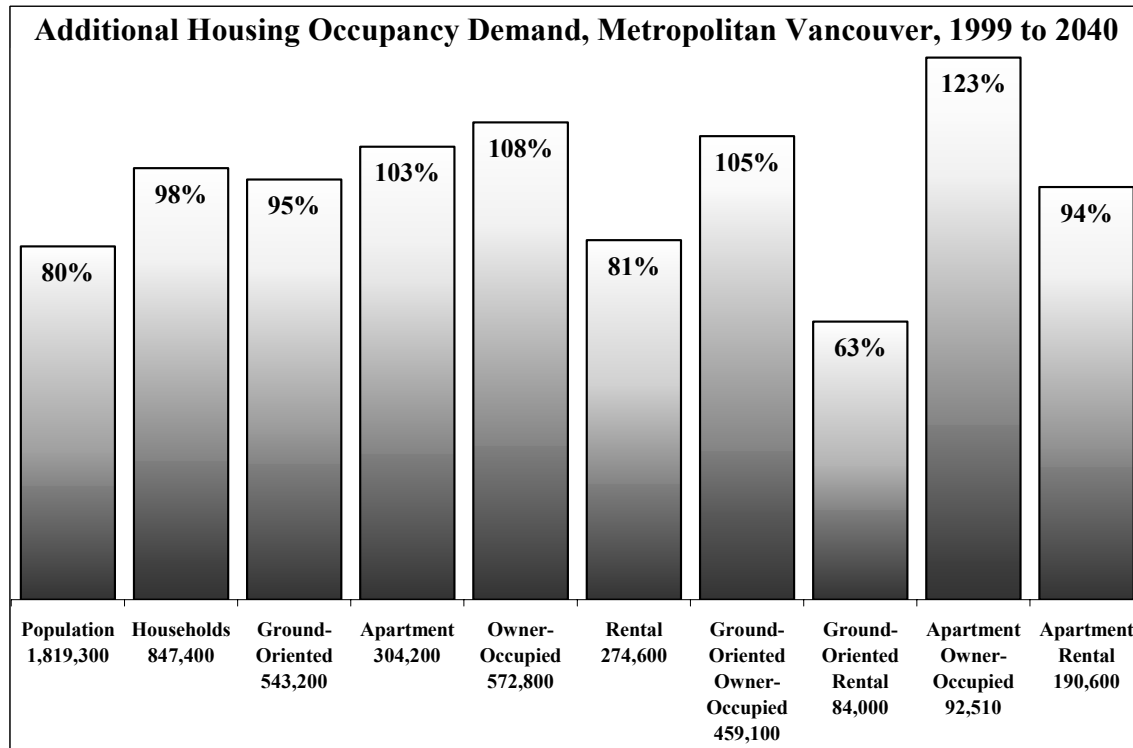


Housing Metropolitan Vancouver's Population: Demographics and Long Run Housing Demand, 1999 to 2040

By David Baxter and Jim Smerdon



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By David Baxter and Jim Smerdon

November 1999

Summary

The 2% to 4% levels of population growth experienced in Metropolitan Vancouver in the 1990's will not prevail in the near future: the 1999 to 2004 period is projected to see average annual growth in the range of 1.7%, with an average of 39,600 people added to the region's population each year. Over the next decade, the region's population is projected to grow to 2,729,200, adding 457,000 people (an average of 41,500 people per year for an average annual growth rate of 1.7%) between 1999 and 2010. Over the longer term, growth is expected to average 1.4% between 1999 and 2040, adding an average of 44,400 people per year. This projected growth would result in an 80% (1,819,300 person) increase in the region's population, from 1999's 2,272,200 to 4,091,500 in 2040.

The need to accommodate an average of 44,400 additional persons per year over the next 40 years will be one of two very significant demographic factors affecting housing demand in Metropolitan Vancouver. The second will be the changing age structure of the region's population. Metropolitan Vancouver's current age distribution, with one third (33%) of its population between the ages of 33 and 52 and the typical person in the region being a 35 year old, demonstrates an almost generic "baby boom generation bulge" age structure. This bulge will be much less apparent in the region's 2040 population profile when the baby boom generation will be in the 74 to 93 age group, which will account for 11% of the population (compared to today's 74 to 93 age group's 6%). In turn, the 33 to 52 age group's share will drop from its current 33% share of the population to 28% by 2040: this age group will be the most dominant age group in the region's population in 2040, as a result of the births and migration into the younger age groups into the region over the next four decades.

While population growth of 80% over the 1999 to 2040 period will establish the basis for significant increases in housing demand, demographic change will compound these increases, with these two demographic factors leading to a 98% increase in housing demand.

From a demographic perspective, the level and composition of growth in demand will be relatively consistent throughout the next four decades, with average annual growth in occupancy demand between 18,000 and 22,300 net additional households formed each year. Of this total, slightly less than two thirds of the additional households will be in ground oriented units and slightly more than two thirds will be owner-occupiers (in both ground oriented and apartments).

