

Homes in 2026: Who Will Buy Them?

Who Will Build Them?

Presented to:
Homeowner Protection Office

Prepared by:
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in Partnership with Human Capital Strategies

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Abstract

Historically, new housing demand has been closely related to both economic and demographic factors. The age structure of the population, net migration patterns of the population and therefore the formation of households are some of the factors that determine the demand for new homes and the type of homes built. On the economic side, in addition to the level of economic activities which helps to “pull” or “push” mobility, affordability is another factor. The latter is determined by housing prices and interest rates.

In the paper, Roslyn Kunin and Associates, in partnership with Human Capital Strategies, have highlighted their findings regarding the new housing market in British Columbia, including regional differences, and made projections into the foreseeable future.

On the other side of the equation of demand and supply, positive demand for new housing translates into increasing demand for construction trades and other members of the construction workforce (e.g. estimators, technologists, engineers, etc.). Recent employment growth in the construction sector has been robust, and residential builders face competition for workforce from other construction sub-sectors. This paper concludes with a discussion of the trades workforce and whether education and training will keep up with workforce demand.

INTRODUCTION

Roslyn Kunin and Associates, Inc. (RKA) in partnership with Human Capital Strategies was retained by the Homeowner Protection Office (HPO) to analyze the driving forces behind changes in the housing market, and the implications for skill requirements of new entrants and existing workforce in the residential construction industry in British Columbia.

The terms of reference of this project require RKA to prepare a conference paper and deliver a presentation at the *Next Generation: Future of the Housing Industry in British Columbia* conference that covers the following topics:

- Market housing demand forecast (by housing type) for British Columbia by region through to 2026, identifying assumptions, major factors and trends influencing demand during this period.
- Residential construction labour force supply forecast for the same period and geographic areas, identifying assumptions, major factors and trends influencing the labour force supply and skills requirement estimates. For the purposes of the paper and presentation, the labour force supply includes skilled trades and workers involved in the construction of new housing, as well as the builders and developers who arrange and manage the construction.
- An analysis and commentary on these trends/forecasts and the implications for the residential construction industry and its capacity to meet the future demand for market housing in the province.

The paper will be presented by RKA at the conference on May 27, 2008, and will be made available to all conference participants. The paper and presentation will help set the context for the afternoon sessions that will focus on current and future education and training needs of new entrants to the housing industry's skilled workforce including residential builders and developers.

MARKET HOUSING DEMAND FORECAST

Factors that contribute to changes in housing demand are both demographic and economic. The age structure of the population, net migration patterns, and therefore the formation of households are some of the factors that determine the demand for new homes and the type of homes built. On the economic side, in addition to the level of economic activities which helps to "pull" or "push" mobility, affordability is another factor. The latter is determined by housing prices and interest rates.

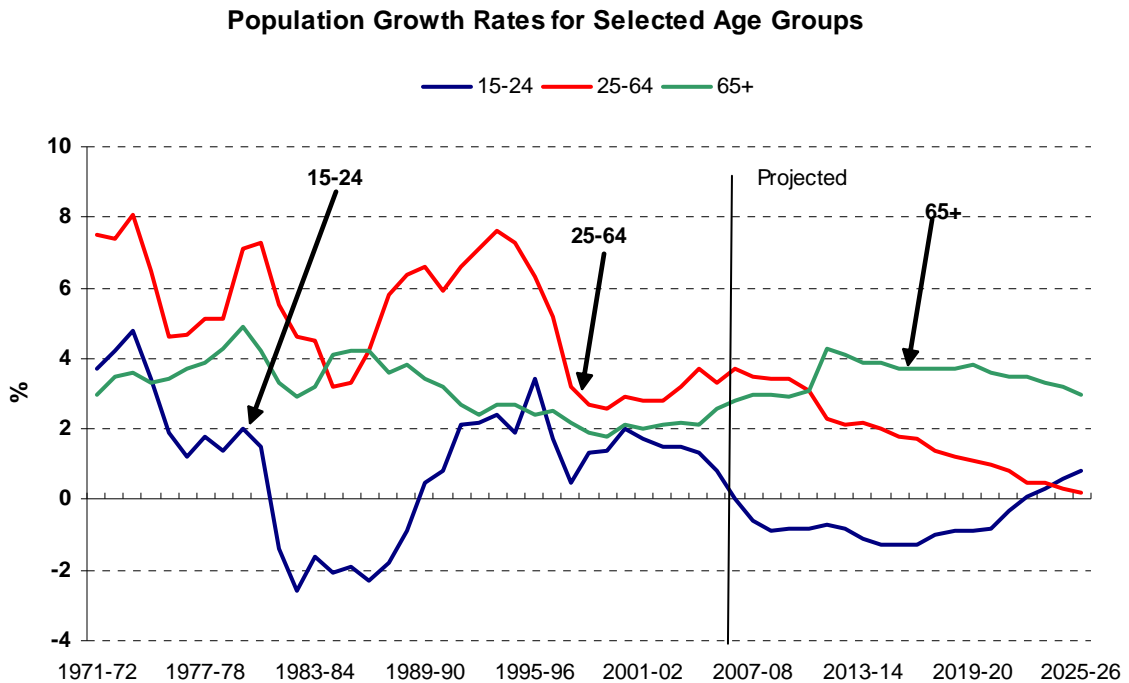
Changing tastes in housing styles and changing family patterns also affect the demand for housing and the type of housing demanded. For example, the trend to later marriages and family formation, fewer children and more older people living alone may increase the demand for smaller units for single people and family homes including suites for older relatives or adult children.

Changing technologies as they affect both lifestyles and construction methods are also important topics, which will be more fully developed by others at the conference.

Demographic Factors

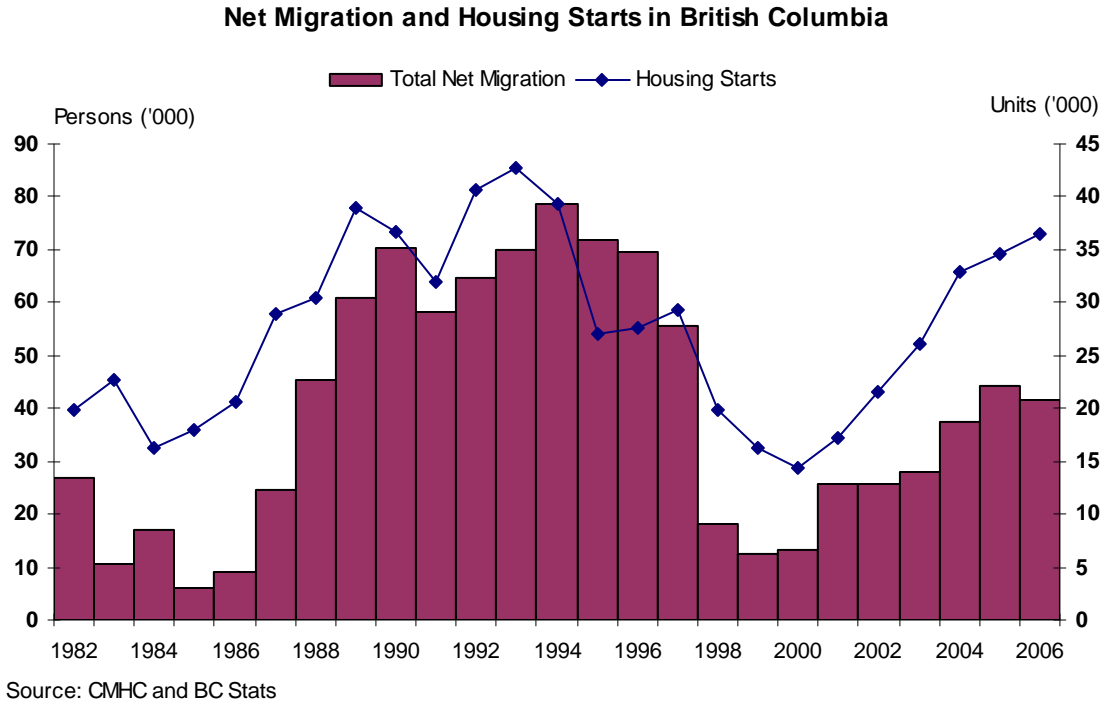
Age structure of the population determines the number of household formations and the type of dwelling arrangements. In British Columbia, as in the rest of Canada, the youth population (age 15-24) has been declining, and is expected to continue to decline up to 2020/21. For the new families, single detached housing will be in demand. With an older population (Fig.1), housing demand will more likely lean toward smaller units in multiple dwellings.

Figure 1



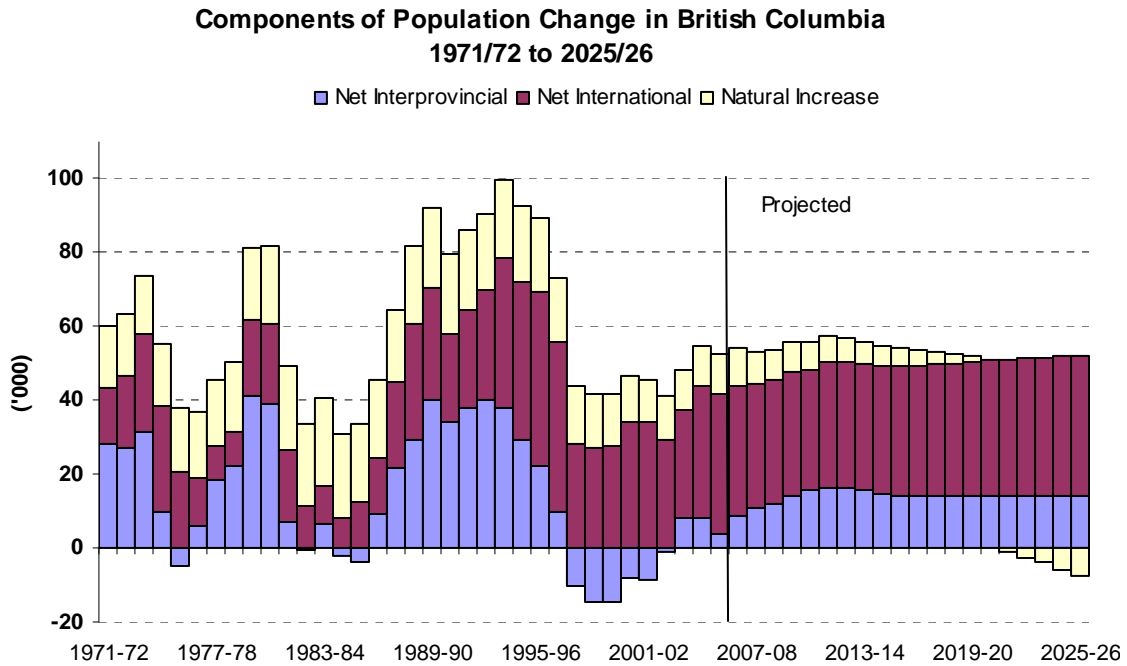
Net migration, including net interprovincial migration and net immigration, also change the demand for new housing. Net migration patterns determine the overall changes in new housing starts, as shown in the following graph (Fig. 2).

Figure 2



The period 1987 to 1997 saw strong net migration into the province which was reflected in high levels of new housing starts during the same years. Between 2001 and 2006, rising housing starts have also been corresponded by increasing net migration.

