THE FRASER VALLEY REGIONAL DISTRICT:
POPULATION GROWTH AND THE CONTEXT FOR MANAGING CHANGE

Population Growth, Fraser Valley Regional District, 1971 to 2003 Estimated, Projected to 2031

JANUARY 2005

URBAN FUTURES
Strategic Research to Manage Change

File No.: 146,769
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EXECUTIVE SUMMARY

The research contained in this report is ultimately concerned with future changes in population, employment, housing, and land use in the Fraser Valley Regional District and its five component sub-areas. These sub-areas, comprising the Regional District’s major municipalities and their immediately adjacent Electoral Areas and Reserves, include Abbotsford, Chilliwack, Mission, Harrison-Kent and Hope. This report considers the factors, trends and processes that will shape the nature and magnitude of change that will be experienced throughout the Fraser Valley over the 2003 to 2031 period.

Two factors will play significant roles in the future of the Fraser Valley’s communities: one that operates on a very local scale and one that operates at the much wider regional level. The local factor of importance will the community’s current population: as today’s residents age, their participation throughout the community and its economy will change along with their housing needs and demands for goods and services. Changes in the community’s resident population will necessitate changes in land uses in addition to social and physical infrastructure requirements throughout the Valley.

The broader scale factor of significance is the reality that the Valley’s communities play an integral part in the Lower Mainland region’s economy, culture and society. This reality means that changes in the Lower Mainland, be them economic, demographic or infrastructure related, will result in change in the Valley’s communities.

1. Demographic Change
   a) Lower Mainland

Historical estimates of the Lower Mainland’s population show that the region’s population grew from 1.21 million residents in 1971, passed two million mark around 1994, and reached an estimated 2.39 million residents in 2003. The most recent count of population (versus estimates) from the Census shows that the region was home to 2,224,515 residents in 2001, eight percent (170,450 new residents) greater than Statistics Canada’s 1996 count, and 20 percent greater than the count in 1991 (435,762 new residents).

Combining trends in migration and natural increase with the inevitable process of aging, the Lower Mainland is projected to grow from its 2003 population of 2.39 million residents to 2.66 million by 2011, past the 3 million mark by 2019 and reach 3.51 million by 2031. Over the next three decades the Region would therefore grow by 1.1 million residents, adding an average of just under 40,000 new residents each year. Annual growth rates would be in the range of 1.6 percent to 2016, before declining to the one percent range by 2031.

While growth will be significant, changes in the composition of the region’s population will be paramount. Between 2003 and 2031 the 65 to 74 age group would see the greatest relative and absolute increases, growing by 147 percent or over 261,000 people. In addition, the 75 to 84 age group would grow by 106 percent, with the 55 to 64 and 85
and older groups each growing by 95 percent. Growth in each of these age groups will significantly outweigh the 39 percent growth expected for the population as a whole. Given the fact that the largest age group in the region today is the 35 to 44 age group, the 55-plus population’s significant relative and absolute growth over the next 30 years comes as no surprise.

Compared to the 467,600 person increase in the population aged 65 and older that is expected over the next thirty years (which, in large part will be driven by the aging of existing residents), will be an increase of 496,900 people between the ages of 15 and 64. This implies that growth in the size of the working aged population in the Lower Mainland will only slightly exceed that of the retiring population, marking the region’s second major demographic transition. As when the Post World War II Baby Boom generation began to move from their parental homes, this emerging demographic reality will have profound consequences on land uses, social services, labour supply, and economic change over the coming decades.

b) Fraser Valley Regional District

Following the mid-1980s recession that saw annual population growth rates in the FVRD decline to under 1.5 percent by 1986, economic growth in British Columbia in excess of the national average pushed population growth rates in the FVRD towards a peak of over six percent by 1990. Since this period of rapid expansion, the Valley’s population has grown at a more moderate pace, increasing by between one and two percent per year. In consideration of the age specific patterns mobility, mortality and natality, the following picture of population growth and change in the Valley emerges: from its 2003 population of 254,229, the region is expected to grow to 309,116 people by 2011, 389,092 by 2021, and 462,666 by 2031. Over this 28 year period the Valley is therefore projected to grow by 208,467 residents, or by 82 percent. Annual population growth rates would climb from the current range of two percent to 2.7 percent by 2009, before declining towards the 1.5 percent range by the end of the projection period. As a point of comparison, over the past 28 years (1975 to 2003), the FVRD grew by 135 percent as it added 146,012 residents.

As at the regional level, the 55 plus population is expected to grow much more significantly than the population as a whole, each growing by between 101 and 143 percent. While growth in the 65 plus population will essentially match that of the labour force in the region as a whole, growth in the 25 to 64 population (108,619 people) will exceed that of the 65 and over population in the FVRD (45,619).

c) Fraser Valley Regional District Sub-areas

By 2031 Abbotsford’s population is projected to grow by 82 percent, as it adds 102,056 residents. Of this total growth, the largest relative growth is expected to occur in the 55

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1 This report defines the Fraser Valley’s sub-areas as follows: Abbotsford comprises the City of Abbotsford and Fraser Valley H; Chilliwack comprises the City of Chilliwack and Fraser Valley E; Mission comprises the District Municipality of Mission and Fraser Valley F and G; Hope comprises the District Municipality of Hope and Fraser Valley A, B, and D; and Harrison/Kent comprises the Village of Harrison Hot Springs, Kent, and Fraser Valley C. Each sub-area also includes the relevant local Indian Reserves.
to 64 age cohort, which would grow by 117 percent (12,897 people). By contrast, the
greatest absolute growth would be seen in the 35 to 44 age group, as it adds 16,647
individuals to Abbotsford’s population over the next three decades.

Chilliwack is expected to expand by 61,633 residents (84 percent) over the next three
decades. The greatest relative growth will occur in the 25 to 34 age group, as it grows by
10,781 people (128 percent) by 2031. In terms of absolute growth, the 65 plus population
is projected to add the greatest number of people, accounting for 13,860 or the 61,633
new residents between 2003 and 2031.

Mission’s resident population is expected to expand from its current (2003) 37,742
residents to 72,534 by 2031, resulting in population growth of 92 percent over this period.
While its 65 plus population will experience the most growth both absolutely (8,708
additional individuals) and relatively (225 percent), the 55 to 64 population is also
expected to grow substantially, adding 5,227 individuals.

Hope’s population is forecasted to grow from 9,940 people in 2003 to 13,717 by 2031.
The addition of 3,777 new residents would see this sub-area grow by 38 percent over this
period. Hope is expected to see its older age groups grow much more rapidly than its
younger age groups, evidenced by the projected 102 percent growth in the 65 plus
population (as the number of seniors increases by 1,715), versus the 25 to 34 age group
which is expected to grow by 702 people (a 78 percent increase).

Harrison/Kent is projected to grow by 6,179 people, from its 8,541 level today to 14,720
by 2031. Future population change would be led by the 65 plus cohort as it is expected to
see the greatest absolute (an additional 2,203 people) and relative growth (a 165 percent
increase) over the period. The 25 to 34 age cohort would see additions of 1,087 people (a
114 percent increase), with the slowest projected growth expected for the 45 to 54 year
old population, as they increase by 183 residents (14 percent growth).

2. Labour Force Change
   a) Lower Mainland

In general, the pattern of participation in the labour force in the Lower Mainland varies
considerably with age, being relatively low in the under 20 year old population (between
43 and 47 percent in 2001) as individuals’ complete high school. While participation
rates increasing significantly for the 20 to 24 age group (to approximately 75 percent),
the most dramatic increases are seen once post-secondary education is completed where
participation increases in to the range of 80 to 87 percent for the 25 to 29 age group.
From this point, participation rates remain relatively constant up to the age of 55 (for
females at 78 percent; for males at about 90 percent) where early retirement begins to
reduce the proportion of individuals actively participating in the labour force.

Given underlying trends in participation age and sex specific participation rates and the
nature of population change anticipated in the Lower Mainland over the coming three
decades, the labour force is expected to grow from roughly 1.32 million today (2003) to
1.96 million by 2031. Although projected to grow by 641,000 people, this growth will occur at a significantly declining rate: between 2003 and 2011 labour force growth would be in the range of 1.7 percent per year, declining thereafter as the first half of the post-WWII boom generation begins to enter the retirement stage of the lifecycle. At this point annual growth in the region’s labour force would fall to the 1.3 percent range by 2021, and further to 1.2 percent by 2031. Even with the projected increases in participation rates, it is insufficient to outweigh the demographic effect that an aging population will have on the size of the Lower Mainland’s work force.

b) Fraser Valley Regional District

Combining projected age and sex specific labour force participation rates for the FVRD with projected change for the Valley results in a labour force that would grow from a base of 133,580 participants today (2003) to 253,673 in 2031. The net addition of 120,093 labour force participants would result in the total labour force growing by 90 percent between 2003 and 2031. Following trends in population growth, annual growth in the size of the labour force would increase in the near-term (in the range of three percent) before falling to approximately 2.0 percent by 2018, and then stabilizing in the range of 1.7 percent by the end of the projection period.

3. Employment Change

a) Lower Mainland

According to the 2001 Census (not adjusted for the undercount) there were 1,094,065 people employed in the Lower Mainland. Commercial Services dominated the region’s employment structure in 2001, accounting for an estimated 292,595 jobs, or 27 percent of the total. This dominance is explained by three factors: the range of activities included in the industry definition, the fact that employment in urban regions have largely become based in service activities (a result of their population serving nature), and the continually increasing role of service industries in economic activity locally, nationally, and globally. For similar reasons, the Retail Sector forms the second largest employer in the region, accounting for 12 percent of regional employment (130,680 jobs) followed by Manufacturing (112,415, ten percent), Health and Welfare Services (105,610, ten percent) and Transportation, Communications and Utilities (93,520, nine percent).

As Primary industries (fishing, logging, mining, trapping and farming) do not generally comprise urban activities, employment in this sector accounts for only 25,165 jobs, or two percent of the Lower Mainland region’s employment. The remaining sectors each account for between six percent (Construction) and seven percent (Finance, Insurance and Real Estate) of total regional employment.

By 2031, total employment in the Lower Mainland is projected to be 63 percent greater than in 2003, as 722,259 jobs would be added to the 1,152,871 seen today; this would result in total 2031 employment of 1,873,600 jobs. The average increases in employment of 1.5 percent per year over the projection period compares to the average annual
increases experienced in the region over the past three decades of over 3.0 percent – once again reflective, in part, of a slowing in the growth of the region’s population.

The projection shows that the most rapidly growing employment sector in the region over the next three decades would be Finance, Insurance and Real Estate (FIRE), with this sector growing by 89 percent, to 151,028, by 2031. The second fastest growing employment sector would be Education, which is projected to grow by 76 percent, adding 65,300 employees as it grows from 85,800 to almost 151,150 people. Health, Welfare and other social services would be the next fastest growing sector, increasing by 73 percent (adding 86,700 jobs). Employment in these three sectors alone would collectively account for almost one-third of the total projected gains in employment.

The next three fastest growing sectors, Construction (69 percent overall growth, adding 45,200 jobs), Commercial Services (65 percent, 201,900) and Public Administration (65 percent, 32,600), would account for another 279,700 new jobs in the Lower Mainland over the next three decades. Each of the remaining sectors would grow more slowly than the regional average of 63 percent, with the Retail Sector growing by 62 percent (85,100 new jobs), TCU by 50 percent (49,600), Wholesale by 49 percent (34,500), Primary by 43 percent (11,360), and Manufacturing by 34 percent (37,500).

b) Fraser Valley Regional District

The Fraser Valley’s 2001 employment base consisted of 96,825 jobs; of this, the Education, Health, and Welfare sector represented the largest share of employment, with 17,407 jobs, or 18 percent of total employment. This sector was followed by Retail Services with 13,195 jobs (or 14 percent of total employment). These two sectors were followed by a group of industries that each accounted for roughly the same proportion of jobs in the Valley: Business Services accounted for 9,953 jobs, or ten percent of the workforce; Primary Industries accounted for 9,753 jobs (ten percent), Accommodation and Food consisted of 9,344 jobs (also ten percent), Manufacturing accounted for 9,032 jobs (nine percent), and Construction with 8,434 jobs (nine percent). Employment in the remaining sectors comprised much smaller shares of the FVRD’s 2001 employment base, with the Government, TCU, FIRE, and Wholesale sectors collectively accounting for 19,707 jobs, or 20 percent of the Valley’s total.

Over the next three decades the number of jobs in the Fraser Valley is expected to grow by 116 percent, as 117,726 new jobs are added to the 2003 base of 101,685. Education, Health, and Welfare would see the greatest absolute gains, adding 26,397 jobs in the Valley (143 percent growth) by 2031. The sector that is expected to show the most relative growth over the period would be the Finance, Insurance, and Real Estate, with job gains in the order of 189 percent, representing an additional 9,260 jobs. Other sectors that are expected to show strong growth over the next three decades are Primary industries (17,589 new jobs, a 175 percent increase), Business Services (18,391, 172 percent), and Retail (14,126 jobs, 103 percent). It is estimated that these five sectors combined will account for approximately three-quarters of all new jobs created in the Fraser Valley by 2031.
Of the remaining sectors, Transportation, Communication and Utilities is expected to grow by 110 percent (6,347 jobs), Construction by 83 percent (7,243), Government Services by 70 percent (4,521), Manufacturing by 60 percent (5,597), Wholesale by 52 percent (5,494), and Accommodation and Food sector activities by 28 percent (2,760).

c) Fraser Valley Regional District Sub-areas

Employment in Abbotsford is expected to grow by 58,580 jobs, or 110 percent, between 2003 and 2031. The largest relative and absolute gains in employment over this period are expected in the Business and Personal Services Sectors (which includes: business services; finance, insurance, and real estate; and accommodation and food services). This sector is expected to add 22,364 jobs (for 169 percent growth), accounting for almost 40 percent of Abbotsford’s total employment growth.

Chilliwack is expected to grow from its 2003 job base of 27,788 to 62,220 by 2031; the addition of 34,432 new jobs would see total employment in Chilliwack grow by 124 percent. Again, similar to Abbotsford, the Business and Personal Services sector is likely to experience the most employment growth over the next three decades, adding 13,329 jobs for an increase of 191 percent over its 2003 level.

Total employment in Mission is projected to grow from its base of 14,465 today (2003) to 33,134 by 2031. Adding 18,670 new jobs in Mission would see employment grow by 129 percent over the coming three decades. As in Abbotsford and Chilliwack, the Business and Personal Services sectors are expected to see the greatest absolute growth (7,137 new jobs) and relative growth (an increase of 205 percent) over this period. The Health, Education, and Government Services category is also expected to grow significantly, adding 5,006 jobs.

Employment in Hope is expected to grow from 3,123 in 2003 to 5,508 by 2031, representing an increase of 76 percent. In addition to representing the largest share of employment within Hope today, Business and Personal Services are also expected to experience the greatest absolute growth by 2031 (adding 980 jobs), while employment in the Trade sectors (retail and wholesale) will see the largest relative increase, growing by 96 percent (as 348 jobs are added).

Employment in Harrison/Kent is expected to grow by 114 percent between 2003 and 2031 as 3,660 new jobs are created. Business and Personal Services are once again expected to add the greatest absolute number of jobs in Harrison/Kent, adding 1,430 new jobs. Employment in the Trade sectors is expected to exhibit the greatest relative growth (at 215 percent), as it accounts for 578 of the 3,660 jobs added in Harrison/Kent by 2031.
4. Housing Change
   a) Lower Mainland

Over the past decade the Lower Mainland added roughly 17,000 dwelling units each year, with the housing stock growing at an average annual rate of 2.3 percent. Over the most recent Census period (1996 to 2001) the Region added slightly fewer units, an average of 14,000 private dwelling units per year, or annual growth in the range of 1.8 percent.

Over the next three decades a growing and changing population would see housing in the Lower Mainland grow from 911,387 units today (2003) to 1.47 million units by 2031. This represents growth in housing occupancy of 61 percent, versus a 48 percent increase in the Lower Mainland’s total population. Rapid growth in the 45 plus population will combine with high household maintainer rates in these age groups, resulting in housing occupancy demand growing faster than total population over the coming decades.

Of the total increase in housing occupancy demand, ground oriented housing (which includes single detached, semi-detached, apartment/flat in detached duplex, row house, other single-attached, and mobile and moveable dwellings) accounted for 57 percent of the additional demand (317,240 units), while apartment dwellings (which include units in buildings five storeys and above and buildings under five storeys that share a common entrance) accounted for the remaining 43 percent (239,130 units). While the dominant household type will remain one occupying a ground oriented dwelling (with the stock growing to 905,075 units), rapid growth in the apartment segment (74 percent over the coming three decades) would lead to the proportion of apartment units in the Region’s total housing stock growing from 35 percent in 2003 (323,555 units) to 38 percent by 2031 (562,681 units).

   b) Fraser Valley Regional District

Compared to projected population growth of 82 percent in the Valley between 2003 and 2031, household occupancy demand in the Valley is expected to grow by 89 percent. On an absolute basis, the region’s housing stock is projected to grow from 92,800 occupied dwelling units in 2003 to 114,941 in 2011, 146,069 in 2021, and 175,420 by 2031. Between the two broad dwelling structure types, occupancy demand will be greater for ground oriented homes, with net additional demand expected to make up 56,740 of the 82,620 additional units (69 percent). While demand for apartments will see more rapid relative growth (increasing by 131 percent), ground oriented units will continue to form the bulk of the housing stock. Between 2003 and 2031 25,880 new apartment units are expected to be added in the Valley to accommodate projected demand.

   c) Fraser Valley Regional District Sub-areas

Of the five sub-areas considered in this report, Abbotsford currently has, and will continue to have, the largest housing base. Overall growth in the number of total housing units over the 2003 and 2031 period to accommodate anticipated demand will be in the neighbourhood of 93 percent, as 40,687 dwelling units are added in Abbotsford. Of this
total, 25,901 (64 percent) would be ground oriented units, which would see the ground oriented stock grow by 81 percent, while the remaining 36 percent – 14,786 units - would be in the form of apartment units (125 percent growth)

Housing demand in Chilliwack is expected to grow from 28,730 today to 53,015 by 2031, or by 85 percent. Of these 24,285 new units, 72 percent, or 17,555, would be in the form of ground oriented homes, representing a 76 percent increase over 2003. As well, 6,730 of the total net additional units will be in the form of apartment dwellings (118 percent growth). Thus, while apartments would see greatest relative growth, ground oriented units would represent much larger absolute additions to Chilliwack’s existing stock.

