Population and Housing Change in the Nanaimo Region, 2006 to 2036

October 2007

URBAN FUTURES
Strategic Research to Manage Change

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Introduction

Over the coming decades the thirty percent of Canada's population born between 1946 and 1965 will age into the third (and final) major stage of their lifecycle. This stage is dramatically different from the first stage – the twenty years of their childhood that were concerned with getting through school and entering the workforce – and from the second – the forty years of establishing homes, families, and careers. No part of Canadian society will be unaffected by these changes, directly or indirectly, as Canada enters this third great demographic transformation.

Statistics Canada's data for 2006 shows that ten million Canadians are between the ages of 40 and 59, comprising the infamous baby boom generation born between 1946 and 1965. Trends in life expectancy would see roughly 6.4 million (65 percent) of Canada's current boomers still alive in 2036, and hence thirty years older (between the ages of 70 and 89). As there are only 2.9 million people between the ages of 70 to 89 today, the aging of Canada's baby boom bulge over the next three decades would more than double (2.2 times) the number of people in this older age group. This doubling of the older segments of the Canadian population over the coming decades will drive social and economic changes that will influence many aspects of our lives, from increasing demand for health care to increasing levels of retirement.

This research provides projections of population change, and the implications for housing demand and land use change in the Nanaimo Regional District over the coming three decades. The research focuses on a review and projection of these dimensions of community change which will assist in the deliberation of the following questions:

- How might projected demographic changes in the Region impact the quantity and type of housing in the coming decades?

- Given this demand, how could scenarios for future development relate to:
  - *the demand for residential lands?*
  - *the locations of supply of residential lands? and*
  - *the current planning policies and development objectives within the Region?*

The approach in addressing these questions takes a "macro-to-micro" outlook. While focusing on the regional trends and projections for population and housing, given low and declining fertility rates that have prevailed throughout Canada since the early 1970's, the report commences with an examination of the national and provincial outlooks as these provide the context for migration, both international and domestic, to the Region in the coming years. This report brings together population change and housing ***demand*** over the coming three decades; subsequent work will focus on the potential ***supply*** of residential lands within the Region today and in coming years.

This projection

A single scenario projection is presented in this report, a baseline projection of the number of people (by age and sex) resident in the Region over the next thirty years, and the housing implications of both newcomers to the Region and existing residents aging through the various lifecycle stages of maintaining a household.

Sensitivity analysis on these variables show that to move in any one direction too far from this trend based scenario means that while this projection will most assuredly not be a precise description of the future, the future will lie within a reasonable range of what is presented in the following pages.

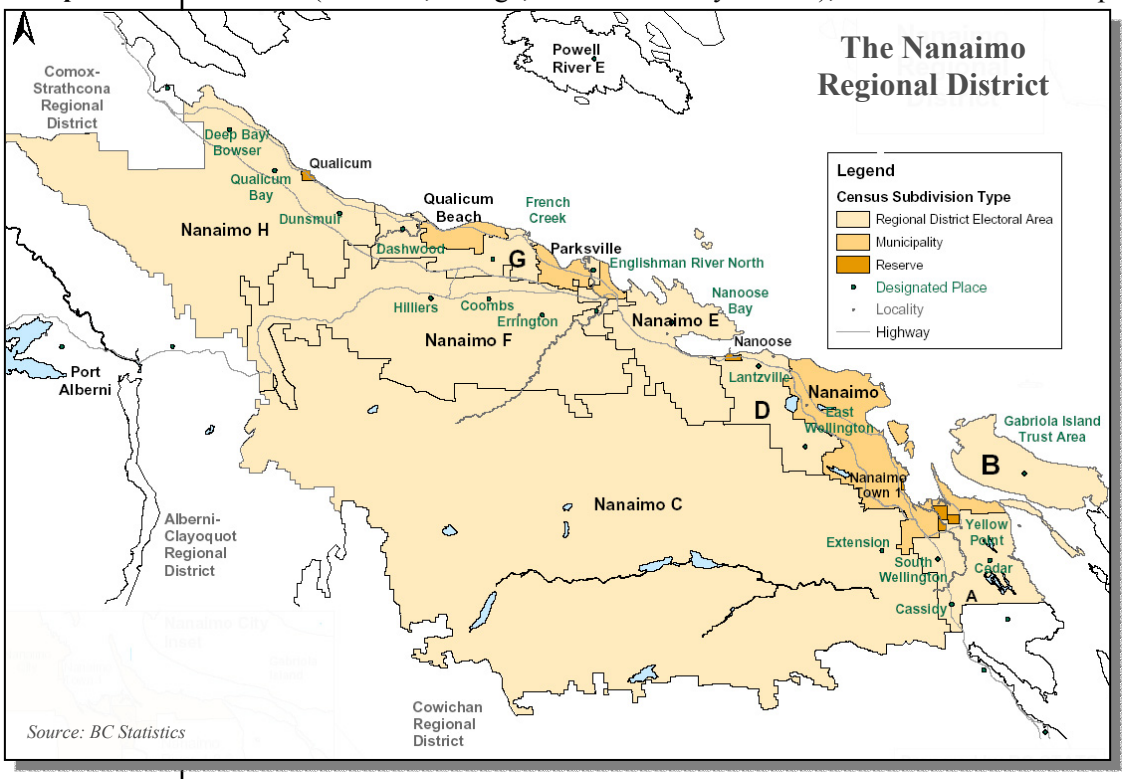
Data and rounding

It has become conventional in many number-intensive reports to round estimates and projections so as not to convey a sense of precision. Unfortunately, this creates a situation where readers cannot formulate their own analysis based on these numbers. In this report, numbers are not, as such, rounded: the only place rounding is used is to keep numbers from being so big that they become meaningless. The absence of rounding is not to indicate precision in what are obviously estimates and projections, but rather to avoid difficulties for readers who wish to conduct further analysis with the numbers. Note also that while based on data from the federal Census, all population numbers have been adjusted for a net Census undercount. For example, the most recent Census count (2006) for the Regional District was 138,630 residents. From previous Census tabulations Statistics Canada estimates an undercount (basically people missed in their count in May of 2006) to range between three and five percent. In this instance, the 2006 population for the District is adjusted upwards to 144,317 residents (for an effective undercount of 4.1 percent).

Geography

This report focuses on the administrative entity of the Nanaimo Regional District (Map 1). While it may differ from other administrative geographies within the Region (the Regional Growth Strategy study area does not include the Indian Reserves within the Regional District or Electoral Area B (Gabriola, Mudge, and De Courcey Islands), which falls under the planning jurisdiction of the Islands Trust), it is the geographic level at which historical time series data are available through the Census.

Map 1

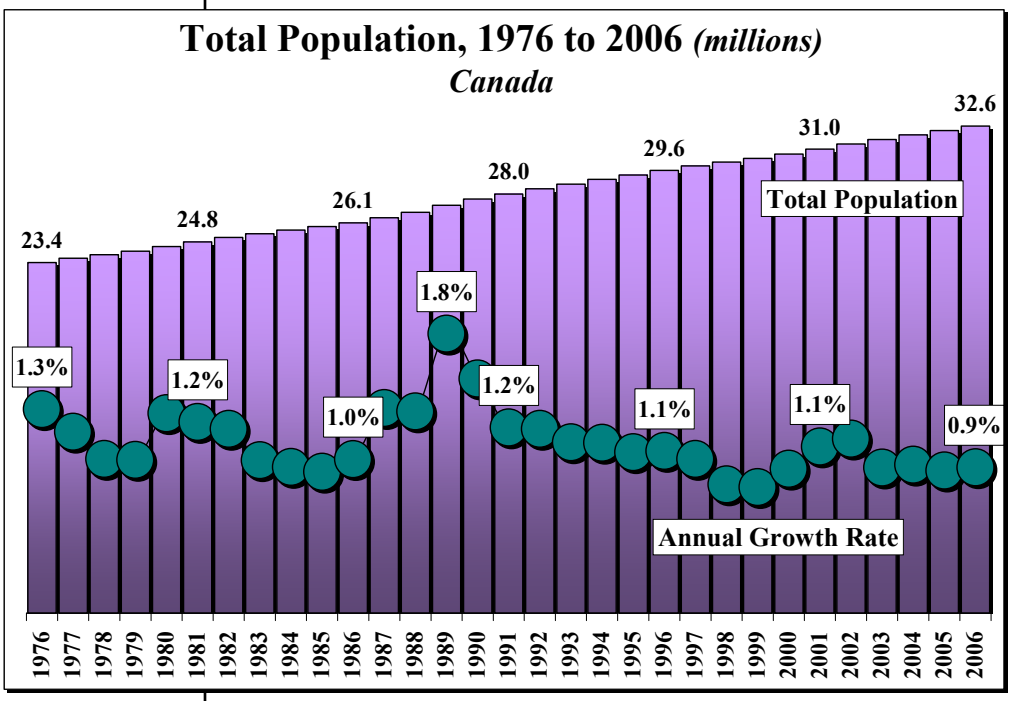


Part I: The Canadian Context for Change

As most regions in Canada share a similar demography, the challenges and opportunities arising from an aging population will be felt nation-wide. As low and declining fertility rates will see immigration and migration play a more significant role in population growth in the future, this first section briefly outlines changes expected at the national level as a context for changes expected in BC and the Nanaimo Region in the coming years.

A. Demographic Change in Canada, 1976 to 2006

Figure 1

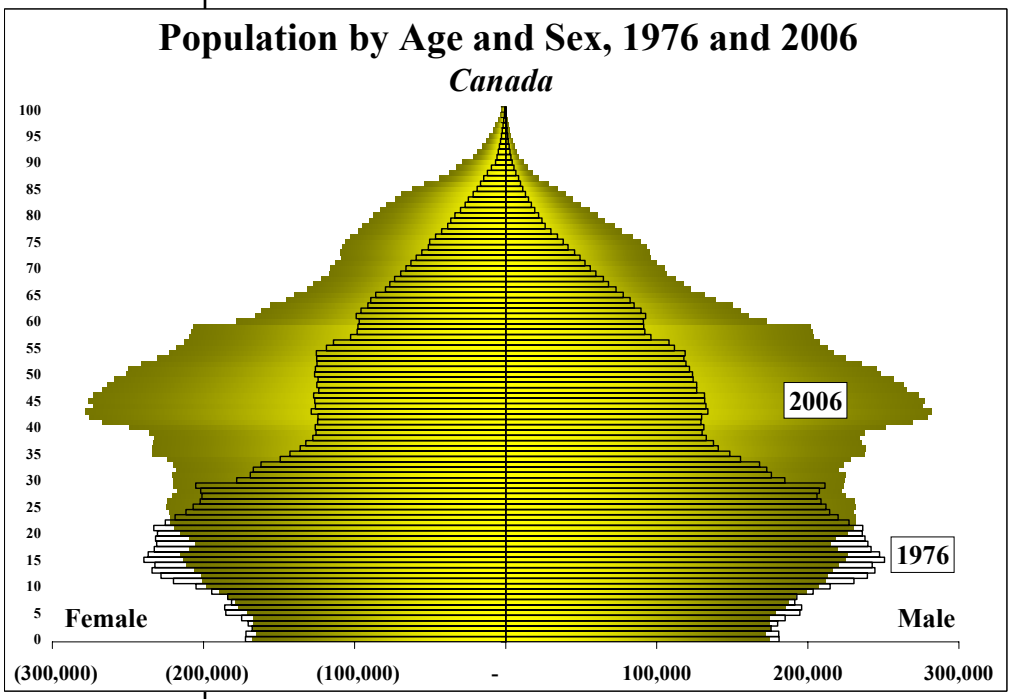


Over the past thirty years Canada's population has grown from 23.4 million residents in 1976 to 32.6 million today (2006, Figure 1). Over this period additions to the population averaged just over 300,000 people per year, or at an average annual rate of 1.1 percent. Annual population growth over this period was cyclical, experiencing no less than six reversals in the direction of growth: rates declined through the late 1970's, and again through the mid 1980's after a slight increase in 1980, before increasing significantly to 1.8 percent in the late 80's. Since this peak, characterized by high levels of immigration, growth has slowed somewhat, falling back to under one percent by 2006.