The dominant household type will be the traditional ground oriented owner-occupancy household, compatible with a population where the majority of the residents, and of the population growth, is between the ages of 45 and 75. Each year, between 9,100 and 12,100 additional owner-occupier households will be added to the ground oriented housing market (a 105% increase over the next four decades, adding 459,100 households). The second most predominant form will be the traditional rental apartment, with between 3,100 and 5,100 more rental apartment households added to the housing stock each year, for a total increase of 190,600 households (a 94% increase) over the next four decades. Most significant in terms of growth rate will be owner-occupier apartment households, which will increase by 1,900 households per year in the near term and 3,300 per year in the longer term, recording a 123% increase over the next 40 years, adding 92,510 households). Finally, the rental ground oriented market will show the slowest rate of increase (63% over the next four decades), but will still record increases of between 1,800 and 2,300 households per year.

Housing Metropolitan Vancouver's Future Population: Demographics and Long Run Housing Demand, 1999 to 2040

by David Baxter and Jim Smerdon
November 1999

I. Introduction

A. Population and Housing

The extent and character of housing demand in Metropolitan Vancouver (Hope to Howe Sound) over the next forty years will be primarily determined by two factors. The first will be demographics, particularly growth and change in the province's population. The second will be socio-economics, particularly people's housing preferences and the extent to which they might change over the coming years.

Population growth will be most important. The region's population is projected to grow by 1,819,300 people (80%) from 2,272,200 in 1999 to 4,091,500 by 2040: housing markets will reflect the accommodation of this growth. But growth is not the only relevant demographic factor. Changes in the age composition of the province's population will also have a significant influence on housing demand. This is the result of the strong relationship that exists between people's age, the probability that they will maintain a household, the type of dwelling that the household lives in and whether they will be renters or owners of that dwelling. For examples, in Metropolitan Vancouver, up to the age of 84, the older a person is the greater the likelihood that they will maintain a household; up to the age of 54 the greater the likelihood that this household will live in a single detached house or other ground-oriented dwelling; and, from age 45 on, the greater the likelihood that household will live in apartments, both rental and owner occupied.

As this report focuses on the relationship between population and housing, it uses an occupancy-based definition of housing demand. Total housing demand is here defined to be the number of dwelling units required to house the people who live in the region. Demand is thus equated with residents' occupancy of dwelling units at a point in time. A change in housing demand over a period of time is the change in the number of dwelling units occupied by the region's residents. This change will be a net change, calculated by subtracting from the number of occupied residences at one point in time the number of occupied residences at an earlier point in time.

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: to the extent that the inventory of vacant units increases over the time period, construction will exceed occupancy demand. Further, construction also includes replacements (new units constructed to replace units demolished or converted to other uses) that do not represent net additions to the housing stock, and secondary residences that are occupied only part of the time.

B. Projections

A projection is a description of what the future would look like if certain things occur between now and then. While some people distinguish between forecasts, projections, and extrapolations, in fact they are all the same - statements of what might result if certain specified things happen. It would be extremely useful if projections could tell exactly what the future is going to bring, and they can, if they include everything that will affect the future, which they can't. Even in rocket science, which housing demand forecasting isn't, what is projected is not always what happens.

What is reasonably sought from projections is not that they give a precise statement of what the future will bring, but rather that they provide information about what might happen under a set of stated circumstances. Projections show us the direction and relative magnitude of the change that might occur given what we know today.

The most common reason for making projections is to anticipate situations that may arise in the future so that we can develop strategic responses to them. In one context, projections are made to help prepare for the future. For example, demographic projections of the province's population show that it is aging, with a very regular pattern of rapid increases in the number of people in the 45 and older age groups projected for the coming 40 years. Knowing this, it is possible to generally prepare for the effects that an aging population might bring, including increased tourism, higher levels of demand for health care and social services, and the need for longer walk lights and bigger print on menus.

In another context, projections are made so that action can be taken to avoid a future that might not be desired. An example of this use of projections is shown in changes in Canadian immigration policy. Under the conditions that prevailed in the late 1980s, projections showed that Canada's population would decline, and the percentage of the population that was retired would increase dramatically, over the next two decades. The consequences of such a situation are significant, including increases in per capita expenditures on, and declining contributions to, social services. After reviewing the options for changing this projected demographic pattern, the most feasible one identified was to increase the rate of immigration. In this context, a successful projection is one that sets in motion actions that will ensure that the projection is not achieved.

C. The Region

A regional housing market projection is intended to include all of the dwellings within a single labour force commuting area. As a result, daily travel ranges set the limits for the market area: as regions grow and daily travel ranges increase, the boundaries of the regional housing market also expand. For this study, the Metropolitan Vancouver housing market is defined as the combined Greater Vancouver and Fraser Valley Regional Districts. This is a larger area than the regional market included thirty years ago, when it did not extend much beyond Surrey, but a smaller area than it will include within thirty years, when it will extend to include Squamish and the Sunshine Coast.

To the extent that there are already commuters from these two areas, the definition of the Metropolitan Vancouver housing market's boundaries used here is too small: to the extent that the portions of the Fraser Valley Regional District within the Fraser Canyon are included in this definition, its boundaries are too large. For the purposes of a long term regional housing projection, however, these exclusions and inclusions are marginal, and will have no noticeable impact: attempting to refine the boundaries would create data problems that would greatly exceed the marginal increase in analytical accuracy that would, perhaps, result.