Between 2003 and 2031 the District Municipality of Mission is projected to see its housing stock increase twofold, from 13,116 to 26,430 units. The addition of 13,314 units would see its total housing stock expand by 102 percent. As in the other Municipalities, ground oriented units are anticipated to comprise the largest portion of growth, increasing by 10,155 units, or 87 percent. By comparison the number of apartment dwellings is expected to grow by 3,159 units (an increase of 225 percent). Once again, while apartment units would see the greatest relative growth, the stock of ground oriented units will continue to make up the bulk of dwellings in the Municipality over the next three decades.

In Hope, total housing stock growth of 44 percent is projected as 1,736 units are anticipated to be added to fulfill anticipated demand. The majority of these additions (71 percent) would be seen in ground oriented formats (1,240 units, or 35 percent growth), while the remainder would be in the form of apartments (an additional 495 units, for increase of 125 percent). Based on this projected pattern of growth, it is expected that ground oriented dwellings will continue to dominate Hope’s housing landscape.

By 2031, Harrison/Kent is projected to see occupancy demand grow by 2,601 units, an increase of 83 percent over 2003. Comprising this total growth would be demand for ground oriented units growing by 68 percent (1,890 additional units) and apartments by 188 percent (711 additional units). As such, ground oriented units will continue to account for the majority of Harrison/Kent’s housing stock in 2031, with 73 percent versus the 27 percent seen in apartment units.
THE FRASER VALLEY REGIONAL DISTRICT:
POPULATION GROWTH AND THE CONTEXT FOR MANAGING CHANGE

I. INTRODUCTION

This research is specifically concerned with future changes in population, housing, employment and land use in the Fraser Valley Regional District and its 5 component sub-areas. These sub-areas, comprised of the Regional District’s major municipalities and their immediately adjacent areas, include Abbotsford, Chilliwack, Mission, Harrison-Kent and Hope. It considers the factors, trends and processes that will shape the nature and magnitude of change experienced throughout the Fraser Valley in the future, and presents trend based scenarios of future change for the 2003 to 2031 period.

Two factors will play significant roles in the future of the Fraser Valley’s communities: one that operates on a very local scale and one that operates at the much wider regional level. The local factor of importance is the community’s current population: as today’s residents age, their participation in the economy and their requirements for personal goods and services, as well as housing, will also change, necessitating changes in land uses and infrastructure requirements throughout the Valley.

The wider scale factor of significance is the reality of the Fraser Valley communities’ integral participation in the Lower Mainland’s economy, culture and society. The reality that the communities of the Fraser Valley are not merely situated in the Lower Mainland, but are a functional part of it, means that change in the Lower Mainland results both from, and in, change in the Valley’s communities.

This has not always been the case. Decades ago the communities of the Fraser Valley were part of the primary resource economy of the province, with changes in the farming, fishing, mining and forestry industries bringing cycles of boom and bust activity to these communities; this was in contrast to the booms and busts of the metropolitan economy that were generally contained within the borders of the Burrard Peninsula. Over the more recent past this division has become less prominent, with growth and change in the metropolitan economy coupled with increased accessibility throughout South Western BC serving to expand the spatial impact of the metropolitan region to encompass all communities from Howe Sound to Hope. Increasingly the communities centered on Squamish and Gibsons are also being considered integral parts of the Lower Mainland’s economy and society as the spatial extent of the metropolitan region continues to grow. This has resulted in the contemporary situation where, while primary industries still play a vital role in economic activity, it is the metropolitan based economic activities and its workers that engender fundamental change in the Valley’s communities.

Today, the majority of households in Fraser Valley communities do not earn their incomes from primary industry activities such as farming or forestry. Rather they earn their incomes from metropolitan based activities ranging from manufacturing, processing and transportation, to population serving activities such as retailing, teaching and health care. This has broadened the geography of where residents of the Valley communities
work and, in turn, where the Valley’s workforce lives. Rather than being tied to the local land base, residents of Valley communities now have employment options located throughout the Lower Mainland. Similarly, those working within the Valley economy have housing options that stretch throughout the Lower Mainland.

The communities of the Fraser Valley have become integral parts of the Lower Mainland’s economy, labour market, and physical environment. There are few aspects of community life in the FVRD that are not fully part of its Lower Mainland equivalent: housing, transportation and communication; land use and infrastructure; recreation; education and health care; and air and water are all affected by, and affect, the broader region.

Thus, while the focus of this research is on the five component communities of the Fraser Valley, much of this report considers the patterns of change that will occur at the Lower Mainland and Fraser Valley Regional District levels before considering change at the community level. It will be these regional changes that will provide the context for change in the Valley communities over the coming decades. The first major portion of this report, therefore, discusses the region as a whole, examining trends and projecting future change in the Lower Mainland’s population, housing, employment and labour force that will both shape, and be shaped by, changes that occur in the Valley communities. A full understanding and appreciation of the pattern of, and options for, future change in the Valley necessitates an understanding and appreciation of trends and patterns of change at the Lower Mainland, provincial, and national levels.

The second major portion of this report focuses on the Fraser Valley Regional District as an entity. There are two major reasons for examination of change at this level, one pragmatic and one functional. The pragmatic reason is that the Fraser Valley Regional District represents a distinct jurisdictional entity within the province, having statutory responsibility for change management strategies affecting land use, transportation and the environment. The functional reason is that while the each of the five component communities within the FVRD are distinct, each with their own characteristics and resources, they have much more in common with each other than they have with communities in other parts of the metropolitan region. Their spatial proximity, core of current common characteristics, and interconnectedness logically require addressing demographic, economic and land use change at the Regional District level. The final major portion of this research (to be provided as a separate report) will present projections of economic and demographic change for each of the 5 major communities in the Fraser Valley Regional District.

The focus of this report is on the change that time will bring to the current residents of the Valley, as well as to the new residents that join these communities over the coming decades. Demographic change will be most dramatic: the current age profile of the population in Fraser Valley communities means that without welcoming new families to the Regional District the proportion of the population aged 65 plus would grow from its current 14 percent to 24 percent in 2031. Even with the projected number of new
households being added to each community, the seniors’ population would increase from 14 to 18 percent of the FVRD’s total population by 2031.

This aging is parallel to a similar pattern of change that will be seen in the demography of the Lower Mainland where, without migration, the 65 plus population would increase to 28 percent of the total population from today’s 12 percent; even with migration, this segment of the population would grow to 22 percent. Consequently, this aspect of demographic change will present many challenges that will have to be dealt with head-on, now and in the coming years. The following example emphasizes this point.

One by-product associated with an aging population is an increase in the demand for health care services; which will require, at the very least, a constant - if not a growing - number of registered nurses and nurse supervisors at a time when the retirement of the current stock of these health care professionals will be reaching record numbers. The most recent Census showed that 52 percent of the registered nurses and nurse supervisors in the FVRD, and 47 percent in the Lower Mainland as a whole were 45 years of age or older in 2001. As such, assuming that the retirement pattern of the 1990s will continue to prevail over the coming decade, one-third of the 2001 nursing population in the region will have retired by 2011. In the case of the Lower Mainland, this reality will necessitate the recruitment of 4,800 new nurses and nurse supervisors during this period – an 86 percent increase in recruitment when compared to that which was seen between 1991 and 2001 - merely to keep the number of health care professionals constant.

In addition, if the region is to attract new nurses to fill those spots it will have to ensure that it can not only provide affordable housing for these nurses, but also adequate transportation infrastructure to their places of work, schools for their children, and all of the other social and physical infrastructure that they require for their lives. Moreover, to the extent that the 4,800 nurses who retire over the next decade continue to be residents of the Lower Mainland, replacing them will involve an increase in the region’s population by at least an additional 4,900 people (as the new nurses will have families of their own). Therefore, the focus of future land use and infrastructure planning strategies will be on change, and change management, and not merely on growth.

In this respect the fundamental land use change management questions include, on a broader level: a) where are the next generation of workers - people who will increasingly provide goods and services to the region’s residents and who earn the incomes that, directly and indirectly, pay for social services in the region - and their families going to live?; and b) how are they going to travel between work, home, daycare, hockey practice and band recital? The answers to these questions will, together with the aging of the current population and the changes they will undergo, provide the information required to set the strategies for land use, infrastructure, and community planning in the Fraser Valley Regional District over the coming decades.
II. THE TIMING OF, AND PLANNING FOR, POPULATION PROJECTIONS

Two organizations, BC Statistics and Urban Futures, currently maintain demographically-based forecasting models to project the future size and composition of population in the province, regions and communities of British Columbia. The population projections developed by Urban Futures are based on a cohort survival methodology which accounts for each of demographic component (changes in birth and death rates, and changes in net migration) by age and sex on an annual basis. Being a trend-based forecast, these projections are based on the extension of long-run trends in the Fraser Valley’s, the Greater Vancouver’s, and the Lower Mainland’s population, both in terms of its vital rates (natality and mortality) and its net migration levels, including intra-provincial, inter-provincial and international migration.

Figure 1 In its most recent series of population projections (PEOPLE 29) BC Stats projects the Lower Mainland population to increase by 930,000 residents between 2003 and 2031 as it grows from 2.39 to 3.31 million residents (Figure 1). Adding almost a million more people would involve a far slower pace of growth than has been experienced historically in the region: BC Statistics anticipates the rate of population growth in the Lower Mainland to remain in the range of 1.5 percent per annum over the coming 15 years, before declining into the one percent range by 2030. This growth rate is in contrast to the past decade which saw annual growth average just over two percent, and far lower than early-1990s peak where annual growth in the Lower Mainland peaked at 3.3 percent.

The most recent projection of the Lower Mainland’s population prepared by Urban Futures indicates a similar pattern of change over the coming three decades (Figure 2). Over the coming three decades Urban Futures projects that the Lower Mainland’s population will increase by 1.12 million residents as it grows from its current population of 2.39 million (2003) to 3.5 million people by 2031. Again, this change is expected to
occur at a much slower pace than has been experienced historically, with annual growth remaining in the range of 1.5 to 1.6 percent over the next 15 years, before declining towards the one percent level by 2031.

BC Statistics current projection of 3,310,924 and Urban Futures of 3,567,853 residents represents a difference of 256,929 residents (or 7.5 percent) by 2031. While there are a number of minor differences between the two projection methodologies, there is one major difference lies in the projected level of immigration to Canada, and hence to the Lower Mainland. BC Statistics links their projection to Statistics Canada’s assumption of a constant number of immigrants to Canada (250,000 per year) over the coming three decades and applies a trended declining share of this immigration to determine the Lower Mainland’s share over the coming three decades.

Urban Futures projections adopt a different approach. Recognizing the demographic consequences that an aging Canadian population will have on the demand for, and supply of, workers in Canada, Urban Futures projects annual immigration to Canada to increase from its recent 0.63 percent of the population to 0.80 percent by 2026. This results in a national immigration level that is lower than the Statistics Canada’s 250,000 per year until 2012, and higher thereafter, reaching 308,800 immigrants by 2031. In spite of these different approaches to determining immigration levels over the coming decades, the two projections are essentially indistinguishable between 2003 and 2012. However, beyond 2012 Urban Futures immigration assumptions become more prominent as immigration begins to play a larger contribution in population growth, largely due to a reduction in the contribution of domestic sources of population growth as our population ages and fertility rates continue to decline.

The strategic advantage of considering the timing of attaining population thresholds is reinforced through evaluation of recent, rather than merely the most recent, projections for the Lower Mainland. The base reference used here is PEOPLE 29, which has the Lower Mainland’s population reaching 3.3 million people by 2031 (Table 1). Mapping the date that the 3.3 million figure was attained in previous projections shows that it was reached by 2028 in BC Statistics PEOPLE 28 projection, two years earlier in the P27 projection, only one year earlier (2028) in the P26 series, and as early as 2023 if the P23 and P24 projections are considered. By contrast, this population is attained by 2026 in Urban Futures most recent (2004) projection as well as in a projection conducted in 2002. Current projections from BC Statistics for the Lower Mainland are therefore the lowest projections seen over the past decade.

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<th>Timing of Regional Population Projections</th>
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<tr>
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<tr>
<td>Urban Futures 2002</td>
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<td>Urban Futures 2004</td>
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<td><strong>Mean</strong></td>
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<td><strong>Std. Dev. (years)</strong></td>
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* estimated
If all of these projections are considered collectively a mean date for achieving 3.3 million residents would be 2026. Given the range illustrated in Table 1, a standard deviation around this mean of approximately three years can be calculated. This indicates that, given the range of approaches, assumptions and timing of growth for the Lower Mainland, it is reasonable to anticipate the region will grow to 3.3 million residents by 2026, give or take roughly three years.

In considering the range of projections for the Fraser Valley Regional District, a slightly different situation is seen. Again using the current BC Statistics projection of 418,000 residents in the Valley as a baseline, while the P29 series reaches it in 2031, previous projections have been more conservative, attaining the baseline sometime between 2032 and 2035. These more conservative projections are in contrast to the P23 and P24 series which saw more robust growth for the valley: the baseline was achieved between 2025 (P23) and 2027 (P24), four to six years earlier than the current projection. Urban Futures most current projection reaches the 418,000 mark in 2025, three years later than our previous projection for the Valley, and six years before the most recent BC Statistics projections. Again, considering the spectrum of dates presented in these projections, it is reasonable to postulate that the Fraser Valley Regional District will reach a population of 418,000 residents by 2028 (the mean date of all projections), give or take five years (the standard deviation around the average).

What do these two projections tell us? The fundamental and unquestionably important point is that they agree that sometime between 2026 and 2031 the Lower Mainland will reach a population of 3.3 million residents. What both projections are saying is that the FVRD and GVRD should collectively plan for a population of 3.3 million people within the next twenty five years, give or take a couple of years. Within the functional region, the Greater Vancouver portion should reasonably anticipate growing to a population of just under three million by roughly 2026, give or take three years, while the Fraser Valley component should be planning to reach the 418,000 mark by 2028, give or take five years. [It should be noted that the greater standard deviation in timing of the Fraser Valley projections results from its smaller population base, and the greater variation in annual growth rates that result. Conversely, the GVRD’s population, due to its larger base, sees less dramatic relative change on an annual basis. For example, given its 1.1 million residents the GVRD would have to add ten times as many people as the FVRD in a particular year to grow by the same rate. The greater degree of stability that comes with the larger population base in turn results in a lower standard deviation for the GVRD].

Within the context of strategic planning, of anticipating infrastructure, land use, and financing requirements, this is the magnitude of future growth and change that should be considered and planned for. There are few, if any, strategic planning considerations where the difference in timing between the BC Statistics and Urban Futures projections is worthy of serious consideration. While any particular plan may chose to use the low, the high or the average for a particular year, functionally it must anticipate that within a 5 year window the 3.3 million mark will be reached. It may be reasonably argued that it
would be most appropriate to plan for the earlier attainment of this level, as the consequences of having capacity a couple of years early are generally easier to mitigate than of not having them when they are needed.

The variance in the timing of these projections, both within BC Statistics and between the two organizations, illustrates the nature of forecasting and its importance in the context of strategic risk management. Part of a strategic approach to managing uncertainty is to consider a range of alternatives in order to map out the conditions within which programs are viable and, more importantly, are not viable. Finding ways of dealing with the uncertainty that the future presents therefore goes hand-in-hand with developing reasonable projections of it. Within this context, while the magnitude of growth is what is typically of concern in a planning framework, a firm understanding the assumptions that underlie the projections is the best tool the Valley can employ mitigate uncertainty in the coming decades.
III. THE LOWER MAINLAND AS A CONTEXT FOR GROWTH AND CHANGE IN THE FVRD

3.0 The Lower Mainland's Demographic History

Historical estimates of the Lower Mainland’s population show that the region’s population grew from 1.21 million in 1971, passed two million in 1994, and reached an estimated 2.39 million residents in 2003. The most recent count of population (versus estimates) is from the Census conducted every five years by Statistics Canada. According to the 2001 Census count, there were 2,224,515 residents in the Lower Mainland, eight percent (170,450 new residents) greater than Statistics Canada’s 1996 count and 20 percent greater than the count in 1991 (435,762 new residents).

The 2001 estimate of the Lower Mainland’s population of 2,323,841 was roughly four percent greater than Statistics Canada’s 2001 Census population count of 2,224,515. The reason for the difference is that Statistics Canada estimates, based on verification reporting, that approximately four percent of the total population is missed in the Census enumeration process. This is referred to as the Census Undercount. Given this undercount factor, estimates for the Lower Mainland’s historical and base populations include adjustments for the Census undercount.

Historically, annual population growth in the Lower Mainland has demonstrated a great deal of variance, ranging from highs of over three percent annual growth to lows of under one percent. In spite of this great degree of variance, a general trend towards a slowing rate of population growth has been seen, in part the result of changing demographics, and in part due to mathematics.

The demography of an aging population has, over the past two decades, combined with declining natality rates to contribute to a declining rate of population growth: the 23,900 births in the Lower Mainland in 2003 were fewer than those seen a decade ago, despite a larger population. Another contributing factor to a slowing rate of growth is mathematical: as the size of the region’s population grows, the base value for the calculation (i.e. the total population) increases, resulting in future increments having a smaller relative impact on growth.

Within the general pattern of a slowing rate of population growth, a cyclical pattern of change is also
evident, driven primarily by relative economic circumstances at provincial, domestic, and international levels. During the late 1980s and early-1990s recessions, economic change, and administrative restructuring in Alberta and Ontario pushed people (labour force migrants, families and retirees) towards a robust economy in British Columbia. At the same time the province grew rapidly as a result of international factors such as the “Asian Tiger” economic boom, political uncertainty in Hong Kong and Taiwan, and changes in federal immigration regulations in Canada. The result was a period of significant growth throughout the province, with annual growth rates peaking at over three percent in the early-1990s (Figure 3).

Accompanying growth in the region’s population has been a significant change in its composition. Since 1946, the region’s age profile (and the rest of Canada’s) has been dominated by the aging of the boom in births which produced the large population cohorts of the World War II War babies and the Post War Boom. For example, in 1971, 36 percent of the Lower Mainland’s population were between the ages of 5 and 24 (Figure 4). This cohort, born between 1947 and 1966, represents the Post World War II Baby Boom Generation who, together with their international and domestic migrant counterparts, accounted for the 32 percent of the Region’s population when they were between 37 and 56 in 2003.

While time, via migration and mortality, tempers much of the distinction in the older segments of the population age profile, it still shows the impact of historical changes in birth rates. For example, the low level of births in Canada during the First World War is marked in the profile by the notch between the ages of 51 and 56 in 1971, and the step in the 2003 age profile at age 88, both corresponding to the number of births between 1915 and 1919. Both age profiles also show the impact of the low level of births during the Great Depression, with a notable “waist” occurring in the mid-30 year old age groups in the 1971 profile and a slightly fewer number of people in their mid-60s in the 2003 profile.