Canada's population growing by a slower rate over this period masks the degree to which it *changed* over this three decade period. While the most typical resident in Canada in the mid-1970's was a teenager, the past three decades saw this person age through the major life milestones of completing school, entering the labour force, purchasing a home and potentially beginning a new family. By 2006 Canada's typical resident had entered their 40's, with many of them now looking towards the next major life milestones: paying off the mortgage, having the kids finally move out, and retirement.

In a broader context, Figure 2, below shows the significant growth of the 40 to 59 year old age group that marked the aging of the baby boom generation over this period. This picture also illustrates the decline in the number of young people that followed the boomers aging: the under 20 population is actually smaller today than three decades ago.

Figure 2



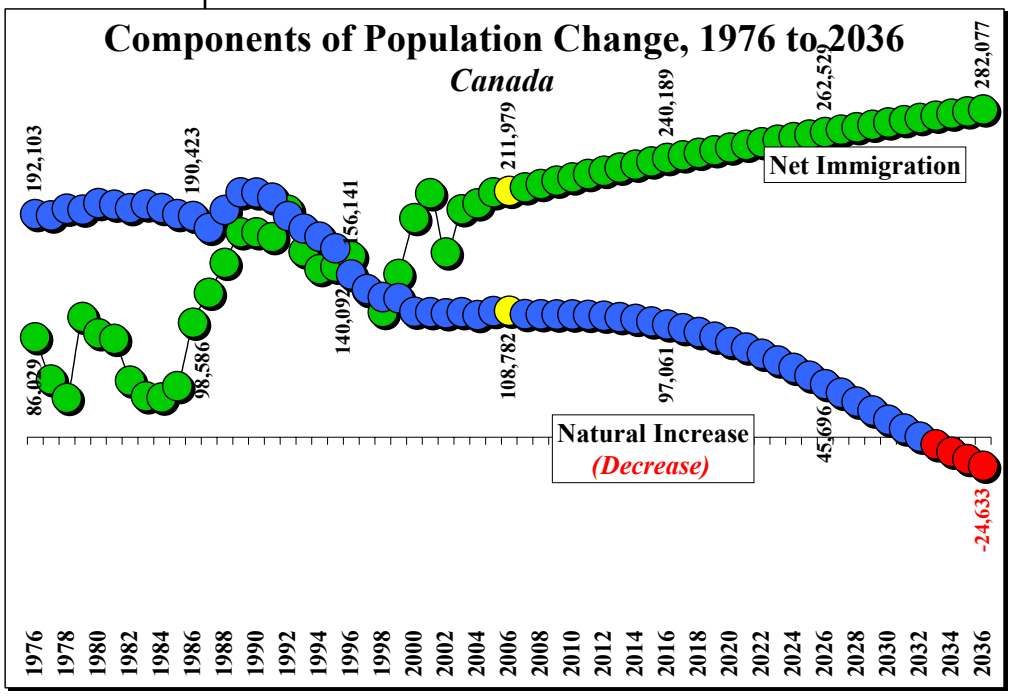
The slowing rate of growth in the Canadian population also masks the fact that the factors contributing to population growth have changed significantly over the past 30 years: declining fertility has seen immigration play a much larger role in recent years, a trend that will certainly continue as a large portion of the Canadian population has aged out of the high fertility stages of the lifecycle.

B. Projected Change, 2006 to 2036

Along with the inevitable process of aging, the two contributors to population change at the national level are usually grouped as *natural increase* (the difference between the number of births and the number of deaths) and *net immigration* (the number of immigrants minus the number of emigrants, plus changes in the number of non-permanent residents and Canadian's living abroad).

Figure 3 shows that historically, natural increase and net immigration have, on average, contributed close to the same number of people to Canada's population growth. Between 1976 and 2006 net immigration added an average of 139,000 new residents annually to the national population, while natural increase added an average of 165,000 people. From 1991 onward however, the contribution of natural increase began to decline, adding an average of only 134,000 people versus net immigration which added an average of 176,000. By 2006 immigration added over 211,000 people, while the contribution of natural increase fell to just over 108,000.

Figure 3

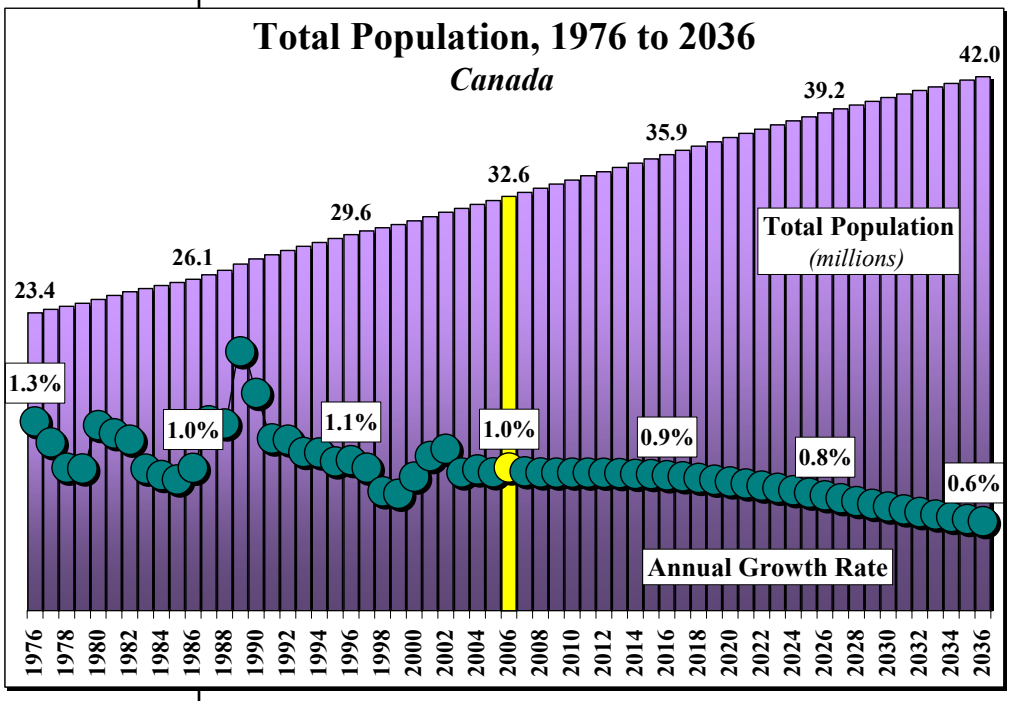


Over the coming three decades immigration is projected to become even more predominant, adding an average of 245,000 net immigrants each year to the Canadian population. Given Canada's below replacement level birth rate (a woman in Canada today typically has

only 1.64 kids with the replacement level being 2.1) and an ever increasing number of deaths (as more Canadians age into higher mortality stages of the lifecycle), the contribution of natural increase will continue the pattern of decline seen since the early 1990's, becoming natural *decrease* by 2033 as the number of deaths exceeds the number of births.

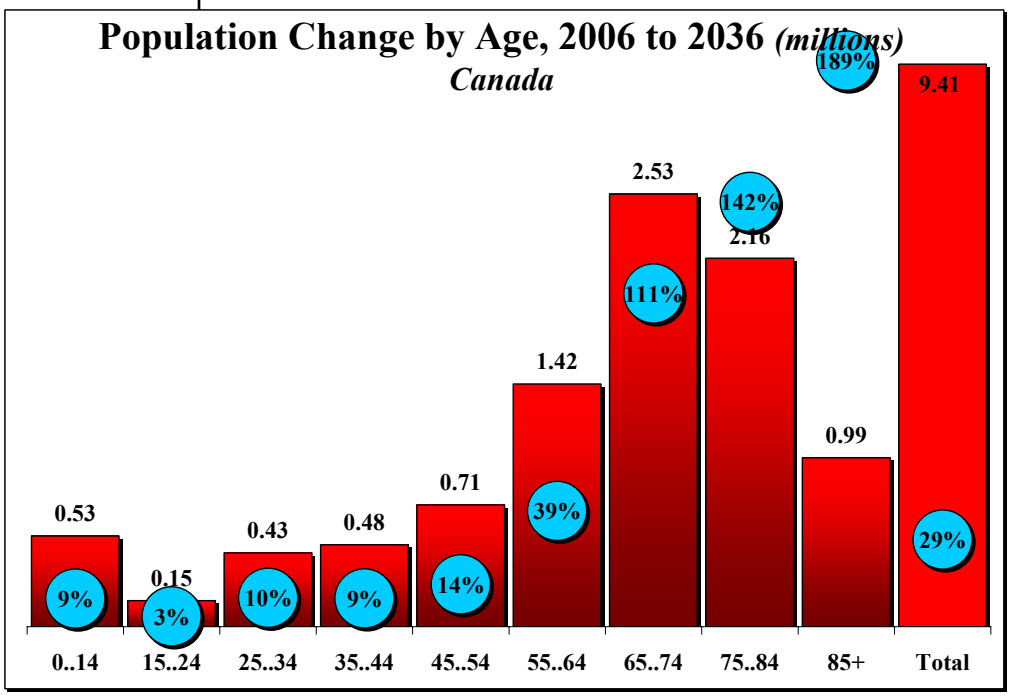
Even with robust immigration, the annual number of deaths is projected to eventually exceed the number of births. From this point on net population growth in Canada would be solely driven by immigration. With the most typical person immigrating being in their late 20's, immigration will help to slow the aging of Canada's population. That said, while it will slow the pace of aging, it will not stop it; the aging of the country's 10 million baby boomers will easily overshadow the younger contributions of both net immigration and births over the coming decades.

Figure 4



Trends in the components of natural increase and net immigration, when combined with the aging of Canada's current population, results in a projection of Canada's population to grow from 32.6 million residents in 2006 to 35.9 million by 2016, and further to 42 million by 2036. Over the next three decades the Canadian population is expected to grow by 29 percent, or 9.4 million residents (Figure 4). Given the declining contribution of natural increase outlined earlier, the annual rate of growth would decline slowly over time, from one percent in 2006 into the neighbourhood of 0.6 percent by the end of the projection period.

