property can be grouped under three headings:

- ▲ Planning and land use;
- ▲ The building process; and
- ▲ Property transfer.

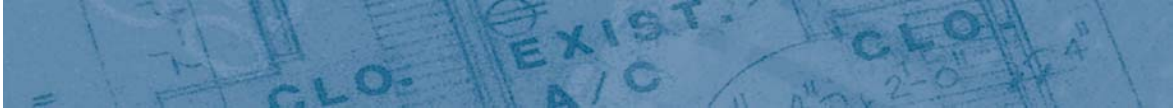
It is important to point out that the home building sector is affected by legislation other than that targeted specifically at this industry. As pointed out by Lampert and Pomeroy:

“The activity of physical development and building is carried out within an environment of regulations, codes and standards While many of these are specific to residential development, they have been formulated within a more general context to apply to all types of buildings. The National Building Code, for example, encompasses all forms of building construction from industrial buildings, and office towers to individual dwellings.” (“Canada’s Housing System: The Public Policy Environment for Housing in Canada”, Greg Lampert and Steve Pomeroy, September, 1998, p. 63)

6.2 Provincial Responsibilities

Provincial government authority and responsibility for housing are derived from provincial jurisdiction for civil and property rights, including land use regulation and planning.

Three key areas of provincial jurisdiction are planning and land use, building regulation and education and training. Provinces also are responsible for systems to record ownership and land



transactions. A key area of provincial responsibility was described as follows in Lampert and Pomeroy:

“New home building and renovation must meet minimum standards specified in the building codes. Constitutional responsibility for building regulation resides with provincial governments...” (“Canada’s Housing System: The Public Policy Environment for Housing in Canada”, Greg Lampert and Steve Pomeroy, September, 1998, p. 75)

The Lampert and Pomeroy article summarized the activities and functions of provincial governments as follows:

- ▲ Housing policy, including program development (p. 17):
 - ▲ Overseeing social housing delivery and management;
 - ▲ Providing program and legislative responses based on provincial needs and resources;
 - ▲ Landlord/tenant legislation and, in many cases, rent regulation;
 - ▲ Preservation of existing stock through regulation and standards;
 - ▲ Developing policies and programs to facilitate the operation of the housing market.
- ▲ Local municipal governance
- ▲ Building and development standards:
 - ▲ Building safety and accessibility;
 - ▲ Fire safety;
 - ▲ Worker safety;
 - ▲ Consumer protection;
 - ▲ Municipal infrastructure;
 - ▲ Community and land use planning;
 - ▲ Property assessment and appeal system;



- ▲ Land information policy and standards; and
- ▲ Heritage property.

- ▲ Education and training systems
- ▲ Provinces also regulate others matters of importance to the home building industry such as fire protection, boilers and pressure vessels, elevators, gas, water and electrical systems

6.3 Municipal Responsibilities

Provinces delegate authority and responsibility to local governments through provincial enabling legislation. Provincial legislation defines matters that are subject to municipal regulation. Provinces grant taxing and fee collecting powers to municipalities in return for commitments by municipalities to provide specified services.

Municipalities often deliver programs that result from federal and provincial policies and legislation and may cost-share programs with the two senior levels of government. Municipalities are delegated powers to enforce building codes, implement land use planning and regulation, and enforce health and safety standards. There also is a local role in identifying labour force requirements as referenced in federal/provincial labour market development agreements.

Lampert and Pomeroy summed up the importance of municipalities in the area of housing and land use development as follows:

“The functions involved in the planning and execution of an orderly and rational pattern of development are typically performed by local municipal governments or, in the case of unincorporated municipalities, regional or county level administrative agencies.”

“Land use planning and development approval at the municipal level is the forum through which many provincial policies that affect cities and housing are interpreted and implemented (pp. 54-65).”



6.4 Federal Responsibilities

Federal authority and responsibility is derived from its role in setting national standards and its responsibility for macro economic management of the economy.