The marked step in the age profiles at age 24 in 1971 and 56 in 2003 indicate the first of the Post World War II boomers. Note that in the 1971 profile the number of boomers is relatively constant, with the age profile dropping almost straight down to roughly age seven, while in the 2003 profile the number of boomers just keeps on increasing down to roughly age 40. The difference is explained by the migration of baby boomers from the
rest of the province, the country, and the world to the Lower Mainland between 1971 and 2003.

The age profile of the Lower Mainland, and the rest of Canada, is currently very robust demographically, as it has the overwhelming majority of the population in the middle age groups, working to earn their living, paying their taxes, and contributing to health care and pension plans. The result, when combined with the fact that there is a relatively small percentage of the population in the oldest and youngest age groups – those who utilize social programs more than anyone else - is that there are currently few demographic challenges facing these programs. However, over the coming decades, through the inevitable process of aging, this profile will change significantly as the bulge of the baby boom shifts into the higher social service utilization (and lower labour force participation), stages of the lifecycle. Opposing the blossoming of the top of the age profile over the coming decades will be a relative contraction in the young domestic population due to continued declines in birth rates.

a. The Components of Demographic Change

The first component of change that is typically considered in a demographic projection is natural increase, or the difference between the number of births and deaths that occur each year. Since 1971 natural increase has been a relatively constant source of population growth, adding an average of 10,700 people to the Lower Mainland each year (Figure 5). The gradual decline in the contribution of natural increase (from a peak of 14,257 in 1980 to the 9,074 in 2003) is a result of the gap narrowing between the annual number of births and deaths. This results from the low, and declining, birth rates seen in the Lower Mainland and the aging of the leading edge of the Baby Boom generation into higher mortality stages of the lifecycle. This pattern of a declining contribution of natural increase will continue, and accelerate, in coming decades as all of the 1938 to 1967 birth cohort ages out of the childbearing stage of the lifecycle and into one characterized by rapidly increasing mortality rates.

In contrast, net migration (the sum of net immigration, net inter-provincial and net intra-provincial migration) has, on average, been the largest component of population growth in the Lower Mainland. Since 1971, net migration has added an average of over 33,000 people to the region.
each year, three times the contribution of natural increase. Although a much larger contributor, the net flow of migrants has been much more varied than that of natural increase: the largest contribution was in 1993 when net migration brought more than 68,600 new people to the region. By 2003 net migration had declined into the range of 20,500, rivaling the lows that characterized the late-1970s and early-1980s.

b. Biology, Mobility and the Lower Mainland’s Future Population

Combining the process of aging with the future levels and composition of migratory flows and the profile of age specific natality and mortality provides the basis for a projection of the Lower Mainland’s population over the coming decades. Given the role that international and domestic migration has historically played in shaping the Lower Mainland’s population, these migratory flows will continue to have a significant impact on the future composition and size of the region’s population. Having said this, it will be the inevitable process of aging that will offer the greatest change, as net additions to the regional population will slow - but not stop - the aging of the Lower Mainland’s existing residents from the late family stages of the lifecycle into retirement.

i. Net Migration. In considering the future level of migration of people into and out of the Lower Mainland, it is necessary to acknowledge broader national and international economic factors, including the relative stabilization of economic activity in the provinces of Saskatchewan, Manitoba, Quebec and the Maritimes, and strong growth in Alberta and Ontario. While short-term economic conditions will certainly influence the magnitude of the migratory flow, these provinces will not, over longer-term horizons, be a source of increasing in-migrants for the Lower Mainland. Given constraints on the supply of, and competing demand for, labour from countries that also experienced a post World War II baby boom, the international flow of migrants is also expected to be far more competitive in the coming decades.3

Given national and international demographic and economic factors, it has been assumed that the long-run level of net migration to the Lower Mainland will average 47,300 people per year over the next three decades.

Given these national and international factors, it has been assumed that the long-run level of net migration to the Lower Mainland will average 47,300 people per year over the next three decades (Figure 6). This projection balances out the significantly lower levels of net migration experienced in recent years with the substantial gains seen in the 1986 to 1996 period.
again reflecting the labour challenges that will be experienced in other regions both domestically and internationally.

ii. Natural Increase. With respect to projecting natural increase, between 2003 and 2031 the annual difference between births and deaths is expected to add an average of 3,400 people annually to the region. Continued declines in birth rates, and the aging of the bulk of the region’s population out of the family formation stage of the lifecycle, will lead to natural increase falling from an average of 7,000 over the next decade to just 3,800 between 2014 and 2023. Given the narrowing gap between births and deaths, it is expected that by 2026 the below replacement level birth rate will combine with the Boom generation reaching the higher mortality rate stage of the lifecycle to result in the annual number of deaths exceeding the annual number of births, a point at which natural increase will actually become natural decrease (Figure 6).

iii. Putting it all Together. Combining trends in migration and natural increase, the inevitable process of aging would take the Lower Mainland from its 2003 population of 2.39 million residents to 2.66 million by 2011, just over the 3 million mark by 2019 and to 3.51 million by 2031 (Figure 7). Over the next three decades the Region would therefore grow by 1.1 million residents, adding an average of just under 40,000 new residents each year. Under this projection, annual growth would be in the range of 1.6 percent to 2016, and would decline thereafter to just over one percent by 2031.

When compared to historical growth rates ranging between one and three percent, projected growth rates fall below historical averages and are more in line with the 1.1 percent growth rates seen between 2002 and 2003. There are two fundamental reasons for the slowing in the rate of population growth in the coming decades, the first being the assumption of a slowing relative contribution of net migration to total population growth and the second being the fundamental shift from natural increase being a positive contribution to population change to a negative one by 2026. Driving the decline in the contribution of natural increase (and to some extent the flow of migrants) will again be the significant aging of the Region’s, and Canada’s, population.
Growth will certainly be one characteristic defining the region over the coming decades, as adding a million new residents to the Lower Mainland will have wide-ranging implications on many facets of planning. Change, with respect to the changing composition of the population, will be another, with the aging of the region’s 2.4 million existing residents having equal, or potentially wider-ranging, implications. Figure 8 shows that while the aging of the boom generation (the leading edge of which are now 56 years of age) will cause the number of seniors to expand rapidly, low fertility rates and net migration will essentially only maintain the size of the younger population over the next three decades.

Between 2003 and 2031 the greatest absolute and relative growth in the Region will be that of the 55-plus population (Figure 9). The 65 to 74 age group would see the greatest relative and absolute growth by 2031, growing by 147 percent, adding over 261,000 more people. In addition, the 106 percent increase in the number of people between the ages of 75 and 84, and the 95 percent growth in the number of people between the ages of 55 and 64 and those 85 and older, would each outweigh the 39 percent growth expected for the total population. Given the fact that the largest age group in the region today is the 35 to 44 age group, the 55-plus population’s significant relative and absolute growth over the next 30 years comes as no surprise.

While discussions of population projections tend to be framed with respect to the net additional number of people expected in the region, it will largely be the aging of today’s residents that will frame issues of community and regional planning over the next three decades. Compared to the 467,600 person increase in the population aged 65 and older over the next thirty years (which will largely be driven by the aging of existing residents), will be an
increase of 496,900 people aged 15 to 64. This implies that growth of the working aged population in the Lower Mainland will only slightly exceed that of the retiring population. This emerging demographic reality will have profound consequences on land uses, social services, economic change and labour supply in the future, many issues which are outlined in further sections of this report.
3.1 Labour Force in the Lower Mainland, 2003 to 2031

As a context for managing growth and change in the future, this section considers the role of age specific labour force participation, or the percentage of the population by age who are active in the labour force, as one of the major mechanisms that will shape demographic and economic change both regionally and locally. It presents a scenario for how trends in age specific labour force participation would interact with an aging population as a precursor to outlining projections of employment for the Lower Mainland. The interaction of the labour force and employment projections becomes fundamentally important in rationalizing the population projections, as the nature and magnitude of employment growth in the Lower Mainland over the next three decades will, in part, be determined by size and composition of labour force available to work. This, by default, will be driven by population growth and change projected for the region.

a. Labour Force Participation in the Lower Mainland

The pattern of participation in the labour force changes considerably with age, being relatively low in the under 20 year old age groups (as individuals complete high school), increasing significantly for the 20 to 24 age group, and again once post-secondary education is completed in the 25 to 29 age group (Figure 10). From this point, participation rates remain relatively constant up until the age of 55 where early retirement begins to reduce the proportion of individuals actively participating in the labour force. Differences in male and female participation rates are also noteworthy, with female rates generally being lower than male rates once the family formation stage of the lifecycle is reached.

While the historical patterns of change in labour force participation over the past three decades were considered nationally in order to forecast future rates, it was also necessary to recognize potential labour challenges that will inevitably result from an aging population as the bulk of the Post World War II Baby Boom generation reaches retirement.
For example, lower birth rates, and the delaying of pregnancy, are anticipated to result in increasing female participation rates, slightly in the younger age groups and more substantially in the older age groups. This would result in female labour force participation rates increasing to the 84 percent range in the 40 to 54 age groups, and to 77 percent in the 55 to 59 age group by the end of the projection period (Figure 11).

In terms of male participation rates, it was assumed that marginal increases in rates would be seen, the product of slight increases in the younger age groups and larger increases in the older age groups. While a trend based projection of increasing male participation in the labour force would have moved rates in the opposite direction, this projection recognizes a future that will be characterized by a tightening labour supply domestically and internationally, and where increasing life expectancies will allow individuals to work past traditional retirement points. This results in male labour force participation rates increasing into the 93 to 95 percent range though the typical working stage of the lifecycle, in to the 86 percent in the 55 to 59 age group, and the 69 percent range for the 60 to 64 age group by the end of the projection period (Figure 12).
b. Labour Force Change in the Lower Mainland, 2003 to 2031

Given projected changes in participation rates and the nature of population change anticipated for the region over the coming three decades, the Lower Mainland’s labour force is projected to grow from roughly 1.32 million today (2003) to 1.96 million by 2031 (Figure 13). Although projected to grow by 641,000 people, this growth will happen at a significantly declining rate: between 2003 and 2011 labour force growth would be in the range of 1.7 percent per year. However, after 2011, as the first half of the Post WWII boom generation begins to enter the 55 to 65 stage of the lifecycle (retirement), annual growth in the region’s labour force would fall to the 1.3 percent range by 2021, and further to 1.2 percent by 2031. Even with the projected increases in participation rates, it is insufficient to outweigh the demographic effect that an aging population will have on the size of the Lower Mainland’s work force.

While of interest in itself, this pattern of labour force change also has significant implications for a range of other aspects of planning. Of particular interest in the context of this report are its implications for employment growth in the Lower Mainland region and its communities. To the extent that there will always be some level of unemployment due to structural adjustments and labour force mobility, one can anticipate that, once this level is reached, employment growth in the region would be limited to the rate of growth in the labour force and, by extension, population. As such, the Lower Mainland’s resident labour force growing by an average of 1.5 percent per year over the 2001 to 2031 period would suggest a constraint in the range of 1.5 percent per year on employment growth, with any economic growth beyond this level relying solely on increases in productivity.
3.2 Employment in the Lower Mainland, 2003 to 2031

This section presents projections of the land-using components of economic activity in the Lower Mainland region over the next three decades. While compiled and projected independently from the preceding population and labour force components of this analysis, the projection of employment (and hence economic activity) is intimately tied to population and demographic change through the size and capacity of our labour force to produce it. As indicated above, a resolution of all three projections provided a mechanism for rationalizing the degree of change projected for the Lower Mainland.

Methodologically, the approach used in preparing projections of sectoral employment is relatively straightforward. The projections are based on extending historical patterns demonstrated in the relationship between annual estimated sectoral employment (which includes everyone who works: employees, employers, and the self-employed) in the Lower Mainland and real Gross Domestic Product (real GDP), defined as the total sum of goods and services produced in the economy, for the province of British Columbia. While this methodology is neither causal nor revolutionary, its overwhelming strength is rooted in the amount of historical data available that permit strong assessments of changes in the relationships between GDP and sectoral employment.

As with all projections, new (or revised) data will always be on the horizon, and the current data do suffer from limitations; however, the data are both suitable and robust enough to be used in the development of projections of sectoral employment trends in the region. Having said this, it is important to explicitly document the data limitations before considering either historical relationships or projections.

There is no single comprehensive source of long-term time series of annual employment data by industry sector for the Lower Mainland; there are point data from the 1961, 1971, 1981, 1991, and 1996 Census for employed labour force by place of work in the region by 1980 SIC (Standard Industrial Classification) codes. For the 2001 Census, industry sectors have been reclassified to correspond with the North American Industry Classification System (NAICS). In order to overcome errors introduced by the adoption of the new classification system, a custom tabulation of the data by historical SIC classifications allowed the historical database to be updated to 2001. To the extent that reclassification has occurred to match the NAICS system, SIC-based sectoral totals presented here will not match standard employment tables released to the general public by Statistics Canada.

Additionally, Census data is point data, reflecting the data collected in the 1/5 sample conducted in May every five years. In order to estimate inter-Censal employment, other data series were consulted. There are also some time series data for employees for the 1961 to 1989 period, but there is no consistent annual database that covers all employment in the region over the 1961 to 2001 period. To overcome this lack of a consistent time series of employment data, Urban Futures has maintains an annual time series of employment estimates by industry in this region. This has been done by combining indexed series data, data at the provincial level, and other Census estimates, to
produce estimates of annual employment for 11 major industry groups in the Lower Mainland for, in the best cases, the 1961 to 2001 period and, in the worse case, the 1983 to 2001 period. Having stated these data limitations, estimates of annual sectoral employment do show a consistent and explainable pattern of employment growth and change in the region in the context of growth in provincial real GDP.

It is important to note that projections based on these estimates and their historical relationships to changes in annual real GDP will generally indicate the direction and the magnitude of employment change in the region. They also capture structural changes related to issues of changing productivity and participation in the workforce as these changes are inherent in the historical relationships between individual sectors and GDP. The critical element of the projection are therefore not the employment estimates themselves, but rather the short term variation in provincial GDP, and longer term patterns of economic growth and change anticipated for provincial economic activity.

a. The Lower Mainland’s Employment Structure in 2001

The historical database for employment in the Lower Mainland considers 11 major industry sectors which follow the traditional industry classification of goods-producing industries (including primary or resource industries, manufacturing, and construction); transportation and trade industries (transportation, communications and utilities - TCU; wholesale and retail trade) and the service industries (finance, insurance and real estate - FIRE; education, health and welfare, commercial services including both business and consumer services, and public administration).

According to the 2001 Census counts (not adjusted for the Census undercount) there were 1,094,065 people employed in the Lower Mainland. Included in this total are people who have a place of work in the Lower Mainland, including 91,410 who live in the region and work at home, and the 886,855 who have a usual place of work in the Lower Mainland outside their home regardless of where they live (i.e., they may be residents of the Lower Mainland or may reside outside of it, but they have a place of work in the region). It also includes 115,800 people who live in the Lower Mainland who have no fixed workplace (such a bus drivers, construction workers and home care workers). As they have no fixed workplace, it is not possible to say definitively that they work in the Lower Mainland; they are included because the overwhelming majority of them likely do.

Figure 14 shows that Commercial Services dominated the region’s employment structure in 2001,
accounting for an estimated 292,595 jobs, or 27 percent of the total. This dominance is explained by three factors: the range of activities included in the industry definition, the fact that urban economies have largely become based in service activities (a result of their population serving nature), and the continually increasing role of service industries in economic activity locally, nationally, and globally. For similar reasons, the Retail Sector is the second largest employer in the region, accounting for 12 percent of regional employment (130,680 jobs) followed by Manufacturing (112,415, ten percent), Health and Welfare Services (105,610, ten percent) and Transportation, Communications and Utilities (93,520, nine percent).

As Primary industries (fishing, logging, mining, trapping and farming) do not generally comprise urban activities, employment in this sector accounts for only 25,165 jobs, or two percent of the region’s employment. The remaining sectors each account for between six (Construction) and seven percent (Finance, Insurance and Real Estate) of total regional employment.

b. Projected Changes in Real Provincial Gross Domestic Product

As indicated above, sectoral employment projections have been based on two assumptions. First, they assume that the relationship between real GDP and sectoral employment observed over the 1961 to 2003 period describes the relationship that will prevail over the 2004 to 2031 period. Second, they assume that the input projection of real provincial GDP will generally represent the employment-generating capacity of economic growth over the coming three decades.

With respect to the first assumption, these relationships are taken as a given: the historical estimated employment series is the only comprehensive data source for employment, and correlating these values with provincial real GDP is a logical (and inexpensive) means to establish a projection methodology. As the projected real GDP forms the independent variable in the mathematics of the methodology, it is necessary to establish or obtain a long-run projection for real GDP for British Columbia. The longest projection currently published for the province is the February 2003 Ministry of Finance and Corporate Relations British Columbia Economic Review and Outlook which projects provincial GDP to 2008 (Table 2).

While the recent history of economic change in the province shows change ranging from the 0.2 percent growth in 1991, through to the 4.3 percent growth in 2000 and the 0.2 percent decline seen in 2001, the Ministry of Finance forecasts see growth in provincial GDP between 2002 and 2008 ranging from 1.5 to 3.1 percent per annum. These projections imply economic activity in BC trending back towards levels which prevailed in the post-1980 period. One cautionary note on the Ministry’s projections should be made: more recent economic outlooks provincially, nationally, and internationally (specifically in the

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<td>2002</td>
<td>1.9%</td>
<td>$127,570</td>
</tr>
<tr>
<td>2003p</td>
<td>1.5%</td>
<td>$129,483</td>
</tr>
<tr>
<td>2004p</td>
<td>2.8%</td>
<td>$133,109</td>
</tr>
<tr>
<td>2005p</td>
<td>3.1%</td>
<td>$137,235</td>
</tr>
<tr>
<td>2006p</td>
<td>3.1%</td>
<td>$141,489</td>
</tr>
<tr>
<td>2007p</td>
<td>3.1%</td>
<td>$145,876</td>
</tr>
<tr>
<td>2008p</td>
<td>3.0%</td>
<td>$150,252</td>
</tr>
</tbody>
</table>

\[p=projected\]
United States and Europe) suggests that these forecasts may be slightly more robust than what will be realized.