Figure 5



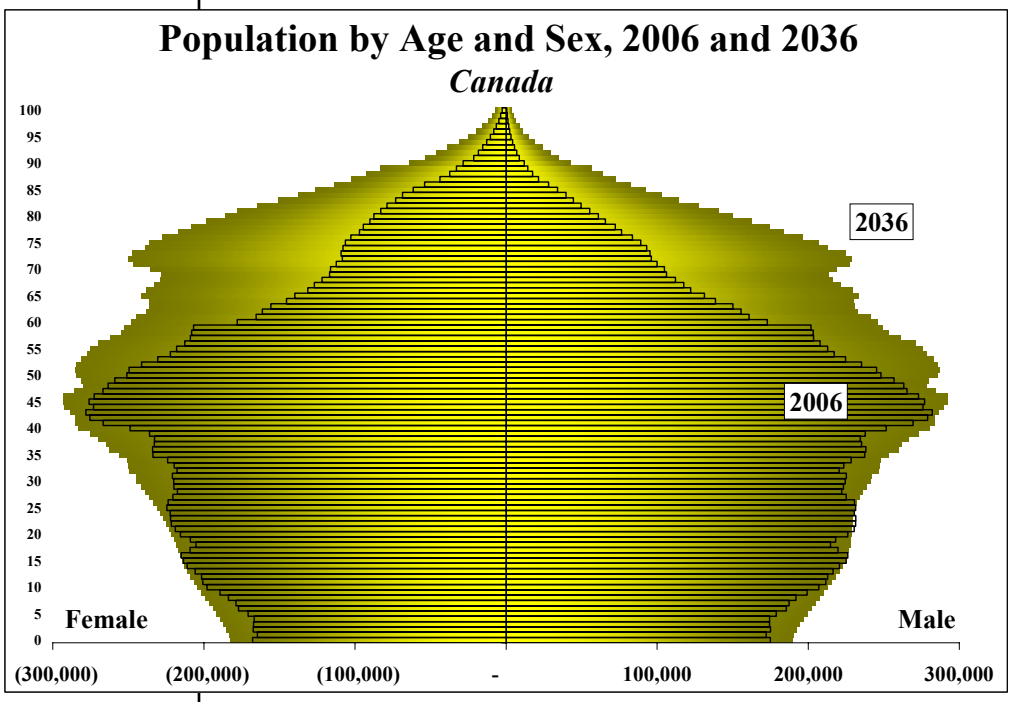
While growth in Canada's total population is expected to continue to slow, changes in its age composition will be much more dramatic (Figure 5). Total population growth of 29 percent over the next three decades would be comprised of the 55 plus population growing much more rapidly than the total population (adding 7.1

million people) while all the under 55 population would increase by more slowly (growing by only 2.3 million). The growth of the 55 plus age group will be largely due to the aging of the boomers as even without immigration to Canada the 55 plus population would still grow by 65 percent (5.15 million people).

By contrast, without net immigration the under 55 population would decline by 24 percent (falling by 5.82 million people). Growth in the under 55 population, and hence the working aged population, will solely be the result of net immigration over the coming years. This illustrates the magnitude of demographic opportunities and challenges that will be evident in Canada in the coming years: an older population growing by three times the size of its younger population.

More specifically, Figure 5 shows the 65 to 74 age group would see the greatest absolute increases, growing by 2.53 million people between 2006 and 2036. In addition, the 75 to 84 group is projected to add 2.16 million people, the 55 to 64 group 1.42 million, and the 85 plus just under one million. On a relative basis, this would represent tremendous growth in the older age groups, with the 85 plus group almost tripling (growing by 189 percent), the 75 to 84 group growing by 142 percent, and the 65 to 74 group doubling in size (111 percent).

Figure 6



These compositional changes would result in a significant shift in the Canadian age profile by 2036 (Figure 6), pointing towards pressure for changes on a wide range of issues such as health care and pensions at the national scale, to more local considerations such as longer walk signals at crosswalks and larger print in newspapers.

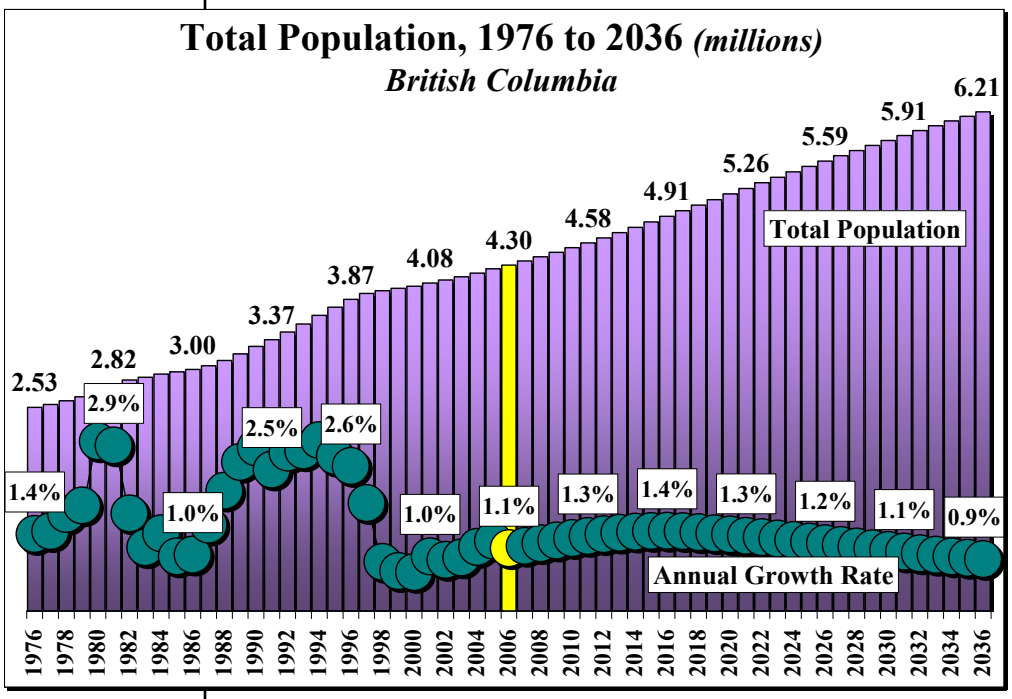
Part II: Directions of Change in British Columbia

A. Population Change in British Columbia, 1976 to 2036

The past thirty years have seen British Columbia's population growth generally exceed that of Canada (69 percent provincially versus 40 percent nationally), growth that has generally moved in tandem with provincial economic cycles. Annual growth rose significantly through the late 1970's as the provincial economy expanded, but fell through the early 1980's to a low of one percent in 1985/1986, following an economy that contracted by almost three percent in 1982/1983. The late 1980's began another period of expansion, with population growth in the range of 2.5 percent during the early 1990's being driven by economic restructuring in both Alberta and Ontario, and the influence of the political (and economic) restructuring in Asia.

From a population perspective the turn of the new millennium was associated with the slowest rate of population growth BC has seen in more than three decades (0.69 percent in 2000), a period again characterized by slow economic growth. The exception to the trend of population and economy generally moving in the same direction is the most recent period. Strong growth in the provincial economy in the post-2001 period has not yet been matched by levels of population growth seen in previous growth periods. This fact is clearly reflected in the record low unemployment rates that the province has experienced in the past few years.

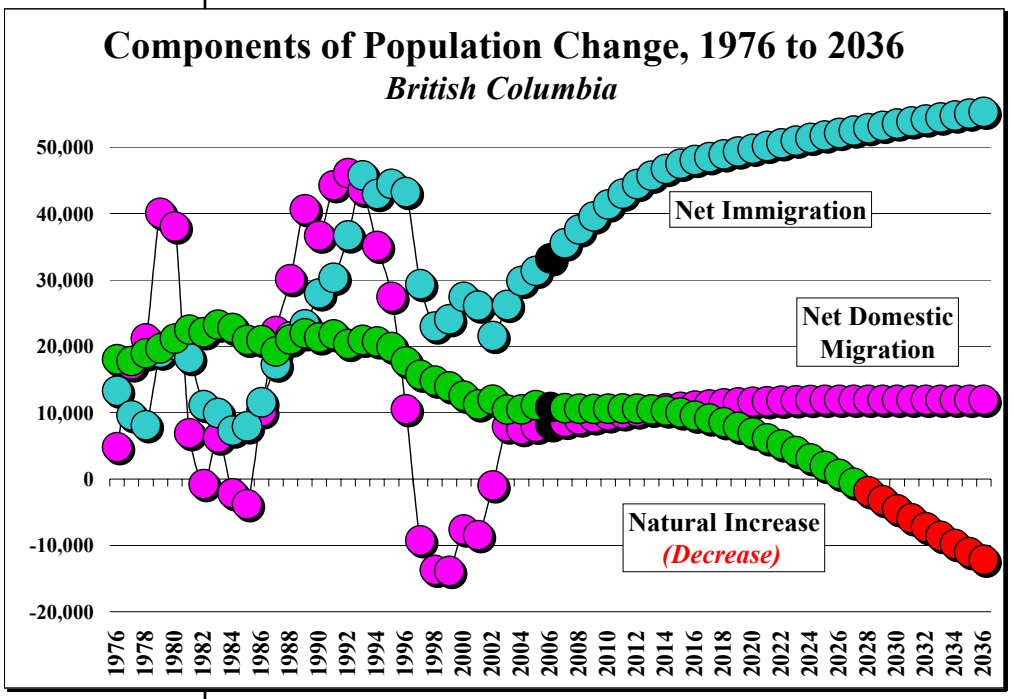
Figure 7



As with the national picture, trends would point towards slight declines in birth rates, slight increases in life expectancy, growing net inter-provincial migration, and increasing net international migration characterizing changes in the provincial population. These trends, along with the aging of the province's existing population, would see the province grow from 4.30 million today to 4.58 million by 2011, 5.26 million by 2021 and 6.21 million by 2036 (Figure 7). On average, an estimated 52,000 new residents would be added to the provincial population each year, smaller than the 59,000 that was added annually over the past three decades.

In terms of the components of change, annual additions from net immigration would increase from the current 33,000, back towards the 46,000 range seen in the early 1990's and further to 55,000 by 2036 (Figure 8). On a trend basis, domestic migration is expected to increase as well, from the range of 8,000 net interprovincial migrants today to almost 12,000 annually by the end of the projection period.

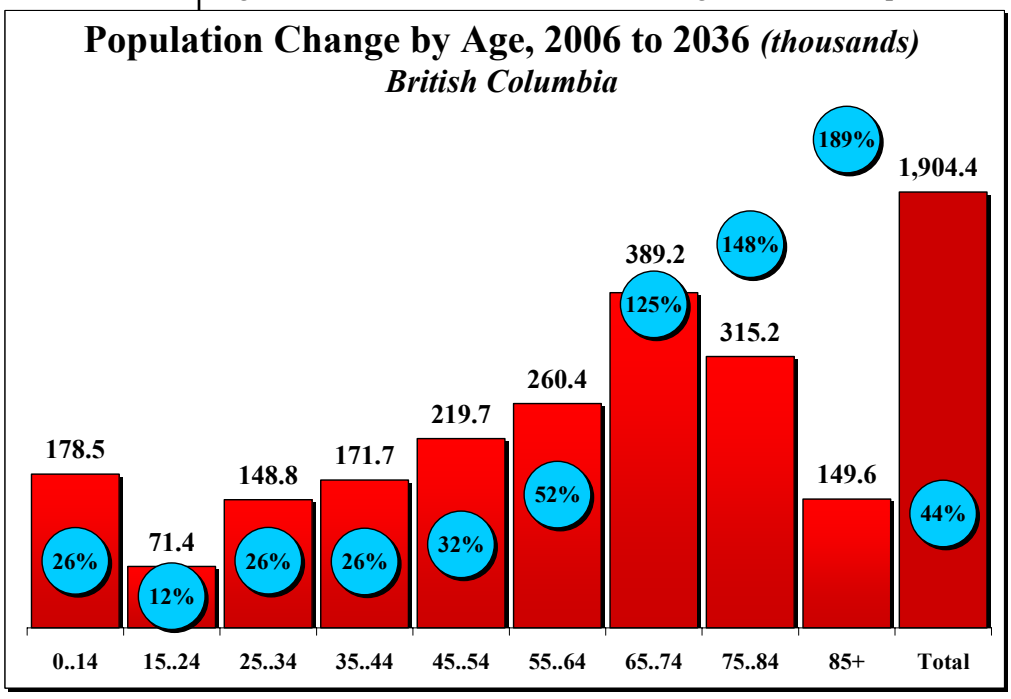
Figure 8



With roughly one-third of British Columbia's population currently between the ages of 40 and 59 the coming thirty years will see a substantial increase in the size of the province's older population. Given its relatively small base in 2006, the 85 plus population would to grow by 189 percent over the coming three decades, adding 149,600 people (Figure 9). The 75 to 84 and 65 to 74 age groups would also experience significant change, growing by 148 percent (315,200 people) and 125 percent (389,200 people) respectively. The only other age group that would see above-average growth, at 52 percent, is the 55 to 64 age group, as it grows by 260,400 people by the end of the projection period.