Figure 3



Source: BC Stats

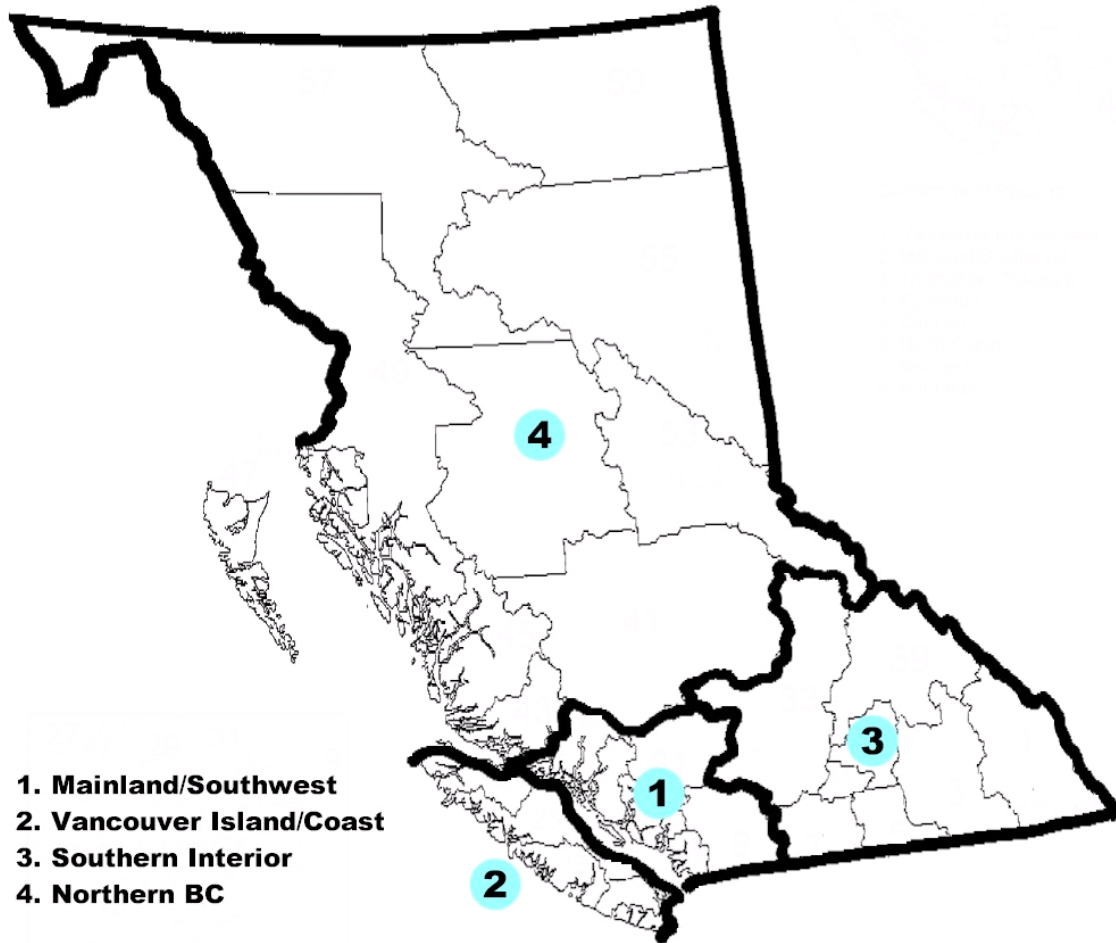
Given population projections (see Fig. 3), it is expected that overall population growth will be at a modest rate of 1.1 per cent per year between 2007 and 2026. The population is also aging rapidly, with those 65 years and older growing at an annual rate of 3.5 per cent, as opposed to the number of young people projected to decline 0.07 per cent per year.

Looking at the components of population change, net migration, both interprovincial and international, is projected to grow at an average annual rate of 0.9 per cent per year between 2007 and 2026. Also we can see the importance of net international migration in the overall population growth. Natural increase, on the other hand, is expected to decline over the projection period. By 2022, it is expected that the natural increase component of the population will be negative.

Regional Differences

For the purposes of this report, we have divided the province into four areas: Mainland/Southwest, Vancouver Island/Coast, Southern Interior, and Northern BC. The outline of these four regions is consistent with the geographic areas represented by the four regional associations of the British Columbia Construction Association.

Figure 4

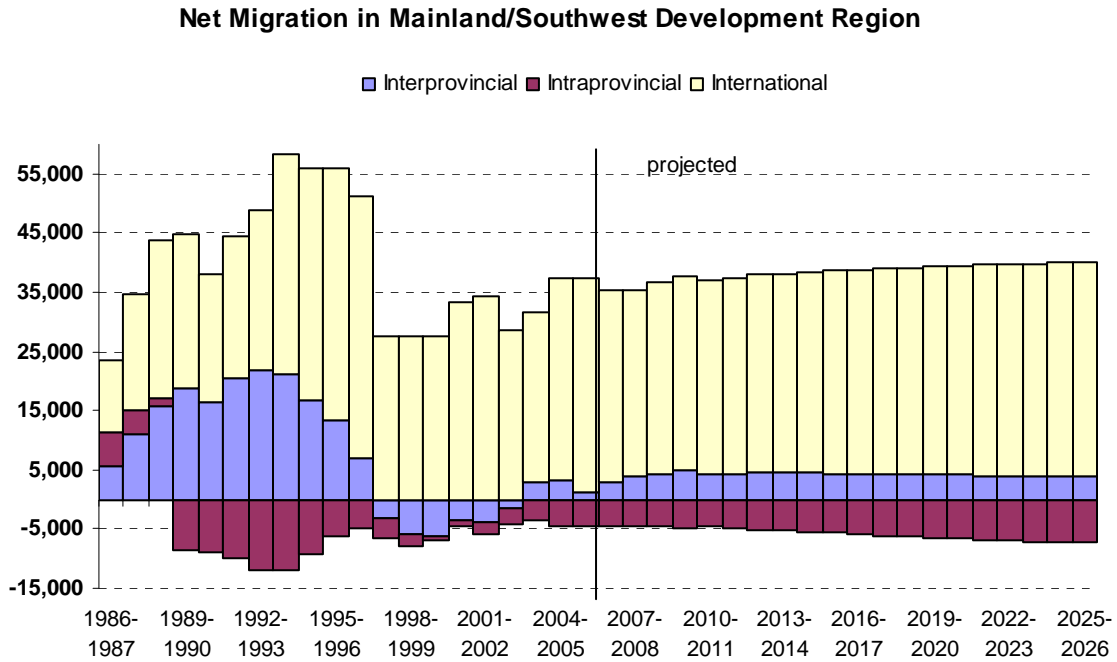


Source: based on BC Stats' Map of Development Regions

In this report, where regional discussions are presented, we are referring to these regions which correspond to combinations of specific development regions in the province. All the four charts to follow will show only net migration patterns in each of the regions.

Mainland/Southwest Region

Figure 5



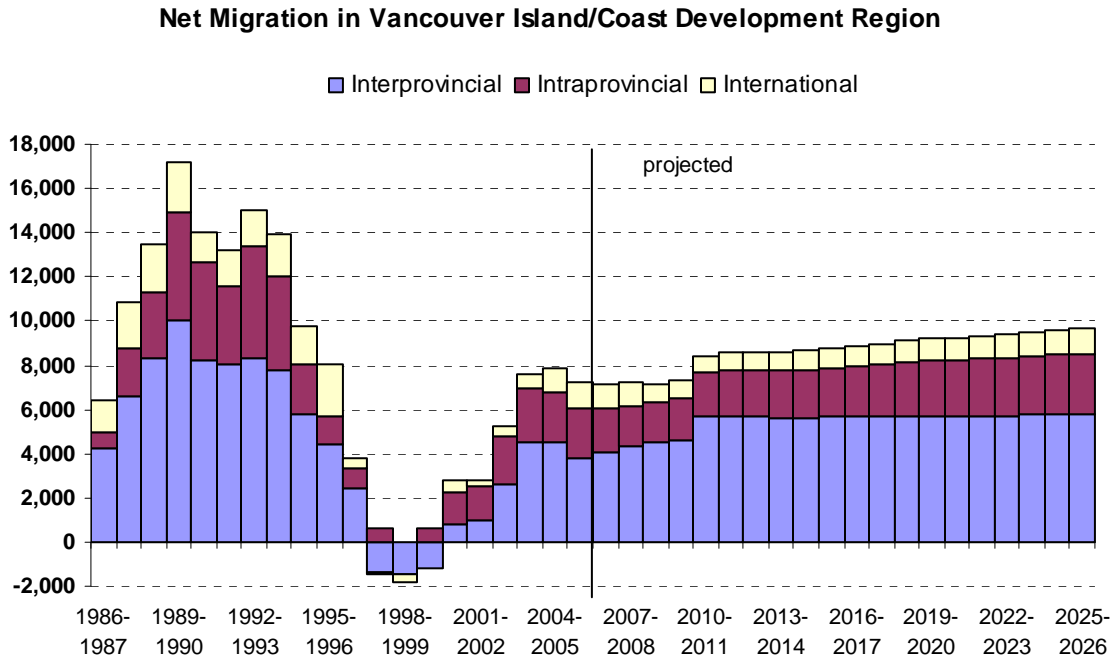
Source: BC Stats

This area covers the same area as the Mainland/Southwest Development Region. Over the long-term, the distribution of growth in the Mainland/Southwest Region will be influenced by the implementation of the Livable Region Strategic Plan of the Greater Vancouver Regional District. This plan proposes a “growth concentration area” comprised of Burnaby, Coquitlam, Port Moody, Port Coquitlam, New Westminister, Vancouver, North Surrey, and North Delta. The plan is to concentrate growth in these areas and to reduce traffic congestion by locating jobs near where people live.

Net migration, including net interprovincial and international migration as well as net inflow of migrants from within the province, is projected to grow at an average annual rate of 0.3 per cent per year between 2007 and 2026. (See Fig. 5)

Vancouver Island/Coast Region

Figure 6



Source: BC Stats

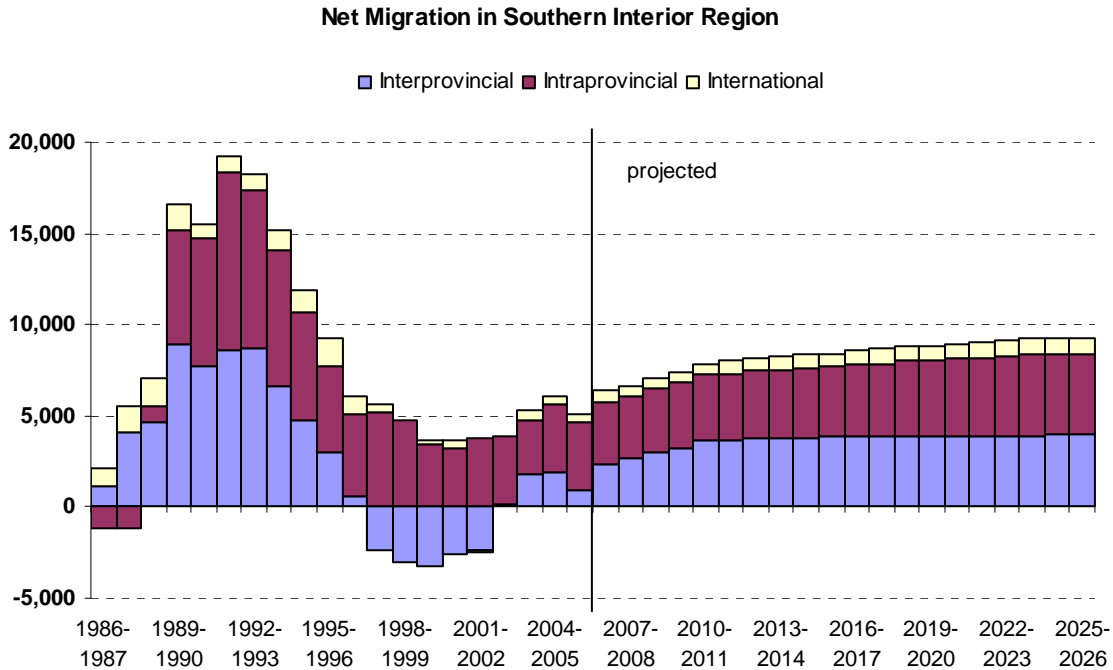
This region covers the same area as the Vancouver Island/Coast Development Region in the province.¹ Based on information from BC Stats, over the long-term, it is expected that the onset of retirement for the ‘baby boom’ generation will lead to somewhat larger net inflows of migrants to areas like the Capital and Nanaimo Regional Districts. With the growing number of retirees, attractive areas, particularly those outside of large urban cores will likely experience population growth. From the most heavily populated areas there will likely be some migration outward to nearby communities.

Net migration, including net interprovincial and international migration as well as net inflow of migrants from within the province, is projected to be at an average annual rate of 1.6 per cent per year between 2007 and 2026. (See Fig. 6)

¹ With the exception of the Mainland portion of Mt. Waddington Regional District, which is included in the Northern BC Region in this paper.