While these estimates are useful in setting the direction for short-term projections, for long-term projections it is necessary to look back to the long-run pattern of change in real GDP growth in the province (Figure 15). During the 1960s, annual growth in real GDP averaged seven percent; in the 1970s it averaged six percent; in the 1980s it averaged 3.5 percent; and in the 1990s it averaged 2.4 percent. Historical data are defined by a long term trend towards a slowing in the growth of real GDP in the province of British Columbia. As much of GDP comprises the factors of production and consumption that are population dependent (consumption, government spending, imports), part of the slowing in growth in real GDP is the result of slowing population growth: in the 1960s, BC’s population increased by 35 percent, while in the 1990s it increased by only 19 percent. Other factors contributing to slower real GDP growth include BC’s dependence upon commodities, and its exposure not only directly from commodity prices, but indirectly from intervening competition from both other countries and other substitute products.

The prospects for population growth in Canada, BC, and the region are for continued growth, qualified by a continued slowing in the relative rate of this growth over the next three decades (refer back to Figure 7). In turn, this will continue to lead to slower long-term growth in real GDP.

Potentially compounding issues of slower overall population growth, increasing concern has been voiced with respect to the potential impact of an aging population on growth of productive output in Canada. The Conference Board of Canada recently published a research paper addressing the issue titled “Slowing Down with Age: the Ominous Implications of Workforce Aging for Canadian Living Standards”. In the report they postulate that, among other factors, an aging workforce has the potential to slow the rate of economic growth significantly after 2010 due to the reduced productive capacity of an older workforce.

Yet another aspect of an aging population that will increasingly impact the ability of the economy to expand is the relative economic burden placed on younger generations to support current Canadian social programs such as the Canada Pension Plan and
nationally-funded healthcare. The degree to which these programs recognize and, more importantly respond to, the coming demographic challenges will determine the extent to which they will represent longer-term liabilities or benefits to economic activity.

Given this realm of factors, and the large bulge of the baby boom generation reaching retirement, growth in economic activity in the coming decades will rely on unprecedented levels of growth in productivity (output per worker). This suggests that a) long term growth in real GDP may not be at historical levels, and b) the relationship between GDP and employment observed in the past may (and will have to) change significantly in the direction of fewer jobs per unit increase in GDP (i.e., increases in productivity). It is again important to note that embodied within this approach to forecasting future employment are historical increases in productivity, to the degree that they are represented in the historical database of change in provincial GDP. These gains in productivity were realized during a period of relative abundance of labour force participants. However, over the coming decades, productivity gains will have to be in excess of these historical changes to account for the demographic impacts of an aging labour force.

In considering this broad range of factors a logarithmic trend line was fitted to the two-year moving average of change in real GDP between 1961 and 2003. A logarithmic trend line eliminates a greater degree of variance in the annual change than was possible with establishing a linear or polynomial based trend. Carrying this trend line forward to 2031 maintained the historical pattern of slower annual growth in GDP, but did so at a declining rate. As shown in Figure 14, this resulted in a projection of real GDP growth slowing towards the two percent per year range during the rest of this decade, continuing this pattern of slowing growth and stabilizing in the range of 1.3 percent by the end of the projection period. This scenario would result in real GDP growing from its estimated $131 billion in 2003 to $212 billion in 2031, a 62 percent increase. This compares to the 140 percent increase that occurred in the past twenty eight years (from $54 billion in 1975 to $131 billion in 2003).

This projection, together with the historical relationship between real GDP and sectoral employment forms the basis of the projections of sectoral employment described in the following sections. The aggregation of sectoral employment (total projected employment in the region) is then compared to the projected labour force in the region to ensure that there is a reasonable balance between the number of jobs (based on the GDP projections) and the number of workers (based on the population and labour force projections) available to fill those jobs.

c. Total Projected Employment, 2003 to 2031

Total employment in the Lower Mainland (the sum of the projected employment for each of the 11 individual sectors) is projected to increase by 63 percent between 2003 and 2031. Over the coming three decades 722,259 jobs are projected to be added to the 1,152,871 in 2003, to reach an employment of 1,873,600 people in 2031. This average annual increase of 1.5 percent compares to an average annual increase in employment of
over three percent experienced in
the region over the past three
decades; again reflective in part of
a slowing in the growth of
population.

The projection shows that the
most rapidly growing employment
sector in the region over the next
two decades would be in the
Finance, Insurance and Real-estate
sector (FIRE), with the number of
people working in this sector
growing by 89 percent, to
151,028, by 2031 (Figure 16).
This compares to a projected 63
percent increase in total
employment, and a 61 percent
increase in real GDP over the
same period.

The second fastest growing sector would be the Education sector, which is projected to
grow by 76 percent, adding 65,300 employees as it grows from 85,800 to almost 151,150
people. Health and Welfare would be the next fastest growing sector, increasing by 73
percent (adding 86,700 jobs). Employment in these three sectors alone would
collectively account for almost one-third of the total projected gains in employment.

The next three fastest growing sectors, Construction (69 percent, 45,200), Commercial
Services (65 percent, 201,900) and Public Administration (65 percent, 32,600), would
account for another 279,700 new jobs over the next three decades in the Lower Mainland.
Each of the remaining sectors would grow slower than the average of 63 percent, with the
Retail sector growing by 62 percent (85,100), TCU by 50 percent (adding 49,600 jobs),
Wholesale (49 percent, 34,500 jobs), Primary (43 percent, 11,360 jobs), and
Manufacturing (34 percent, 37,500).

While the projection shows that economic activity will continue to grow and diversify
towards the service based sectors, manufacturing and primary sector
activities are expected to remain relatively stable in the Lower Mainland
over the coming decades. In order to demonstrate consistency between the
three projections and close the circle of employment, labour force and
population, total employment in the future can now be related back to the
projected size of the available labour force.
Based on the changing age profile of the region and anticipated changes in male and female labour force participation rates, the total labour force in the region is projected to increase from 1,315,385 in 2003 to 1,956,646 in 2031. Increasing participation rates counter the impacts of a rapidly aging population, resulting in labour force growth in the range of 1.4 percent by the end of the projection period. As this is slightly slower than the projected 1.5 percent per annum growth in total employment; the gap between labour force participants and employment is projected to narrow over the next three decades and the unemployment rate expected to fall.

For example, Figure 17 shows that an unemployment rate of 7.1 percent in 2003 (1,315,385 jobs in the region and a labour force of 1,228,683) would fall to 4.4 percent by 2031 (a total labour force of 1,956,646 persons and total employment of 1,873,638). While much lower than today, the unemployment rate falls within the bounds of experience, and reflects the impact of slower labour force growth that can be anticipated over the coming decades.
3.3 Housing the Lower Mainland’s Future Population, 2003 to 2031

Over the coming decades, the extent of change in housing occupancy demand will be primarily determined by two factors: the first will be changes in the age composition and size of the Lower Mainland’s population; and the second will be socio-economics, particularly people’s expressed housing preferences and the extent to which they might change over the coming years.

This section presents projections of the land using implications of the interaction between demographic change and changes in housing preference, both over the lifecycle of housing occupancy and temporally over the past three decades. It begins with a brief discussion of the definitional issues that influence both the conduct and the interpretation of the projection of housing markets before examining patterns of occupancy based demand for housing in the region by structure type and their implications given the demographic projections presented in the first section of this report.

a. Projecting Housing Occupancy Demand

As this projection focuses on the relationship between population and housing, it uses an occupancy-based definition of housing demand. Total housing occupancy demand is the number of private dwelling units (i.e., excluding institutional and collective dwellings) required to house the people who live in the Region at any one fixed point in time. Change in housing demand over a period of time is therefore represented by the change in the total number of dwelling units occupied by the Region’s residents. This change will be a net change, calculated by subtracting the number of occupied residences at one point in time from the number of occupied residences at some earlier point in time.

It is important to note that the change in occupancy demand over a period of time will not necessarily be the same as the number of dwelling units constructed during that period. Growth in occupancy demand can be met not only by new construction, but also by households occupying units that existed but were vacant at the beginning of the period. To the extent that an inventory of vacant units is reduced over the time period, occupancy demand can grow faster than new construction. Similarly, to the extent that this inventory increases over the time period, construction will exceed occupancy demand.

Further, conversion of units from and to non-residential uses can alter the supply of residential accommodation without necessarily being reflected in construction or demolitions data. In this vein, construction may also include replacement (new units constructed to replace units demolished or converted to other uses) that do not represent net additions to the housing stock. Construction of secondary residences that are occupied only part of the time (and hence are not part of resident occupancy demand) would be included as new construction, while construction of secondary suites may not show up as new construction, but would represent an occupied dwelling unit on the Census.
b. The Age Specific Pattern of Housing Occupancy

The link between housing occupancy and the age composition of the population is made through the percentage of people of each age who are deemed to be household maintainers. In the Census questionnaire used to gather data on housing, each group of people living together in a private dwelling unit (a household) are asked to indicate the age (and other attributes) of the person they consider to be primarily responsible for the financial support of the household. This person is referred to as the (primary) household maintainer. Dividing the total number of people of a specific age who are household maintainers by the total number of people in that age group gives the age specific household maintainer rate. This age specific data is then linked to other data on attributes of the household, such as the structure type (for example an apartment or row house), the tenure type (owned or rented), or household composition or mobility.

The 2001 Census provides the most recent snapshot of age specific housing occupancy in the Lower Mainland. The Census shows that only two percent of the people in the 15 to 19 age group are household maintainers, meaning that most people in the age group (and all of the people in the zero to 14 age group) are living in households maintained by someone else, usually their parents (Figure 18). A far greater percentage of people in the 20 to 24 age group have left the parental home to establish their own households, with 17 percent of the people in this age group being household maintainers.

Significant increases in maintainer rates continue as people age, the most striking being the increase to 37 percent of the people in the 25 to 29 age group, and to almost half (48 percent) in the 30 to 34 age group, of people being household maintainers, largely driven by people entering the family formation stage of the lifecycle. Throughout the 35 to 85 plus age groups, more than half of the people are household maintainers, with the percentage increasing from 52 percent in the 35 to 39 age group to a peak of 63 percent in the 75 to 79 age group. Rates decline from this peak to 54 percent for those 85 and older when there occurs a shift from maintaining one’s own household to living either in a private household maintained by others or an institutional or collective care facility.
The pattern of household maintainer rates increasing with age has significant implications on housing demand. Consider the example of 1,000 people in the 15 to 19 age group in 2003: at this time, there would be only 20 households maintained by these 1,000 people. Five years later (2008), when these 1,000 people have all aged into the 20 to 24 age group, they would maintain 170 households and, five years (2013) later as they aged into the 25 to 29 age group, would maintain 370 units. Therefore, over this ten-year period, the occupancy demand from the same 1,000 people would increase by a factor of more than 18 (from 20 to 370 units). This phenomenon characterized housing markets throughout Canada in the late-1960s and 1970s as the post World War II baby boom generation moved out of their parents’ homes and established households of their own: between 1966 and 1976 the number of households in the Region grew at almost twice the rate of the population (44 percent compared to 25 percent). Similarly, the aging of this segment of the population through another lifecycle milestone, namely retirement, will again have significant implications on the magnitude and nature of housing demand in the Lower Mainland over the next 30 years.

c. The Age and Structure Type Specific Pattern of Housing Occupancy

In addition to the strong age related pattern of household maintainership, there is also a distinct association between a person’s age and the type of dwelling they will most likely maintain. The great diversity of private housing types found in the region can be generally classified into two major structural types: ground-oriented and apartment units. Most typically ground-oriented dwellings have a front door that opens directly to a lawn or street, and only one group of people (one household) living in it, while apartments generally share a common corridor entrance and are also occupied by one household.

Like the single detached house, there are other dwelling types that share direct access to the ground, but have no side yards between them. These types of housing are commonly referred to as attached ground-oriented units. It includes the side by side duplex (referred to in the Census tabulation as a double house or semi-detached) and row houses, where the dwelling units are attached to other units on both sides. (Moveable and mobile homes are also generally included in this category, even though they are structurally more similar to single detached.)

The apartment category includes dwellings that are not only attached side-by-side, but also stacked one on top of the other. As a result of being stacked, individual dwelling units do not generally have direct entrances that open onto a yard, but rather have entrances that open onto a corridor, with households sharing a common access to the yard and street. Apartment dwellings are in multi-unit high-rise (five or more storeys) and low-rise (less than five storeys) buildings. In both cases, the defining features are many units in one building, attached to other units not only on two sides but above and below, share common access through shared corridors, and have no direct access to yards.
There are two additional types that, depending upon design, may be considered to be either ground-oriented or apartment units. The first is the up/down duplex, a two-unit structure with units stacked one on top of the other. The second is the suite in a house where there are only two dwelling units in total in the structure. As the units in these two unit dwellings are stacked, they have the characteristics of apartments, but they usually have direct access to a yard, and hence more resemble ground-oriented units. Generally, it would be appropriate to include up/down duplexes in ground-oriented and to include suites within the apartment classification. This is not possible, as in Census data these two are aggregated to the category “apartment or flat in a detached duplex”. In this report, these units have been included in the ground-oriented category.

As was noted earlier, there are many specific structure types used to classify units of housing within the total housing stock. While each type may appear distinct and discrete, in reality they form a continuum of both structures and uses that have few defining boundaries that are subject to interpretation: what classifies as single detached in one system may fall in apartments under five storeys in another. For example, if there are more than two units arranged vertically in a single detached house, such as in a house with a suite in the basement, one on the main floor and one on the top floor, the dwelling could be classified by Statistics Canada as an apartment building of less than five storeys, or as a single detached home.

Therefore, in order to reduce the ambiguity in interpretation of the dwelling stock and best represent the potential implications on the land use side, three major structure types have been considered. The first is the single detached classification. The second is defined as other ground oriented and includes (by Census structure type definitions) houses with precisely two dwelling units in them (houses with two suites and side-by-side duplexes), row houses (three or more units side-by-side in a structure with no stacking of units), single units attached to a non-residential structure and mobile homes. The final category is the apartment classification, which includes both low- and high-rise buildings.

There is a distinct relationship between a household maintainer’s age (stage in the lifecycle) and the structure type in which a household lives (Figure 19). A person in the Lower Mainland is generally more likely to maintain a household in one of the ground-
orientated formats (single detached or other ground orientated) than in an apartment. From age 45 to 64, a greater proportion of individuals reside in single detached dwellings, a pattern that generally coincides with the family formation stage of the lifecycle and the desire to have space for a sandbox and Mr. Turtle Pool.

Similar to most metropolitan areas throughout Canada, a person is more likely to be the maintainer of a household living in an apartment. Apartment maintainer rates in the under 34 population outweigh both single detached and other ground orientated units - a decision that is driven by financial constraints, and/or lifestyle choices. Apartment maintainer rates also show considerable increases as the retirement stages of the lifecycle are reached, as lifestyle choice and potentially financial constraints again modify the pattern of housing maintainership through this stage of the lifecycle.


Changes in maintainer rates result from the net effect of a wide range of variables, including everything from changing attitudes to marriage and divorce, housing prices, transportation costs, employment options, incomes, education, career development, and lifestyles. Housing policy, both explicit and implicit, also impacts individuals’ behaviour by influencing the choices of housing types and locations that are available to residents. It is not feasible to either fully explain or anticipate precisely how all of these socio-economic factors shape the changes in the occupancy of the stock of housing in the region. From a forecasting perspective, what is important is to recognize that change has occurred in the past and will certainly characterize the future, and to determine the extent to which history provides the basis for projection of change in maintainer rates in the future.

The 1991 to 2001 period represents two distinct periods of economic growth within the province of BC, particularly within the Lower Mainland. The early-1990s were characterized by rapid economic expansion and population growth, and the late-1990s by slow economic and population growth resulting from low levels of immigration and net outflows from the Lower Mainland to other Regional Districts in the province and to the rest of Canada (specifically Alberta and Ontario).
While the 1991 to 2001 period showed a slight decline in the total household maintainer rate (0.4 percentage points), it was comprised of significant declines in the 15 to 44 age groups and slight increases in the 65 plus population (Figure 20). The greatest absolute change was the 3.5 percentage point decline in the 15 to 24 year old age group, with the 1.8 point decline in the 25 to 34 and 1.0 point decline in the 35 to 44 group also being noteworthy. In part the declines in the 15 to 24 and 25 to 34 age groups are the result of a significant increase in the proportion of under-30s residing in the family home. Figure 21 shows that over the past two decades in the province of British Columbia the proportion of 20 to 24 year olds living with their parents increased by 70 percent, and those aged 25 to 29 by 188 percent: by 2001 more than half of the 20 to 24 year olds and one in five 25 to 29 year olds were living with their parents.

Contrasting declining maintainer rates in the younger age groups over the past decade were the slight increases seen in the proportion of household maintainers over the age of 65. Driven largely by increasing disability free life expectancy and a decline in the percentage of the population living in Collective dwellings (such as nursing homes and care facilities), the proportion of household maintainers 65 and over increased by 0.2 percentage points between 1991 and 2001. Figure 22 shows that between 1991 and 2001 the percentage of the 75 to 79 population living in collective dwellings fell from seven to three percent, and for the 80 to 84 population from 14 to ten percent. Even the most elderly age group saw a significant decline in the proportion of individuals residing in collective dwellings, falling from 35 to 26 percent.
Therefore, the salient question in forecasting housing occupancy demand is: to what extent are changes in the recent past indicative of future change? While the data themselves provide no direct answer to this question (because we cannot account for all of the reasons why the changes occurred), in the context of a trend scenario based on empirical, and hence historical, evidence, changes in the rates over the coming decades will focus on the degree to which maintainer rates in the 20 to 29 age group may continue to decline and, conversely, that to which those for the 65 plus population continue to increase.

Thus, while based on the trends observed over the past two to three decades, the projection of future maintainer rates will implicitly reflect issues as diverse as the future post secondary education, fundamental shifts in labour market conditions (for the younger age group), decreasing disability rates, changing relative male life expectancies, and medical technology and delivery of medical care.

e. Projected Household Maintainer Rates

In developing a projection of future age and structure type specific maintainer rates it first needs to be acknowledged that many of the changes in how people are accommodated in the region will be in the detail, not in the general format. For example, single detached will remain as single detached, but on smaller lots; some single detached will be replaced by duplexes, houses with suites or row houses; some houses with three or four suites will be replaced by low rise apartment buildings, etc. Thus, the focus of projecting rates should be thematic rather than highly disaggregated.