The federal government has recognized that coordination of provincial policies and legislation is required to ensure uniformity of national standards in all regions of Canada. It has developed national model codes that have assisted in the development of uniform building standards across the country. The Canadian Commission on Building and Fire Codes (CCBFC) is responsible for maintaining national model codes. Provincial input into the CCBFC comes from the Provincial/Territorial Committee on Building Standards. The CCBFC maintains the following model codes:

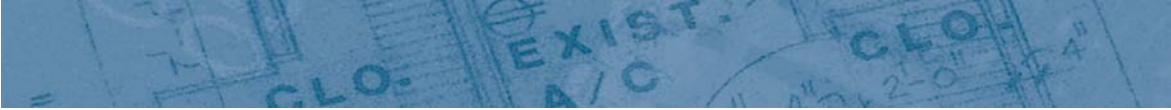
- ▲ The National Building Code;
- ▲ The National Fire Code; and
- ▲ The National Plumbing Code.

These codes typically are incorporated into provincial legislation and regulation. The CCBFC may adopt a National Energy Code in upcoming years. This code could implement energy efficiency requirements and have a significant effect on the home building industry.

The federal government has responsibilities related to labour market mobility as a result of the federal provincial agreement on internal trade. It also is involved in the “Red Seal” program for apprenticeship training. The federal/provincial labour market development agreement provides direct funding for apprenticeship.

The Canada Mortgage and Housing Corporation (CMHC) has a broad mandate including housing finance, research and information transfer, assisted housing and international activities. The Lampert and Pomeroy article points out that the CMHC has changed in recent years.

“The Corporation has largely stepped back from directly developing and financing housing. It has given greater priority to the development of an appropriate public policy environment for competition and innovation by the private sector (pp.14-15).”



Some federal financial legislation has an important impact on the home building industry. Legislation that requires federally chartered lenders to restrict residential real estate lending to a maximum of 75% of the value of a property is particularly noteworthy. Mortgage insurance available from CMHC allows lenders to extend financing beyond the 75% limit.

Other important federal legislation relates to the prepayment of mortgages. This legislation allows homeowners to pay off their mortgage after five years with a maximum prepayment penalty of three months' interest.

6.5 Impact of Regulations on Residential Building and Renovation

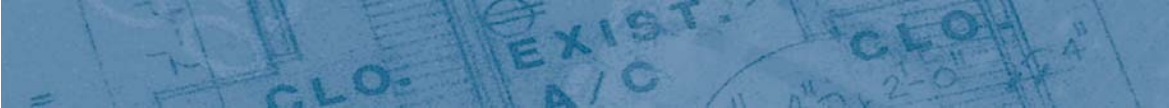
The Lampert and Pomeroy publication identifies three phases in residential building. Each phase entails a number of work activities requiring specific skills. The phases are: planning, construction and marketing/sales. The work activities and skills required in each phase are significantly influenced by laws and regulations.

6.5.1 The Planning Phase

The planning phase entails feasibility analysis, land acquisition, planning, zoning change and design. A variety of occupations are involved in this phase including lawyers, real estate brokers, architects, engineers and surveyors. All of these occupations require a licence and the activities and skills required for these occupations are influenced by regulations and processes governing title registration, borrowing, the environment, zoning, subdivision, land use planning and building codes.

6.5.2 The Construction Phase

The construction phase entails site preparation, construction and financing. A variety of construction trades occupations, including supervisory occupations and contractors and sub-contractors, are involved in the construction phase. Some of these occupations have mandatory licensing requirements. The activities and skills required for these occupations are influenced by public regulations and requirements with respect to building permits, codes and inspections, contract law,



material standards, utility regulations, labour codes, and health and safety codes.

6.5.3 Marketing and Sales Phase

The marketing and sale of dwellings could be done by real estate agencies (which require a licence) or by employees of construction and development companies. Occupations involved in this phase are lawyers, real estate brokers, and other sales and marketing personnel. Contract and real estate law along with banking regulations and laws are important to this phase.

6.6 The Importance of Immigration Laws and Policies

The Lampert and Pomeroy publication provides an overview of the importance of laws and policies on immigration to the Residential Building and Development industry. The article shows that immigration has an important influence on the industry in two ways:

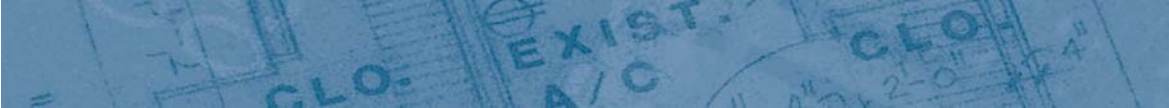
- ▲ Immigrants increase the demand for housing; and
- ▲ Immigration contributes to the supply of labour Residential Building and Development occupations.