While the younger population in BC is expected to grow more slowly than the population as a whole, a young migration profile would see these age groups grow more rapidly in BC than at the national level. The 45 to 54 group would grow by 32 percent (versus 14 percent nationally), and each of the 35 to 44 and 25 to 34 groups would grow by 26 percent (versus nine and ten percent nationally). The most significant differences would be in the two youngest age groups: the 15 to 24 group is projected to grow by 12 percent in BC relative to a three percent increase nationally, and the under-15 group is expected to grow by 26 percent provincially relative to nine percent growth in Canada as a whole. Having said this, the pattern of growth in the older age groups being significantly greater than the younger age groups will prevail both provincially and nationally.

Figure 9



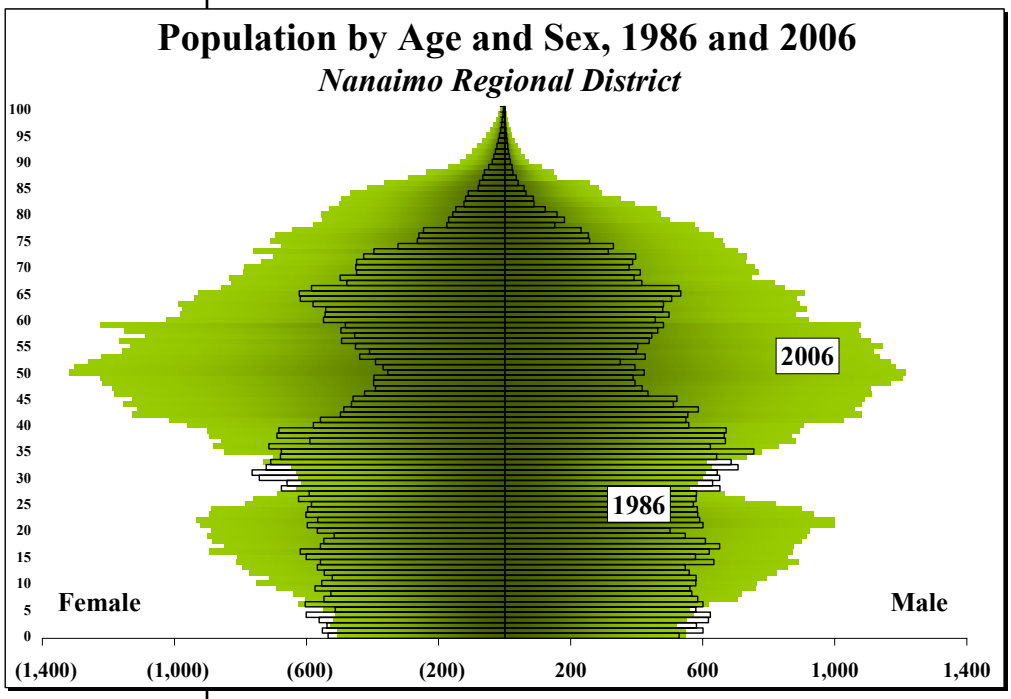
Regardless of where you are in Canada, the changing composition of our population over the next three decades will have fundamental implications for anything with a strong lifecycle-related pattern, be it visits to the doctor, the demand for bi-focal lenses or, as in the context of this report, the demand for different forms of housing.

III. Demographic Change in the Nanaimo Regional District

The Nanaimo Regional District's population, which increased from 84,819 people in 1986, to 126,375 in the mid-1990's, and further to 144,317 by 2006, has grown by 70 percent over the past two decades, adding almost 59,500 new residents. During this time, the Region experienced two distinct periods of growth: annual population growth of over five percent during the late-1980's and early-1990's was followed by growth of under one percent per year in the latter half of the 1990's and early 2000's. More recently growth has been in the range of two percent, significant compared to only five years ago, but much lower than that which characterized the early 1990's.

More striking than growth of the Nanaimo Regional District's population has been changes in its composition. The District's 2006 age profile is characterized by two distinct bulges: the significant widening between the ages of 40 and 60, reflecting the post-World War II baby boom that lasted from 1947 to 1966, and another, albeit much smaller, concentrated around the age of 20. Between these two bulges the profile narrows, a trait not seen in the 1986 profile (Figure 10).

Figure 10



As the base of the 1986 profile was relatively constant and a one year old in 1986 would be 21 today (just slightly younger than the waist in the current age profile), the waist is more driven by people between the ages of 20 and 35 migrating out of the District than a baby boom "echo" caused by the aging of the boom generation through family formation.

Given the sheer size of the post-World War II baby boom, the aging of this cohort has resulted in demographic change proceeding at a much more rapid pace than population growth in the District. For example, while the number of individuals under the age of 25 age increased by 32 percent over the past two decades, the 25 to 64 population grew by more than twice this rate (78 percent), and the 65 plus population by almost 130 percent. The aging of the post-War boom generation through the family-formation stage of the lifecycle has had significant implications on housing, land use, and employment within the Regional District; the coming decades will see these residents have an equally significant impact as they enter the empty-nester and retirement stages of the lifecycle.

In looking forward, although the demographic processes that will shape the Region's population in the coming decades will be the same as those that shaped it in the past, their relative importance will be much different. The typical resident of the Nanaimo Regional District – who is currently 50 years old – conservatively has a life expectancy (at birth) of 30 more years; as such, aging and mortality will be more significant determinants of the Region's age profile (with births being less so) over the coming decades than they have been in the past. These components

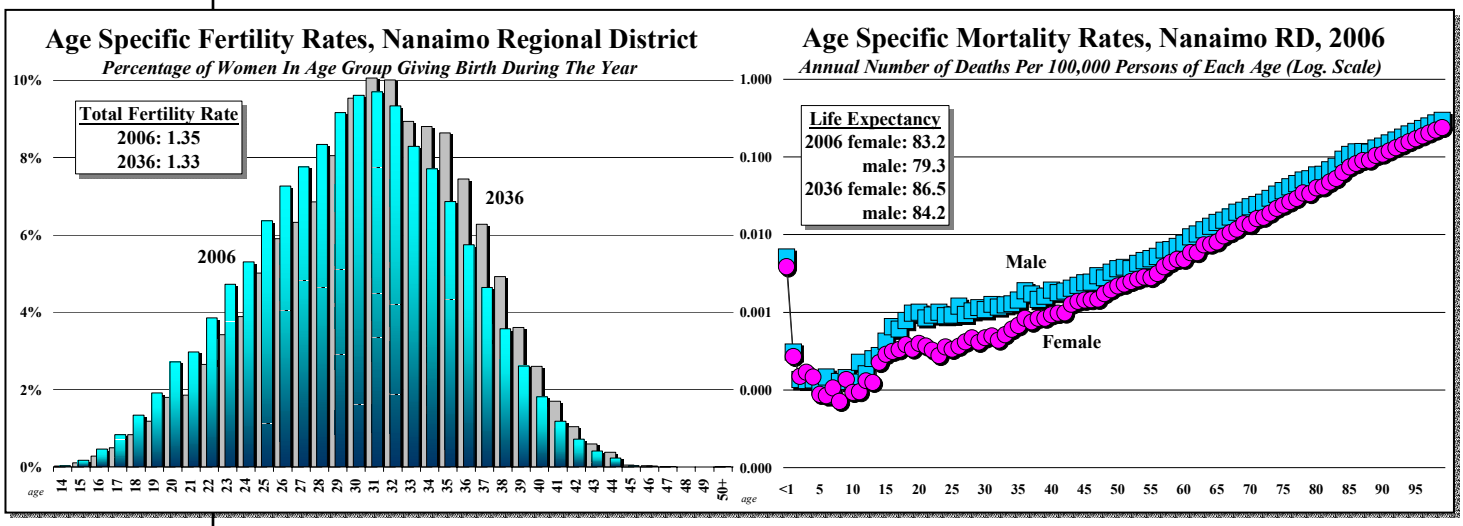
of population change, along with migration, will be briefly outlined before presenting the regional population projections.

A. Natural Increase in the Nanaimo Regional District

Since the peak of the post-World War II baby boom in the late-1950's, declining birth rates have put downward pressure on the number of babies born in the Region each year. However, despite this, and despite significant gains being made in life expectancies, neither the number of births nor the number of deaths in the Region has changed dramatically over the past two decades.

A rapidly growing population meant that, while birth rates declined significantly, the annual number of births in the Region remained relatively constant between 1986 and 1996. Since then, slower population growth has contributed to the declines in the annual number of births. Similarly, relatively robust population growth resulted in the annual number deaths climbing over the past two decades in spite of dramatically falling mortality rates. The aging of the population during this period also played a part, with an increasing proportion of people in the older, higher-mortality age groups, translating into more deaths each year. Additionally, the aging of the baby boomers through the peak child-bearing stage of the lifecycle offset some the impact of declining birth rates. Combined, the contribution of natural increase (the difference between the number of births and deaths each year) has been characterized by a steady pattern of historical decline, whereby the annual number of deaths in the District has exceeded the number of births every year since 1999.

Figure 11



The coming decades are expected to see a relatively constant total fertility rate, with changes in childbearing more characterized by postponing towards later stages of the lifecycle (Figure 11). With respect to mortality rates, continued increases in life expectancy are anticipated, albeit by smaller increments than have been seen historically. While future changes in these vital rates are expected to be small relative to historical changes, the aging of the baby boom generation out of the family stage of the lifecycle and into higher mortality age groups will see the annual number of deaths increase dramatically relative to the projected level of births. In part, migration will work to offset the negative contribution of natural increase to population growth, as it is expected to continue to bring younger migrants to the Region.

B. Migration in the Nanaimo Regional District

To a large degree in-migration depends on the characteristics and behaviour of persons who live in other regions. Similarly, out-migration, while partially a function of the resident population, is also dependent upon conditions outside of the Region. Therefore, a general approach to migration projections (and that utilized here) is to project future levels of migration flows and apply age specific profiles of the flows, rather than to apply age specific migration propensities to the Region's resident population. The migration vectors are then layered into the cohort survival population model, which includes annual births, deaths and aging to produce trend projections of the Region's population.