Figure 23

<table>
<thead>
<tr>
<th>Single Detached Household Maintainer Rates, Lower Mainland, 2001 &amp; 2031</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Group</td>
</tr>
<tr>
<td>15..24</td>
</tr>
<tr>
<td>25..34</td>
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<tr>
<td>35..44</td>
</tr>
<tr>
<td>45..54</td>
</tr>
<tr>
<td>55..64</td>
</tr>
<tr>
<td>65+</td>
</tr>
</tbody>
</table>

In considering each of the major structure types, Figures 23 and 24 shows how maintainer rates are expected to change for each structure type. The “decline at a declining rate” pattern observed for single detached rates in the under 65 age groups (and the converse in the older age group) would result, by 2031, in single detached maintainer rates in the 35 to 64 age group that are between 21 and 30 percent, versus the 25 to 31 percent currently. The

Three general trends can be identified that will characterize future housing occupancy:

- an, increase in the proportion of young adults remaining in the familial home,
- increasing life expectancy for the seniors’ population
- a continuation of postponing of couples having their first child.

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trend for the 65 plus population is essentially towards constant future single detached maintainer rates.

Contrasting the historical pattern of declines in single detached rates are those for maintainers of households living in apartment units. Continuing historical trends would see maintainer rates for apartment units increase in all but the youngest age group (Figure 24). The most significant absolute increases would be seen in the 35 to 54 population, each increasing by five percentage points over the coming three decades. Again following the historical pattern of declining rates in the younger age groups, apartment maintainer rates for the 15 to 24 population would decline to four percent from the six percent seen currently.

With respect to changes in maintainer rates for other ground oriented units, it has been assumed that the proportion of individuals maintaining other ground oriented units would remain constant over the next three decades, in part offsetting the declines projected for single detached units. This is reflective of both push factors such as increasing land constraints and pull factors such as growing acceptance of higher density ground oriented residential developments, from both local planning departments and residents.

To summarize, three general trends can be identified which will characterize future changes in the lifecycle pattern of housing occupancy. The first is a continued, albeit curtailed, increase in the proportion of individuals in the youngest age cohorts choosing to remain in the familial home as they pursue higher education, labour force, or alternative lifestyle opportunities. The second is continued increases in life expectancy (and particularly disability free life expectancy) and hence increases in independent living for the seniors’ population; as such, healthier, longer lives will continue to broaden the range of housing preference expressed by this segment of the population. Lastly, while experiencing less dramatic changes than the preceding or following age groups, maintainer rates for the 35 to 64 age group will be characterized by relative stability, as lifestyle and family formation patterns remain relatively constant.

f. Projected Occupancy Demand, 2003 to 2031

Over the long run, housing occupancy demand in the Lower Mainland will grow more rapidly than total population, the result of the aging of current residents and people who join the community from other Regional Districts, other provinces, and abroad. While
Population growth will be one driver to expanding housing occupancy demand, demographic change, largely driven by the aging of the 1938 to 1967 birth cohort and their high propensity to be household maintainers, will compound any growth that arises as a result of adding new residents to the region over the coming three decades. Over the next three decades a growing and changing population would see the housing stock in the Lower Mainland grow from 911,387 units today (2003) to 1.47 million by 2031 (Figure 25).

Over the past decade the Lower Mainland added roughly 17,000 dwelling units per annum, growing at an average annual rate of 2.3 percent. Over the most recent Census period (1996 to 2001) the Region added an average of 14,000 private dwelling units per year, experiencing slightly slower annual growth in the range of 1.8 percent. Therefore, annual growth in occupancy demand over the coming three decades in the range of 1.7 percent per annum is consistent with the slowly declining rate of population growth anticipated for the Lower Mainland over the coming three decades.

Between 2003 and 2031 population growth and change will result in housing occupancy demand growing by 61 percent, relative to a projected 48 percent increase in total population (Figure 26). Of this total demand, almost 40 percent of the additional households would be in single detached units (222,440 units) and almost 43 percent in apartments (239,130). While the dominant household type will remain one occupying a single detached dwelling (with the stock growing to 634,509 units), rapid growth in the apartment segment (74 percent over the coming three decades) will lead to the proportion of apartment units growing from 35 percent in 2003 (323,555 units) to 38 percent of the total private dwelling stock by 2031 (562,681 units).
IV. GROWTH AND CHANGE IN THE FRASER VALLEY REGIONAL DISTRICT

As indicated earlier, the Fraser Valley Regional District represents an administrative entity within a much larger functional geographic region. As such, over the coming decades growth and change in the FVRD will be shaped by structural, economic, and demographic trends experienced both regionally and nationally. That said, while being influenced by these interconnections, the Valley, and specifically communities within its administrative boundaries, do exhibit distinct traits that warrant consideration when compiling demographic or economic projections. As such, the approach to compiling projections for the FVRD was to apply a similar cohort survival methodology to the FVRD’s base population and the annual components of age specific growth and change (changes in birth and death rates, and changes in net migration). Therefore, building on the detail provided in the regional projections, this section outlines growth and change in population before outlining projections of labour force, employment and housing for the FVRD.

4.0 The FVRD’s Demographic History

Figure 27 shows the major peaks and troughs that have characterized population growth in the FVRD over the past 32 years. Over this three decade period the 1976 and 1981 peaks are clearly seen, followed by the prolonged trough of the mid-1980s. Following the mid-1980s recession that saw annual growth rates in the FVRD decline to less than 1.5 percent by 1986, economic growth in BC, which exceeded the national average, pushed population growth rates in the FVRD towards a peak of over six percent by 1990. Since this period of rapid expansion, the Valley has expanded at a significantly slower pace, dropping into the range of one to two percent between 1999 and 2003 (Figure 27). Like the Lower Mainland region, the Fraser Valley has seen a high degree of variance in its rate of growth, again largely driven by prevailing economic conditions locally, nationally, and internationally: migrants from other provinces and countries came to British Columbia and the Fraser Valley en masse in the early-1980s and 1990s due to strong economic growth and labour markets. This inflow countered by the mid-1980s and late-1990s when much lower levels of migration were seen, the result of stronger economic activity in other parts of
Canada and abroad. Although the rate of population growth has been more tempered in recent years, the FVRD has added over 100,000 new residents since 1989 - 30,000 in the post-1996 period alone.

While conversations about population and community have historically focused on notions of growth, the implications of change will also be an increasingly dominant topic in the FVRD. As illustrated by changes in its age profile, Figure 28 shows how the FVRD’s demography has changed over the past three decades.

Between 1971 and 2003 the most obvious change is the significant growth in the population between the ages of 30 and 50, as this segment of the population went from a 23 percent share of the total population in 1971 to 31 percent in 2003. Over this period the most typical person in the region went from being 16 years of age to being 40. Like the Lower Mainland and the rest of Canada, the Fraser Valley’s age profile shows that, while a significant proportion of its population falls within these middle age groups today, the inevitable process of aging will continue to see this bulge move upwards over the coming decades, bringing along with it implications on everything from land use to social programs.

Figure 29

a. The Components of Demographic Change

Between 1972 and 2003 the largest source of population growth in the Fraser Valley was migration, or people moving to the Valley from other regions in BC, Canada or from abroad (Figure 29). For example, of the 3,947 new residents added between 2002 and 2003, 22 percent (886 new people) came from natural increase (births minus deaths) and 78 percent (3,061) came from net
migration. Over the past three decades net migration accounted for roughly 75 percent of population growth in the Valley while natural increase accounted for 25 percent. While the aggregate patterns of migration and natural increase are interesting in themselves, differences in the patterns of natality and mortality for the Valley warrant individual comment.

i. Natality. When compared to the province as a whole, the Fraser Valley exhibits a significantly higher natality rate. Measured through what is referred to as the total fertility rate (TFR, or the total number of children a woman would have during the fertile stage of her lifecycle), Figure 30 shows that, when regions within the Valley are compared to the province, total fertility rates were between 30 and 50 percent higher in the FVRD between 1989 and 2003.

In 2003 the Mission Local Health Area had the highest TFR at 2.10 (meaning the typical woman living in Mission would have 2.10 children during the fertile stage of her lifecycle). This is equal to what is commonly referred to as the replacement level, or the point at which a mother and her partner just replace themselves in the population. Above the replacement level a population will grow and become younger, while below this level a population will, over the long-term, decline and grow significantly older. While consistently higher than the provincial average of 1.39, each of the Local Health Areas in the FVRD (with Agassiz-Harrison being an exception) showed a similar direction of change, each falling by between five and six percent between 1989 and 2003. Over the same period the provincial total fertility rate fell by a more significant 15 percent.

Despite falling birth rates, births have made a relatively consistent contribution to the population (refer back to Figure 28). Again, the total number of annual births in the FVRD has begun to decline, in part as a result of the declining rates shown above, but also as a result of people aging out of the childbearing stage of the lifecycle - a factor that will increasingly characterize population change in the coming years.

ii. Mortality. While the trends in mortality are of interest in a demographic model, these trends are often observed through changes in life expectancy. Driven by a host of medical, social, and economic conditions, life expectancy has seen considerable increases. For example, between 1991 and 2003 life expectancy in the province of BC
increased by 2.4 years, from 78.0 to 80.4 years; this would indicate that for every five years of life lived between 1991 and 2001 an individual in the province of BC actually picked up one year in life expectancy (Figure 31). Within the FVRD the most significant absolute increases were seen in the Hope and Mission Local Health Areas (3.1 and 2.4 years added, respectively). The smallest increase was seen in Abbotsford where life expectancy increased by 0.6 years between the 1987-1991 and 1999-2003 periods.

These trends in natality and life expectancy imply that, as has been seen over the 1971 to 2003 period, a smaller share of future population growth will result from the process of natural increase, in part due to further declines in the total fertility rate and in part due to the aging of the large bulge of the baby boom generation out of the family formation stage of the lifecycle and into the empty nest and retirement stages.

b. Biology, Mobility and the Fraser Valley’s Future Population

i. Net Migration. Based on the historical patterns exhibited by each component of migration, the future level of net migration is projected to increase from the range of 3,000 people in 2003 to 6,602 by 2011, before declining to approximately 5,825 by 2031 (Figure 32). The pattern of net migration would be characterized over the short-term by a continued strengthening of the provincial economy and the FVRD serving as an attractive destination for labour force migrants. Over the longer term this strong growth in the number of migrants is expected to abate somewhat as issues related to slower population growth projected for the rest of Canada (due in part to declining fertility rates) and increasing competition for labour force migrants both
internationally and domestically begin to reduce the level of net migration.

While over the coming years peaks and troughs around this average are expected, it is reasonable to anticipate that, on average, roughly 6,000 net migrants would be added to the FVRD’s population each year.

**ii. Natural Increase.** Based on trends in the age specific patterns of natality and mortality seen in the FVRD, the projected contribution of natural increase (births minus deaths) is expected to average just over 1,400 people annually between 2003 and 2031. As with the annual contribution of migration, the trend would be for sizeable growth in the contribution of natural increase over the short-term as the rate of population growth increases. However, this contribution will be mitigated somewhat over the longer term as natality rates are expected to continue to decline and as the large bulk of the baby boom generation ages into retirement.

**iii. Projected Population Growth.** In considering the age specific patterns for each component of population change particular to the FVRD, the following picture of population growth in the Valley emerges: from its current (2003) population of 254,229 the FVRD’s population would reach 309,116 by 2011, 389,092 by 2021, and 462,666 by 2031 (Figure 33). Over this 28 year period the Valley is therefore projected to grow by 208,437 new residents, or by 82 percent. As a point of comparison, over the past 28 years (1975 to 2003), the FVRD grew by 135 percent and added 146,012 residents.

To achieve this projected growth, annual population growth rates would rise from the range of two percent currently to 2.7 percent by 2009 before declining towards the 1.5 percent range by the end of the period (Figure 33).

Average annual growth in the range of 2.2 percent implies significantly slower growth for the Valley than has been experienced historically. As at the Lower Mainland level, the reasons for projecting more moderate rates of growth can be attributed to two main factors: a declining contribution of natural increase due to declining natality rates and the passing of the baby boomer generation into higher mortality stages of the lifecycle and a long-term decline in
The contribution of net migration as other regions and countries begin to compete for increasingly scarce labour force participants.

Aside from considering future growth in the Valley’s population, it is equally important to take into account anticipated change in its composition. As seen in Figure 33 (like that picture painted for the Lower Mainland), the outlook for the FVRD’s population is one of a rapidly growing older population, as each of the 55 plus age groups are anticipated to grow much more rapidly than the regional average (between 100 and 140 percent versus 82 percent for the region as a whole). However, unlike the Lower Mainland, significant relative and absolute growth is also projected for the younger age cohorts, each growing by between 58 and 90 percent by 2031.

Overall, the age pyramid for the under 50 population in 2031 will look very similar to its current shape, albeit much wider by 2031 (Figure 35). That said, the profile of the over 50 population will change considerably between as the bulge in the 40 year old population in 2003 will form a bulge in the 70 year old population in 2031.

This means that over the next 28 years the 65 plus population would grow by 45,667 residents, while the 25 to 64 population (essentially the active labour force) would grow by 108,619 people, and the under 25 population would grow by 54,150 people. This would imply that over the coming three decades the number of seniors would grow by roughly the same magnitude as the potential labour force in the FVRD.
4.1 Labour Force in the FVRD, 2003 to 2031

As stated earlier, understanding the interrelations between, and projected changes of, the Region’s population, its labour force, and its employment is fundamental to understanding the nature of demographic and economic change and the directions which planning will need to take to respond to it. As such, having already discussed population projections and their implications in the FVRD, the implications of labour force and employment growth and change are outlined in the following sections.

a. Labour Force Participation in the FVRD

This general lifecycle pattern of labour force participation outlined for the Lower Mainland is also evident in the Fraser Valley. Figure 36 shows that participation rates among the youngest males and females are between 53.9 and 55.4 percent, increasing to 88.3 percent of males and 78.4 percent of females being active in the labour force as individuals move from pursuing education opportunities to being active in the labour force.

Between the ages of 25 and 49, typically the active labour force stage of the lifecycle, participation rates in the Valley remain relatively constant in the 92 percent range for males and the 78 percent range for females. From this point participation begins to decline, in the case of males, to 80.2 percent in the 55 to 59 age group (the influence of early retirement) and further to only 12.1 percent for the 65 plus population where retirement predominates. Females show a similar pattern of decline, with participation rates falling to 59.1 percent (55 to 59 age group) from 75.3 percent (50 to 54) due to early retirement, and further to only 5.6 percent of the 65 plus female population being active in the labour force.
Over the coming decades labour force participation rates will most certainly change; what we can not say with certainty is the direction or magnitude of their change. The historical pattern of change for male participation rates regionally, provincially, and nationally at best point to a period of stabilization of rates that have seen considerable decline over the past two decades. However, some hypothesize that current trends will reverse themselves and people will begin to choose to work longer in the future.

While there is no long term empirical evidence to warrant significant changes in male labour force participation rates over the projection period, to balance between evidence and speculation, Figure 37 shows a slight increase in male rates for the 20 to 54 age groups, and slightly more significant increases in the 55 plus age groups. In the case of females’ historical trends in labour force participation for the Valley (compounded by trends towards lower birth rates and a later timing of births) would see rates increase, slightly in the younger age groups and more substantially in the older age groups. As at the Lower Mainland level, it has been assumed that tightening labour markets domestically and internationally will push more workers into the labour force, both older and younger alike. The one exception to this assertion would be the youngest age group (15 to 19) where rates are expected to decline slightly as more individuals continue to pursue educational opportunities that preclude them from being active participants. Increasing life expectancy was again assumed to be a significant factor that will continue to influence the 55 plus populations’ choice (or necessity) to remain in the labour force past traditional lifecycle milestones.

b. Labour Force Change in the FVRD, 2003 to 2031

Combining projected age and sex specific labour force participation rates for the Valley with population growth and change
results in labour force that is projected to grow from a base of 133,580 participants today (2003) to 253,673 in 2031 (Figure 38). The net addition of 120,093 labour force participants would result in the total labour force growing by 90 percent between 2003 and 2031. Following trends in population growth, annual growth in the size of the labour force will be high in the near-term (in the range of three percent per annum) before falling to approximately 2.0 percent by 2018, stabilizing in the range of 1.7 percent by the end of the projection period.

As alluded to earlier in this report, demographic change and economic change are inexorably tied to one another, as changes in the size and composition of a region’s population will influence the degree and nature of its economic growth, and vice versa. This interdependence is evidenced by the fact that the scale and scope of economic growth in any region relies on both an adequate supply of workers (i.e., a sufficiently-sized labour force) as well as an adequate number of consumers (in the form of individuals and businesses) to drive the demand-side of the economy. Simultaneously, the extent and nature of economic growth in a region will influence its demography, both in terms of the sheer number of individuals living in the region as well as their age composition. In recognition of the nature of the relationship that population and labour supply have with overall economic growth (and accordingly, employment), the following methodology was employed in estimating and forecasting employment in the Valley.
4.2 Employment in the FVRD, 2003 to 2031

The approach to the allocation of regional growth in employment to the Fraser Valley was to identify the degree to which employment in each of ten industry sectors (excluding construction) was correlated with the population. This was done by calculating the number of employees in each sector in the FVRD per 1000 residents, and then comparing this value to the Lower Mainland average. The lower the variance in the sectoral per capita ratios, it was hypothesized, the greater the degree to which employment in that sector was correlated with population. Further, on the basis of a strong correlation, one could hypothesize that employment in the sector was entirely dependent on population distribution, and hence it would be appropriate to distribute all future growth in employment in this sector according to population growth.

Given the limitations imposed by data availability, the allocation of non-population serving employment (i.e., the percentage of sectoral employment growth not allocated as population serving) was based on each sub-area’s share of the sectoral employment in the previous year. Thus, in a sector such as Primary, employment growth would be more heavily weighted to areas where employment is already located and less on the basis of where significant population growth occurs.

The final step was to allocate construction employment. As two thirds of construction employment is described as either work at home (i.e., from home) or no fixed workplace, it is in some senses most appropriate not to allocate construction employment by sub-area. Having said this, it is necessary to account for where construction employment will generally occur in the future. The approach used to allocate Construction employment was to allocate annual growth in construction on the basis of each sub-area’s share of growth in both population and employment.

a. The FVRD’s Employment Structure in 2001

Based on data from the 2001 Census, the Fraser Valley’s 2001 employment base consisted of 96,825 jobs (Figure 39). Education, Health, and Welfare services garnered the largest share of employment in the Region, with 17,407 jobs, or 18 percent of total employment, followed by Retail Services, with 13,195 jobs (14 percent) making up the second largest sector. These two sectors were followed by a group of industries that each accounted for roughly the same proportion of workers in the Valley: Business Services accounted for 9,953 jobs, or ten percent of the workforce;
Primary Industries accounted for 9,753 jobs (ten percent), Accommodation and Food consisted of 9,344 jobs (also ten percent), Manufacturing with 9,032 jobs (nine percent), and Construction at 8,434 jobs (nine percent). Employment in the remaining sectors comprised much smaller proportions of the FVRD’s employment, with Government, Transportation, Communications and Utilities (TCU), Finance, Insurance and Real Estate sector (FIRE), and Wholesale accounting for 19,707 jobs, or 20 percent of the total.