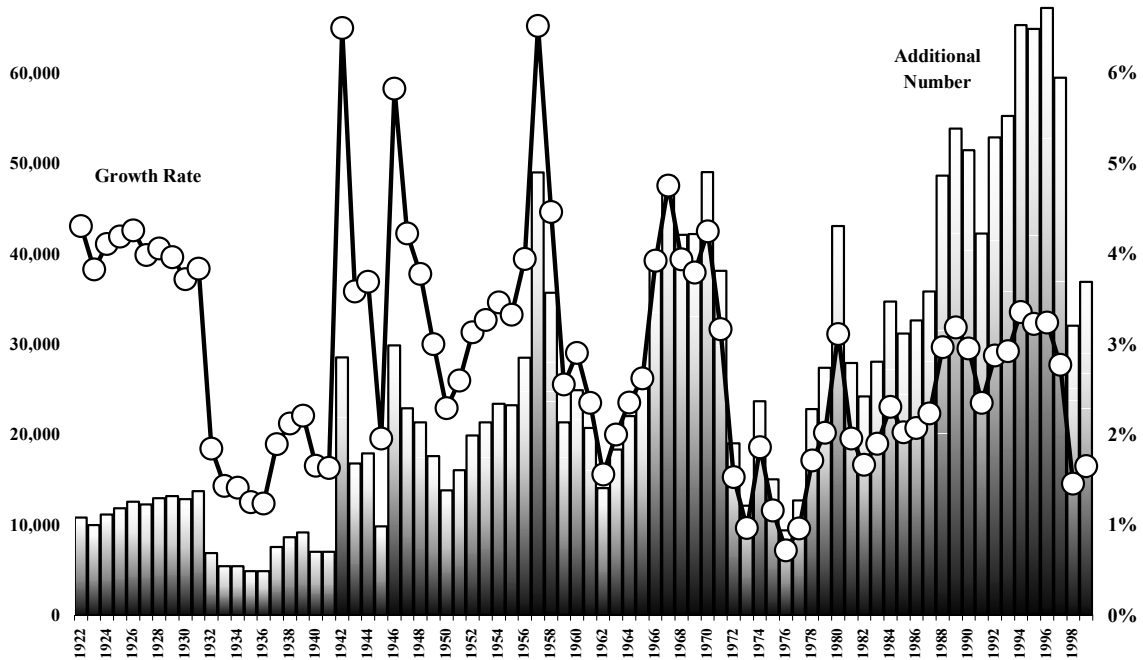
D. Data Sources

The data used here on housing occupancy patterns rely on custom tabulations of data from the Census of Canada (particularly from the 1996 and 1991 Census). This is the most comprehensive data available on housing and population in Metropolitan Vancouver. The 1996 Census also provides the most recent data on the link between demographics and housing.

The population projection used with the 1996 Census data in this report is from The Urban Futures Institute's report Population 4 Million: Metropolitan Vancouver's Population in the Next Four Decades (May, 1999). A summary of the population projection follows: for a full description of the data and assumptions used, please refer to the population forecast report.

It is important to note that the housing and population projections used in this report are long run projections, giving consideration to trends and change over a number of years, rather than a number of months as is done in short run projections. As such, these projections will smooth out short-run patterns and cycles: this means that, in any one-year, the projected values may not (and most likely will not) equal actual counts. The goal of long-term projections is to capture the nature and magnitude of the direction of change in a community, rather than attempt to precisely forecast conditions for a particular date in the future.

Figure 1: Net Annual Population Growth, Metropolitan Vancouver, 1921 to 1999



II. Population Growth and Change

A. Overall Growth

Metropolitan Vancouver's 1999 population was 2,272,200 people. The region's population grew by an average of 27,950 people per year over the past 30 years, a 97% increase from 1,154,000 in 1969 to its 1999 population (an average growth rate of 1.7% per year, Figure 1). Growth over the past decade was above that of the previous decades, with an average of 52,800 people added to the region's population each year between 1989 and 1999 (2.7% growth per year). Population change in the 5 year period from 1994 to 1999 was similar, with growth of 52,100 people per year, an increase of 2.5% per year.

The high levels of growth of the early 1990's will not continue: the 1999 to 2004 period is projected to see average annual growth in the range of 1.7%, with an average of 39,600 people added to the region's population each year. Over the next decade, the region's population is projected to grow to 2,729,200, adding 457,000 people (an average of 41,500 people per year for an average annual growth rate of 1.7%) between 1999 and 2010. Over the longer term, growth is expected to average 1.4% between 1999 and 2040, adding an average of 44,400 people per year. This projected growth would result in an 80% (1,819,300 person) increase in the region's population, from 1999's 2,272,200 to 4,091,500 in 2040.

The need to accommodate an average of 44,400 additional persons per year over the next 40 years will be one of two very significant demographic factors affecting housing demand in Metropolitan Vancouver. The second will be the changing age structure of the region's population, which will result in housing occupancy demand increasing faster than population growth over this period.

B. Changing Age Structure: Growth Rates

Metropolitan Vancouver's current population age distribution, with one third (33%) of its population between the ages of 33 and 52 and the typical person in the region being a 35 year old, demonstrates an almost generic "baby boom generation bulge" age structure (Figure 2). Mortality, and the small number of births during the 1930s Depression and the Second World War, have made the generation before the baby boom (currently aged 53 to 72 and comprising 16% of the population) relatively small compared to the Post World War Two Baby Boom Generation. The birth control pill and urbanization made the generation born after the baby boom (currently aged 13 to 32, 28% of the region's population) relatively small as well.