In formulating these local projections, there are two components of migration that must be considered: net international (immigration and emigration or people moving between the Nanaimo Regional District and locations outside of Canada), and net domestic (inter-provincial migration or people moving between the Region and locations in other Canadian provinces and intra-provincial migration, those moving between regions in BC). In conducting projections for the Nanaimo Regional District, the flow of international migration to the Region recognizes projected immigration levels both nationally and provincially, while inter-provincial migration of residents to the Nanaimo Regional District from regions outside BC recognizes projected domestic migration at the provincial level. The corresponding age and sex profiles of each aspect of migration are based on data from the past two decades for the Nanaimo Regional District, a period generally characterized by periods of both high and low levels of migration.

i) International Migration

As with all migration flows, a strong lifecycle pattern is associated with international migration, the profiles of which are decidedly young. With the most typical international migrants to and from the Regional District being in their early 30's, 63 percent of the immigrants to, and 59 percent of the emigrants from, the Region over the past decade were under the age of 40. Note that the 20 percent of immigrants to the Nanaimo Regional District (and the 17 percent of emigrants from the Region) were people under the age of 15 – the result of the movement of people in the 25 to 39, most typically their parents.

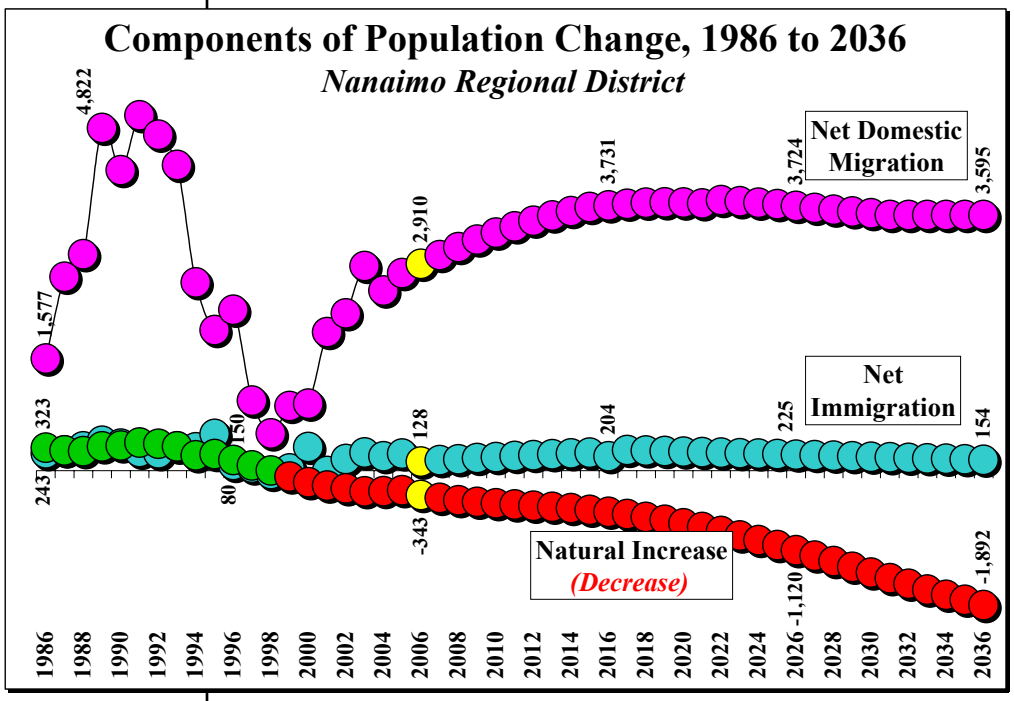
In terms of the number of international migrants, over the past two decades immigration to the District averaged 273 people per year, while over the last decade it averaged 206, a result of immigration of fewer than 100 people in 1998/99 compared to the peak of 400 seen in early 1990's. A similar pattern was seen with emigration, with there being an average of 118 emigrants leaving the Region each year over the past two decades, compared to more than 140 each year over the last decade. The combined result is net immigration to the Regional District that has averaged almost 170 people each year over the past two decades. Note that between 1998 and 2001 more people left the Region for other countries than migrated from them, resulting in net immigration actually being negative.

In preparing the trend-based projections of immigration and emigration for the Nanaimo Regional District a number of factors were considered. As indicated earlier, immigration to the Region will largely be a function of the total number of immigrants expected to come to Canada and the province in the coming years, which in part, will be a function of federal immigration policy. Therefore, the Regional District's share of international migration to the province that has prevailed in the Region over the past two decades was considered in conjunction with the national projection of immigration (as outlined in the first section of the report) to generate future

immigration levels. With respect to the flow of emigrants from the District, historical emigration levels per capita were used to determine the number of emigrants leaving the District each year[1].

The results of combining local and national trends in international migration is a projection of net immigration increasing from its current 128 to 204 in 2016, 225 by 2026 before stabilizing in the range of 175 over the last decade of the projection (Figure 12). Given the younger age profile of both immigration and emigration relative to the Region's existing residents, immigration will work to slow the aging of the Region's population.

Figure 12



ii) Domestic Migration

As with international migration, migration within Canada is typically dominated by younger people. In 2006 the most typical domestic in-migrant to the Region was 22 years of age, with the 20 to 29 age group representing the peak age range (relative to the 25 to 34 peak for the migration from international origins). As with international migration, only eight percent of this flow is of people 55 years of age or older.

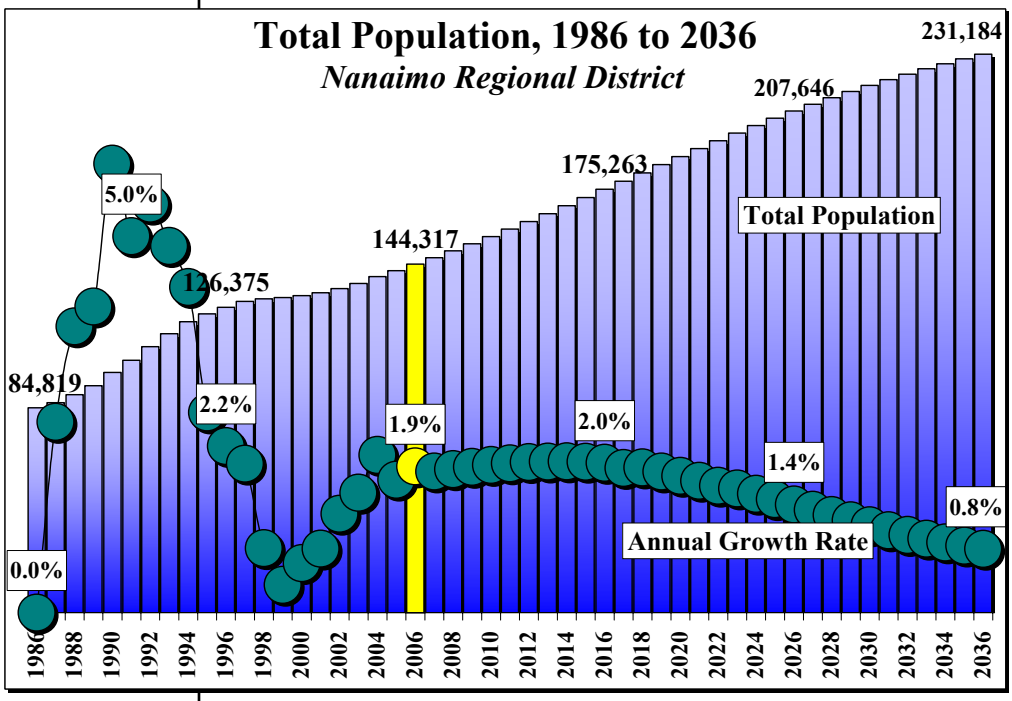
Historically, domestic migration to the Region has always exceeded migration from it, with net domestic migration in the range of 2,650 people per year over the 1986 to 2006 period (Figure 12). That said, over the past two decades domestic migration showed considerable variance around this average, ranging from a peak of 5,000 people in 1991 to a low of under 1,000 between 1997 and 2000. The increasing mobility of residents to other places in BC and other provinces began in 1997 when there was a net outflow of migrants from the province of BC to strong economies in Alberta and Ontario. It was not until after 2002 that domestic migration at the provincial level was once again positive. The narrowing of the gap between domestic ins and outs in the Region over the most recent period has been the result of both an increase in the number of in-migration and a decline in out-migration. By 2005/06 net domestic migration to the Nanaimo Regional District had increased back into the range of 3,000 people, significantly greater than only five years previous, but still 40 percent lower than the peak seen in the early 1990's.

Considering trends in the long run levels of domestic in- and out-migration we need to recognize two demographic realities. The first is that the below the replacement fertility rates that have prevailed since the early 1970's are now having an impact on the ability of the labour force to grow. With fewer kids under the age of six in the Regional District today than in 1986, a

[1] Note that , albeit small, the number of Non-Permanent residents and residents temporarily abroad are also accounted for the international flow of migrants to the District.

constrained labour force and high worker mobility will increasingly characterize most regions in Canada over the coming years. Over the long run, given the impending retirement of a large number of Post War Boomers, improving regional economies within the province of BC and favourable local environments may also point towards increasing mobility of the non-working population.

Figure 13

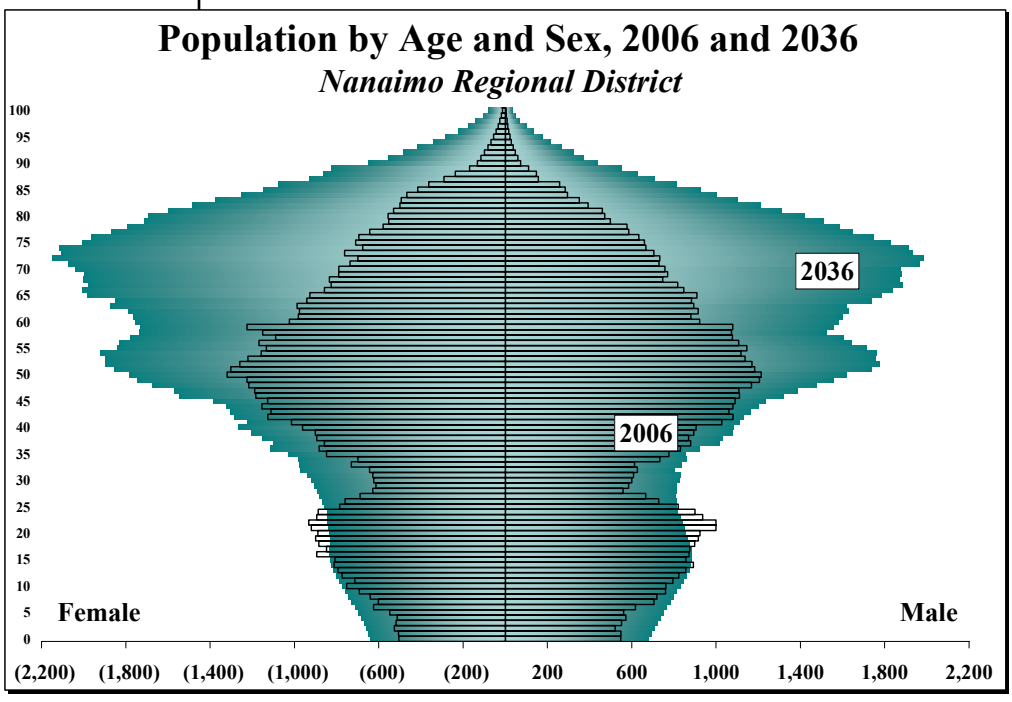


C. A Trend-based Population Projection for the Nanaimo Regional District

The combined influences of aging, natality, mortality and migration leads to a projection of the Nanaimo Regional District's population increasing from today's 144,317 residents (2006) to 175,263 in 2016, 207,646 by 2026 and 231,184 by 2036 (Figure 13). The projected increase of just over 30,000 people over the next ten years, 32,000 over the following decade and 23,000 over the remaining ten, would add over 86,000 people to the Region's population over the next three decades.