Citizenship and Immigration Canada (CIC) is responsible for administering immigration in Canada, except in the province of Quebec. Some aspects of citizenship and immigration are now shared with the provinces. Skilled workers may qualify for immigration to Canada if they obtain enough points in a points system in an assessment system administered by the CIC.

Labour market considerations play an important role in the selection of immigrants as suggested by the following quotations from Lampert and Pomeroy:

“The assessment system assigns points to applicants for considerations such as education, occupation, work experience, occupation related training and education, age language skills, personal suitability, self-employment and arranged employment.

To assist with the evaluation of skilled workers, CIC utilizes HRDC’s General



Occupation List which identifies occupations in which immigrants can be expected to have a reasonable chance of entering the labour force. Applicants with occupations which have an active labour market have a better chance of successfully immigrating to Canada.

Construction trades are generally not included on the General Occupations List – this is partially a reflection of the regional and cyclical nature of construction activity (pp. 40-41).”

Although construction trades are not on the General Occupation List, short-term importation of skilled construction workers occurs frequently as illustrated in the following quotation from Lampert and Pomeroy.

“The most common intervention in the construction labour market undertaken by CIC is the review and processing of temporary work permits for foreign construction workers required to work on individual projects. These situations can arise when builders use new technologies which require skills not available in Canada. These applications are sponsored by builders, and CIC reviews the applications in consultation with HRDC (p. 41).”

Occupations with shortages that must be filled by foreign workers would be high priority areas for training and skill development.

6.7 Legislation and Human Resources Development

Legislation and government policy affect four areas of human resources development:

- ▲ Unemployment Benefits;
- ▲ Education and Training;
- ▲ Labour Mobility; and
- ▲ Labour Standards and Relations.



Unemployment Benefits

Workers in the residential home building industry rely on Employment Insurance (EI) to supplement incomes more than most sectors of the economy due to the cyclical and seasonal nature of the industry. Human Resources Development Canada is responsible for the Employment Insurance system. Reforms in the EI in the 1990s reduced benefits, decreased the length of claims and made it more difficult to qualify for benefits.

Education and Training

Federal and provincial responsibilities and initiatives in the field of education and training were summed up by Lampert and Pomeroy as follows:

“Training and education programs are constitutionally the responsibility of the provincial governments. However, the federal government plays an important role in labour market development and training initiatives, through programs funded by EI, and through funding of industry–led human resource programs. Together, the federal and provincial governments have endeavoured to develop national industry occupational standards to facilitate labour mobility. As a result, most skilled trades and many occupations have national and interprovincial trade certification through the Red Seal Program (p.43).”

Many trades require mandatory certification under Apprenticeship Programs administered by provincial governments. A number of national organizations and committees have been established to promote inter-provincial consistency in programs and standards and provide a national perspective on apprenticeship programs. The Red Seal Program noted in the above quotation is one mechanism used to achieve these goals. Another Canada-wide initiative is the Pan Canadian Skill Based Examination for the Red Seal designation that is now being computerized under the Inter-provincial Computerized Examination Management System (ICEMS).

Federal/provincial roles and responsibilities for education and training changed significantly over the 1990s. The federal government, under Labour Market Development Agreements, transferred



responsibilities for the design and delivery of a variety of labour market development programs to the provinces. The federal government pays students directly for certain types of training.

Labour Mobility

The Lampert and Pomeroy article points out that labour mobility is critical in the residential construction industry due to wide variations in demand for labour across the country. The article also points out that the Federal/Provincial Agreement on Internal Trade (AIT) that came into effect on July 1, 1995 contains provisions to reduce barriers to labour mobility by:

- ▲ Removing residency requirements;
- ▲ Improving information on licensing and certification to eliminate the use of these programs as barriers to entry;
- ▲ Reconciling differences in provincial occupation training standards to facilitate inter-provincial mobility; and
- ▲ Recognizing that the “Red Seal” program meets the requirements for mobility under the AIT.

Labour Standards and Relations

Labour standards and relations relate to the rights and responsibilities of employers and employees and is generally a provincial responsibility. Lampert and Pomeroy describe the three core provincial responsibilities as follows (p. 43):

- ▲ Establishing and enforcing employment standards;
- ▲ Promoting and enforcing occupational health and safety standards;
- ▲ Labour relations.