While population growth will change the size of the region's population, aging will change its age structure. The aging of the baby boom generation will shift the age profile up: in 2020 the bulge will be in the 54 to 73 age group, which will account for 24% of the region's population. The pre-boomer generation will be aged 74 to 93, and account for only 7% of the population in 2020, while the post boomer generation will be 34 to 53, and account for 29%.

The baby boom bulge will be much less apparent in the region's 2040 population profile. In 2040, the baby boom generation will be in the 74 to 93 age group, which will account for 11% of the population (compared to today's 74 to 93 age group's 6%). In turn, the 33 to 52 age group's share will drop from its current 33% share of the population to 28% by 2040: this age group will be the most dominant age group in the region's population in 2040, as a result of the births and migration into the younger age groups into the region over the next four decades.

In the first two decades of the projection period, most of the growth in the Metropolitan Vancouver population will be in the 45 to 74 age groups (Figure 3), the result of the aging of the boomers into this stage in the life cycle. This aging will add 249,600 people (a 128% increase) to the 55 to 64 age group, 164,000 (112%) to the 65 to 74 age group, and 139,900 (44%) to the 45 to 54 age group. The aging of the war babies and increased life expectancies will bring growth in the 55% to 77% range to the 75 and older age groups, while births and migration will cause the under 45 age groups to increase by between 14% and 26%.