The projected absolute increases in the Region's population over each of the coming decades, while greater than the 18,000 added between 1996 and 2006, is significantly lower than the 41,000 residents added between 1986 and 1996. Thus, a scenario for demographic change that involves extending historical trends into the future, while acknowledging patterns of diminishing marginal change, results in a region that will grow at a slowing annual rate, falling from roughly two percent today to just under one percent by the end of the projection period.

Figure 14

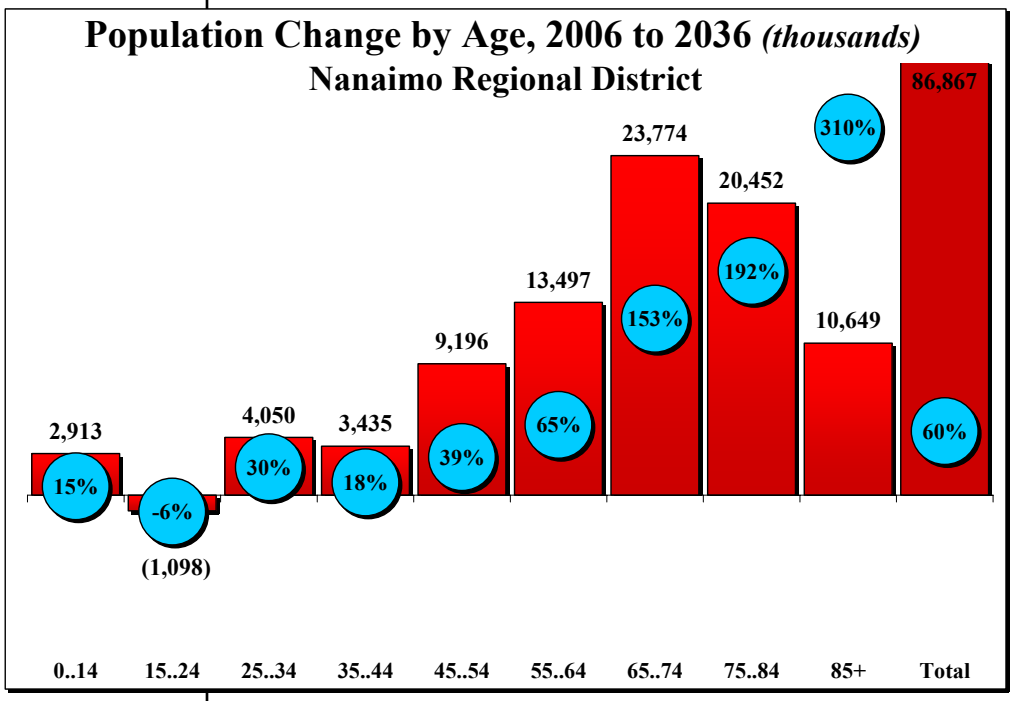


The most significant consequence of the projected levels and composition of migration to the Regional District is not that it will increase the Region's population, but that it will

still see significant aging. As Figure 14 shows, the Region's age profile will be dominated by its continued shift upwards and, given a below the replacement level birth rate, a base that will, at best, just remain constant.

The impact of migration on the Region's population will be seen to the greatest degree in the younger age groups. That said, migration will also contribute to the growth of the older population, with today's most typical 30 year old immigrant being part of the 60 plus population by 2036. Overall, under this trend scenario the next three decades will be characterized by the population over the age of 55 in the Region growing more rapidly than total population, and the population under the age of 55 growing more slowly. The largest absolute increases would be in the 65 to 74 age group, as it grows by 23,774 residents (153 percent growth), accounting for more than one-third of growth in the Region (Figure 15). The smallest absolute and relative increases would be in the youngest cohorts, with the 15 to 24 population experiencing a slight decline (six percent or 1,098 fewer people between 15 and 24).

Figure 15



Comparatively, the family formation and rearing stages of the lifecycle (25 to 54 age groups) are expected to grow in the range of 30 to 40 percent, slower than the projected growth for the 55 plus population. This pattern differs from what has been experienced historically where over the past two decades these age groups grew more rapidly than the overall population. As indicated earlier, this shifting of population growth to the older segments of the Region's population will have significant implications on a wide variety of issues within the Regional District; of which the housing implications will be addressed in the following section.

V. Housing Occupancy Demand

As this report focuses on the relationships between the Nanaimo Regional District's changing demography and its implications for housing, an occupancy-based definition of housing demand is used which considers changes in housing demand at various stages in the lifecycle. Housing occupancy demand therefore represents the number of private dwelling units required to house the people who are expected to live in the Region. In this context it does not include people resident in institutional and other collective types of accommodation.

Housing demand is thus equated with residents' occupancy of dwelling units at a certain point in time. A change in housing demand over a period of time represents change in the number of dwelling units occupied by the Region's residents. This change will be a net change, calculated by subtracting the number of occupied dwelling units at one point in time from the number of occupied residences at an earlier point in time.

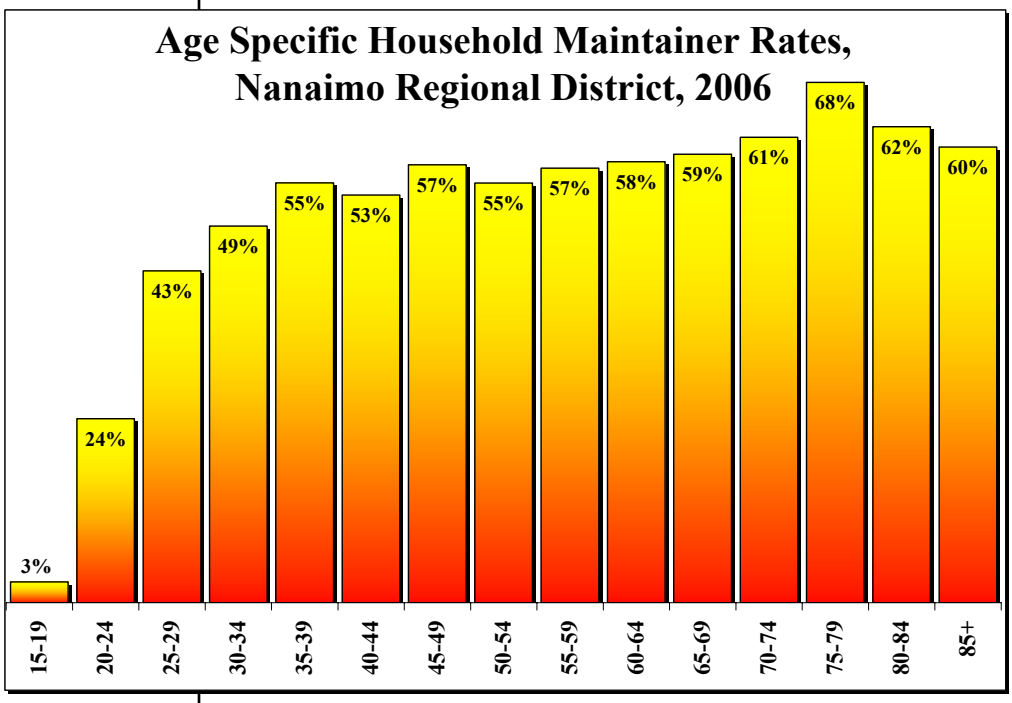
It is important to note that changes in occupancy demand over a period of time will not necessarily be the same as the number of dwelling units constructed during that period which are typically tracked though permit, starts and completions data. Growth in occupancy demand can be met not only by new 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; to the extent that this inventory increases over the time period, construction could exceed occupancy demand.

Further, conversion of units from and to non-residential uses can also alter the supply of residential accommodation without necessarily being reflected in starts, completions or demolition data. In this vein, construction may then include replacements (new units constructed to replace units demolished or converted to other uses) that do not represent net additions to the housing stock. Additionally, construction of secondary residences that are occupied for only part of the year would not be considered part of resident occupancy demand but may be counted as new construction data. Conversely, secondary suites added to the dwelling stock have not typically shown up in permit or new construction databases, but do represent a dwelling unit that would fulfill occupancy demand.

A. The Age Specific Pattern of Housing Demand

In the Census questionnaire each group of people living together in a private dwelling unit (a household) is 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 is referred to as the age specific household maintainer rate. This age specific data is then linked to other data on attributes of the dwelling that they maintain, such as the structure type (for example an apartment or row house) or the tenure type (owned or rented). Tracking the different forms of housing demanded at various stages of the lifecycle provides the link between housing occupancy and a growing and changing regional population. The 2006 Census data provides a snapshot of this lifecycle pattern of housing occupancy in the Nanaimo Regional District, while comparisons to previous Census periods shows how it has changed over time.

Figure 16



These data show a distinct lifecycle pattern. This pattern is characterized by only three percent of the people in the 15 to 19 age group maintaining their own household as most people at this point in their lives are living in households maintained by someone else, usually their parents (Figure 16). A much greater percentage of people in the 20 to 24 age group have left the parental home to establish their own households: 24 percent of the people in the Region in this age group are household maintainers (with the other 76 percent living with someone else who is primarily responsible for the finances of the household).

This significant increase in the proportion of people maintaining households continues as people move into family-formation and family-rearing. The most striking change is the increase to 43 percent of the people in the 25 to 29 age group, and to almost half (49 percent) of people in the 30 to 34 age group, being household maintainers. In the 35 to 85 plus age groups more than half of the people are household maintainers, with the percentage increasing from 55 percent in the 35 to 39 age group to 68 percent in the 75 to 79 age group, before declining to 60 percent in the 85 and older age group. Declines in this eldest age groups result from a shift from maintaining one's own household to living either in a private household maintained by others (such as the kids or grandkids) or into collective accommodation such as a nursing home or care facility.

The lifecycle pattern of household maintainer rates increasing with age has significant implications for housing demand. Consider the example of 1,000 people in the 15 to 19 age group: in 2006 there would be only 30 households maintained by these 1,000 Nanaimo Residents. Five years later, when these 1,000 people had aged into the 20 to 24 age group, they would maintain 240 households and, five years later as they aged into the 25 to 29 age group, 430 units. Therefore, over a ten-year period the occupancy demand from the same 1,000 people would increase more than 10-fold, from 40 units to 450 units. This characterized housing markets throughout Canada in the late-1960's and 1970's as the post-World War II baby boom generation moved out of their parents' homes and into their own dwellings. Between 1966 and 1976 many regions throughout Canada saw the demand for housing grow at much greater rate than population.

i) Age and Housing Structure Types

The great diversity of private housing types people live in can be classified into two major structural types: ground oriented and apartment. The most typical ground oriented dwelling is a single detached house with its front door opening onto a lawn, its rear door opening onto a yard, with side yards separating it from other dwellings, and only one group of people (one household)

living in it. The essence of this form of dwelling is living at ground level, with doors and windows that open out onto yards.