Southern Interior Region

Figure 7



Source: BC Stats

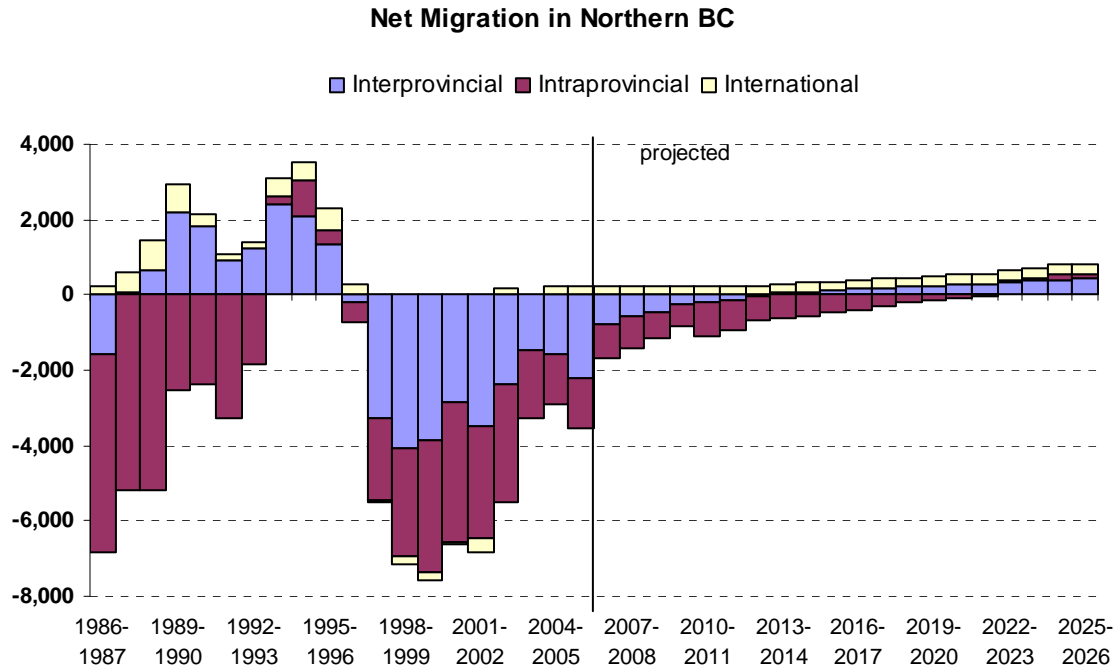
This region covers two Development Regions in the province: the Thompson-Okanagan Development Region and the Kootenay Development Region. Based on information from BC Stats, in the long run, the Thompson-Okanagan Region will likely continue to receive strong net inflows of population because of the growing mining industry and because this area is a popular retirement centre.

In the Kootenay Region, tourism and the construction of four season resorts will likely continue to attract workers particularly in the eastern portion of the region. Overall, it is projected that this region will receive modest net inflows of migrants over the duration of the projection period. Interprovincial migration will continue to figure more prominently in net migration levels for this region, due to its close proximity to urban centres in southern Alberta.

Net migration for these two Development Regions combined, including net interprovincial and international migration as well as net inflow of migrants from within the province, is projected to grow at an average annual rate of 2.0 per cent per year between 2007 and 2026. (See Fig. 7)

Northern Region

Figure 8



Source: BC Stats

This area covers the areas corresponding to four Development Regions – Cariboo, North Coast, Nechako, and Northeast – in the province.²

Based on information from BC Stats, in the long run, net migration to the Cariboo area is projected to fall then to return to positive levels as its economy continues to diversify away from forestry activities.

The North Coast Development Region has experienced a net outflow of migrants over the last ten years. This trend is expected to continue over the period of analysis. However, the increase in port activity including potential construction projects, and the increase in mining activity will have a positive impact on the local economy, thus mitigating net population outflow.

In the Nechako Development Region, it is expected that developments in the mining industry will provide jobs as well as indirect and induced employment in the region. Net intraprovincial migration for this area has been negative for the past ten years. This trend is projected in the short run to continue, but at a lower than previous level, according to information from BC Stats.

The Northeast Development Region has benefited from a booming mining, oil and gas sector. The region has recently experienced positive net intraprovincial migration, but negative net interprovincial migration as areas in Alberta continue to draw migrants from

² Including the Mainland portion of Mt. Waddington Regional District.

this area. In the long run, BC Stats' population projection model predicts that an overall trend of modest net in-migration to the area is possible as oil and gas exploration and construction continue to provide employment in the region.

Net migration for these four Development Regions combined, including net interprovincial and international migration as well as net inflow of migrants from within the province, is projected to increase from -1,430 in 2006/07 to -10 in 2016/17 at a rate of 39 per cent per cent per year. Between 20017/18 and 2025/26 it is projected to grow at an average rate of 25 per cent per year. (See Fig. 8)

Economic Factors

On the economic side, in addition to the level of economic activities which helps to "pull" or "push" mobility, affordability is another factor. The latter is determined by housing prices and interest rates relative to earnings and incomes. Especially in the Lower Mainland, housing prices have recently been rising much faster than incomes, making Metro Vancouver the highest cost city for housing in Canada. Housing prices there are still very competitive compared with many other international cities. Part of the impact of rising prices has been absorbed by historically low interest rates. Many have adjusted their expectations with respect to the size and location of their home. Those on low or fixed income who do not have a stake in the housing market already are severely constrained.

Non metro communities attractive to retirees and those seeking recreational properties have also become more expensive. Here the price rise is driven by rising demand. However, those communities heavily dependent on the forest industry which is facing difficult times are seeing weakening housing prices.

Recent growth in economic activities in the province has been strong. Real GDP growth was 3.7 per cent in 2005 and 3.9 per cent in 2006. Employment growth has been strong, with the unemployment rate across all industries at a 30-year low. These have been factors drawing strong net migration into the province.

The current strong growth in the province is driven by strong commodity prices which benefit mining production and mineral exploration, as well as construction activities in preparation for the 2010 Winter Olympic Games. In the long run, commodity price levels are likely to remain high, while Olympic related construction activities are expected to continue into 2009. Thereafter, construction activities are expected to remain strong according to the BC Major Project list, and thus avoiding a significant economic downturn. On the other hand, the forestry industry will likely continue to face hardship due to the Canadian dollar appreciation and the pine beetle infestation. These factors will impact all regions in the province, especially forestry dependent communities.

As explained earlier, strong net migration drives housing demand, as indicated by its close association with new housing starts. When demand for housing exceeds supply, the consequence is a rise in housing prices. On the other hand, rising housing prices will help to ease off the level of demand. This inter-relationship is demonstrated in Fig.9 and Fig. 10.

Figure 9

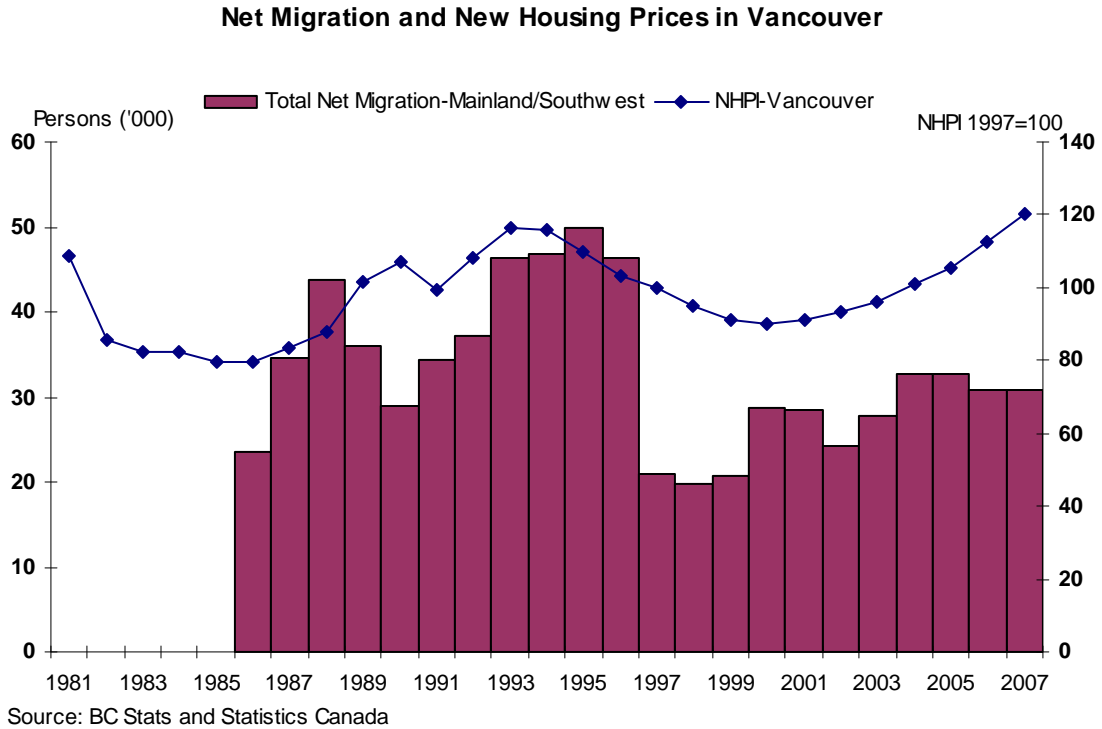


Fig. 9 plots new housing price levels, as represented by the New Housing Price Index (NPHI), in Vancouver and the overall level of net migration in Mainland/Southwest. It shows how the change in net migration affects housing prices, and vice versa.

Figure 10

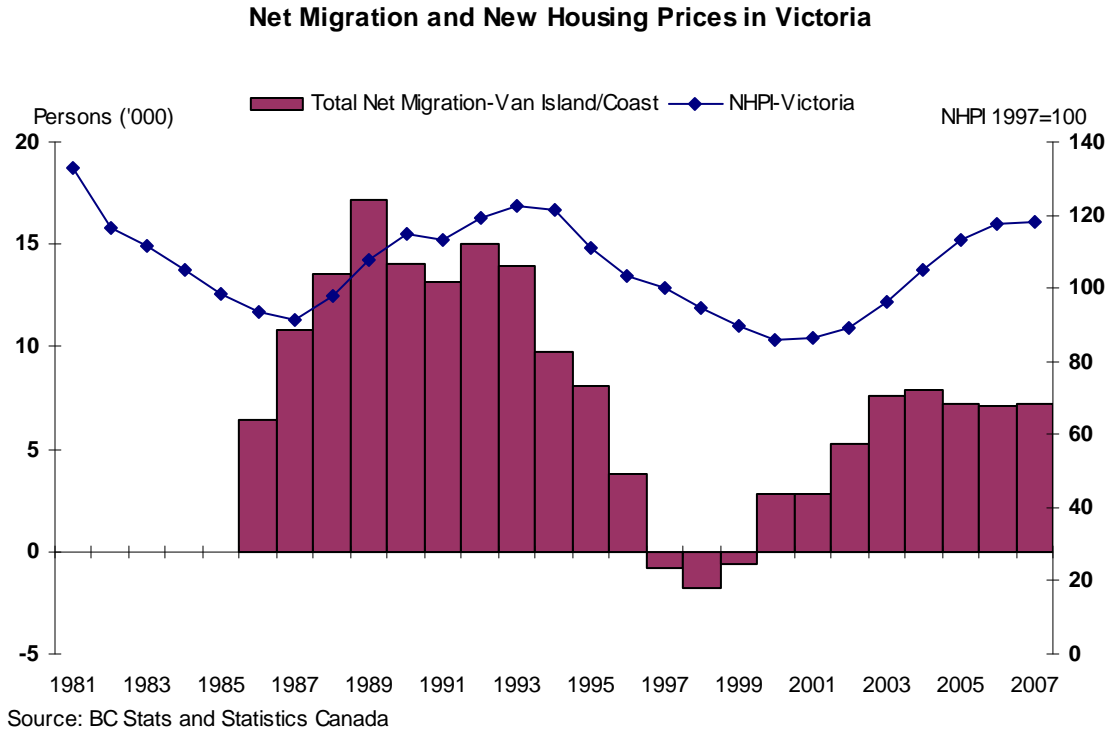
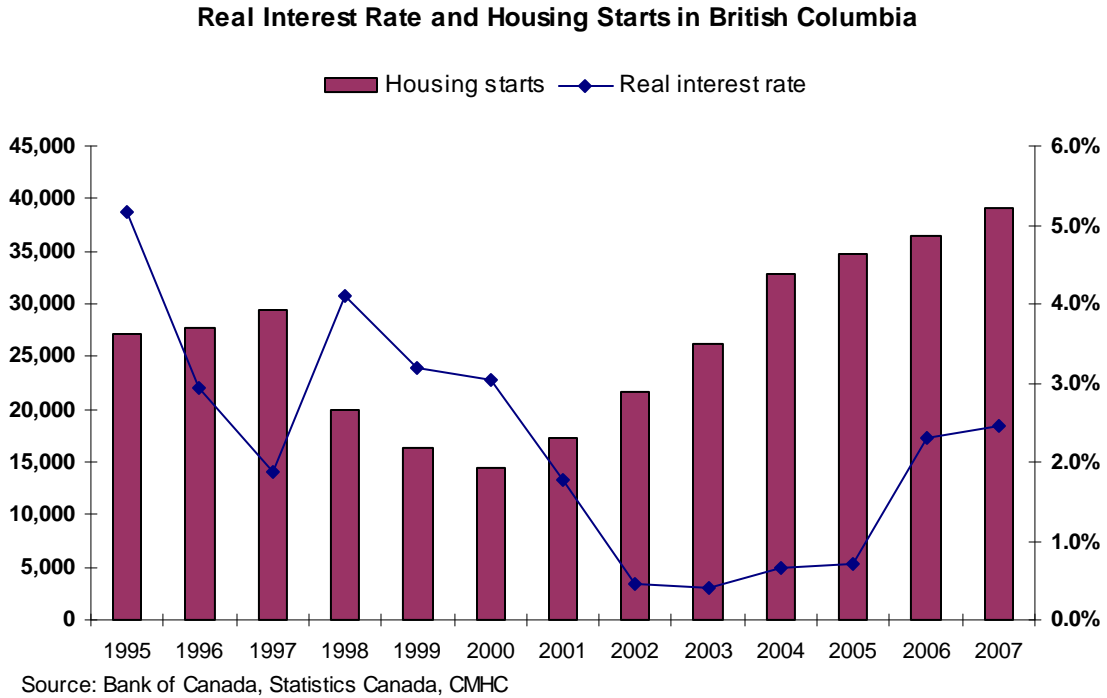


Fig. 10 plots new housing price levels, as represented by the New Housing Price Index (NHI), in Victoria and the overall level of net migration in Vancouver Island/Coast. Again, it shows how change in net migration affects housing prices.