Figure 2: Age Profile of Metropolitan Vancouver Population, 1999, 2020, and 2040

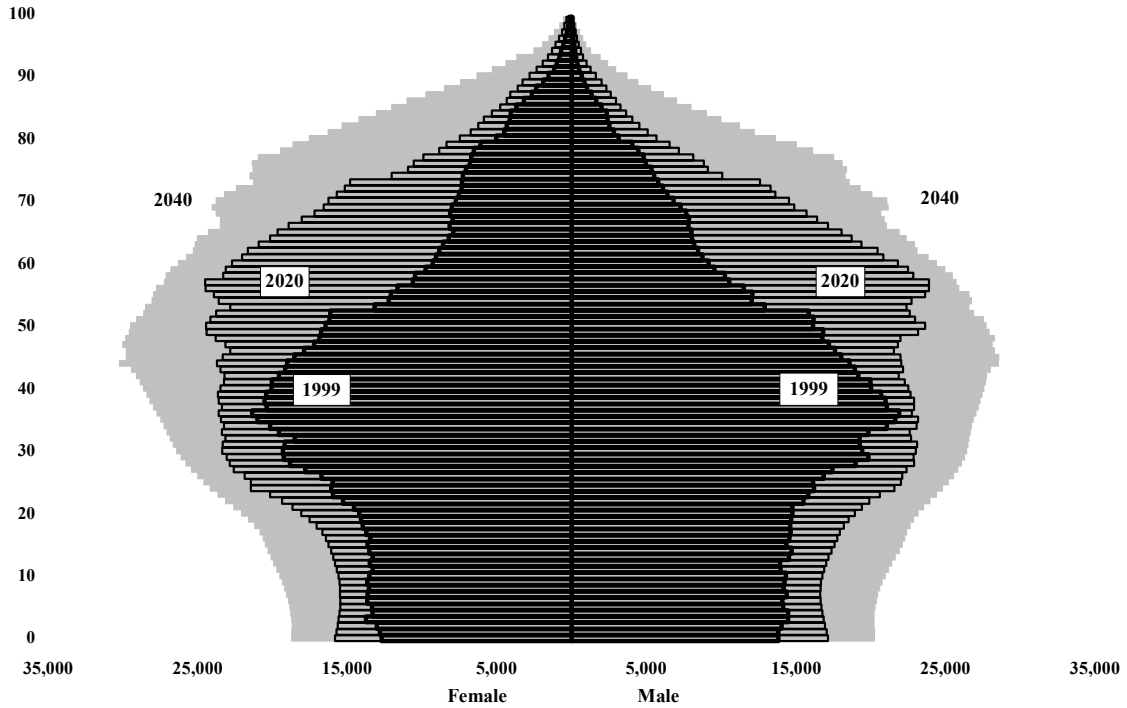
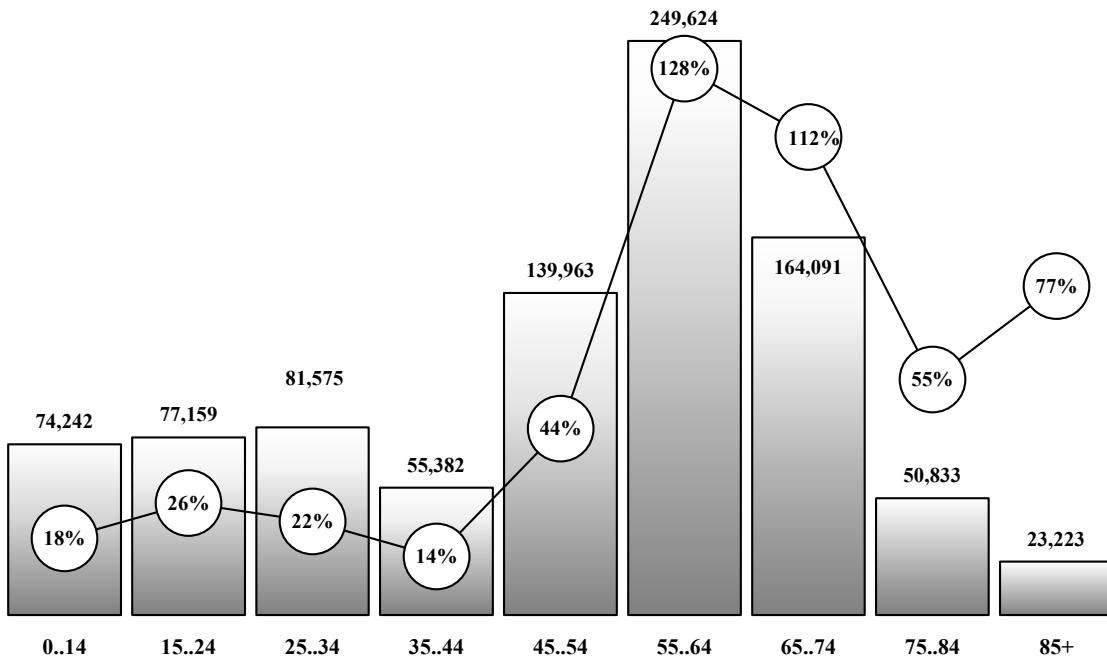
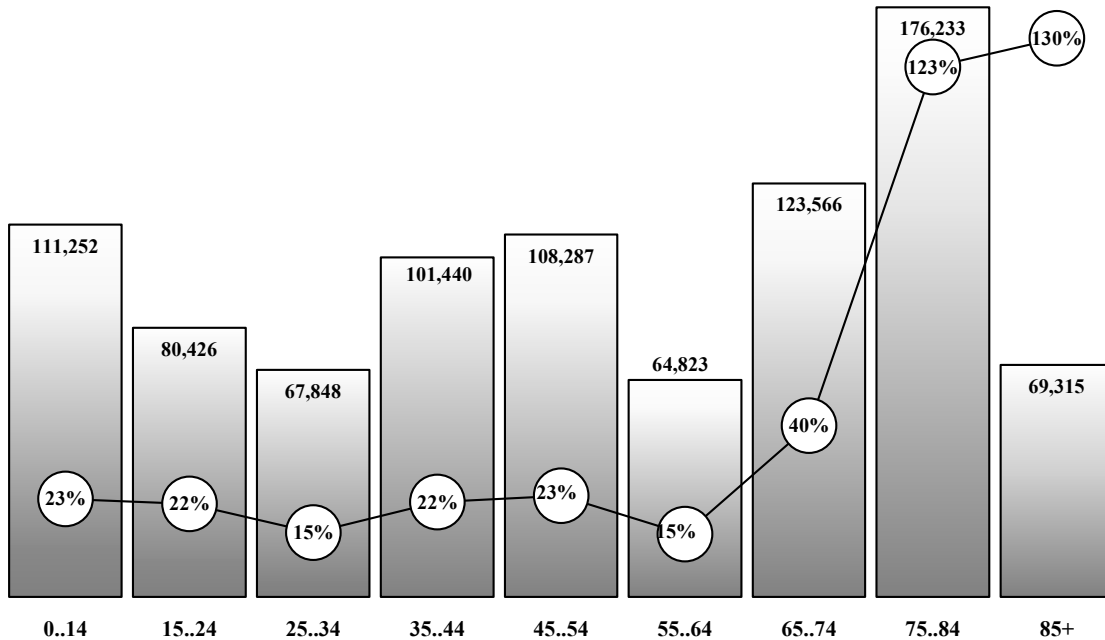


Figure 3: Projected Increase in Metropolitan Vancouver's Population by Age Group, 1999 to 2020



In the following 2 decades, from 2020 to 2040, the baby boom will continue to age through the life cycle, but will increasingly be affected by the higher mortality rates of older age groups. In 2040 the baby boom will be 74 to 93 years old: their aging will cause the over 75 age groups to increase dramatically in both absolute and relative terms (a 176,200 person, 123% increase, in the 75 to 84 age group; and 69,300 person, 130% increase, in the 85 plus age group). The 65 to 74 age group, catching the tail end of the aging baby boom, will increase by 40% (123,600 people) between 2020 and 2040. All of the under 65 age groups, free of the influence of baby boom generation by 2040, will increase at much slower rates, between 15% and 23%, adding between 65,000 and 110,000 people over the two decades. Growth in these age groups will be determined by rates of birth and migration to the region.