The Underground Economy

7.0 The Underground Economy

The underground economy consists of economic activities that result in earned income that is not reported. A Statistics Canada publication entitled “The Size of the Underground Economy in Canada” defined the underground economy as follows:

“In the broadest sense, it usually denotes sales of goods and services on which indirect taxes have not been paid, giving rise to income on which taxes and mandatory social security contributions have not been paid either. In this broad definition, ‘underground economy’ is virtually synonymous with ‘untaxed transactions’.”³

The Statistics Canada article focuses on measuring economic activity not included in Canada’s Gross Domestic Product (GDP). It is important to understand that such a measurement understates the underground economy. The reason is that some underground transactions are included in the GDP as noted by the Statistics Canada publication.

“... some underground transactions are captured in the official GDP. This is why the domestic market production which goes untaxed is larger than that which goes unmeasured.”⁴

Estimates of the underground economy made in this section of the report include estimates of activity not included in the GDP and activity included in the GDP but not recorded by the Canada Customs and Revenue Agency.

Conducting activity through the underground economy reduces costs associated with taxes, contributions to social programs and permits and approvals required to conduct business. Avoidance of these costs allows operators to charge lower prices and/or make higher profits. One study estimated that in the Ontario construction industry “... the sort of price differential achieved by undergrounders

3 “The Size of the Underground Economy in Canada”, Statistics Canada, Catalogue 13-603E, No. 2 – Occasional, p.2.

4 IBID, p. 4.



*can range from 10% to 30%.”*⁵ Another Ontario study estimated that underground operators offered customers a price discount of between 12.5% and 25%.⁶

It is widely believed that increases in taxes, particularly the introduction of the GST in Nova Scotia in 1991 and the HST in 1997, expanded the underground economy in that province. The underground economy also is positively correlated with downturns in economic conditions. One study summed up the situation as follows:

*“Comparing this study to work done by Statistics Canada suggests that since 1990, the underground economy has increased by 50% to 100%.”*⁷

Studies have correlated the underground economy with the following factors:

- ▲ Lower skilled occupations;
- ▲ One person operations;
- ▲ Small projects;
- ▲ Short-term projects; and
- ▲ Projects paid by the job, with a unit price or by piece work.⁸

The underground economy is more prevalent in some sectors of the economy than in others. For example, a 1994 study by Statistics Canada focused on the following sectors in attempting to estimate the size of the underground economy:

- ▲ Residential construction, particularly alterations and improvements;

5 “The Underground Economy in Ontario’s Construction Industry”, Estimates of its Size and the Revenue Losses to Government and the Workplace Safety Insurance Board (WSIB)”, John O’Grady Consulting Ltd., Greg Lampert Economic Consultant Inc. and the ARA Consulting Group Inc., November, 1998, Final Report, Executive Summary, p. 3.

6 “Getting it in Writing”, Canadian Home Builders Association, p. 4.

7 IBID, p. 3.

8 “Strategic Analysis of Underground Employment in the Construction Industry”, KPMG, December 1997.



- ▲ Importation of tobacco and alcohol;
- ▲ Personal services such as domestic services; and
- ▲ Certain sectors of the retail and service industry such as bartending/waitressing, taxicabs, motels and guest houses and child care/day cares.

The residential construction industry is characterized by all of the factors listed above and the underground economy is a major issue in this industry. The underground economy can take a variety of forms in the residential construction industry. People and firms may operate exclusively in the underground economy and avoid all taxes and contributions to social programs. In some instances, a portion of the economic activity is reported and a portion is unreported.

A growing phenomenon in the construction industry is contracting work to self-employed individuals. In many cases, these self-employed individuals are dependent contractors in that they work for one prime contractor. Dependent contractors have the same relationship with the prime contractor in terms of supervision and control as an employee to an employer. Legally, dependent contractors are subject to the same taxes and deductions as employees.

7.1 Significance

Two issues are linked to the underground economy:

- ▲ The value of the home building sector could be significantly under-estimated. If so, employment in the sector also could be understated; and
- ▲ There is a lack of recognition of learned skills in the underground economy leading to problems in recruiting and training workers.

Underestimate of Value Added to GDP

The value of the home building sector is represented by its contribution to Gross Domestic Product (GDP). This incremental contribution of the home building sector to GDP is called “value-added”. Statistics Canada estimated the size of the underground economy in the sector in relation to GDP as



measured in the National Accounts.