Finally, the real interest rate, as measured by the Bank Rate net of inflation, affects the level of new housing starts. However, such impact tends to lag behind housing prices.

Figure 11

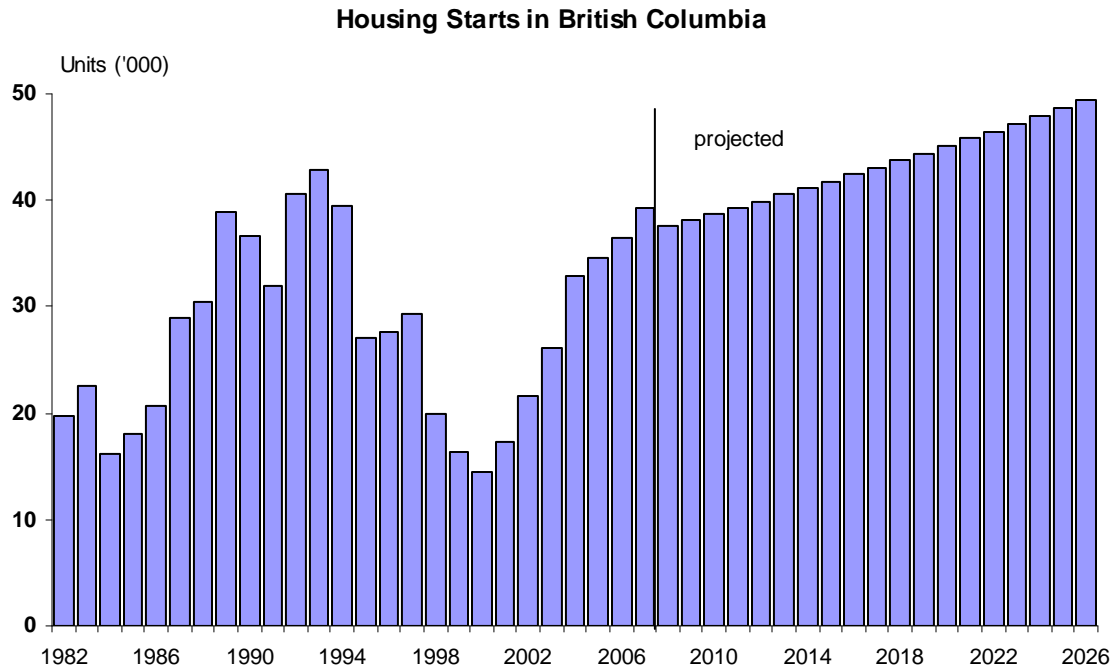


Shown in Fig. 11 are the real interest rates between 1995 and 2007 (up to November) plotted against housing starts in British Columbia. The recent low interest rates since 2001 coincided with a strong housing market in the province.

Housing Demand Forecast

To summarize, we expect new housing starts will grow at an estimated annual rate of 1.5 per cent per year between 2007 and 2026 in the province, as indicated in Fig. 12.

Figure 12



Source: CMHC, RKA

In Fig. 12, we show actual housing starts in British Columbia between 1982 and 2007. During this period, housing starts increased from 19,800 to 39,200, up by about 98 per cent. On a yearly basis, this represents an average annual growth rate of 2.6 per cent. For the projected period, we expect new housing starts will grow from 40,000 in 2008 to 49,400, up by about 25 per cent. This growth pattern is consistent with projected net migration pattern in the province.

Note that although the projected housing starts in future years are gradually increasing, it is possible that actual housing starts in a given year will be higher or lower than the projected number.

Based on Canada Mortgage and Housing Corporation (CMHC) report *Housing Market Outlook – British Columbia Regional Outlook*,³ in the near term in 2008 and 2009, housing starts will be above average, although actual levels will be lower than those seen in 2007. It is likely that total housing starts will be down by 15 per cent between 2007 and 2008, and further down by 5 per cent between 2008 and 2009.

Data available from the Homeowner Protection Office (HPO) allows for analysis of the number of new residential units constructed by type and by region of the province. Note, however, that HPO's data is only available for the period of 2000 to 2007. Also, HPO's data includes those new units constructed by owner builders.⁴

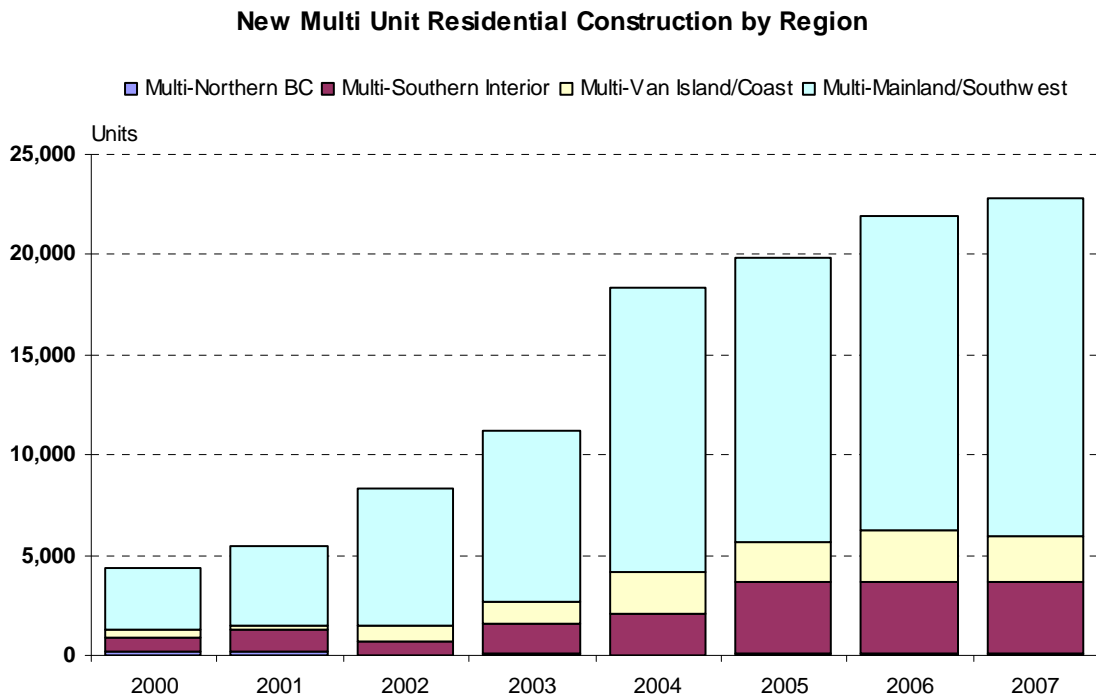
³ Released first quarter 2008.

⁴ An owner builder is an individual authorized by the Homeowner Protection Office to build a new home for their personal use. An owner builder is not required to be licensed by the HPO to build the new home or

Note that the dataset from CMHC and from HPO are two different series of datasets, and the timing and data collection methodology are different. As such the total numbers of new housing starts in each year from these two series are different.

Using HPO's data, in the two graphs to follow, we will show housing starts by building type and by region.

Figure 13



Source: HPO Database

Fig. 13 shows the number of new multi-unit housing units started (i.e. having obtained building permits) each year between 2000 and 2007 in the province in four regions: Northern BC, Southern Interior, Vancouver Island/Coast, and Mainland/Southwest.

Figure 14

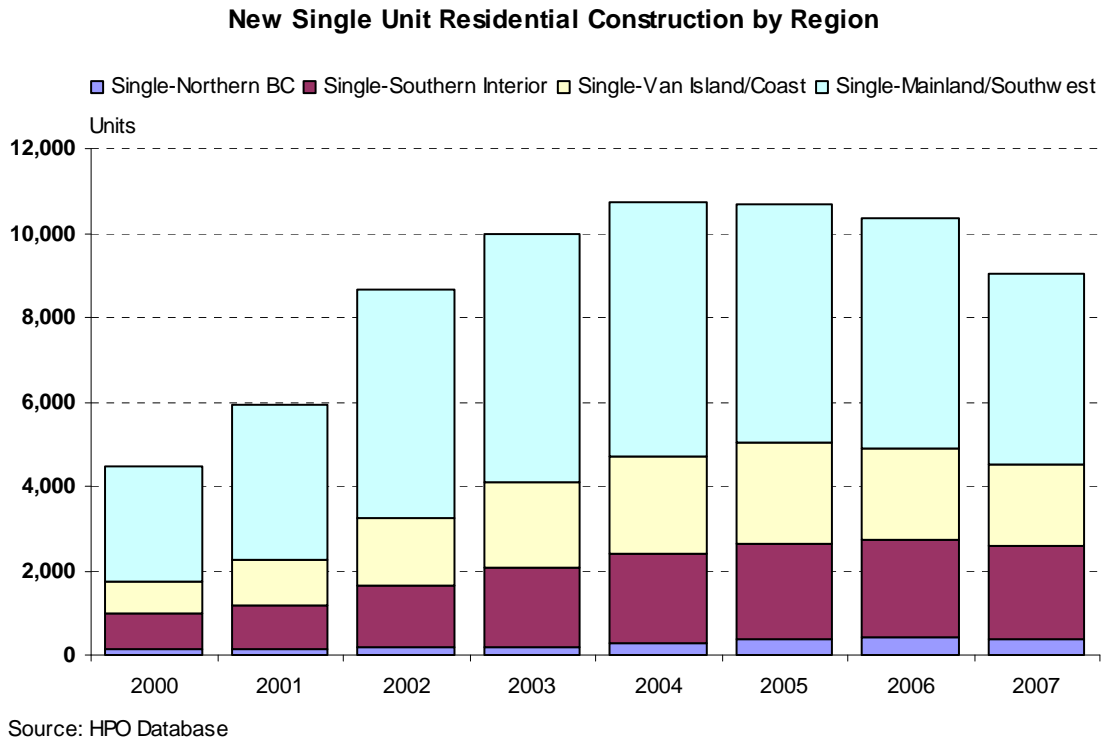
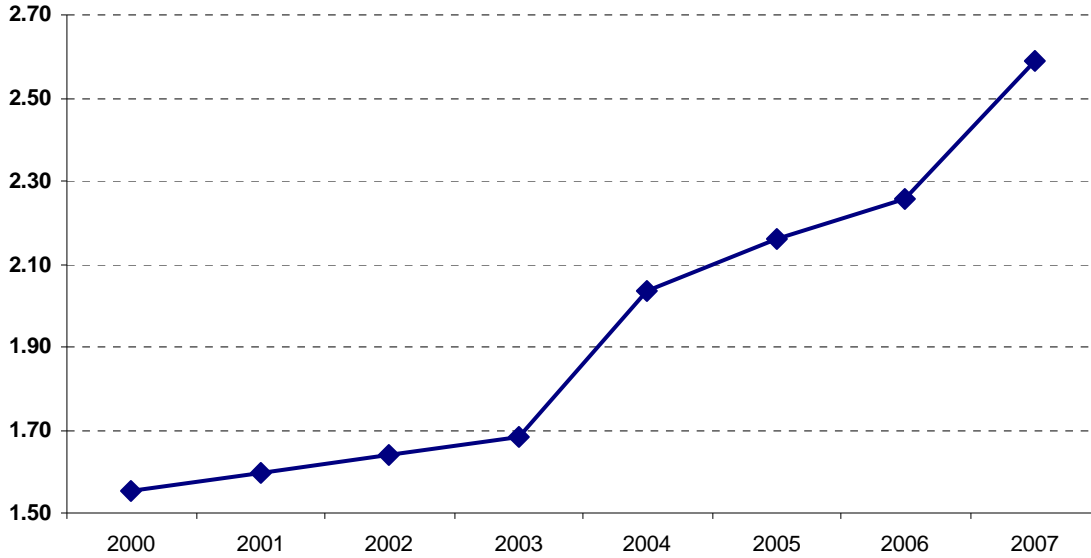


Figure 14 shows the number of new single-unit housing starts each year between 2000 and 2007 in the province in the same four regions: Northern BC, Southern Interior, Vancouver Island/Coast, and Mainland/Southwest.