There are other dwelling types that also have direct access to yards, but where there are no side yards between dwelling units. This type of housing is referred to "attached" or "other ground oriented" units. It includes the side-by-side duplex (referred to in the Census tabulation as semi-detached or duplex), where dwelling units are on the ground with doors and windows that open onto yards on three sides, but where the fourth side is attached to another unit (or a non-residential building in what is referred to as single attached unit). This category would also include row houses, where the dwelling units are attached to other units on both sides and suites which fall under the Statistics Canada definition of apartments or flats, duplex. (Moveable and mobile homes are also generally included in this category, even though they are, according to the strict Census definition, 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 access to a yard, but rather share a common corridor access to a yard or street. Typical examples of apartment dwellings are in multi-unit apartment buildings of five or more storeys (high-rise buildings) and in buildings of less than five storeys (low-rise buildings). In both cases, the defining features are many units in one building, units attached to other units not only on two sides but above and below, unit entrances by way of shared corridors, and no direct access to yards or streets.

As was noted earlier, there are a great diversity of structure types found within any community. While each type may appear distinct and discrete, in reality they form part of a continuum of both structures and uses that is subject to interpretation: what classifies as single detached in one system (such as CMHC) may fall in as an apartment under five storeys in another (the Census). To reduce as much as possible the ambiguity in interpretation of the projections presented here, three major structure types are presented: single detached, other ground oriented and apartment.

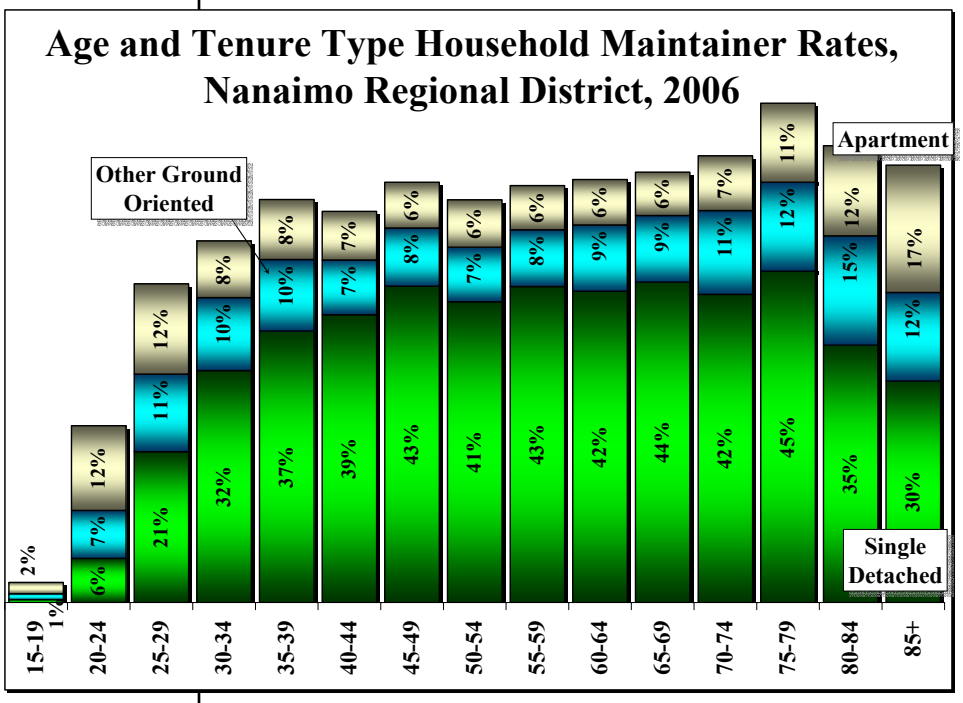
While single detached is a distinct structure type (one dwelling in a structure, the structure not being attached to any other structure), the other ground oriented grouping (using Census structure type definitions) includes houses with two - and only two – dwelling units in them (houses with two suites and side by side duplexes), row houses (three or more units side by side in a structure with no stacking of units), and mobile homes. The apartment classification captures dwellings in both low and high-rise buildings.

In large part these dwelling unit aggregations attempt to reflect the degree to which households may be willing to substitute one structure type for another. For example, a household realistically seeking a single detached unit may, because of budgetary or locational factors, have to consider alternatives to this most preferred form of dwelling such as side-by-side duplex (other ground oriented). Additionally, the groupings reflect general land use requirements and zoning configurations for each type of structure type.

There is also a distinct relationship between a household maintainer's age (again a particular stage in the lifecycle) and the structure type of the dwelling they maintain (Figure 17). A person in the District is generally more likely to be the maintainer of a household living in a ground oriented unit than one living in an apartment unit. From age 35 to 79, a greater proportion of individuals reside in ground oriented dwellings, a pattern that generally coincides with the family stage of the lifecycle; single detached accommodation predominates in all by the two youngest age groups. In a pattern that is typical of most metropolitan areas throughout Canada, a person is

most likely to be the maintainer of a household living in an apartment in the under 30 and 80 and older age groups, a decision that is driven by lifestyle, financial and/or physical constraints.

Figure 17



The 30 to 34 group marks one transition in the lifecycle pattern of housing occupancy. From the 15 to 19 age group to the 20 to 24 age group, the probability that a person maintains an apartment household exceeds the probability for both ground oriented types of household. In the 25 to 29 age group the apartment maintainer rate falls below that for single detached housing, beginning a decline that continues to the early retirement stage of the lifecycle.

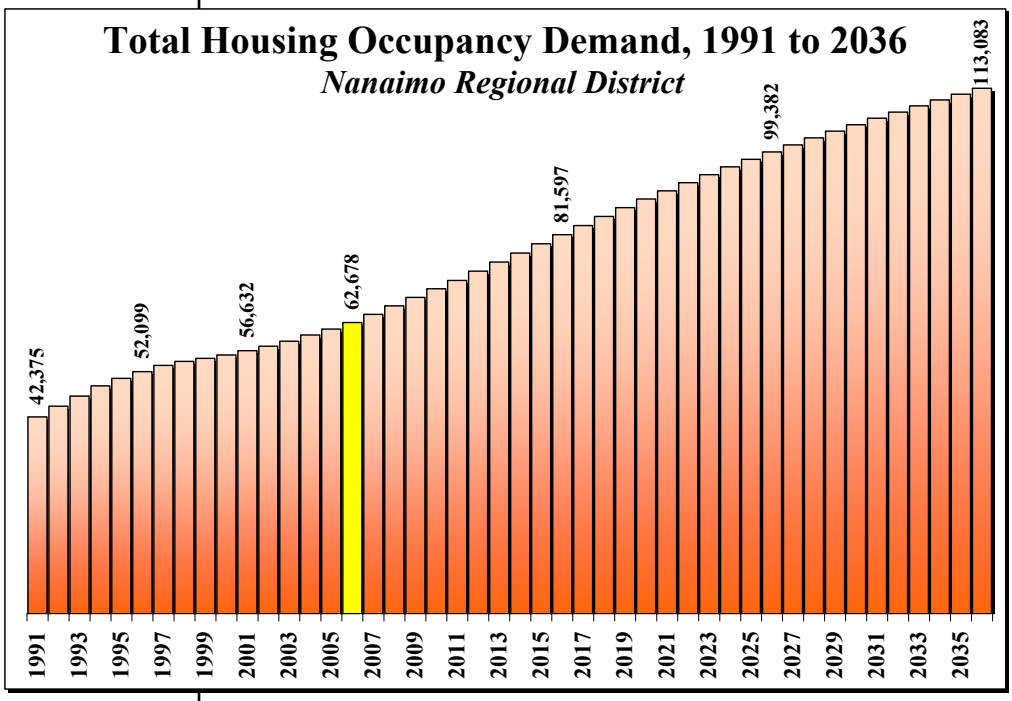
This pattern holds up to the second transition, in the 75 to 79 age group, where single detached rates begin to decline and maintainer rates for other ground oriented and apartment housing increases. It should be noted that while single detached maintainer rates do decline throughout these later stages of the lifecycle, they do still predominate right up to the eldest age group; almost one third (30 percent) of the population 85 years of age and over still maintained a single detached home in the Regional District in 2006.

B. Projected Housing Occupancy Demand

It is possible to argue that as the number of people in a particular region grows, age specific housing occupancy patterns will change. The underlying rationale is that more people will eventually translate into increasing residential densities, and population growth will bring along with it both push and pull factors that will influence a change in people's housing preferences. The push factors would be increased competition for the use of land and increasing transportation costs, both of which could compel land to be used more intensively in order to reduce housing and accessibility costs. The pull factors would be increasingly urban lifestyles that place a greater emphasis on a home as a base for an urban lifestyle rather than as en expansive yard and lawn.

Therefore, following historical changes seen within the Regional District and the province as a whole over the past decade, age and structure type specific household maintainer rates were trended over the coming decades to account for some of these push and pull factors. Generally, it was assumed that rates for young adults for ground oriented accommodation would continue their pattern of decline over the coming two decades as more kids remain in (or return to) the parental home for longer periods of time. Trends would also indicate relatively constant rates for maintaining ground oriented units for people in the family rearing stage of the lifecycle; and slightly increasing rates for the older age groups as increasing disability free life expectancy will continue to allow elderly couples to remain in their homes for longer periods of time. With respect to apartment units, while trends would again see further declines in apartment maintainer rates for the younger segments of the population as they continue to remain in the familial home for longer periods of time, broader trends also point towards apartment units as an increasingly

Figure 18

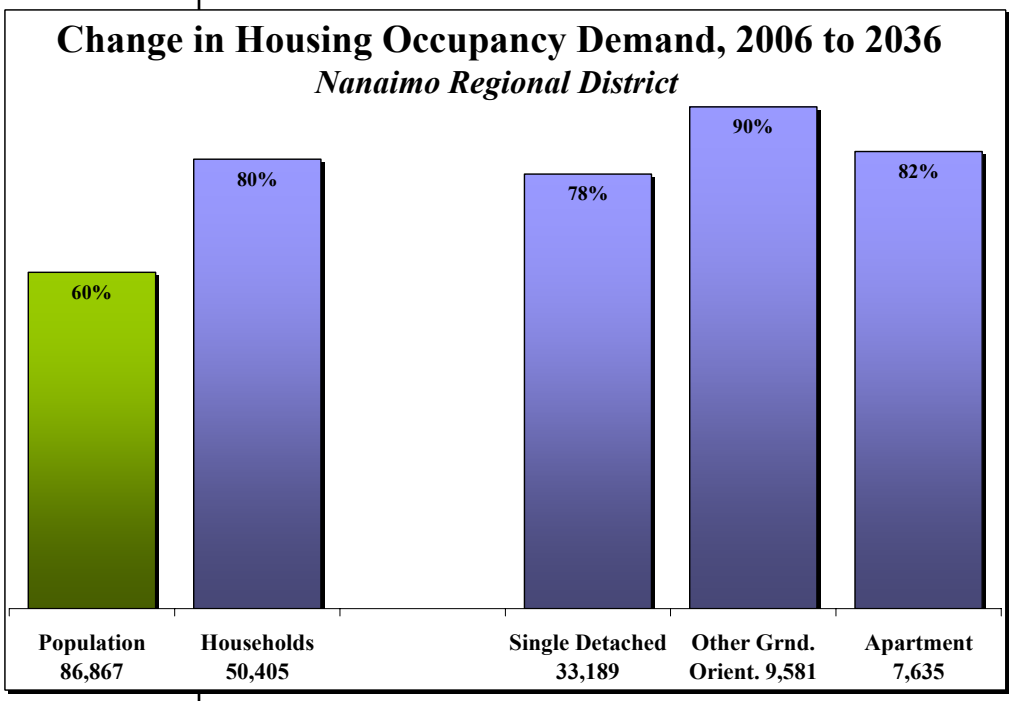


viable housing form for young families.