Estimates of GDP in the underground economy for each sector of the home building sector were as follows:

New Housing Starts

GDP was estimated based on the number of housing starts by month and average value of building permits. “Work put in place coefficients” were used to estimate how much of the total value of building houses occurred in each quarter after the start of construction. “Work put in place coefficients” measured the volume of work involved in new home construction or renovations completed in each quarter after the beginning of construction.

Housing starts were from the Canada Mortgage and Housing Corporation (CMHC) and were considered reliable. Values for building permits sometimes were understated but Statistics Canada adjusted for this. It was felt that understatement of the value of building permits is minor.

Cottages

Building permit data are poor for cottages. In recognition of this, Statistics Canada adjusted activity and value in this sector upward. Adjustment of the activity data was based partly on data on the number of homeowners who own cottages.

Conversions

Serious under-reporting problems occurred for conversions. Estimates of conversions were based on building permit data, but few building permits were issued and there is no way of estimating work undertaken without a permit. Upward adjustment of existing data on conversions was used to account for missing transactions.

Mobile Homes

Estimates of GDP for mobile homes were based on manufacturer shipments and were considered as reliable.



Total Investment in New Housing

Statistics Canada estimated investment in the housing sector to be about \$31 billion in 1992. The Statistics Canada estimates do not appear to have included manufactured housing.

The value of activity escaping measurement due to underground activity, that is, activity without building permits, could be as high as \$1.9 billion, or 6%. Each component of the housing sector contributed to the under-statement of value, with Conversions and Cottages contributing proportionately the most.

Alterations and Improvements

Estimated spending on this component of the home building sector was based on the annual Home Repair and Renovation Expenditure Survey (HRRES) and on building permits. It was believed that GDP estimates understated the actual GDP by as much as \$1.7 billion, or 20%.

Total Underestimate of GDP in the Home Building Sector

GDP in the home building sector in Canada could be understated by \$3.6 billion.

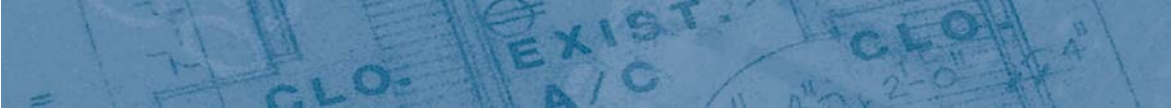
“If all of the \$3.6 billion that may escape measurement corresponded to value added (that is, consisted solely of wages and profits, a very plausible assumption), unmeasured value added in residential construction would represent 40% of the recorded value added of \$9.0 billion (1.5% of GDP at factor cost in current dollars).”⁹

Total value-added to the GDP in the home building sector in Canada in 1992 could have been as high as \$12.6 billion (\$9.0 billion reported and \$3.6 unreported).

Under-Reporting of Activity Included in GDP

The Statistics Canada article goes on to state that an additional \$2.3 billion is not reported to Canada Customs and Revenue Agency but is included in GDP figures. This unreported economic activity in the

9 Source: The Size of the Underground Economy in Canada, Statistics Canada, Cat. No. 13-603E, No. 2, p. 17.



home building sector must be included in estimates of the underground economy. The estimate of the underground economy is the sum activity that is not reported to Canada Customs and Revenue Agency and is not included in the GDP figures, plus activity that is included in the GDP figures but is not reported to Canada Customs and Revenue Agency.

Estimate of the Underground Economy

In total, \$5.9 billion was not reported to Canada Customs and Revenue Agency in 1992 in the home building sector. This figure serves as the estimate of the underground economy in that year. The estimate was derived as follows:

Underground Economy Equals:

- ▲ Underestimate of GDP (\$3.6 billion), plus
- ▲ Value of Activity included in GDP but not Reported to the Canada Customs and Revenue Agency (\$2.3 billion)

The Statistics Canada publication indicates that this is an upper limit of the size of the underground economy in this sector.

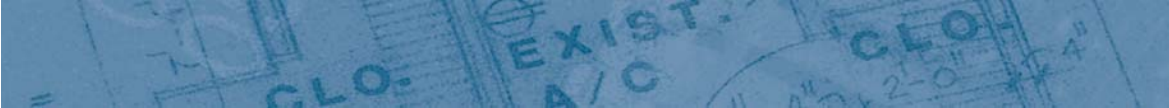
The total size of the underground economy could account for 47% of the value added to GDP in the home building sector. These estimates indicate that non-reporting in the underground economy is significant in the home building sector and that the reported value of the sector may be seriously understated.