During the period 2000 to 2007, new multi-unit housing starts grew on average 27 per cent per year, as compared to new single-unit housing growing at an annual average rate of 11 per cent. For multi-unit housing, those in Vancouver Island/Coast grew the fastest, at 29 per cent per year, followed by Mainland/Southwest (27 per cent per year) and Southern Interior (26 per cent per year). Single unit housing grew the fastest in Northern BC, at an average rate of 16 per cent per year. It is followed by that in Vancouver Island/Coast and Southern Interior (14 per cent per year), with the slowest in the Mainland/Southwest (8 per cent per year). Note that the faster growth rates usually reflect a smaller base number.

Figure 15

Unit/Building Ratio in British Columbia



Source: HPO Database

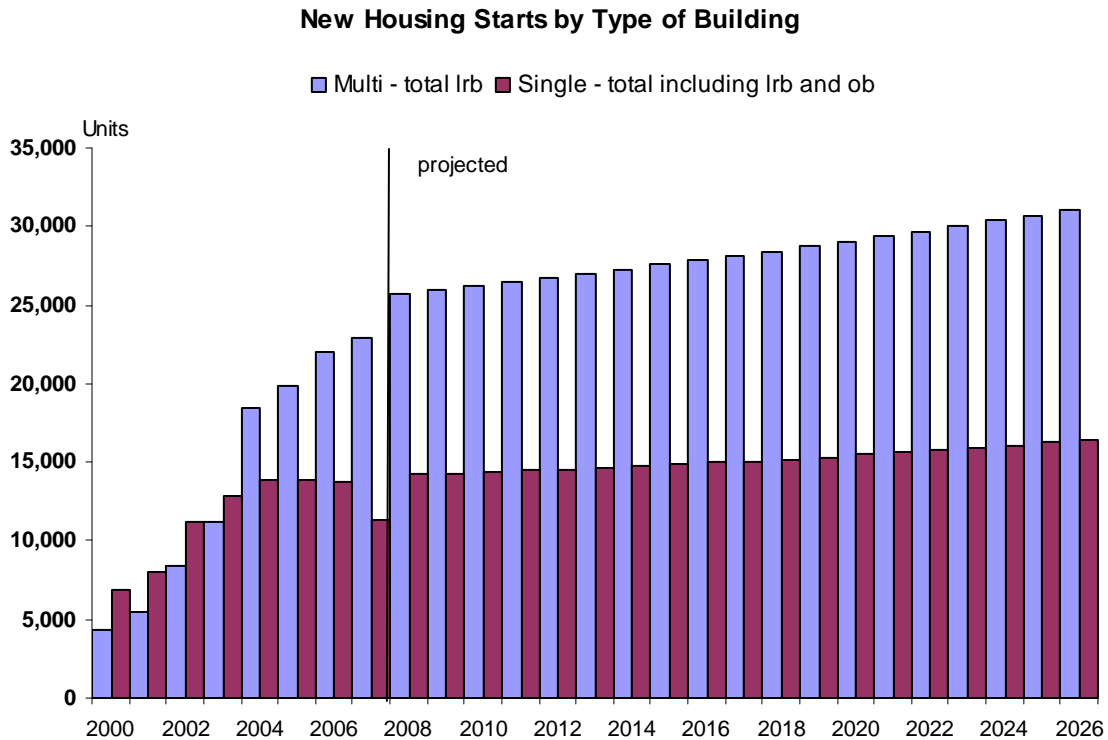
In Fig. 15, we show a graph indicating the units-per-building ratio from 2000 to 2007. If there were only single units in each building, the ratio would be 1. The higher the ratio the higher percentage of multi-unit buildings in the new housing market.

Such growth patterns reflect the fact that as major centres become more densely populated, the price of housing rises faster. In turn, multi-unit housing arrangements become more popular.

For the forecasting period between 2007 and 2026, we expect that multi-unit housing will probably grow twice as fast as single unit housing. (See Fig. 16)

In CMHC report *Housing Market Outlook – British Columbia Regional Outlook*, analysts also state that multi-family starts will continue to account for about two-thirds of new homes started in 2008 and 2009.

Figure 16



In Fig. 16, for the period between 2000 and 2007, actual number of new house starts built by licensed residential builders and owner builders is shown. For projected needs between 2008 and 2026, we have first adjusted the value of these numbers from HPO to be in line with new housing starts value in CMHC’s data series as shown in Fig. 12. The resulting average annual growth rate for multi-unit housing starts is projected to be 1.8 per cent, while single units (including those built by owner builders) are projected to grow by 0.9 per cent per year.

LABOUR DEMAND AND SUPPLY

Labour Demand

In the recent past, from 2001 to 2006, British Columbia enjoyed a period of remarkable employment growth in construction. Overall activity expanded over 50 per cent, with strong growth in every year. Highlights for this period include:

- Investment growth in all construction sectors has exceeded other provinces.
- Employment in construction has expanded by 50 per cent from 2001 to 2006.

- The largest number of jobs and the fastest growth was in residential building.
- Construction employment growth far exceeds all other provinces – including Alberta.
- Annual gains in the construction workforce of 9 per cent were needed to keep up with building activity.
- Over the same period, the total provincial labour force grew 2 per cent each year.
- Additions to the construction workforce dramatically increased its share of the total provincial labour force.
- Strong construction employment growth reduced unemployment to the lowest level recorded since at least the late 1980s, and likely the lowest ever.

At this point there is no specific data available pertaining to residential construction labour requirements. Overall construction sector employment data by major trade and occupation, both in the recent past and for the future between 2006 and 2015, has been provided by the Construction Sector Council (CSC). The major assumptions CSC used in providing these projections are as follows.

In the first period, 2006 to 2010, the resurgence in construction continues:

- Strong growth continues in 2007 and 2008, and then drops moderately in 2009 and 2010.
- All sectors follow this pattern, but overall growth in industrial building construction reaches almost 60% from 2006 to 2008, exceeding any other province.
- Non-residential construction declines in 2009 and 2010, but the levels remain well above 2006 activity.

Over the longer term, from 2011 to 2015, the cycle shifts. Construction activity peaks in 2008/09 and then declines over the forecast but remains strong relative to recent history.

Over the period of 2006 to 2015, CSC projects an average annual growth of 1.1 per cent per year for all construction trades and occupations under consideration. We expect that for the remaining period of analysis, overall employment in these trades will continue to be growing at 1.1 per cent per year, which is consistent with our projected population growth discussed earlier.

The Table that follows summarizes our projected employment change over this period.

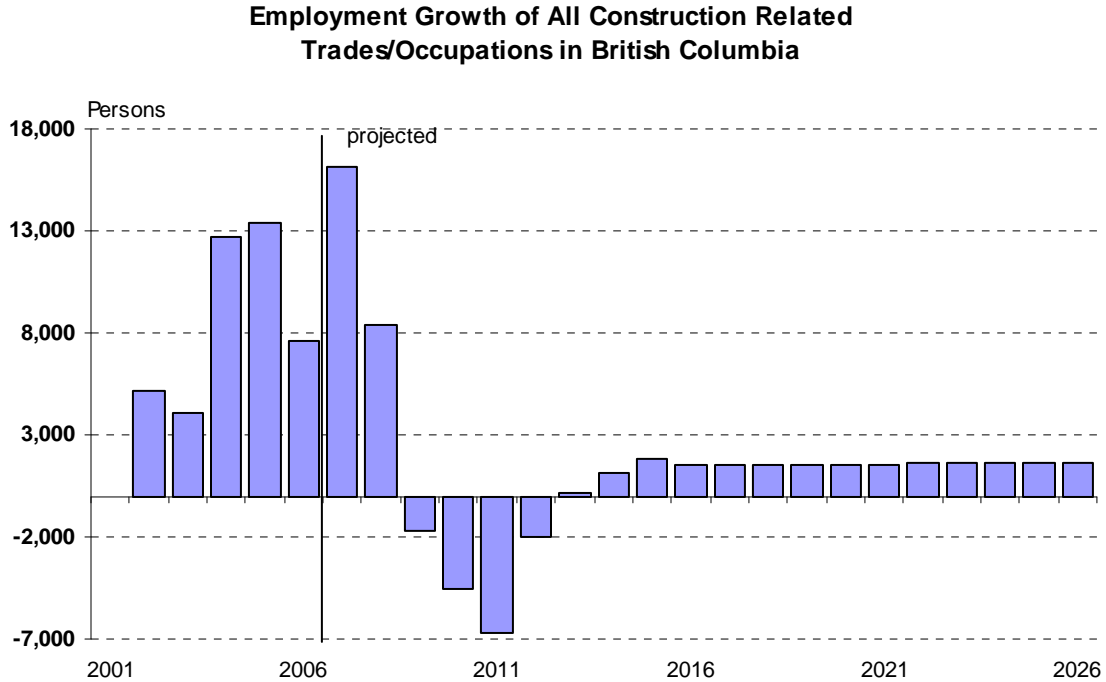
Figure 17 Employment Change of Construction Related Trades/Occupations in British Columbia, 2001 to 2026

	2001-2006 Change	2001-2006 %	Ave Annual Growth Rate	2006-2026 Change	2006-2026 %	Ave Annual Growth Rate
Total for all trades	42,863	53.5%	8.9%	29,891	24.3%	1.1%
Boilermakers	397	53.7%	9.0%	729	64.1%	2.5%
Bricklayers	568	54.3%	9.1%	333	20.7%	0.9%
Carpenters	8,070	55.6%	9.2%	4,573	20.3%	0.9%
Concrete Finishers	466	46.8%	8.0%	406	27.8%	1.2%
Construction Managers	4,516	61.4%	10.1%	1,923	16.2%	0.8%
Construction Millwrights and Industrial Mechanics	242	52.7%	8.8%	376	53.5%	2.2%
Contractors and Supervisors	3,360	52.4%	8.8%	2,484	25.4%	1.1%
Crane Operators	243	52.8%	8.9%	183	26.0%	1.2%
Drillers and Blasters	142	49.0%	8.3%	87	20.0%	0.9%
Electricians (Including Industrial and Power Systems)	2,988	51.0%	8.6%	2,662	30.1%	1.3%
Elevator Constructors and Mechanics	148	34.0%	6.0%	246	42.2%	1.8%
Floor Covering Installers	939	53.5%	8.9%	541	20.1%	0.9%
Gas Fitters	222	49.9%	8.4%	286	42.9%	1.8%
Glaziers	391	57.6%	9.5%	211	19.7%	0.9%
Heavy Equipment Operators (Except Crane)	2,297	50.5%	8.5%	1,379	20.2%	0.9%
Heavy-duty Equipment Mechanics	263	51.6%	8.7%	164	21.3%	1.0%
Industrial Instrument Technicians and Mechanics	31	55.5%	9.2%	34	40.0%	1.7%
Insulators	294	46.0%	7.9%	500	53.5%	2.2%
Ironworkers and Structural Metal fabricators and Fitters	388	50.7%	8.5%	435	37.7%	1.6%
Labourers and Trades Helpers	4,411	50.8%	8.6%	3,461	26.4%	1.2%
Painters and Decorators	2,728	54.7%	9.1%	1,538	19.9%	0.9%
Plasterers, Drywall Installers and Finishers, and Lathers	1,769	49.9%	8.4%	1,227	23.1%	1.0%
Plumbers	1,769	50.5%	8.5%	1,451	27.5%	1.2%
Refrigeration and Air Conditioning Mechanics	340	51.5%	8.7%	297	29.7%	1.3%
Residential and Commercial Installers and Servicers	1,001	56.2%	9.3%	590	21.2%	1.0%
Roofers and Shinglers	1,078	49.4%	8.4%	825	25.3%	1.1%
Sheet Metal Workers	1,218	60.9%	10.0%	698	21.7%	1.0%
Steamfitters, Pipefitters and Sprinkler System Installers	608	56.0%	9.3%	1,004	59.3%	2.4%
Tilesetters	484	54.1%	9.0%	274	19.9%	0.9%
Truck Drivers	803	53.2%	8.9%	444	19.2%	0.9%
Welders and Related Machine Operators	690	51.7%	8.7%	695	34.3%	1.5%

Source: Construction Sector Council, RKA

From Fig. 17, we expect that the total number of job openings for construction related trades and occupations will be approximately 29,900 over the period of 2006 and 2026, which is an increase of 24 per cent. On average, this translates to about 1,500 job openings per year. Based on residential investment as a proportion of the overall construction industry investment, we expect that about half, or 49 per cent, of all construction related openings shown above will be in the residential sub-sector.