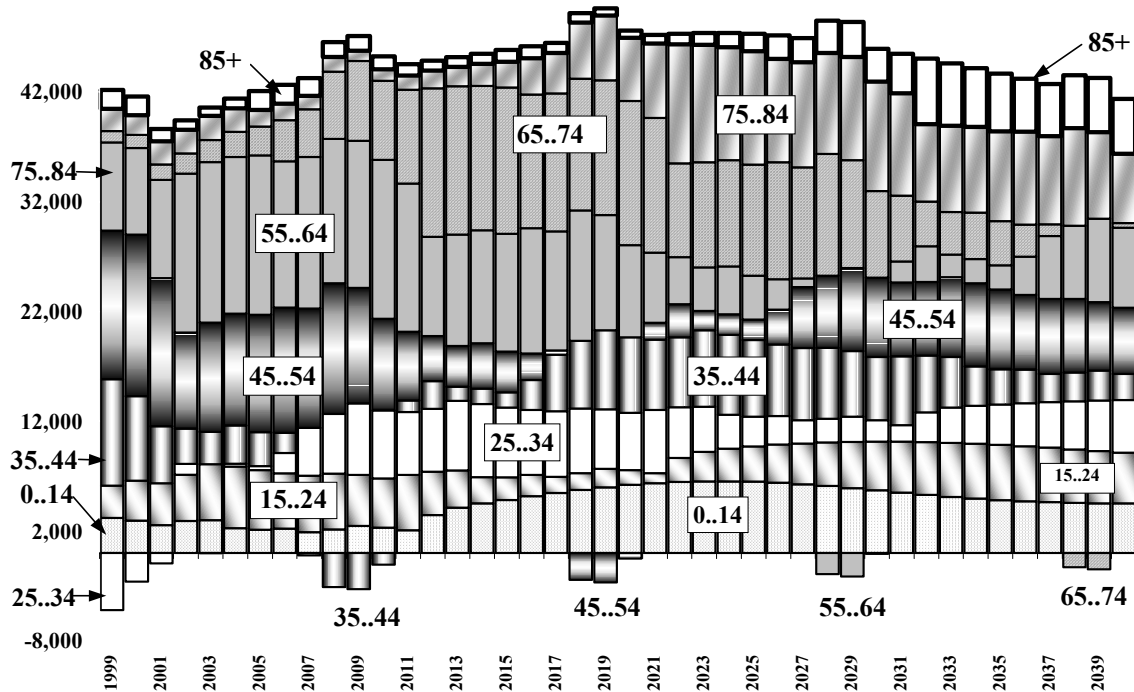
Figure 4: Projected Increase in Metropolitan Vancouver's Population by Age Group, 2020 to 2040



The difference between the region's age structure in 2040 and its current structure will be the result of a gradual pattern of population growth and change that will occur during the next 40 years (Figure 5)¹. Over the next ten years, most of the population growth will be in the 45 to 54 and 55 to 64 age groups, as the full baby boom generation arrives in these two age groups. The 25 to 34 age group, in contrast, will decline slightly in size, the result of the smaller post baby boom generation following the last of the baby boomers into the 25 to 34 age group.

From 2011 to 2020, the pattern of significant growth will shift to the 55 to 64 and 65 to 74 age group, following the aging of the boomers into this stage of the life cycle. The 35 to 44 age group, in its turn, will decline slightly in size as the last of the boomers age out of it, while the 25 to 34 age group will start to grow again as the 1980 to 1996 generation starts to age into this stage of the life cycle. Near the end of this period, the 75 to 84 group will start to experience significant increases as the second world war babies, thanks to increased life expectancy², age into this stage of life.

Figure 5: Projected Population Growth By Age Group, Metropolitan Vancouver, 1999 to 2040



From 2021 to 2040, population growth will be concentrated in the 65 and older age groups, the result of the front edge of the baby boom aging into the post retirement age groups. In the 2021 to 2030 period, the aging pattern shifts growth upwards once again, into the 75 and older age group (the first of the boomers turns 75 in 2021), while the aging of the last of the baby boom babies ensures that the size of the 65 to 74 age group continues to increase (as it will until 2031). This growth will be supplemented by the increase in the 35 to 44 age group. In the 2031 period, it will be the 75 to 84 age group and 85 plus age group that will increase as a result of the aging of the baby boom, combined the "recovery" growth of the 45 to 54 age group.

With this very strong age related pattern of population change, it is reasonable to anticipate equally strong pattern of change in markets where there are age specific patterns of demand. As the next section demonstrates, housing demand is very closely related to age, and hence much of what will happen in Metropolitan Vancouver's housing markets can be predicted by linking population projections and housing market behaviour.