There has been no in-depth study to estimate the extent of the underground economy in the New Brunswick residential construction and renovation industry.

7.2 Recruitment and Training

The following quotes illustrate the impacts on training resulting from the underground economy.

“The growth in the number of individual contractors (in place of employees) would



mean that there would be fewer opportunities for on-the-job training by journey persons. Those in the underground were viewed as often being highly skilled in their trade but could not take part in formal apprenticeship training.”¹⁰

“The four Apprenticeship Directors interviewed all strongly agreed that underground construction employment was having a deleterious effect on training programs, for such reasons as the following:

- ▲ Unreported work did not reflect apprenticeship needs.*
- ▲ Underground activities often involved individual tradespersons and therefore gave no opportunities for job-site training.*
- ▲ Underground workers had no commitment to transfer technology and were unconcerned about their impact on training programs.”¹¹*

“... underground practices reduce the contribution base for benefits plans and weaken apprenticeship training and skills development.”¹²

One recruitment issue related to the underground economy is that increased enforcement through the mandatory Contract Payment Reporting System has resulted in workers choosing to work either above ground or underground but not both.

10 Strategic Analysis of Underground Employment in the Construction Industry”, KPMG, December 1997, p. 5.

11 IBID, p. 5.

12 “The Underground Economy in Ontario’s Construction Industry”, Op Cit, p. ES9.

Projections of Residential Construction Activity and Employment

8.0 Projections of Residential Construction Activity and Employment

8.1 The CMHC Model

Projections of new home construction are based on a 1997 report produced by the Canada Mortgage and Housing Corporation entitled, “The Long-Term Housing Outlook: Household Growth in Canada and the Provinces, 1991-2016”.

The report projects household growth in Canada and how it will vary given different assumptions about how and where Canadians will house themselves. The approach used to make these projections was summed up as follows in the report:

“Scenarios were developed based on an assessment of major demographic and other trends. The primary factors considered were patterns of net interprovincial migration and rates of household formation. It should be recognized that the projections illustrate a range of possible future outcomes; they are not intended as precise forecasts of future housing activity.

The scenarios were generated using CMHC’s Potential Housing Demand Projection (PHD) Model. Custom population projections produced by Statistics Canada were used as input to the model. These were transformed by the model into projections of household growth, tenure choice and dwelling type choice. Results include national and provincial household projections by age, type of household, tenure and type of dwelling (p.2).”

The logic for using household growth as the basis for projecting new home construction is stated as follows in the CMHC report:

“While variation in housing demand from year to year is largely related to cyclical economic factors, demand in the long run can be traced to changes in the size and age structure of the population and the overall tendency to form households (pp.1).”

The link between household growth and housing starts was described as follows in the



CMHC report.

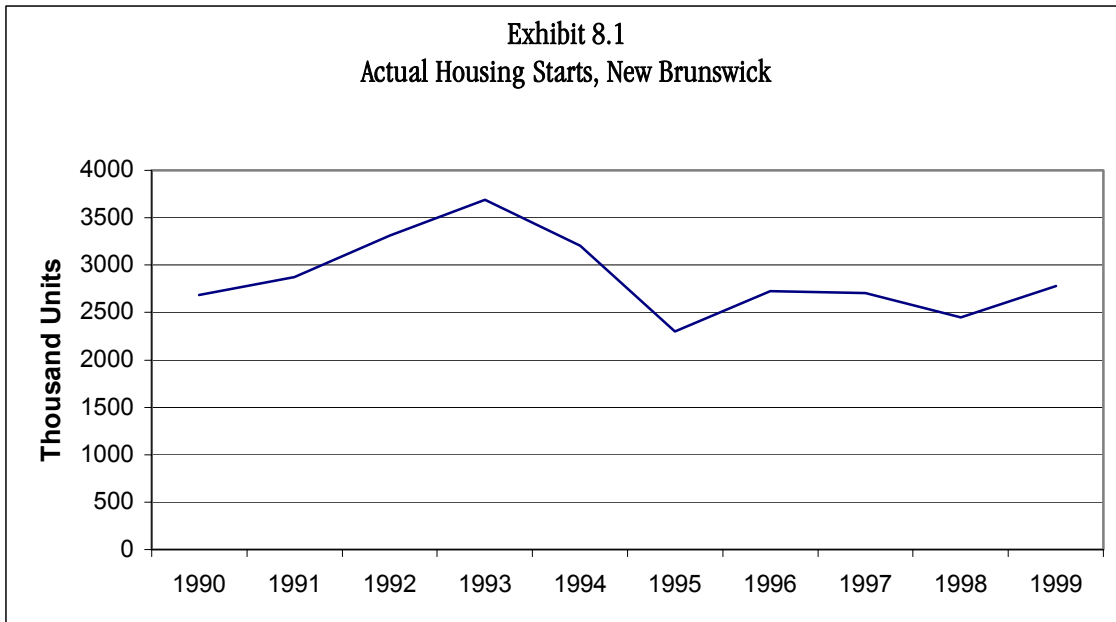
“Starts are linked to household growth via completions, which increase the supply of housing, thereby enabling growing numbers of households to be housed. At a minimum, enough housing units must be added to the stock to accommodate the increase in households, since households cannot form if there is nowhere for them to live. Even if household growth were zero, however, additional dwellings would have to be created to replace units lost from the existing housing stock. In addition, the expansion of stock should allow for an adequate number of vacant units – enough to ensure a reasonable balance between supply and demand.