Figure 18

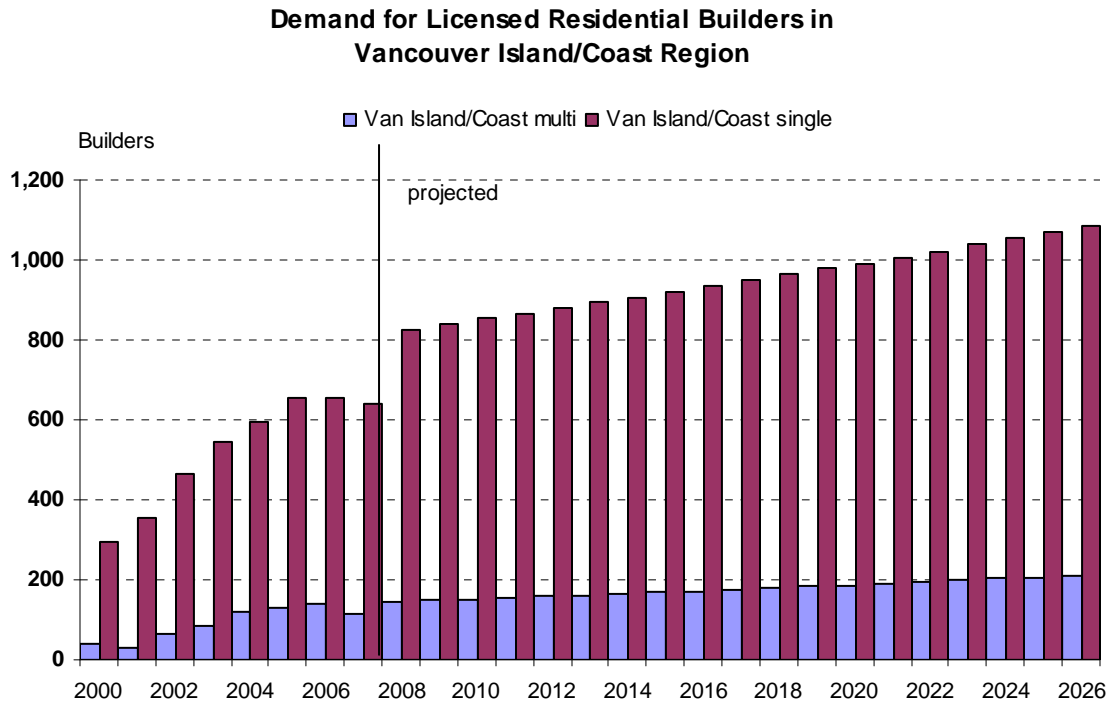


Source: CSC and RKA

In Fig. 18, we show the year over year change of employment in all construction related trades/occupations over the period between 2001 and 2026.

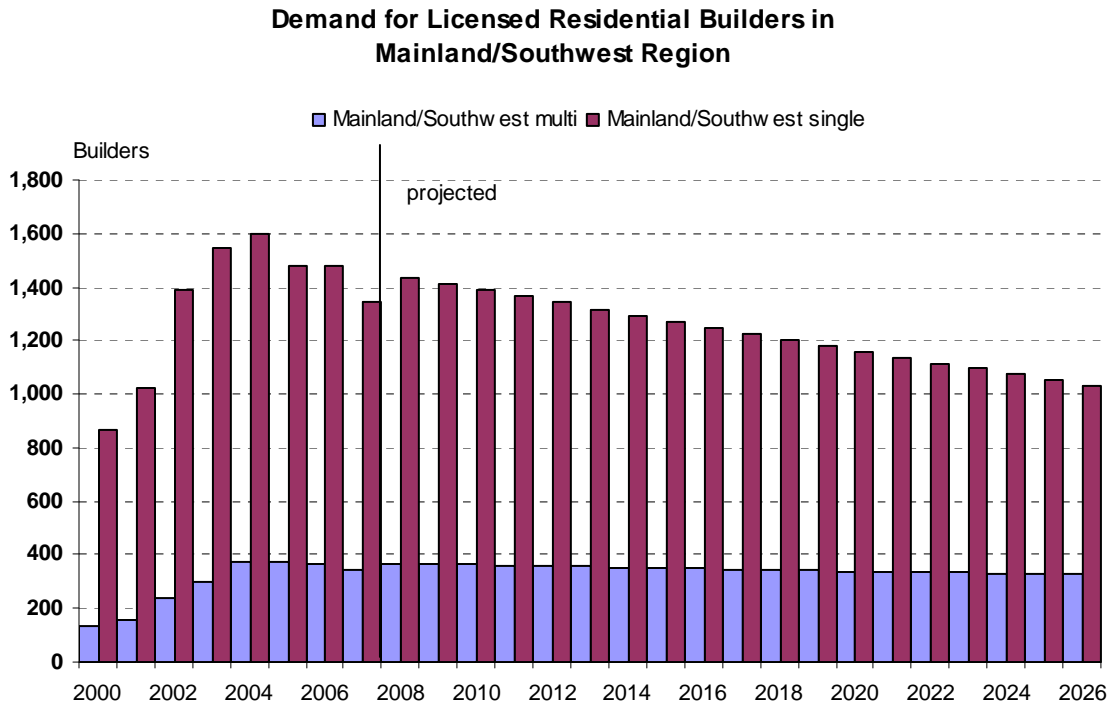
In addition to construction trades and occupations, in the following graphs, we have shown our projections of the number of licensed residential builders required in each region, by type of buildings. (See Fig. 19 to Fig. 22) Note that the total number of licensed builders will be slightly smaller than the sum of multi unit licensed builders and single unit licensed builders as some build both types of buildings.

Figure 19



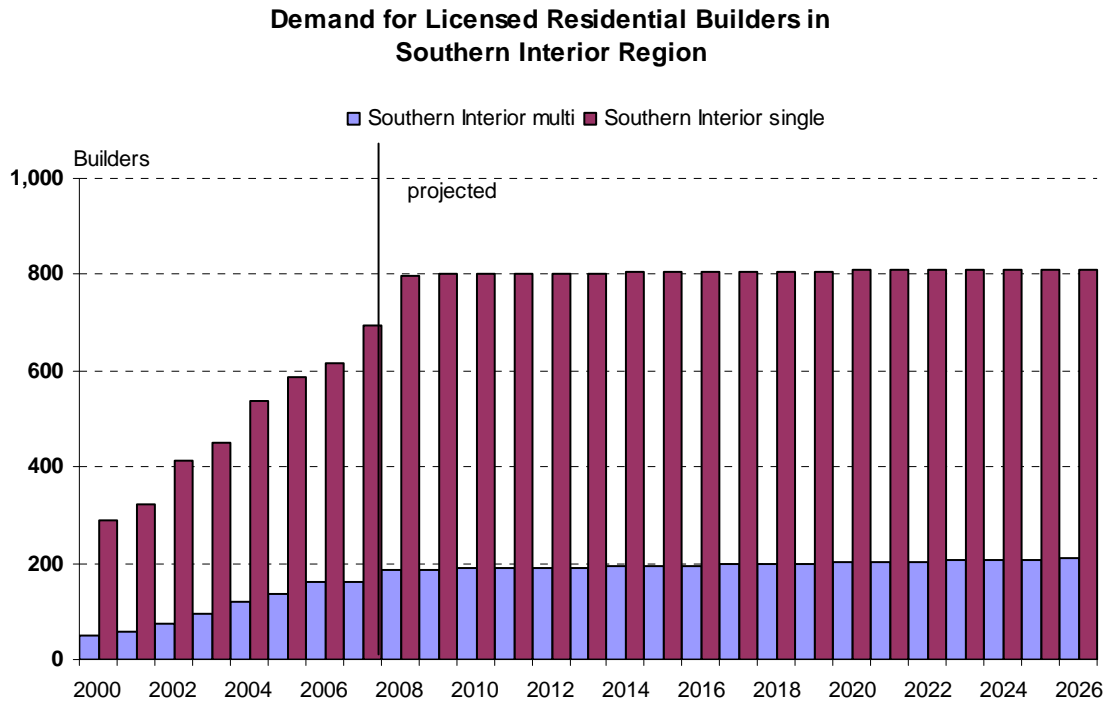
Source: HPO Database, RKA

Figure 20



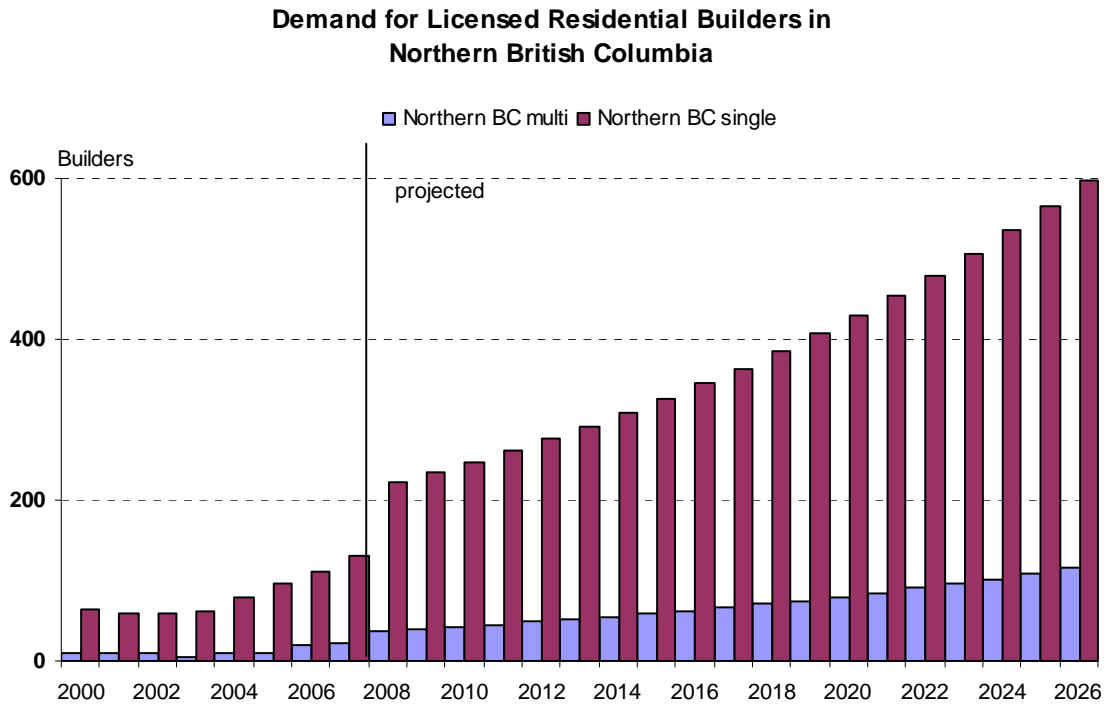
Source: HPO Database, RKA

Figure 21



Source: HPO Database, RKA

Figure 22



Source: HPO Database, RKA

In each of Fig. 19 to Fig. 22, for the first seven years between 2000 and 2007, the actual number of licensed residential builders in each region by building type is shown. For each type of building, we have calculated a units-per-builder ratio in each year. The resulting values of these ratios are:

- For multi-unit buildings in Vancouver Island/Coast, the ratio was 20.4 in 2007, up from 10.1 in 2000. Its counterpart in single-unit buildings was 3.0 in 2007 compared with 2.6 in 2000.
- For multi-unit buildings in Mainland/Southwest, the ratio was 49.5 in 2007, up from 23.0 in 2000. Its counterpart in single-unit buildings was 3.4 in 2007 compared with 3.1 in 2000.
- For multi-unit buildings in Southern Interior, the ratio was 21.8 in 2007, up from 13.8 in 2000. Its counterpart in single-unit buildings was 3.2 in 2007 compared with 3.0 in 2000.
- For multi-unit buildings in Northern BC, the ratio was 6.3 in 2007, down from 15.5 in 2000. Its counterpart in single-unit buildings was 2.9 in 2007 compared with 2.0 in 2000.

From 2008 to 2026, we have projected licensed residential builder requirement in each type of building in each region based on the units-per-builder ratios and new housing starts by building type by region as shown in Fig. 16. We have assumed that the units-

per-building ratios will increase by one per cent per year for multi-unit builders, and 0.5 per cent per year for single-unit builders.

Labour Supply

We will discuss in this section, factors that affect potential labour supply to meet requirements presented in the earlier section.