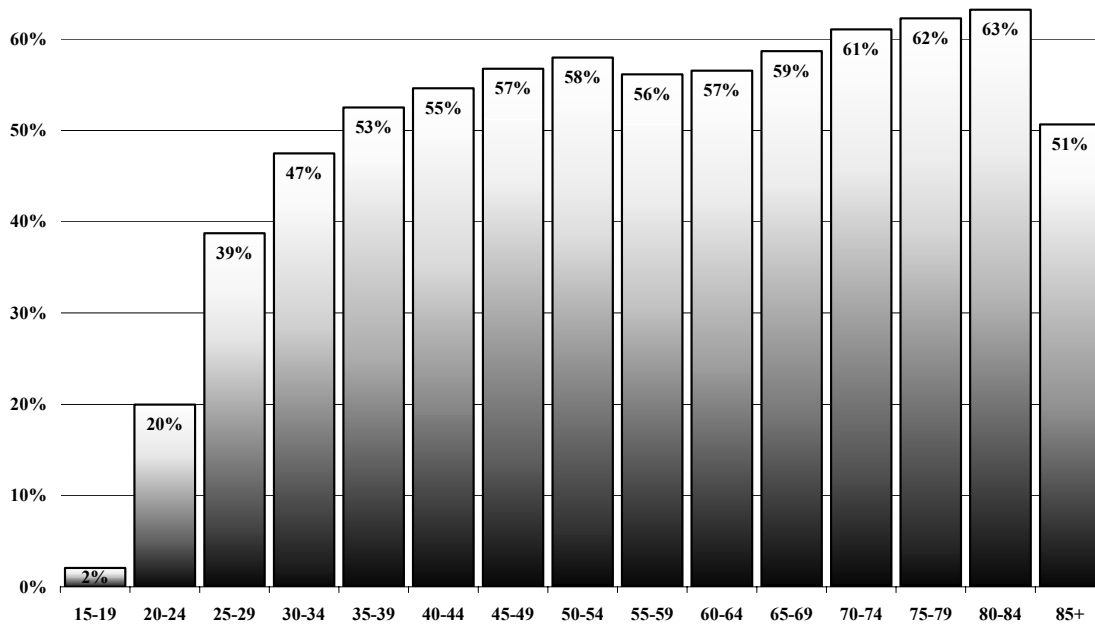
III. The Age Specific Pattern of Housing Demand

A. Age Specific Household Maintainer Rates

The connection between housing demand and the age composition of the population is shown in the percentage of people in each age group who are "household maintainers". In the census questionnaire used to gather data on housing, each group of people living together in a 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: the percentage of people in each age group who are household maintainers is referred to as the household maintainer rate.

There is a strong relationship between age and the household maintainer rate (Figure 6). The 1996 Census data for Metropolitan Vancouver show that only 2% of the people in the 15 to 19 age group are household maintainers: most of the people in the age group, and all of the people in the 0 to 14 age group, are living in households maintained by someone else (one or more of their parents). A greater percentage of people in the 20 to 24 age group have left the parental home to establish their own households, with 20% of the people in this age group being household maintainers. There is also a significant increase in the rate as people move into the next age group, with 39% of the people in the 25 to 29 age group, and almost half (47%) 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 53% in the 35 to 39 age group to 63% in the 80 to 84 age group, then declining to 51% in the 85 and older age group (when there is a shift from maintaining ones own household to living with others, either in a private household or a care facility).

Figure 6: Age Specific Household Maintainer Rates, Metropolitan Vancouver, 1996



The 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: there would be only 20 households maintained by people in this age group. Five years later, when these 1,000 people had aged into the 20 to 24 age group, they would maintain 200 households, and, in another five years, when they aged into the 25 to 29 age group, they would maintain 390. Over a ten-year period, the occupancy demand from the same 1,000 people would have increased by almost 2000%, from 20 units to 390 units. This is what happened in the late 1960s and 1970s as the post World War Two baby boom generation moved out of their parents homes and into their own housing: between 1966 and 1976, the number of households in metropolitan Vancouver grew at almost twice the rate of population growth (44% compared to 25%).

The probability of a person being a household maintainer generally increases from the 35 to 39 age group to the 80 to 84 age group, but the increases between age groups are much smaller than those seen between the 15 to 19 and 25 to 29 age groups. For example, 1,000 people in the 45 to 49 age group will maintain 570 dwellings, while 1,000 in the 80 to 84 age group will maintain 630: this means a 5% increase in housing demand simply as a result of aging of the population. The fact that maintainer rates increase with age means that housing demand will continue to grow faster than the population over the coming 40 years: the fact that the increases are small after age 35 means that the difference will not be great as it has been in the past.

B. Structure Types

It is important to know the definitions used in the data to describe housing structures before using structure type specific maintainer rates. The great diversity of housing types people live in may be classified into two major structural types, ground-oriented and apartment. The typical ground-oriented dwelling is the 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. The dwelling unit that one household lives in is not attached to that of another household: units are not “stacked” so no household lives above/below another, and, thanks to the sideyards, they are not joined on the sides.

There are other dwelling types that share with the single detached house the direct access to yards but where there is no side yard between one dwelling unit and another. This type of housing is referred to attached ground-oriented. It includes the side by side duplex (referred to in census tabulations as a double house or semi-detached), 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 units). This category also includes row houses, where on the ground 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, as they generally do not have the yard characteristics of single detached units.)

The apartment category includes dwellings that are not only attached side by side, but also are stacked one on top of the other. As a result of being stacked, individual dwelling units do not have 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. The typical examples of apartment dwellings are in multi-unit apartment buildings of 5 or more storeys (high-rise buildings) and in buildings of less than 5 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 as well, unit entrances by way of shared corridors, and no direct access to yards.