**b. Total Projected Employment, 2003 to 2031**

The number of jobs in the Fraser Valley is expected to grow significantly over the next three decades: it is anticipated that total employment will increase by 116 percent, adding 117,726 new jobs to the 2003 base of 101,685. Education, Health and Welfare services would see the greatest absolute gains, adding an additional 26,397 jobs – growth of 143 percent - by 2031 (Figure 40). The sector that is expected to show the most relative growth over the period would be the Finance, Insurance, and Real Estate, with job gains in the order of 189 percent, representing an additional 9,260 net additional jobs. Other sectors that are expected to show strong growth over the next three decades are Primary industries (17,589 new jobs, a 175 percent increase), Business Services (18,391, 172 percent), and Retail (14,126 jobs, 103 percent). It is estimated that these five sectors combined will account for approximately three-quarters of all new jobs in the Fraser Valley by 2031.

Employment in the remaining sectors will also grow, with Transportation, Communication and Utilities growing by 110 percent (6,347 jobs), Construction by 83 percent (7,243), Government Services by 70 percent (4,521), Manufacturing by 60 percent (5,597), the Wholesale sector by 52 percent (5,494), and Accommodation and Food sector activities by 28 percent (2,760).
4.3 Housing the Fraser Valley’s Future Population

Forecasting the total number of dwelling units required to house the projected population for the Valley follows the same approach outlined for the Lower Mainland and considers the age specific profile of household maintainer rates, the age specific composition of the Valley’s projected population. As at the Lower Mainland level, projected housing demand for the FVRD is built on an occupancy-based definition of demand with total housing occupancy demand representing the number of private dwelling units (i.e., excluding institutional and collective dwellings) required to house the people who live in the Regional District at any one particular point in time. Changes in housing demand over a period of time are therefore represented by changes in the total number of dwelling units occupied by the FVRD’s residents.

a. Age and Structure Type Specific Housing Occupancy in the FVRD

Following the general lifecycle pattern of housing occupancy outlined for the Lower Mainland, individuals in the FVRD have typically low maintainer rates in the under 25 year old age groups, increasing rapidly and remaining relatively constant throughout the family formation stage of the lifecycle (Figure 41). While Figure 40 also shows increasing maintainer rates for the 65 plus population, considering this age cohort in more detail shows that maintainer rates for the 85 plus population also decline in the FVRD as individuals move towards collective types of dwellings (refer back to Figure 18).

Figure 41 also shows that residents in the Valley are more likely to be maintainers of a ground oriented home, as this pattern holds true for all age groups, including the youngest. However, as a person ages from this youngest age group their propensity to maintain a ground oriented household increases from less than six percent to a high of 48.0 percent for those people aged 45 to 54. From this point there is a decline in the proportion of residents who maintain ground oriented homes as people approach the retirement stage of the lifecycle and shift towards maintaining alternate forms of dwellings (i.e., apartments). Although rates for ground oriented accommodation do show a pattern of decline after the age of 54 (falling by 6.2 percentage points), it should be noted that individuals in these older age groups are still more likely overall to maintain ground oriented units than they are apartment units. Even in the 65 plus age group, ground
oriented maintainer rates are still 2.1 times greater than those for apartments.

The age specific pattern of maintaining apartments also follows the typical lifecycle pattern: from the youngest age group (those aged 15 to 24 years) apartment maintainer rates generally increase, adding almost 15 percentage points for those people aged 65 plus, where 19.5 percent maintain an apartment unit. Choices to maintain an apartment for this segment of the population may be driven by space considerations (an aversion to too many empty bedrooms), financial circumstances, or physical limitations.

Figure 42

Along with changing over the lifecycle, maintainer rates have changed over time. While the 1996 to 2001 period saw little absolute change in the total household maintainer rate (0.02 percentage points), a significant pattern of change was evident for specific age groups (Figure 42). The single largest absolute change in maintainer rates was seen in the 15 to 24 age group: by 2001, the rate had dropped by 1.2 percentage points relative to 1996, a combination of individuals in this age group staying in school for longer periods of time, increasingly doubling up with other individuals, or remaining in (or moving back to) the parental nest. The 25 to 34 age group also saw a significant decline (a 0.5 percentage point decline) which, given the declines evident for the 15 to 24 age group, would be predominantly driven by 25 to 30 year olds.

Countering declines seen in the younger cohorts were increases in the eldest age group. Between 1996 and 2001 maintainer rates for the 65 plus age group increased by 0.4 percentage points, a result of continuing increases in general health, mobility, and disability free life expectancy.

b. Projected Household Maintainer Rates

Building on changes seen in the FVRD between 1996 and 2001, and those dating back to 1971 on a provincial level, total household maintainer rates for the youngest age cohorts would be expected to see further declines in the future, with rates for the eldest age groups showing more growth. Figure 42 shows the projected maintainer rates by structure type for 2031. When compared to 2001 it shows ground oriented households, which make up the largest component of total dwelling units in the Fraser Valley, experiencing declines across all age groups (the exception being the 65 plus cohort), albeit at a significantly slower rate than has been seen historically.
Again, as health continues to improve and life expectancy continues to increase, the prevalence of independent living will also rise, resulting in slight increases in ground oriented maintainer rates over the next three decades in the FVRD: by 2031, ground oriented maintainer rates for the 65 plus age group are expected to be 42.1 percent, 0.3 percentage points above those seen in 2001. Conversely, by 2031 ground oriented maintainer rates for the 15 to 24 and 25 to 34 age groups are expected to fall to 3.8 and 28.7 percent respectively, 2.0 and 6.6 percentage points below their 2001 values. Ground oriented maintainer rates for each of the 35 to 44, 45 to 54 and 55 to 64 age groups are expected to fall by 4.3, 2.9, and 2.9 percentage points respectively, although the rates will still remain relatively high, reflecting the strong propensity to maintain ground oriented homes during the family stage of the lifecycle.

With the exception of the 15 to 24 age group (which will see apartment rates fall by 0.7 percentage points), changes in apartment maintainer rates between 2001 and 2031 are expected to move in the opposite direction to ground oriented rates. The proportion of the population between the ages of 25 and 54 that will maintain an apartment by 2031 will range between 9.2 and 11.8 percent, with each age group seeing between a two and three percentage point increase in rates over the period. By 2031 it is expected that a higher proportion of people aged 15 to 24 will maintain apartments compared to ground oriented units.

Figure 43
Combining the patterns of change expected in population and household maintainer rates for the various housing types illustrates the degree to which the housing stock will need to change in the Valley over the coming 28 years to accommodate anticipated growth and change. By 2031 housing occupancy demand is projected to grow by 89 percent, faster than the 82 percent growth projected for total population in the Valley over the same period (Figure 44). Housing demand will grow faster than total population as a result of the combined effects of high household maintainer rates in the 45 plus population (refer back to Figures 40 and 42) as well as the rapid growth in the size of this segment of the population (Figure 33).

On an absolute basis, the housing stock in the Valley is projected to grow from a base of 92,800 occupied dwelling units in 2003 to 114,941 in 2011, 146,069 in 2021, and 175,420 by 2031. Between the two types of household structures, demand will be stronger for ground oriented homes. Despite showing lesser growth on a relative basis (at 78 percent growth compared to a 89 percent growth in total demand), additional demand for ground oriented units is expected to make up 56,740 of the 82,620 additional units (69 percent) projected by 2031. Demand for apartments will see the more rapid relative growth, increasing by 131 percent between 2003 and 2031, as 25,880 new apartment units would need to be added to the Valley to accommodate projected demand.

Finally, it should be noted that, in consideration of more localized planning issues, both local and regional governments could adopt policies that, intentionally or unintentionally, change housing occupancy behaviour. To the extent that this occurs, future housing occupancy patterns (i.e. the household maintainer rates) may differ from those projected on a trend basis, thereby changing the size and composition of future demand. While of less influence at the regional level, changes in local planning policies have the potential to significantly alter the nature and magnitude of occupancy demand anticipated for sub-regions within the FVRD. How these issues could potentially influence the mix and distribution of demand within the FVRD is the focus of the following report that will detail sub-regional housing and population projections.
V. GROWTH AND CHANGE WITHIN THE FVRD COMMUNITIES

5.0. Methodological Approach

While this report is specifically concerned with future changes in population, housing, employment and land use in the Fraser Valley Regional District and its component communities, the starting point for this research was growth and change at the Lower Mainland and Fraser Valley Regional District levels. From these macro levels projections of population, labour force, employment and housing for communities within the FVRD could be produced. The flow chart (located on Page 8) outlines the methodology employed in moving from the macro to the spatial projections. The five sub-areas that comprise the Valley include: the City of Abbotsford, including Fraser Valley H; the City of Chilliwack, including Fraser Valley E; the District Municipality of Mission, including Fraser Valley F and G; the District Municipality of Hope, including Fraser Valley A, B and D; and Harrison/Kent, including the Village of Harrison Hot Springs, Kent and Fraser Valley C. It should also be noted that all data include local Indian Reserves in each respective sub-area’s population, in addition to all data being adjusted for the Census Undercount.

a. Population: While at the Regional District level it is possible to develop population scenarios on the basis of aging and trends in natural increase and migration, at the sub-area level population and employment growth and change will be driven more by the capacity (and willingness) of a particular land-uses to accommodate change. Given this distinction, a quasi-lifecycle approach forms the basis of the sub-area projections. It begins by identifying the capacity of the existing housing stock within each community to accommodate people as they age through the lifecycle of housing occupancy. Comparing the capacity of the existing stock to the housing demands of the community’s current population as they age identifies both the requirement for different forms of housing generated by existing residents, and

Figure 45

Spatial Allocation of Housing, Population and Employment

- Regional Control Total
  - Net additional housing units to be constructed in FVRD during year by structure type

- Sub-area share based on historical trends and plans
- Net additional dwelling units in sub-area for year

- Year start housing stock
- Year End Total Units

- Age, sex and structure type specific headship rates

- Units required to house remaining population

- Household size, age and sex distribution for additional households by structure type

- Additional population by age and sex

- Total sub area population for Year End
the potential for the community to accommodate additional residents within its existing housing stock. Within a particular year, this first step identifies either the number of dwelling units potentially “freed up” as existing residents move out of their dwelling units either through moving to other communities or due to death, or the number of new dwelling units required to accommodate them as they age through the lifecycle of housing occupancy.

Having first accounted for the dwelling requirements of the existing population over the projection period, the location of net new housing units completes the description of the distribution of housing within each of the five communities of the FVRD. Net new dwelling units were allocated to the five major communities based on their historical pattern of residential housing starts in the FVRD and the capacity existing residential land uses to accommodate development as illustrated through each community’s respective Official Community Plan and are listed on Figure 46.

From this point it was possible to populate the available dwelling stock (both existing units that were freed up and net new additions to the stock) to derive the annual age specific population in each of the Valley’s five sub-areas. The available dwelling stock was populated in a two step process to account first for the various household sizes that typically characterize different dwelling types and second for differing age compositions of the population residing within them. For example, a total of 2.84 persons per dwelling unit in Abbotsford was comprised of 2.86 persons per ground oriented dwelling and 1.58 in each apartment unit. Similarly, the housing stock in Chilliwack was comprised of an average of 2.55 people living in each ground oriented dwelling and 1.36 people in each apartment unit.

Once the total population was derived from the available dwellings on an annual basis the total number of new residents was distributed by age and sex into the existing population using a custom Census based tabulation of age and sex specific migrants to each sub-area. Once combined with the base population, all residents were aged and subject to the components of demographic change (natality, mortality and migration). This formed the following years base population by age and sex, to which the new residents could be added in subsequent years. As a final step the total population was compared to the regional population projection and to major planning milestones as outlined in each area’s Official Community Plan.
Figure 47 outlines the results of this allocation process and shows Abbotsford adding the greatest absolute number of people (102,056 new residents) between 2003 and 2031. While Abbotsford **will grow by the greatest absolute** number, Mission is projected to experience the greatest relative growth (92 percent between 2003 and 2031) as it adds 34,791 new residents. In terms of the other sub-areas, Chilliwack is projected to add 61,633 residents (84 percent growth), Harrison/Kent 6,179 (72 percent) and Hope 3,777 new residents (38 percent) between 2003 and 2031.

**b. Employment:** Paralleling this projection of changing people and changing communities is one of a changing economy and changing communities within the Valley. Once the sectoral employment projections were completed for the FVRD, employment was allocated to the five sub-areas acknowledging that a component of employment is largely dedicated to serving the local population (such as employment at a grocery store) while another is largely dependent on export markets (such as Western Star trucks). The methodological approach for allocating employment for each sub-area is illustrated in Figure 48. This economic base approach separates the employment that would be driven by projected
population growth and change in each community and that which is dependent on markets external to the local population, or the export serving dimensions of the local economy.  

Figure 49 shows that Abbotsford would add the greatest number of jobs, adding 58,580 new jobs to its 2003 base of 53,107 by 2031. The City of Chilliwack is anticipated to see employment grow by 34,432 jobs with Mission projected to add 18,670 new jobs between 2003 and 2031. Harrison/Kent and Hope will add significantly fewer jobs, each growing by 3,660 and 2,385 respectively by 2031.

[It should be noted that although the process of employment forecasting was undertaken on a sector-specific level, and in an effort to simplify the presentation of the employment projections that follow in this report, the individual sectors have been aggregated according to their broad industrial nature, for each of the Valley’s five sub-areas.]

The following sections present a projection of the population, housing and employment in each of the five communities in the FVRD. These community level projections are consistent with the projections for the Lower Mainland region and for the FVRD presented in the preceding sections of this report, and, like these more aggregate projections, are based on current and historical trends demonstrated in data at the local, regional, provincial and national levels. As with all projections, attainment of these community level projections are conditional upon the observed trends upon which they are based continuing into the future. Further, as with all projections, there a wide range of alternative scenarios that can be presented, ones that are based on different conditions. It would be useful to prepare other scenarios to the baseline scenario presented here, as examining the differences between a range of conditions and outcomes would indicate the sensitivity of projections of the future to the various factors that will shape the future.

In all cases, it will be essential to approach these projections in the same fashion as was discussed at the beginning of the first section of the report, as points within a range rather than simply as numbers. For example, in the context of population change projected for a community, what are important are the orders of magnitude of the change and the time period in which it is projected to occur, as it is in this context that strategic planning and change management are carried out.
5.1. The Sub-Area Projections

a. Abbotsford

- Of the five sub-areas considered in this report, Abbotsford has, and will continue to have, the largest housing base. Overall growth in the number of total housing units over the 2003 and 2031 period will be in the neighbourhood of 93 percent, as 40,687 dwelling units are added. Of this total, 25,901 (64 percent) would be ground oriented units, which would see the ground oriented stock grow by 81 percent, while the remaining 36 percent – 14,786 units - would be in the form of apartment units (125 percent growth). [Figure 50]

- In terms of the age profile of migrants, of those individuals who moved into the Abbotsford sub-area between 1996 and 2001, 21 percent were between the ages of 35 and 44; with them they brought their children, as 22 percent of new migrants to the sub-area over this period were under the age of 15. This pattern of movers was similar to that for those who moved within the Abbotsford sub-area, as the two most prominent age groups were the 35 to 44 and under 15 age groups, at 20 and 27 percent, respectively. It is interesting to note that the age pattern of people who did not move over the period was more evenly distributed, ranging from 20 percent of under 15s to 7 percent of 25 to 34 year olds, illustrating the higher propensity of people under the age of 45 to move either within or between communities. [Figure 51]

- Combining today’s population with new residents results in Abbotsford’s population growing by 82 percent, or 102,056 residents, by 2031. Of this total growth, the largest relative growth is projected to occur in the 55 to 64 age cohort, which would grow by 117 percent (12,897 people). By contrast, the greatest absolute growth would be seen in the 35 to 44 age group, as they add 16,647 individuals over the next three decades. [Figure 52]

- With respect to a changing local economy, employment in Abbotsford is expected to grow by 58,580 jobs, or 110 percent, between 2003 and 2031. The largest relative and absolute gains in employment over this period are expected in the Business and Personal Services Sectors, adding 22,364 jobs (169 percent growth) and accounting for almost 40 percent of employment growth. [Figure 53]
### Table 3

#### Demographic and Economic Projections, Abbotsford*, 2003 to 2031

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<tr>
<th>Housing</th>
<th>2003</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
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<td></td>
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#### Employment Growth and Change, Abbotsford, 2003 and 2031

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<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2003 to 2031</th>
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*the City of Abbotsford, Fraser Valley H, and local Indian Reserves
b. Chilliwack

Figure 54

Dwelling Units by Structure Type, Chilliwack, 2003 & 2031

- Over the next three decades the number of dwelling units in Chilliwack is expected to grow from 28,730 today (2003) to 53,015 by 2031 (an 85 percent increase). Of these 24,285 new units, 72 percent, or 17,555, would be in the form of ground oriented homes, representing a 76 percent increase over 2003. As well, 6,730 of the total net additional units will be in the form of apartment dwellings (118 percent growth). Thus, while apartments would see greater relative growth, ground oriented units would see larger absolute additions made to its existing stock. [Figure 54]

- Considering the age profile of people moving between 1996 and 2001, 27 percent of individuals moving into Chilliwack and 20 percent of individuals moving within Chilliwack were less than 15 years of age, making these individuals the most mobile of all the age groups, being driven by the mobility of their parents, namely those in the 25 to 34 and 35 to 44 age groups (which represent the second and third largest proportion of those who moved). Like Abbotsford, the age group distribution of non-movers during this period was fairly even, again indicative of the role that family type housing plays for migrants. [Figure 55]

- This projection shows the City of Chilliwack growing by 61,633 new residents, or by 84 percent between 2003 and 2031. The largest relative growth over this period is expected to occur in the population between the ages of 25 and 34, with this group growing by 10,781 people (128 percent) by 2031. In terms of absolute growth, the 65 plus population is projected to add the greatest number of people, 13,860 new residents, growing by 117 percent over the period. [Figure 56]