Taking these trends in age and structure type specific maintainer rates and combining them with projected population change by age for the Regional District results in a projection of housing occupancy demand for the Region over the next three decades. The result of doing so is a projection of net housing demand in the District growing from 62,678 units today (2006) to just over 81,000 by 2016, 99,000 by 2026 and 113,000 by 2036 (Figure 18).

While the pattern of growth in housing demand is expected to follow the pattern of population growth projected for the Region (growing at a slower rate in the coming years), the lifecycle pattern of housing occupancy (reaching their peak for the older age groups) will combine with the Region's changing demography (again characterized by high growth in the older segments) to result in total housing occupancy demand growing at a faster rate than total population. For example, over the next three decades the 60 percent growth in population (86,897 people) will be associated with an 80 percent increase in the occupied housing stock in the Regional District.

Figure 19



Given trends in demography and housing patterns, there would need to be 50,405 more dwelling units added to the Region's existing housing stock to accommodate expected population growth and, more importantly, its change in the coming years (Figure 19).

The reason for housing occupancy demand growing more rapidly than total population over the next 30 years results from the population over the age of 45 – those with the highest household maintainer rates – growing much more rapidly than the overall population. With the 45 to 75 age groups having some of the highest single detached household maintainer

rates (and significant growth projected for these age groups in the coming years), it comes as no surprise that the greatest absolute increase for housing will be for single-detached accommodation.

Again given trends in demography and the lifecycle of maintaining different types of housing, there will be a net increase in demand for 33,189 single detached units over the coming three decades (78 percent growth). The demand for other forms of ground oriented accommodation such as row homes or duplexes would grow by 9,581 units (90 percent) while the number of apartments would need to grow by 7,635 units (82 percent) to fulfill projected occupancy demand. The long term growth in demand for apartments would be driven mainly by the growth in the 50 and older age groups, supplemented by the less rapid growth of the under 30 population, where high apartment maintainer rates are seen.

Overall this would see the composition of housing in the Region shift lightly in the coming years, with single detached units declining from representing 68 percent of the stock today to 67 percent by 2036. The other ground oriented stock would see an increase in its share in the coming years, increasing from 17 to 18 percent over the next three decades, while the apartment stock would maintain its current share of 15 percent of the Regional District's housing stock.

V. Conclusions and Strategic Considerations

The two major conclusions that arise from this research are that the Region would:

- ***see its population increase by 60 percent, from 144,317 residents in 2006 to 231,184 in 2036; and as a result,***
- ***its occupancy demand for housing to grow by 80 percent from 62,678 occupied units in 2006 to 113,083 in 2036.***

The real substance of the research however, is much more significant than the numbers presented above would indicate. The impact that population change will have on the Region's resources in the coming years, in both financial (in terms of community and social programs and health care funding) and physical (in terms of land use and planning) senses will be much more relevant than that which will be brought about by population growth. In addition to the Region's population expanding over the coming two decades, it will also become significantly older. As a proportion of its total population, the older age groups will garner an increasingly larger share than has ever been seen in history, while the youngest age groups will garner an increasingly smaller share.

Over the long run, housing occupancy demand will increase faster than total population, the result of the aging of the Region's current residents and people who join the community from other regions in the province, the country and abroad. While population growth of 60 percent over the next three decades will establish the basis for growth in housing demand (logic would say an associated 60 percent growth in housing demand), demographic change will compound these increases, leading to an 80 percent increase in total housing demand.

From a demographic perspective, the level and composition of growth in demand will be relatively consistent throughout the next three decades, with average annual growth in occupancy demand of just under 1,900 units annually over the coming decade, falling to just under 1,400 units annually over the last decade of the projection period (2026 to 2036). Of these additions, slightly more than two thirds would be in single detached formats, with another quarter in other ground oriented formats such as row homes or duplexes. This pattern of additional demand is compatible with a population where the majority of growth is expected to be between the ages of 45 and 75 where the vast majority of people maintain ground oriented accommodation, most typically single detached homes.

These projections rest on two assumptions. The first is that age specific maintainer rates will continue to move in the directions seen over the past decade both regionally and provincially as push and pull factors see the younger population forming households later in life and increasing life expectancies allow the older population to remain in their homes for longer periods of time. Housing patterns are generally expected to continue to shift towards smaller lot ground oriented and apartment formats in the coming years due in part to issues of affordability, and in part to availability as a large segment of the boomers remain in their single detached homes.

The second assumption is that the population projection reasonably corresponds to actual population growth realized in the Region. This projection indicates a long term annual population growth rate in the range of one to two percent, well below the three to five percent range the Region experienced in the past. This may therefore be considered by some to be a conservative projection. Within the framework of slowing growth, whether considered robust or conservative, the projection highlights the significant aging of the Region's population that will occur over the coming decades; a situation that leads directly to the specific pattern of housing demand projected for the Region in the coming years.

Appendix I

Population by Age, Nanaimo Regional District, 1991 to 2006 Actual, Proejcted to 2036										
	1991	1996	2001	2006	2011	2016	2021	2026	2031	2036
All Ag	**104,465**	**126,375**	**132,414**	**144,317**	**158,767**	**175,263**	**192,117**	**207,646**	**220,680**	**231,184**
0..4	6,558	7,275	5,929	5,309	5,622	6,610	7,361	7,462	7,151	6,833
5..9	7,155	8,068	7,506	6,473	5,534	6,019	7,074	7,821	7,885	7,545
10..14	6,692	8,497	8,309	7,973	6,747	5,954	6,497	7,544	8,255	8,290
15..19	6,550	7,914	8,837	8,751	8,088	7,031	6,311	6,853	7,861	8,542
20..24	5,931	7,075	6,995	9,282	8,887	8,545	7,640	6,942	7,426	8,393
25..29	6,873	7,322	6,504	6,837	9,890	9,847	9,662	8,788	8,026	8,456
30..34	8,299	9,054	7,652	6,508	7,482	10,788	10,857	10,678	9,748	8,939
35..39	8,593	10,277	9,278	8,636	7,090	8,260	11,632	11,698	11,472	10,506
40..44	7,897	10,212	10,502	10,521	9,120	7,733	8,959	12,312	12,342	12,086
45..49	6,333	9,224	10,479	11,625	12,937	11,719	10,415	11,630	14,901	14,894
50..54	5,133	7,330	9,814	12,080	14,591	16,049	14,928	13,645	14,802	18,007
55..59	5,012	6,396	8,157	11,248	14,092	16,693	18,202	17,119	15,829	16,954
60..64	5,992	6,287	7,345	9,405	12,505	15,390	18,001	19,515	18,460	17,195
65..69	6,400	6,731	6,975	8,326	10,222	13,298	16,151	18,716	20,205	19,219
70..74	4,931	6,229	6,670	7,253	8,621	10,488	13,443	16,194	18,665	20,134
75..79	3,341	4,310	5,601	6,136	6,988	8,299	10,040	12,764	15,333	17,659
80..84	1,656	2,557	3,452	4,518	5,345	6,118	7,278	8,797	11,163	13,447
85+	1,119	1,617	2,409	3,436	5,006	6,421	7,664	9,168	11,154	14,085

Housing Demand by Structure Type, Nanaimo RD, 1991 to 2006 Actual, Proejcted to 2036										
	1991	1996	2001	2006	2011	2016	2021	2026	2031	2036
Single-detached house										
Total	**30,182**	**37,243**	**39,954**	**42,673**	**47,660**	**54,405**	**60,946**	**66,704**	**71,651**	**75,862**
15..19	39	47	52	35	22	19	17	19	21	23
20..24	529	631	635	559	355	341	305	277	296	335
25..34	4,422	4,773	4,065	3,505	4,168	4,951	4,923	4,671	4,265	4,174
35..44	7,131	8,860	8,529	7,327	5,445	5,372	6,916	8,065	7,999	7,588
45..54	4,955	7,153	9,067	9,966	10,781	10,875	9,925	9,899	11,633	12,885
55..64	4,943	5,698	6,724	8,833	11,441	13,801	15,574	15,759	14,750	14,690
65..74	5,107	5,842	6,074	6,686	7,914	9,990	12,430	14,662	16,326	16,528
75+	3,056	4,239	4,808	5,762	7,535	9,055	10,856	13,354	16,361	19,638
Other Ground Oriented										
Total	**6,374**	**7,732**	**8,791**	**10,670**	**12,838**	**14,561**	**16,208**	**17,718**	**19,056**	**20,251**
15..19	69	84	62	70	73	64	57	62	71	77
20..24	498	594	453	607	586	563	504	458	490	553
25..34	1,484	1,602	1,455	1,369	1,760	2,090	2,078	1,972	1,800	1,762
35..44	1,149	1,428	1,424	1,622	1,598	1,577	2,030	2,367	2,348	2,227
45..54	750	1,082	1,361	1,820	2,396	2,417	2,206	2,200	2,585	2,863
55..64	661	762	1,271	1,725	2,242	2,705	3,052	3,088	2,891	2,879
65..74	1,089	1,246	1,341	1,582	1,957	2,471	3,074	3,627	4,038	4,088
75+	673	934	1,423	1,875	2,226	2,675	3,207	3,945	4,833	5,801
Apartment										
Total	**5,819**	**7,124**	**7,887**	**9,335**	**11,247**	**12,631**	**13,862**	**14,959**	**15,934**	**16,970**
15..19	87	105	208	135	82	71	64	69	79	86
20..24	656	783	845	1,069	977	939	840	763	816	923
25..34	1,240	1,338	1,160	1,325	2,068	2,456	2,443	2,317	2,116	2,071
35..44	1,003	1,246	1,145	1,401	1,514	1,494	1,923	2,243	2,224	2,110
45..54	682	984	1,269	1,507	1,762	1,777	1,622	1,617	1,901	2,105
55..64	563	649	834	1,261	1,824	2,201	2,483	2,513	2,352	2,342
65..74	759	868	1,023	1,029	1,041	1,315	1,636	1,930	2,148	2,175
75+	829	1,150	1,404	1,608	1,979	2,378	2,851	3,507	4,297	5,158
All Structure Types										
Total	**42,375**	**52,099**	**56,632**	**62,678**	**71,745**	**81,597**	**91,016**	**99,382**	**106,640**	**113,083**
15..19	195	235	322	240	177	153	138	150	172	186
20..24	1,683	2,008	1,933	2,235	1,918	1,844	1,648	1,498	1,602	1,811
25..34	7,145	7,712	6,680	6,198	7,996	9,498	9,444	8,960	8,181	8,006
35..44	9,284	11,535	11,098	10,351	8,557	8,443	10,870	12,675	12,571	11,926
45..54	6,386	9,220	11,697	13,293	14,939	15,069	13,752	13,716	16,119	17,854
55..64	6,168	7,109	8,829	11,820	15,507	18,706	21,109	21,360	19,992	19,911
65..74	6,956	7,956	8,438	9,297	10,913	13,776	17,140	20,219	22,512	22,792
75+	4,558	6,323	7,635	9,245	11,739	14,108	16,914	20,806	25,491	30,596