In sum, the increase in stock must accommodate the net growth in households, provide for a sufficient supply of vacant units, and make up for units lost from the stock. As noted above, units can be added to the stock through new construction (completions) and conversions. Completions account for the bulk of the increase in the supply of housing.”

Assumptions about demolition rates, conversion rates, vacancy rates, and completion rates (the proportion of starts actually completed) can be used to examine potential implications of household-growth scenarios ... for housing starts (pp.42-43).”

8.2 Projected Housing Starts

Before projecting housing starts in New Brunswick, it is important to examine historical data on starts. Exhibit 8.1 shows total housing starts in New Brunswick over the period 1990 to 1999. The exhibit shows that housing starts increased from 2.7 million to 3.7 million units over the first four years of the period. They declined sharply over the next two years, reaching a low of 2.3 million, followed by a period of recovery. By 1999, the number of housing starts had reached 2.8 million units, a level only 4% higher than in 1990.



Two important features of projected housing starts made in this report are:

- ▲ A variety of projections of household formation were made in “The Long-Term Housing Outlook: Household Growth in Canada and the Provinces”. The projections depend on assumptions about migration among the provinces and the rate of household formation. Projections were based on three scenarios of household formation: high, medium and low; and two assumptions about migration: “central” and “western”. Only one projection of housing starts was made in this document. This projection assumed a “medium” rate of household formation and averaged the two migration scenarios contained in the CMHC report.
- ▲ The projection of housing starts in this report assumed starts would be 4% higher than the level of household formation. This assumption is consistent with the actual relationship between household formation and housing starts over the 1971-1991 period.

Projections of annual average housing starts were made over five year intervals to match the projections of household formation contained in the CMHC report.

The projections are contained in Table 8.1



Table 8.1
Projected Housing Starts, Thousand of Units, New Brunswick

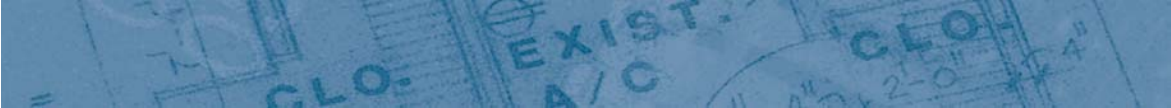
	Single Detached	Apartment	Other Multiple	Moveable	Total
1992-1996	2,496	208	208	0	2,912
1997-2001	2,340	364	260	52	3,016
2002-2006	1,820	312	156	52	2,340
2007-2011	1,456	312	156	52	1,976
2012-2016	1,092	312	156	52	1,612

The table indicates that housing starts are projected to drop over the period from current levels of roughly 3.0 million per annum to about 2.3 million over the 2002-2006 period, 2,000 over the 2007-2011 period and 1,600 over the 2012-2016 period. A decrease of about 45% in total housing starts from average levels in the 1992-1996 period to average levels over the 2012-2016 period is projected.

It is important to note that the drop in housing starts is uneven across the various types of housing identified in the table above. Apartment starts are projected to increase by 50% in the 2012-2016 period compared to the 1992-1996 period, while other multiple starts are projected to decline by 25% and single detached housing starts are projected to drop by 56%.