As discussed in the previous section, strong employment growth in the overall construction industry between 2001 and 2007 has resulted in labour shortages with most of the trades in the industry, probably more so in residential construction. Based on HPO's recent *Licensed Residential Builder Survey*, here is a graphic representation of labour shortage by trade in residential building. (See Fig. 23)

Figure 23 Percentage of Licensed Residential Builders Reporting Labour Shortage by Trade, 2007

	Building Area (2007)						
	2005 Total	2007 Total	GVRD/FV SC to Pemb	VI/Gulf Islands	Okana- gan	Koot- enays	Cent./ North. BC
Base *	752	828	357	212	169	56	57
	%	%	%	%	%	%	%
Total Carpenters (NET)	91	90	88	92	91	97	96
Framer	66	63	62	63	62	65	71
Carpenter (unspecified)	58	59	57	60	64	72	68
Forming	39	43	41	50	47	36	55
Journeyman carpenter	38	39	32	51	46	55	56
Interior finisher	36	39	37	43	44	33	42
Exterior finisher	32	38	37	42	36	37	42
Drywall installer & finisher	36	33	30	31	46	30	50
Siding installer	30	32	35	34	26	33	33
Bricklayer/stonemason	25	29	27	30	28	34	25
Concrete finisher	24	29	28	27	32	36	27
Stucco applicator	24	28	27	22	43	28	20
Plumber	22	28	31	21	21	33	33
Roofer	18	24	26	26	15	38	28
Electrician	16	23	25	20	20	26	19
Painter	24	19	21	21	16	13	11
Tiler	19	18	20	20	17	15	11
Sheet metal worker	14	18	21	15	14	22	11
Insulation installer	11	16	15	14	18	20	28
Forced air heating/cooling specialist	n/a	16	18	13	13	17	12
Building envelope technician	13	15	20	14	8	5	6
HVAC installer	12	15	18	13	11	16	6
Floor covering installer	11	13	13	14	15	11	12
Window and door installer	7	13	14	11	14	10	9
Geothermal specialist	n/a	13	16	10	12	13	15
Gasfitter	11	12	12	13	8	11	10
Air conditioning specialist	n/a	12	15	9	7	7	2
Cabinetmaker/installer	14	11	13	12	14	5	14
Hydronics specialist	n/a	6	8	6	4	5	5

* Those with difficulties finding workers

Source: HPO Licensed Residential Builder Survey, 2007

HPO's *Licensed Residential Builder Survey* was carried out in 2005, 2006 and 2007. In 2005, 67 per cent of builders reported having difficulties finding qualified workers. By 2007, this has risen to 72 per cent. Within trades, carpenters continued to rank the highest in shortage from 2005 to 2007. Qualified workers in other trades, such as exterior finishers, concrete finishers, plumbers, roofers, electricians, insulation installers and window/door installers, have become more difficult to find, according to the survey.

Age

Overall, the average age of all construction trades and occupations in the province is older than the average age of the general workforce. Details are shown in Fig. 24. Based on overall demographic trends, the aging of the workforce is to continue into the projection period.

Figure 24 Average Age of Construction Related Trades/Occupations and Retirement

	Average Age	% under 35	% 55 and over	Average Age	Average Annual Retirement 2006-2015
		2001		2006	
Total for all trades	42	29%	23%	41	2,450
Boilermakers	44	24%	28%	43	20
Bricklayers	44	25%	28%	44	40
Carpenters	42	28%	22%	42	480
Concrete Finishers	39	40%	17%	39	20
Construction Managers	45	17%	29%	46	300
Construction Millwrights and Industrial Mechanics	46	13%	35%	44	20
Contractors and Supervisors	45	18%	29%	45	230
Crane Operators	44	22%	28%	45	20
Drillers and Blasters	42	28%	22%	41	10
Electricians (Including Industrial and Power Systems)	42	28%	27%	39	160
Elevator Constructors and Mechanics	42	30%	33%	43	20
Floor Covering Installers	40	33%	14%	40	50
Heavy Equipment Operators (Except Crane)	43	26%	26%	43	160
Heavy-duty Equipment Mechanics	44	22%	31%	44	20
Industrial Instrument Technicians and Mechanics	45	19%	33%	37	0
Insulators	38	40%	15%	37	10
Ironworkers and Structural Metal fabricators and Fitters	42	28%	25%	40	20
Painters and Decorators	41	30%	21%	40	150
Plasterers, Drywall Installers and Finishers, and Lathers	39	39%	16%	40	100
Plumbers	40	36%	19%	39	90
Refrigeration and Air Conditioning Mechanics	42	29%	18%	39	10
Residential and Commercial Installers and Servicers	40	35%	14%	40	50
Roofers and Shinglers	37	42%	9%	38	40
Sheet Metal Workers	40	30%	18%	40	50
Steamfitters, Pipefitters and Sprinkler System Installers	43	24%	29%	40	30
Tilesetters	42	26%	23%	44	30
Trades Helpers and Labourers	35	51%	14%	35	170
Truck Drivers	43	27%	25%	43	60
Welders and Related Machine Operators	42	30%	25%	41	40

Source: Statistics Canada 2001 Census, CSC

Along with an aging workforce comes retirement and therefore replacement needs which are going to rise. In Fig. 24 we have also included CSC's estimates of replacement demand in the same occupations on a yearly basis between 2006 and 2015. The underlying assumptions for estimating annual retirement and therefore replacement needs are that the rate of exit (leaving the occupation) is projected to be 1 per cent of the construction related trades and occupation labour force at the beginning of the forecasting period, and gradually increases to 3.2 per cent of the overall construction related trades and occupation workforce by 2015. The CSC analysis takes account of work-related factors that are naturally associated with occupations, including the need for managers, supervisors and foremen to have more experience, and the reality that trades like roofers and shinglers, and floor covering installers are physically challenging for older workers.

This means that replacement demand will actually exceed the demand for new workers related to additional construction activity. These demographic trends will gradually erode the available workforce and will create labour shortages even at times when there is only moderate level of construction activity.

Figure 25 Age Distribution of Licensed Residential Builders in British Columbia

	2000	2001	2002	2003	2004	2005	2006	2007
under 35	10%	9%	9%	9%	10%	9%	9%	8%
35 to 54	73%	72%	70%	69%	67%	66%	64%	64%
55 and plus	17%	19%	20%	22%	24%	25%	27%	28%

Source: HPO Database

As with the construction trades and related occupations, licensed residential builders are facing the same ageing issue. Data from HPO's database show that, in 2007, less than 10 per cent of all licensed builders were younger than 35 years old, and almost two-thirds were between 35 and 54 years old. Older builders – those aged 55 and over – accounted for almost 30 per cent of the workforce. Furthermore, data from 2000 to 2007 show those under the age of 35 years and the ones between 35 and 54 years old are declining, down 14 per cent and 12 per cent respectively. Licensed residential builders aged 55 and over have increased by 61 per cent during the same period. (See Fig. 25)

Education and Training Trends

Another factor that affects the supply of labour in the construction industry is the availability of those who have completed the necessary skills training. While apprenticeship is the traditional and most important source, there is also a need for more specialized programs that aim at basic health and safety preparation for new entrants, upgrading skills provided by industry associations, labour groups, equipment and material suppliers and in-house programs.

In Fig. 26 that follows, we present data available from BC's Industry Training Authority (ITA) which shows recent trends in apprenticeship training registration and completion.

Figure 26 Apprenticeship Registration and Completion for Construction Related Trades

Trades	Active App. Dec 2006	% Change in Active App. 2005-06	New App. Jan-Dec 2006	Certificate of App. Issued	Certificate of Qualification Issued	% Change in Certificates of Qual. Issued 2005-2006	Red Seal Issued	Average	Average	Average
								Certificate of App. 96-06	Certificate of Qual. 96-06	Red Seal 96-06
Architectural Sheet Metal Worker	37	68%	22	3	4	-	0	4	8	0
Boilermaker (Construction)	96	-22%	11	8	8	-	8	15	17	16
Boom Truck Operator – Class A Trade	0		0	0	0	-	0	0	4	0
Carpenter	5,609	34%	2,475	155	185	-14%	185	232	306	288
Cement Mason	156	13%	58	0	0	-	0	5	12	10
Construction Formwork Technician	22	-33%	27	2	0		0	0	0	0
Domestic/Commercial Gasfitter	204	15%	126	46	0		0	39	0	0
Drywall Finisher	57	30%	29	0	0	-	0	3	18	0
Electrician	5,428	30%	1,933	319	398	-17%	396	361	504	410
Elevator Mechanic	4	-	0	0	1	-	0	6	9	0
Floor Covering Installer	134	25%	46	2	2	-80%	2	11	22	20
Forklift Mechanic	5	-	2	2	0		0	3	0	0
Glazier	262	51%	148	18	19	171%	19	19	24	21
Hardwood Floorlayer	29	-6%	11	4	0		0	2	0	0
Heat & Frost Insulator	101	22%	40	2	3	0%	3	4	6	4
Heavy Duty Equipment Mechanic	1,028	35%	459	73	102	-17%	102	81	116	101
Hydraulic Crane Operator	0	-	0	0	5	67%	0	0	6	0
Industrial Electrical Work	0		0	0	0		0	1	0	0
Industrial Instrument Mechanic	204	17%	75	20	23	-4%	23	14	18	16
Ironworker	77	-17%	21	8	8	14%	8	16	22	10
Joiner	544	21%	222	26	31	41%	31	38	43	41
Lather (Interior Systems Mechanic)	202	49%	113	6	6	-	6	13	28	18
Locksmith	12	20%	8	0	1	0%	0	2	15	0
Mason	197	5%	91	3	3	0%	3	6	9	7
Metal Fabricator	555	26%	236	39	42	-48%	42	47	53	49
Millwright	1,020	26%	395	114	151	-10%	151	116	175	166
Mobile Crane Operator (Const. Ind.)	66	12%	31	9	18	350%	18	7	19	17
Oil Burner Mechanic (Residential)	2	-	2	0	0		0	0	1	0
Painter and Decorator	269	50%	132	12	20	11%	20	23	42	38
Piledriver-Bridgeworker	112	67%	64	1	2	-	0	8	13	0
Plasterer	10	11%	6	0	0		0	4	10	0
Plumber	2,728	37%	1,098	162	170	-7%	169	184	211	190
Power Line Technician	173	21%	54	22	26	-35%	25	24	58	22
Refrigeration Mechanic	539	27%	192	48	53	-24%	53	43	55	46
Refrigeration Mechanic Equivalency	0		0	0	0	-	0	0	0	0
Reinforcing Steel Installer	151	104%	113	3	22	-	0	0	2	0
Residential Building Maintenance	66	1000%	33	0	0		0	1	1	0
Residential Construction Framing Tech.	846	102%	562	5	10	100%	0	0	1	0
Residential Steep Roofer	5	-	3	0	0	-	0	0	6	0
Roofer, Damp And Waterproofing	484	19%	209	27	27	145%	27	36	41	36
Sheet Metal Worker	853	38%	329	71	71	37%	71	70	75	70
Sheet Metal Worker (Manufacturing)	2	-	8	0	0		0	1	0	0
Sprinkler System Installer	374	40%	159	22	25	-19%	25	28	34	29
Steamfitter-Pipefitter	268	65%	139	23	27	17%	27	20	35	23
Tilesetter	52	49%	29	1	1	-67%	0	4	6	0
Tower Crane Operator	0		0	0	0		0	0	2	0
Transport Refrigeration Mechanic	2	-	2	0	0		0	2	2	0
Welder – Level 'A'	727	112%	491	13	87	53%	34	17	90	33
Welder – Level 'B'	0		0	0	255	52%	18	0	188	16
Welder – Level 'C'	0		0	0	432	35%	0	0	315	0
Winder Electrician	23	0%	8	4	4	300%	4	4	6	3
Totals	23,735	35%	10,212	1,273	2,242	5%	1,470	1,518	2,627	1,700

Source: Industry Training Authority

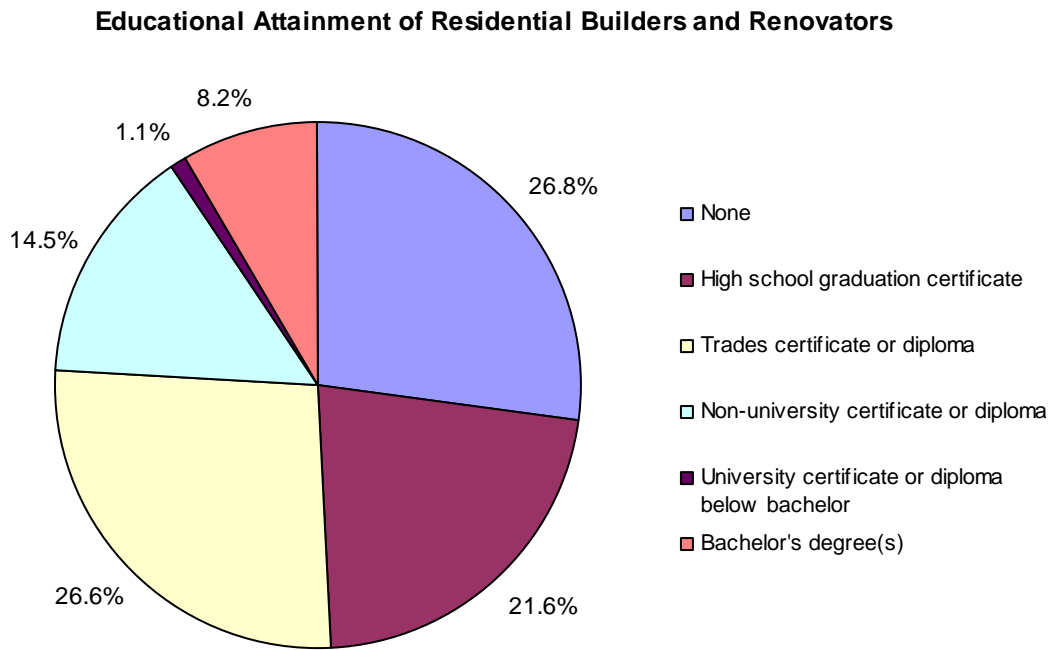
As can be seen from Fig. 26, registrations in 2006 are up significantly in most trades, indicating an immediate response to growing demand. Completions are also on a rising trend but have not yet matched the recent growth in registrations.