- In terms of projected employment, the City of Chilliwack is expected to grow from 27,788 jobs in 2003 to 62,220 by 2031. Adding 34,432 new jobs would see total employment in Chilliwack grow by 124 percent. Again, similar to Abbotsford, the Business and Personal Services sector is likely to experience the most employment growth over the next three decades, adding 13,329 jobs – an increase of 191 percent over 2003. [Figure 57]
**Figure 55**

Age Composition of Migrants & Non-Movers, Chilliwack, 1996 to 2001

**Figure 56**

Population by Age, Chilliwack, 2003 & 2031

Page 57
### Employment Growth and Change, Chilliwack, 2003 and 2031

**Figure 57**

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>Yearly Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary, Manufacturing &amp; Construction</td>
<td>8,329</td>
<td>14,427</td>
<td>20,294</td>
<td>11,029</td>
<td>7,279</td>
<td>16,470</td>
<td>73%</td>
</tr>
<tr>
<td>Business &amp; Personal Services</td>
<td>6,965</td>
<td>191%</td>
<td>17,555</td>
<td>85%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>5,215</td>
<td>111%</td>
<td>12,435</td>
<td>85%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health, Education &amp; Govt. Services</td>
<td>7,279</td>
<td>126%</td>
<td>14,427</td>
<td>85%</td>
<td></td>
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</table>

### Demographic and Economic Projections, Chilliwack, 2003 to 2031

**Table 4**

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<th></th>
<th>2003</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2003 to 2031</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ground Oriented</td>
<td>23,025</td>
<td>28,599</td>
<td>32,168</td>
<td>35,474</td>
<td>38,286</td>
<td>40,580</td>
<td>17,555 76%</td>
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<tr>
<td>Apartment</td>
<td>5,705</td>
<td>7,291</td>
<td>8,476</td>
<td>9,697</td>
<td>11,020</td>
<td>12,435</td>
<td>6,730 118%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>28,730</td>
<td>35,890</td>
<td>40,644</td>
<td>45,170</td>
<td>49,307</td>
<td>53,015</td>
<td>24,285 85%</td>
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<td><strong>Population</strong></td>
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<td>0..14</td>
<td>14,969</td>
<td>15,924</td>
<td>17,943</td>
<td>20,905</td>
<td>23,640</td>
<td>25,391</td>
<td>10,422 70%</td>
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<td>15..24</td>
<td>9,864</td>
<td>14,158</td>
<td>15,443</td>
<td>15,244</td>
<td>15,675</td>
<td>17,354</td>
<td>7,490 76%</td>
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<tr>
<td>25..34</td>
<td>8,403</td>
<td>12,099</td>
<td>15,967</td>
<td>18,505</td>
<td>19,620</td>
<td>19,184</td>
<td>10,781 128%</td>
</tr>
<tr>
<td>35..44</td>
<td>11,526</td>
<td>10,693</td>
<td>11,224</td>
<td>14,226</td>
<td>17,638</td>
<td>19,888</td>
<td>8,362 73%</td>
</tr>
<tr>
<td>45..54</td>
<td>9,831</td>
<td>13,278</td>
<td>13,189</td>
<td>12,126</td>
<td>12,347</td>
<td>15,099</td>
<td>5,268 54%</td>
</tr>
<tr>
<td>55..64</td>
<td>7,723</td>
<td>10,643</td>
<td>12,928</td>
<td>14,448</td>
<td>14,016</td>
<td>12,722</td>
<td>5,449 75%</td>
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<td>65+</td>
<td>11,836</td>
<td>14,463</td>
<td>16,740</td>
<td>19,486</td>
<td>22,725</td>
<td>25,696</td>
<td>13,860 117%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>73,702</td>
<td>91,257</td>
<td>103,435</td>
<td>114,940</td>
<td>125,661</td>
<td>135,335</td>
<td>61,633 84%</td>
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<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary, Manuf.&amp; Const.</td>
<td>8,329</td>
<td>10,367</td>
<td>11,462</td>
<td>12,485</td>
<td>13,477</td>
<td>14,427</td>
<td>6,097 73%</td>
</tr>
<tr>
<td>Business &amp; Personal Serv.</td>
<td>6,965</td>
<td>11,485</td>
<td>13,887</td>
<td>16,100</td>
<td>18,234</td>
<td>20,294</td>
<td>13,329 191%</td>
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<tr>
<td>Trade</td>
<td>5,215</td>
<td>7,231</td>
<td>8,281</td>
<td>9,235</td>
<td>10,150</td>
<td>11,029</td>
<td>5,814 111%</td>
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<tr>
<td>Health, Education &amp; Govt. Services</td>
<td>7,279</td>
<td>10,479</td>
<td>12,140</td>
<td>13,646</td>
<td>15,087</td>
<td>16,470</td>
<td>9,192 126%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>27,788</td>
<td>39,562</td>
<td>45,769</td>
<td>51,466</td>
<td>56,948</td>
<td>62,220</td>
<td>34,432 124%</td>
</tr>
</tbody>
</table>

*the City of Chilliwack, Fraser Valley E, and local Indian Reserves*
c. Mission

- Between 2003 and 2031 the District Municipality of Mission is projected to see its stock of dwelling units increase twofold, from 13,116 to 26,430; this addition of 13,314 units would see the total housing stock expand by 102 percent. Ground oriented units are anticipated to comprise the largest portion of future additions, growing by 10,155 units, or 87 percent. Over this period the number of apartment dwellings is expected to grow by 3,159 units (an increase of 225 percent). Once again, as seen in other regions, while apartment units would see the greatest relative growth, the stock of ground oriented units will continue to make up the bulk of dwellings in the Municipality over the next three decades. [Figure 58]

- Between 1996 and 2001, individuals in the under 15 age group formed the largest component of movers, both to Mission and within it (with 27 percent of each of the respective sets of movers belonging to this age group). Furthermore, their parents (falling in the 25 to 34 and 35 to 44 age groups) made up the next largest shares of both internal and external movers to Mission. This pattern is indicative of families migrating to the region with over 76 percent of those who moved to Mission between 1996 and 2001 being under the age of 45. By comparison, only 58 percent of Mission’s residents who did not move were in this family stage of the lifecycle. [Figure 59]

- Additions to Mission’s dwelling stock over the next three decades result in projections of the resident population growing from 37,742 today (2003) to 72,534 by 2031. Adding 34,791 residents would result in Mission’s population growing by 92 over this period. While Mission is expected to see its 65 plus population grow the most over this period, both absolutely (by 8,708 individuals) and relatively (by 225 percent), the 55 to 64 population is also expected to grow substantially, adding 5,227 individuals between 2003 and 2031 [Figure 60]

- Total employment in Mission is expected to grow from a base of 14,465 today (2003) to 33,134 by 2031. Adding 18,670 new jobs in Mission would see the employment base grow by 129 percent over the coming three decades. As in Abbotsford and Chilliwack, the Business and Personal Services sectors are expected to see the greatest absolute (7,137 new jobs) and relative (an increase of 205 percent) growth over this period. The Health, Education, and Government Services category is also expected to grow significantly, adding 5,006 jobs over the next three decades. [Figure 64]
Employment Growth and Change, Mission, 2003 and 2031

Table 5

Demographic and Economic Projections, Mission*, 2003 to 2031

<table>
<thead>
<tr>
<th>Housing</th>
<th>2003</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2003 to 2031 absolute</th>
<th>relative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Oriented</td>
<td>11,713</td>
<td>14,059</td>
<td>15,896</td>
<td>17,924</td>
<td>19,945</td>
<td>21,869</td>
<td>10,155</td>
<td>87%</td>
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<tr>
<td>Apartment</td>
<td>1,403</td>
<td>1,894</td>
<td>2,364</td>
<td>2,940</td>
<td>3,667</td>
<td>4,561</td>
<td>3,159</td>
<td>225%</td>
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<tr>
<td>Total</td>
<td>13,116</td>
<td>15,954</td>
<td>18,260</td>
<td>20,863</td>
<td>23,612</td>
<td>26,430</td>
<td>13,314</td>
<td>102%</td>
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</table>

<table>
<thead>
<tr>
<th>Population</th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0–14</td>
<td>8,033</td>
<td>8,552</td>
<td>9,867</td>
<td>11,389</td>
<td>12,467</td>
<td>12,943</td>
<td>4,910</td>
<td>61%</td>
</tr>
<tr>
<td>15–24</td>
<td>5,218</td>
<td>6,545</td>
<td>6,616</td>
<td>7,134</td>
<td>8,041</td>
<td>9,222</td>
<td>4,004</td>
<td>77%</td>
</tr>
<tr>
<td>25–34</td>
<td>4,367</td>
<td>5,403</td>
<td>7,208</td>
<td>7,855</td>
<td>7,924</td>
<td>8,514</td>
<td>4,147</td>
<td>95%</td>
</tr>
<tr>
<td>35–44</td>
<td>7,014</td>
<td>6,516</td>
<td>6,715</td>
<td>8,100</td>
<td>9,874</td>
<td>10,239</td>
<td>3,224</td>
<td>46%</td>
</tr>
<tr>
<td>45–54</td>
<td>5,755</td>
<td>8,121</td>
<td>8,427</td>
<td>8,834</td>
<td>10,326</td>
<td>10,326</td>
<td>4,571</td>
<td>79%</td>
</tr>
<tr>
<td>55–64</td>
<td>3,421</td>
<td>4,980</td>
<td>6,603</td>
<td>8,101</td>
<td>8,516</td>
<td>8,648</td>
<td>5,227</td>
<td>153%</td>
</tr>
<tr>
<td>65+</td>
<td>3,935</td>
<td>4,887</td>
<td>5,976</td>
<td>7,588</td>
<td>9,966</td>
<td>12,643</td>
<td>8,708</td>
<td>221%</td>
</tr>
<tr>
<td>Total</td>
<td>37,742</td>
<td>45,004</td>
<td>51,413</td>
<td>58,551</td>
<td>65,625</td>
<td>72,534</td>
<td>34,791</td>
<td>92%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary, Manuf.&amp; Const.</td>
<td>4,741</td>
<td>5,707</td>
<td>6,295</td>
<td>6,898</td>
<td>7,503</td>
<td>8,112</td>
<td>3,372</td>
<td>71%</td>
</tr>
<tr>
<td>Business &amp; Personal Serv.</td>
<td>3,476</td>
<td>5,384</td>
<td>6,615</td>
<td>7,916</td>
<td>9,242</td>
<td>10,613</td>
<td>7,137</td>
<td>205%</td>
</tr>
<tr>
<td>Trade</td>
<td>2,447</td>
<td>3,291</td>
<td>3,837</td>
<td>4,413</td>
<td>4,998</td>
<td>5,602</td>
<td>3,155</td>
<td>129%</td>
</tr>
<tr>
<td>Health, Education &amp; Govt. Services</td>
<td>3,800</td>
<td>5,139</td>
<td>6,006</td>
<td>6,921</td>
<td>7,848</td>
<td>8,807</td>
<td>5,006</td>
<td>132%</td>
</tr>
<tr>
<td>Total</td>
<td>14,465</td>
<td>19,522</td>
<td>22,753</td>
<td>26,147</td>
<td>29,591</td>
<td>33,134</td>
<td>18,670</td>
<td>129%</td>
</tr>
</tbody>
</table>

*the District Municipality of Mission, Fraser Valley F, G, and local Indian Reserves
d. Hope

In Hope, total growth in its stock of dwelling units between 2003 and 2031 is projected to be in the neighbourhood of 44 percent, as 1,736 units are anticipated to be added. The majority of these additions would be seen in ground oriented formats (1,240 units, for 35 percent growth), followed by apartment units (an additional 495 units, an increase of 125 percent). Based on this projected pattern of growth, it is expected that ground oriented dwellings will continue to dominate Hope’s housing landscape, accounting for between 72 percent of the total additions to the sub-area’s dwelling stock over the period. [Figure 62]

In considering the composition of people migrating to Hope, among those moving to Hope from outside of its borders between 1996 and 2001, there was a relatively even distribution across age groups, with each of the age cohorts between 25 to 64, as well as the under 15, accounting for between 16 and 17 percent of total movers to the sub-area. This relatively uniform distribution is contrasted by those who moved internally within Hope, being more weighted to those in the family stage of the lifecycle and their children: the most typical mover was aged 14 years or younger (representing a quarter of all movers), with the next largest group being their parents, or those between the ages of 35 and 44 (19 percent of all internal movers). [Figure 63]

Given its existing population and those expected to move to the community in the coming decades, Hope is anticipated to grow from its 2003 population of 9,940 to 13,717 by 2031. The addition of 3,777 new residents would see Hope grow by 38 percent over this period. Hope is expected to see its older age groups grow much more rapidly than its younger age groups, evidenced by the projected 102 percent growth in the 65 plus population (as the number of seniors increases by 1,715). In addition, the 25 to 34 age group is expected to grow by 702 people (a 78 percent increase), while the number of individuals aged 45 to 54 is projected to decline by two percent. [Figure 64]

Economic growth and change are projected to see Hope’s employment grow from 3,123 in 2003 to 5,508 by 2031, representing an increase of 76 percent. In addition to garnering the largest share of employment within Hope’s economy today, Business and Personal Services are also expected to experience the greatest absolute growth by 2031 (adding 980 jobs), while employment in the Trade sectors (retail and wholesale) will see the largest relative increase, as it grows by 96 percent (an additional 348 jobs). [Figure 65]
Figure 63

Age Composition of Migrants & Non-Movers, Hope, 1996 to 2001

Moved Into Sub-area from outside it
Moved within Sub-area
Did Not Move

0 to 14
15 to 24
25 to 34
35 to 44
45 to 54
55 to 64
65+

Figure 64

Population by Age, Hope, 2003 & 2031

Population by Age, Hope, 2003 & 2031
### Employment Growth and Change, Hope, 2003 and 2031

![Chart showing employment growth and change](image)

Table 6

**Demographic and Economic Projections, Hope*, 2003 to 2031**

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
<th>2003 to 2031 absolute</th>
<th>2003 to 2031 relative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Housing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Oriented</td>
<td>3,577</td>
<td>3,924</td>
<td>4,162</td>
<td>4,401</td>
<td>4,621</td>
<td>4,818</td>
<td>1,240</td>
<td>35%</td>
</tr>
<tr>
<td>Apartment</td>
<td>395</td>
<td>423</td>
<td>480</td>
<td>571</td>
<td>705</td>
<td>890</td>
<td>495</td>
<td>125%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,972</td>
<td>4,347</td>
<td>4,642</td>
<td>4,971</td>
<td>5,327</td>
<td>5,708</td>
<td>1,736</td>
<td>44%</td>
</tr>
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<td><strong>Population</strong></td>
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<td></td>
</tr>
<tr>
<td>0.14</td>
<td>1,809</td>
<td>1,599</td>
<td>1,936</td>
<td>2,230</td>
<td>2,297</td>
<td>488</td>
<td>27%</td>
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<tr>
<td>15.24</td>
<td>1,326</td>
<td>1,487</td>
<td>1,273</td>
<td>1,321</td>
<td>1,618</td>
<td>293</td>
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<td>25.34</td>
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<td>1,699</td>
<td>1,852</td>
<td>1,759</td>
<td>1,599</td>
<td>702</td>
<td>78%</td>
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</tr>
<tr>
<td>35.44</td>
<td>1,484</td>
<td>784</td>
<td>1,292</td>
<td>1,856</td>
<td>2,054</td>
<td>570</td>
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</tr>
<tr>
<td>45.54</td>
<td>1,533</td>
<td>1,466</td>
<td>1,090</td>
<td>980</td>
<td>1,500</td>
<td>-32</td>
<td>-2%</td>
<td></td>
</tr>
<tr>
<td>55.64</td>
<td>1,209</td>
<td>1,677</td>
<td>1,576</td>
<td>1,250</td>
<td>41</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65+</td>
<td>1,683</td>
<td>2,074</td>
<td>2,726</td>
<td>3,064</td>
<td>3,398</td>
<td>1,715</td>
<td>102%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9,940</td>
<td>10,684</td>
<td>11,081</td>
<td>11,846</td>
<td>12,785</td>
<td>13,717</td>
<td>3,777</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary, Manuf. &amp; Const.</td>
<td>815</td>
<td>1,023</td>
<td>1,105</td>
<td>1,196</td>
<td>1,287</td>
<td>473</td>
<td>58%</td>
<td></td>
</tr>
<tr>
<td>Business &amp; Personal Serv.</td>
<td>1,153</td>
<td>1,568</td>
<td>1,736</td>
<td>1,931</td>
<td>2,133</td>
<td>980</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>362</td>
<td>554</td>
<td>630</td>
<td>710</td>
<td></td>
<td>348</td>
<td>96%</td>
<td></td>
</tr>
<tr>
<td>Health, Education &amp; Govt. Services</td>
<td>793</td>
<td>1,246</td>
<td>1,377</td>
<td>584</td>
<td>74%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Total</strong></td>
<td>3,123</td>
<td>4,101</td>
<td>4,515</td>
<td>5,004</td>
<td>5,508</td>
<td>2,385</td>
<td>76%</td>
<td></td>
</tr>
</tbody>
</table>

*the District Municipality of Hope including Fraser Valley A, B, D, and local Indian Reserves
By 2031, Harrison/Kent is projected to see its dwelling stock grow by 2,601 units, an increase of 83 percent over 2003. Comprising this total growth would be ground oriented units growing by 68 percent (1,890 additional units) and apartments growing by 188 percent (711 additional units); as such, ground oriented units will continue to account for the majority of Harrison/Kent’s housing stock in 2031, at 73 percent (compared to 88 percent in 2003). [Figure 66]

The profile of people moving to the Harrison/Kent region between 1996 and 2001 shows that the greatest proportion of movers to the sub-area were families, with 24 percent of all movers to this sub-area being under the age of 15, and 29 percent between the ages of 25 and 44 (the largest group being between 35 and 44). This age specific pattern of those moving into the area was also exhibited by those people moving within the sub-area over the period, with the largest concentrations being in the 0 to 14 (21 percent) and 35 to 44 (18 percent) age groups. By contrast, the age distribution of individuals who did not change residences over this period was relatively spread out, with 45 to 54 year olds making up the largest share (19 percent) of people who did not move. [Figure 67]

Over the 2003 to 2031 period Harrison/Kent is projected to grow by 6,179 people, from its 8,541 level today to 14,720 by 2031. Population change between 2003 and 2031 will be led by the 65 plus cohort, as it is expected to see the greatest absolute and relative growth over the period. This age group is expected to see additions of 2,203 people, for 165 percent growth. In addition, the 25 to 34 age cohort would see significant additions of 1,087 people (a 114 percent increase), while the slowest projected growth is expected to be seen in the number of 45 to 54 year olds, as they increase by a mere 183 people (14 percent growth). [Figure 68]