The reasons for the projected decline in housing starts include:

- ▲ Population growth is expected to decline. On a national basis population growth is expected to decline from 1.3% per annum over the 1991-1996 period to 0.8% in 2011-2016. New Brunswick will enjoy small population gains under the Western scenario and suffer relatively heavy losses by historical standards under the Central scenario (pp. 31 & 62).
- ▲ The New Brunswick population will age significantly over the period with fewer individuals in the household formation age group and more seniors. The proportion of the population under 25 will fall from 33.7% in 1996 to 25.5% in 2016. Although only slightly higher than average in 1991, the proportion of the population over 65 will rise from 12.6% in 1996 to 18.4% in 2016, the third highest in Canada (p. 31).
- ▲ For Canada as a whole, the number of non-family households is expected to increase at a faster rate than for family households. One-person households are projected to increase and the home-



ownership rate is projected to decline marginally after the year 2000. These trends may explain the projected increase in apartment construction (p. 62).

The CMHC publication notes that New Brunswick will continue to have the second-lowest proportion of non-family households, the third highest concentration of seniors and the second lowest proportion of households with heads under 45 of any province (tied with Nova Scotia) in Canada by 2016. Furthermore, ownership rates will increase and remain the second highest in the country.

The CMHC summed up the prospects for housing starts for Canada as a whole as follows:

“The various scenarios presented in earlier chapters project less rapid household formation in the future than in the 1970s and the 1980s and therefore imply lower housing starts as well; moreover, all scenarios indicate a tendency for household growth to decline in the long-run. These findings suggest that the housing stock will, on average, become older because of relatively fewer additions to the growing stock (p. 47).”

The CMHC document points out an important factor that will influence residential construction activity:

“The data indicate that the age composition of the housing stock became younger in the 1970s, but that it has been growing older since 1981. This aging process is likely to continue over the projection period.”

“The housing stock will, on average, become older because of relatively fewer additions to the growing stock. An aging stock has implications for the overall quality of housing and the need for repairs and renovation (pp. 47 & 63).”

Projections made in the CMHC report indicate that the median age of single detached homes in Canada could grow from about 23 years old in 1991 to 38 years old in 2016. A similar scenario is forecast for multiple-unit dwellings.



8.3 Expenditures on Repair and Maintenance in New Brunswick

The discussion of housing investment earlier in this report showed that capital spending on improvements (major renovations from Table 2.1) fluctuated throughout the 1990s, dipping from \$277 million in 1990 to \$259 million in 1995, followed by a period of general recovery. By 2000, major renovation expenditures had increased to \$340 million, up 31% from the lowest point of the decade in 1995 (\$259 million).

The data in Table 2.2 also showed that investment in minor repairs and maintenance increased steadily from \$77 million in 1990 to \$140 million in 1999.

Total expenditures on repair and maintenance (CANSIM D849553) rose at an annual average rate of 8.1% over the 1990-1999 period. Investment increases in major and minor renovations undoubtedly will increase at an accelerating rate as the housing stock ages. As a result, any employment losses resulting from future reductions in housing starts could be offset to some degree by gains resulting from increased expenditure on renovations.

Some idea of the magnitude of this increase can be obtained by projecting a continuation of the 8.1% annual gain in repair and maintenance expenditures into the future. Note that this rate of increase may be conservative due to anticipated increases in the average age of the housing stock. Annual expenditures on repair and maintenance (CANSIM D846553) averaged \$103.8 million over the 1990-1999 period. If these expenditures increase at an annual rate of 8.1%, expenditures could reach \$359.8 million by the 2016 period. This would represent a 247% increase in expenditures over the period 2000-2016.

The increased spending on repairs and maintenance could help offset future decreases in expenditures on new housing. This occurrence could lead to a shift in activity in residential construction away from new housing and toward renovations over the next 15 years (to 2016).

It was demonstrated earlier that total expenditures on renovations are higher than those on new housing (from Table 2.1) and the number of employees in renovation is less than one-half of the number recorded for new housing (from Table 4.2). The fact that home owners supply some of the



labour involved in renovations and the significance of the underground economy in the renovations sector are important factors that explain this phenomenon. Renovations may require less professional labour per dollar of expenditure but it also is true that the number of people working in the home renovations industry is significantly underestimated in the official data.



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