Looking at the longer term, the number of certificates issued in 2006 was lower than the average number issued over the earlier period, from 1996 to 2006. This trend is apparent for most trades.

Certainly these trends signal a problem with low-completion rates. This problem is noted and under study by the industry at this time. One explanation for the low completion rates might be employment-related pressures to keep apprentices on the job during training periods because of pressure to complete work. This would be a normal response to the current tight labour market. It is also possible that alternative ITA programs may be seen as new opportunities that substitute for the traditional trades.

On the level of educational attainment of licensed residential builders, we show in the graph that follows (Fig. 27) the highest level of educational attainment of those in the occupational classification of residential home builders and renovators in British Columbia.

Figure 27



Source: Statistics Canada, 2001 Census

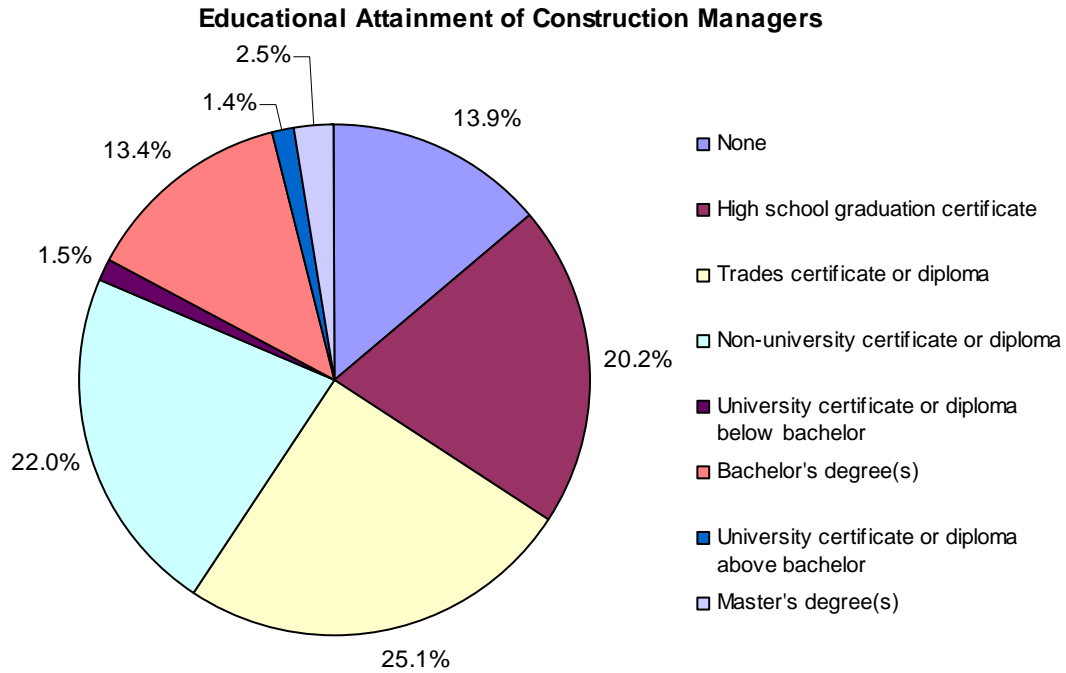
Just over a quarter of all residential home builders reported not having completed any formal education. An equal percentage of all in this occupational group reported having obtained trades certificate, followed by a fifth who reported having completed high school. Just fewer than 10 per cent reported having obtained a Bachelor's degree or a university certificate or diploma (below bachelor).

For comparison purposes, we have shown in Fig. 28 the educational attainment of construction managers, using 2001 Census data.⁵ The level of educational attainment of

⁵ The reason showing the comparison is that it is not clear to what extent a residential builder would be classified as a construction manager.

the latter is higher than those described in Fig. 27. However, there is still 14 per cent of the construction manager workforce who reported not having completed any formal education.

Figure 28

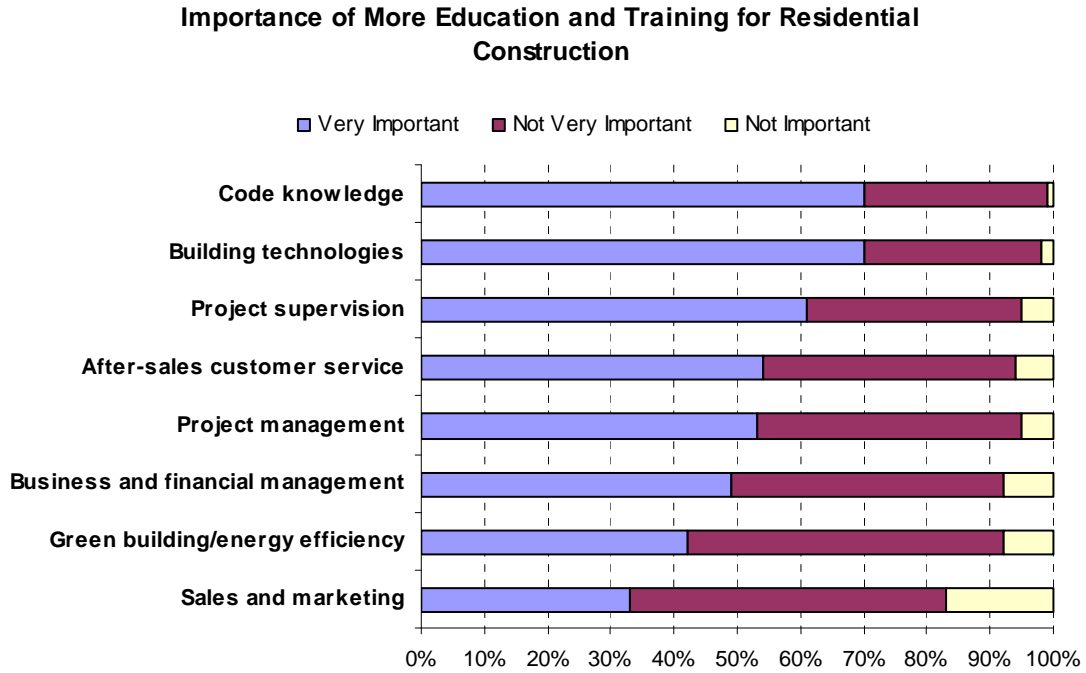


Source: Statistics Canada, 2001 Census

These representations of training trends and the level of educational attainment certainly point to room for improvement in order to meet the skill requirements of the construction workforce in the future.

Indeed, based on HPO's *Licensed Residential Builder Survey* in 2007, the majority of builders pointed out areas where more education and training in residential construction are building code knowledge, building technologies and others. (See Fig. 29) Also, more tradespersons, apprenticeship, and on-the-job training were mentioned by 17 per cent of those commented.

Figure 29



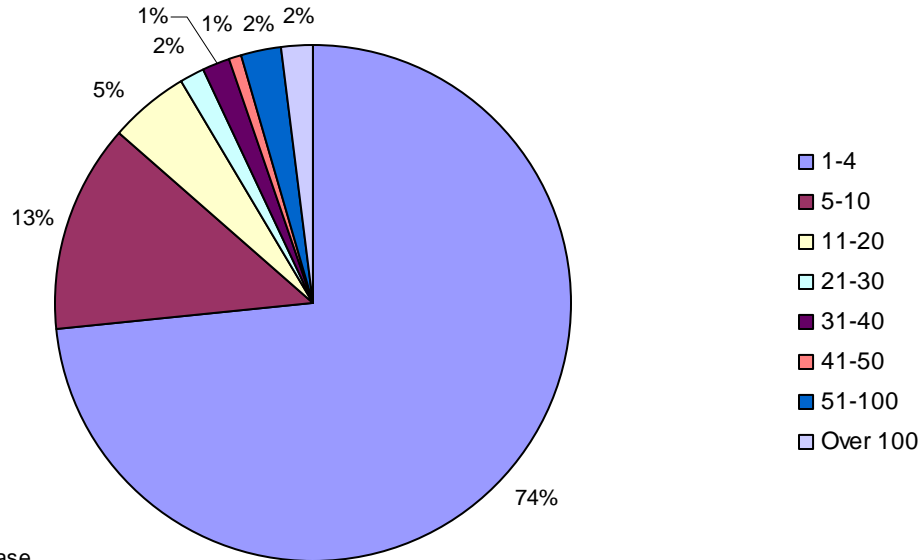
Source: HPO Licensed Residential Builder Survey, 2007

Additional Profile of Licensed Residential Builders

One additional piece of information regarding Licensed Residential Builders in the province is the distribution of these builders by the number of new housing units started each year. Based on data available from the HPO database, the majority of these builders, almost three quarters, built between one and four units of new housing in 2007. Large builders, who built over 100 units in that year, accounted for only 2 per cent. This is shown in Fig. 30.

Figure 30

Percentage of Licensed Residential Builders by Number of New Units Started



Source: HPO Database

As 88 per cent of builders built 10 or fewer units per year, the majority of licensed residential builders are small in size. Small builders may tend to offer fewer formal training opportunities, and face more challenges in recruiting and retaining trades people and other skilled workers.

SUMMARY AND CONCLUSIONS

In this paper, Roslyn Kunin and Associates in partnership with Human Capital Strategies have examined the factors driving the new housing market in the province. These are mainly demographic and economic trends. To a lesser extent, new technological advancement being adopted in building new homes and changing consumer preferences are amongst the factors that impact new housing construction.

On demographic factors, we have examined the close relationship between net migration patterns in the past and new housing starts. Net migration includes both net interprovincial migration and net immigration. Between 1982 and 2006, net migration in the province had been growing on average 1.9 per cent per year. During the same period, new housing starts had been growing an average of 2.6 per cent per year. Looking forward, net migration is expected to grow approximately 1.1 per cent per year between 2006 and 2026, and new housing starts are expected to grow about 1.5 per cent per year. Other demographic factors include the age structure of the population and trends in household formation.

The underlying forces driving changes in net migration would be mostly economic – the perception of the level of economic activities in industries in the province, and probably just as important, social. We have researched and discussed the specifics of these economic factors and how they will play out in different parts of the province. We have also presented statistics showing the close relationship between changes in new housing prices and interest rates and new housing starts.

We have then built up our projections of the new housing demand in the province and regions based on our projections of the underlying factors. We have further utilized Homeowner Protection Office's dataset to estimate the demand by type of housing, and the resulting demand for licensed residential builders. New housing starts are projected to grow at an annual rate of 1.5 per cent per year. We expect new housing starts will grow from 37,600 in 2008 to 49,400 by 2026, up by about 30 per cent. Demand for licensed residential builders is expected to grow 6 per cent for single unit housing and 16 per cent for multi unit housing.

We have also examined overall labour demand for construction related trades and occupations in the province, and discussed associated labour supply issues. Labour demand from construction activities is expected to remain positive even after 2010 due to other major non-Olympic projects. On the supply side, an aging workforce is going to create additional pressure on the already tight labour market facing trades and other occupations. There is also room for improvement from the education and training sector to keep up with the growing labour and skill requirements of the future workforce.