Over the projection period employment in Harrison/Kent is expected to grow by 114 percent (as 3,660 new jobs are created). Business and Personal Services are expected to add the greatest absolute number of jobs, with 1,430, while employment in the Trade sectors (retail and wholesale) is expected to exhibit the greatest relative growth (at 215 percent), as it accounts for 578 additional jobs in the Harrison/Kent sub-area by 2031. [Figure 69]
Age Composition of Migrants & Non-Movers, Harrison/Kent, 1996 to 2001

Moved Into Sub-area from outside it
Moved within Sub-area
Did Not Move

Population by Age, Harrison/Kent, 2003 & 2031

0..14 15..24 25..34 35..44 45..54 55..64 65+

Figure 67

Figure 68
### Table 7

#### Demographic and Economic Projections, Harrison/Kent*, 2003 to 2031

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>2031</th>
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<td>absolute</td>
<td>relative</td>
<td>absolute</td>
<td>relative</td>
<td>absolute</td>
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<tr>
<td><strong>Housing</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ground Oriented</td>
<td>2,763</td>
<td>3,507</td>
<td>3,922</td>
<td>4,258</td>
<td>4,499</td>
<td>4,653</td>
<td>1,890</td>
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<td>Apartment</td>
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<td>546</td>
<td>672</td>
<td>801</td>
<td>940</td>
<td>1,089</td>
<td>711</td>
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<td>Total</td>
<td>3,141</td>
<td>4,053</td>
<td>4,594</td>
<td>5,059</td>
<td>5,439</td>
<td>5,742</td>
<td>2,601</td>
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<td><strong>Population</strong></td>
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<td></td>
<td></td>
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<tr>
<td>0..14</td>
<td>1,544</td>
<td>1,743</td>
<td>1,968</td>
<td>2,256</td>
<td>2,496</td>
<td>2,541</td>
<td>997</td>
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<tr>
<td>15..24</td>
<td>1,127</td>
<td>1,605</td>
<td>1,719</td>
<td>1,651</td>
<td>1,620</td>
<td>1,683</td>
<td>556</td>
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<td>956</td>
<td>1,336</td>
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<td>1,985</td>
<td>2,102</td>
<td>2,043</td>
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<td>35..44</td>
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<td>1,254</td>
<td>1,151</td>
<td>1,469</td>
<td>1,834</td>
<td>1,933</td>
<td>603</td>
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<td>45..54</td>
<td>1,287</td>
<td>1,657</td>
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<td>1,472</td>
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<tr>
<td>55..64</td>
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<td>1,378</td>
<td>1,620</td>
<td>1,773</td>
<td>1,763</td>
<td>1,508</td>
<td>549</td>
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<tr>
<td>65+</td>
<td>1,337</td>
<td>1,847</td>
<td>2,220</td>
<td>2,662</td>
<td>3,100</td>
<td>3,541</td>
<td>2,203</td>
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<tr>
<td>Total</td>
<td>8,541</td>
<td>10,820</td>
<td>12,168</td>
<td>13,268</td>
<td>14,186</td>
<td>14,720</td>
<td>6,179</td>
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<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Primary, Manuf. &amp; Const.</td>
<td>880</td>
<td>1,132</td>
<td>1,255</td>
<td>1,361</td>
<td>1,458</td>
<td>1,535</td>
<td>655</td>
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<tr>
<td>Business &amp; Personal Serv.</td>
<td>857</td>
<td>1,447</td>
<td>1,720</td>
<td>1,945</td>
<td>2,144</td>
<td>2,287</td>
<td>1,430</td>
</tr>
<tr>
<td>Trade</td>
<td>269</td>
<td>519</td>
<td>630</td>
<td>719</td>
<td>796</td>
<td>847</td>
<td>578</td>
</tr>
<tr>
<td>Health, Education &amp; Govt. Services</td>
<td>1,196</td>
<td>1,627</td>
<td>1,818</td>
<td>1,971</td>
<td>2,104</td>
<td>2,194</td>
<td>998</td>
</tr>
<tr>
<td>Total</td>
<td>3,202</td>
<td>4,725</td>
<td>5,423</td>
<td>5,996</td>
<td>6,503</td>
<td>6,863</td>
<td>3,660</td>
</tr>
</tbody>
</table>

*Includes the Village of Harrison Hot Springs, Kent, Fraser Valley C, and local Indian Reserves

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**Figure 69**

**Employment Growth and Change, Harrison/Kent, 2003 and 2031**

- **Ground Oriented Housing**: Growth from 1,535 to 2,287 units, an increase of 167%.
- **Apartment Housing**: Growth from 880 to 2,194 units, an increase of 152%.
- **Total Housing**: Growth from 3,141 to 5,742 units, an increase of 83%.

- **Primary, Manufacturing & Construction**: Employment grew from 880 to 1,535, an increase of 74%.
- **Business & Personal Services**: Employment grew from 857 to 2,287, an increase of 152%.
- **Trade**: Employment grew from 269 to 1,196, an increase of 152%.
- **Health, Education & Govt. Services**: Employment grew from 847 to 2,194, an increase of 158%.

**Note**: The data reflects projections from 2003 to 2031, with significant increases in employment across various sectors.
VI. CHANGE MANAGEMENT AND THE FVRD GROWTH MANAGEMENT STRATEGY

Acknowledging the realities of its growing and changing population, its changing and growing economy, and its invaluable natural environment, the Fraser Valley Regional District has implemented a Regional Growth Strategy (RGS) to assist in the management of these change aspects to ensure that residents continue to enjoy a high quality of life. The foundation of this regional strategy is a vision that the Regional District “will be a network of vibrant, distinct, and sustainable communities that accept responsibly managed growth while being committed to protecting the land resource and the natural environment to ensure that a high quality of life is accessible to all”. To match this vision with reality requires management of change: as such, the RGS articulates not only the region’s goals with respect to various dimensions of life, but also the steps required to achieve these goals, so that the region’s vision ultimately becomes its reality.

While the individual actions that comprise the RGS reflect the interdependency of all of its actions and goals, they also reflect the pragmatic reality of the opportunities and the constraints that the region and its resources face. For example, the 58,000 people in the Regional District currently between the ages of 45 and 64 will account for most of the region’s 65 plus population 20 years hence. With 35,000 people in the region 65 plus today, the aging of the region’s current 45 to 64 population would effectively double the size of the 65 plus population in the Valley over the next two decades. Given this, it is clear the process of demographic change will have profound implications for the region and its strategies to manage change and attain its vision.

Furthermore, the doubling of the 65 plus population would translate into a more than doubling of health care demand, as health care demand from the 65 plus population is more than three times that of the 45 to 64 age group. At the same time, the 45 to 64 age group will be leaving the workforce. To replace not only the retiring nurses, bus drivers, and police officers who are critical in delivering local services, but also the farm workers, hotel operators, and researchers critical to the region’s economic base, will mean attracting and retaining new workers. Thus, to the extent that the region’s current residents remain in the region as they age, their housing and services requirements must be met alongside the housing and services needs of new residents in the region who will serve as replacements for a retiring workforce. Combined, the changes brought about by the aging of current residents and the need to replace them in the workforce requires effectively coping with a growing population, and hence, an increasing demand for housing.

The change management that is required to deal with the complex interaction of visions, goals, constraints and opportunities is a process, on-going and responsive, that monitors the progress towards the attainment of goals, evaluates new trends, and provides alternatives and information in order to adapt to changing circumstances and ensure attainment of goals and aspirations of all of the communities in the FVRD. It is within
this adaptive and responsive process that the series of forecasts contained in this report are presented.

The numbers contained in the projections provide a context for the magnitude of change in the region’s population, housing, labour force, and employment that can reasonably be anticipated over the coming twenty-five to thirty years. At the core, the projections presented here indicate that the actions and goals of the RGS must anticipate that around 2021 the FVRD will pass the 400,000 resident threshold, and that sometime between 2026 and 2031 the FVRD will reach a population of up to 460,000 residents. Similarly, the functional Lower Mainland region (the FVRD and GVRD combined) should collectively plan for a population of 3.3 million people sometime within the next twenty-five years to thirty years. Within the context of strategic planning and change management, these are the orders of magnitude that long-range infrastructure, land use, and services delivery should reasonably anticipate.

While there are many other changes that are described in, or inferred from, these projections, the most dramatic is that of the older population, with the aging of the region’s population leading to a 129 percent increase in the 65 plus population between 2003 and 2031, compared to a projected 74 percent increase in the under 65 population. In terms of change management, it is this aging, and the direct and indirect consequences that it will bring, which will be the source of many of the opportunities and challenges to the attainment of the vision and goals of the RGS.

Numerical projections such as these are essential to change management, as they formally describe the interrelationship between the major variables that define the quality of life in a region. While these projections describe the context in which the attainment of the regional vision and its goals must be pursued, they are not in themselves the vision. Thus, while it is essential to empirically determine the magnitude of changes that a region is likely to experience and to update the projections as new data become available, this process is ultimately undertaken so that the implications of these changes for the region’s vision, its goals, and its actions, can be adapted to in a way that reflects the contemporary situation. These projections indicate that the actions and goals that comprise the RGS must realistically and reasonably anticipate change and growth in the orders of magnitude presented in these projections if they are to ensure the attainment of the vision that is the purpose of the RGS.
Endnotes


3 As a basis for the projection of future immigration levels, it has been assumed that the immigration rate (total immigration as a proportion of total population) will trend upwards as issues of an aging Canadian population (and birth rates that have been below the replacement threshold for over two decades) will result in growing domestic labour force challenges. Therefore, it has been assumed that over the coming three decades immigration will increase from its current (2003) 0.63 percent of the Canadian population to 0.72 percent by 2010 and further to 0.80 percent by 2021 (remaining constant at this level thereafter) in response to these labour force challenges. This results in immigration to Canada being in the range of 219,000 people per year over the coming decade, 260,000 over the following 10 years, and 290,000 over the last decade of the projection.

While this level of immigration falls below the Federal Liberal Party’s Red Book Target of one percent per year, it is above the constant 225,000 immigrant level used by Statistics Canada in their medium level projection for Canada’s population to 2026. This increasing immigration rate for Canada over the next two decades reflects our need to replace skilled labour as the bulk of the baby boom generation reaches retirement. It also recognizes increasing competition for labour force migrants as other countries face similar demographic challenges, most notably Europe and the United States.

On the basis of Canada achieving this level of immigration, it has been assumed that the proportion of international migrants moving into the Lower Mainland will follow historical patterns, trending towards the 16.5 percent of the total Immigration to Canada over the past 15 years. This represents an increase from the 14.4 percent achieved in 2003. This results in immigration to the Lower Mainland climbing from 2003’s estimated 28,400 people to 51,700 people by 2031. Offsetting this international inflow will be its counter flow, emigration. It is assumed that emigration from the Lower Mainland will trend towards the 0.26 percent share of total population that was experienced during the 1990s, reaching this level (from its current 0.28 percent) by the end of this decade. The result is a projection that emigration from the Region would increase from 2003’s 6,800 towards the 8,500 per year range by 2031. The net international flow would therefore provide a growing contribution to population growth: over the coming decades as net international migration would add an average of 37,000 people per year to the Region.

4 For a discussion of the issues surrounding the GDP projections, see BRITISH COLUMBIA BUDGET AND FISCAL PLAN 2003/04 – 2005/06, February 17, 2004 Ministry of Finance; http://www.bcbudget.gov.bc.ca/bfp/default.htm

Historical population figures have been estimated based on data from Urban Futures population estimation model, Statistics Canada’s Censuses of Canada, Statistics Canada’s Quarterly Demographic Statistics, Statistics Canada’s Annual Demographic Statistics, and BC Statistics Estimates.
In order to project net migration for the FVRD each individual migratory component (immigration, emigration, non-permanent residents, inter-provincial and intra-provincial migration) was forecast individually based on historical trends exhibited for each component. As with natality and mortality this was compiled in the cohort survival model on an age and sex specific basis.

7 Detailed Employment Allocation Methodology: Given the available data, the approach to the allocation of growth in future employment was to identify the degree to which employment in each of the ten industry sectors (excluding construction) was correlated with the population for nine sub-areas in the Lower Mainland (the Tri-cities, the City of Vancouver (including the UEL), the North Shore, Burnaby / New Westminster, Surrey / Delta / White Rock, Richmond, the Langleys, Pitt Meadows/Maple Ridge and the Fraser Valley). This was done by calculating the number of employees in each sector for areas within the Lower Mainland per 1000 residents, and then comparing the sub-area values to the regional average. The lower the variance in the per capita ratios in a particular sub-area, it was hypothesized, the greater the degree to which employment in that sector was population dependent.

Employment in the retail and wholesale sectors provide an illustration of the methodology. In 2001, there were 141,236 jobs in the Lower Mainland and a resident population of 2,301,380 people, for ratio of 61 retail jobs per 1000 people, compared to 26 jobs in wholesaling per 1000 residents. There was considerable variance about regional average. In the case of retail, the highest ratio was the 91 retail jobs per 1000 residents (48 percent above the region average) in Richmond and the lowest was the 43 jobs per 1000 (29 percent below the average) in the Pitt Meadows/Maple Ridge sub-area. The Fraser Valley Regional District had a ratio that fell towards the lower end of this scale at 53 jobs per 1000 people.

The variance in wholesaling within the region was even greater, ranging from Richmond’s 55 jobs per 1000 residents (110 percent above the region average) to Pitt Meadows / Maple Ridge’s 10 jobs per 1000 (63 percent below the regions average). Again, the FVRD fell towards the lower end of this scale with 13 wholesaling jobs per 1000 residents. The greater variance shown in wholesaling indicates that its spatial distribution is less closely tied to the spatial distribution of population than that of retail whose lower variance demonstrates a closer correlation between population and employment.

The degree to which the distribution of employment corresponds to that of population can be measured by calculating the degree of variance about the Lower Mainland average for each sector. While the range of variance, such as presented above, indicates such differences, it is subject to distortion by outlier values, and hence is not fully reflective of the general pattern that prevails in the region. Following a correlation approach, the sum of the absolute values of the percentage differences between each sub-area’s values and the Lower Mainland averages considers all sub-areas, rather than just the extremes. In this approach, if the sectoral employment per 1000 residents in each sub-area was the same, there would be a perfect correlation between the distribution of employment and population (i.e. each sub-area would have zero variance from the regional average), and the sum of the absolute values of the variances would be zero. On the basis of this strong correlation, one could hypothesize that employment in the sector was entirely dependent on population distribution, and hence it would be appropriate to distribute all future growth in employment in this sector according to population growth. The greater the value of the sum of the absolute values of the variance, the lower the correlation with population distribution, and hence the lower the amount of growth in employment that would be distributed on the basis of population growth.

Every sector displays some degree of variance within the region in the average number of jobs located in a sub-area per 1000 residents when compared to the regional average. The strongest correlation (i.e., the lowest variance) occurs in the retail sector and the greatest variance occurs in the primary sector. The pattern displayed is reasonable, as the closer an activity is to population serving, the lower its variance. Thus, the distribution of Education and Health Services within the region has a variance that is only 10 percent greater than that of Retailing. Conversely, activities such as Transportation, Communication and Utilities, and Primary Sector Activities are not particularly determined by where people live and hence
show much greater variance, ranging between 2.8 and 4.8 times the variance than that demonstrated by retailing.

In order to use the information about the degree of variance in the allocation process, the percent of annual employment growth that is dependent on population growth was estimated by applying the relative magnitude of the sum of the absolute variance about the sectoral mean to a range of being from zero percent to 100 percent population serving. In this case, a sector with zero variance would have a 100 percent allocation by population growth, while a sector with no correlation would have no future employment allocation according to population growth. No sectors fell at either of these extremes; using this methodology, 92 percent of retail employment growth was allocated on the basis of population growth while only 10 percent of primary employment growth was allocated on this basis.

The next step was to allocate growth in non-population serving employment (i.e., the percentage of sectoral employment growth not allocated as population serving). Given the limitations on data availability, the methodology was to allocate additional non-population serving employment to sub-areas on the basis of the each sub-area’s share of the sectoral employment in the previous year. Thus, in a sector such as Primary, employment growth is more heavily weighted to where employment is already located and less towards where population growth would occur.

The final step was to allocate construction employment. As two-thirds of construction employment is described as either work at home (i.e., from home) or as having no fixed workplace, it is in some senses most appropriate not to allocate construction employment by sub-area. Having said this, it is necessary to account for where construction employment will generally occur in the future. The approach used here was to allocate annual growth in construction on the basis of each sub-area’s share of growth in both population and employment.

The foregoing describes the allocation of growth in the employment by sector. In order to find total employment, the annual growth was added to the prior year’s employment in the sector. While this step may seem obvious, it has three implications that are significant. The first is that as the starting point is the 2001 data, the initial distribution in employment will continue to shape the future distribution until such a point is reached where population growth has significantly changed the regional distribution of people. This inertia means that sub-areas within the Lower Mainland with rapid population growth, while moving towards the regional average, will take a long time to achieve it.

The second is that unless the population in a sub-area declines, or total sectoral employment in a sector declines, sectoral employment in a sub-area will never decline, as there is no other mechanism to calibrate such declines. Obtaining comparable data for the 1996 and 1991 Census periods would permit focusing on the correlation of change in employment and population growth over time, rather than being limited to the 2001 distribution as is currently the case.

The third implication stems from the location of work at home and some of the no fixed work place employment to places of residence of workers. A larger stock of population in 2001 would have resulted in a large number of these workers being allocated to a sub-area in the base year. This will in turn influence the share of growth a sub-area receives as a result of its starting point for the non-population serving allocation.

8 The approach used to forecast maintainer rates in the Fraser Valley Region is identical to that used for the Lower Mainland.

ix For a detailed outline of this approach please see the regional employment section in the document outlining regional growth and change.
The employment classifications follow the North American Industry Classification Standard (NAICS) with Primary, Manufacturing and Construction including the Transportation Communications and Utilities (TCU), Construction, Manufacturing and Primary sectors, the Business & Personal Services including Business Services, Finance, Insurance and Real-estate (FIRE), and Accommodation and Food Services, Trade including Wholesale and Retail Trade and Health, Education, and Government Services including Education, Government and Health and Social Services.

The dwelling unit structure type classifications follow Statistics Canada’s definitions with Ground Oriented including Single Detached, Semi-detached, Apartment/flat in detached duplex, Row house, Other single-attached, and Mobile and moveable dwellings, and Apartments including apartment units in buildings over five storeys and those under five storeys, which share a common entrance.