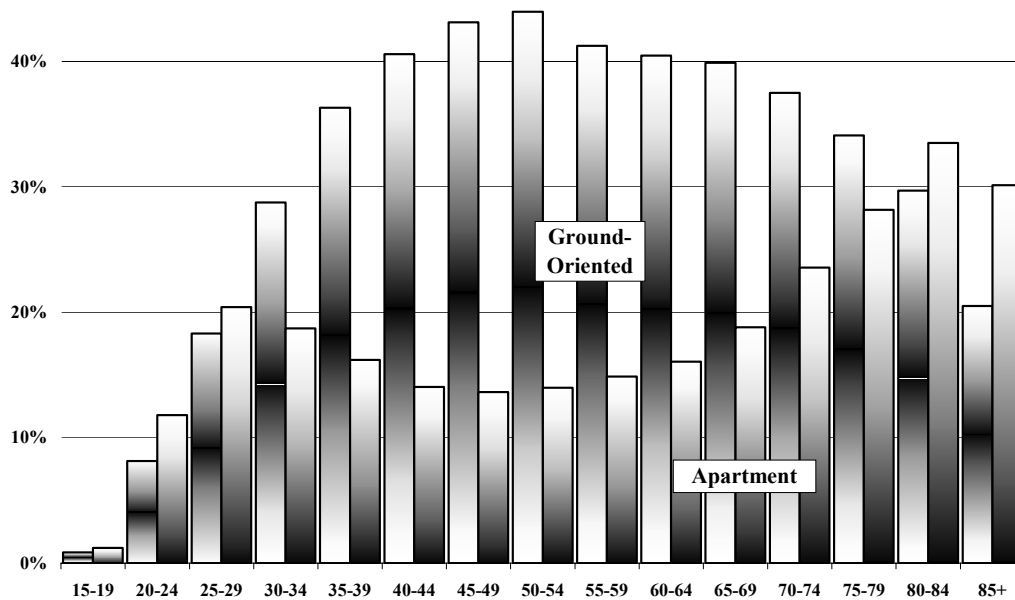
There are two additional types that, depending upon design, may be considered to be either ground-oriented or apartment units. The first is the up/down duplex, a two-unit structure with units stacked one on top of the other. The second is the suite in a house. As these units are stacked, they have the characteristics of apartments. However, they often have direct access to a yard, rather than sharing a corridor entrance, and hence are like ground-oriented units. It would be most appropriate to include up/down duplexes in ground-oriented and suites in apartments. 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 are included in the ground-oriented category.

Dwelling units are grouped together into major groups 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. The closest alternative form, in terms of living experience, would likely be a side by side duplex. If this were not available or affordable, the next alternative would be a row house. In each of these structure types the household could still find some of the ground-oriented characteristics of the single detached house. If the household was realistic about its initial expectations of living in a single detached dwelling, it is not likely that it would consider an apartment in a multi-unit building as a substitute, but rather would seek ground oriented housing in a more affordable location. The boundary between major structure types is between “stacked unit corridor entrance” apartments and the “door on the yard” ground-oriented unit.

C. Age and Structure Type Specific Maintainer Rates

There is a distinct relationship between a household maintainer's age (stage in the life cycle) and the structure type that the household lives in (Figure 7). A person in Metropolitan Vancouver is more likely to be the maintainer of a household living in a ground-oriented unit than one living in an apartment unit in every age group from age 30 to 79. In a pattern that is typical of a metropolitan area, a person is more likely to be the maintainer of a household living in an apartment in the under 30 and 80 and older age groups.

Figure 7: Age and Structure Type Household Maintainer Rates, Metropolitan Vancouver, 1996



The 30 to 34 group marks one transition in the life cycle pattern of housing occupancy. From the 15 to 19 age group to the 25 to 29 age group, the probability that a person maintains an apartment household both increases and exceeds that probability for ground oriented households. In the 30 to 34 age group the apartment maintainer rate is both lower than that for ground oriented housing and begins to decline. This continues up to the second transition, in the 50 to 54 age group,

where ground oriented rates begin to decline and apartment maintainer rates being to increase: by the 80 to 84 age group, apartment maintainer rates exceed ground oriented rates. In the 85 and older age groups, the rates for both apartments and ground oriented households decline, with residency in care facilities and hospitals eroding the maintenance of private households. The highest apartment maintainer rate of all the age groups is found in the 80 to 84 age group where 34% of the household maintainers in this age group are in apartment units: the 30% ground-oriented maintainer rate, while lower than that of the 35 to 79 age groups, is still higher than that for the under 35 population.

The significance for future housing demand of this age specific pattern of household maintainer rates is readily apparent. The two age groups that are projected to have the largest absolute increases in size over the next 20 years (the 55 to 64 and 65 to 74 age groups) and the next 40 (65 to 74 and 75 to 84) are the ones that have among the highest ground-oriented maintainer rates and an increasing propensity to live in apartment units. Clearly, housing demand in Metropolitan Vancouver over the next 40 years will be dominated by the demand for ground-oriented housing. Having said this, the fact that apartment maintainer rates increase in every age group from 50 to 84 means that there will also be strong growth in demand for apartment housing, the result of the combination of significant growth in the number of people in these age groups and the increasing apartment maintainer rates.

The 1996 rates are used here as being representative of stable, long-term average, age and structure type specific maintainer rates: while there will be short term cyclical variations, history indicates that there is not likely to be major long run behavioral change beyond that which has already occurred³. Changes are likely to occur within the major structure types (for examples, from large lot single detached to small lot and row housing, or from apartment units in low rise buildings to those in high rise units) rather than between them.

D. Tenure Types

The stage in a person's life cycle is the major determinant of the probability that they will maintain a household, the type of dwelling the household lives in, and whether the household rents or owns the unit it occupies. Financial resources and mobility requirements are strongly correlated with stage in the life cycle, and hence there is an age-related pattern to housing occupancy by tenure.

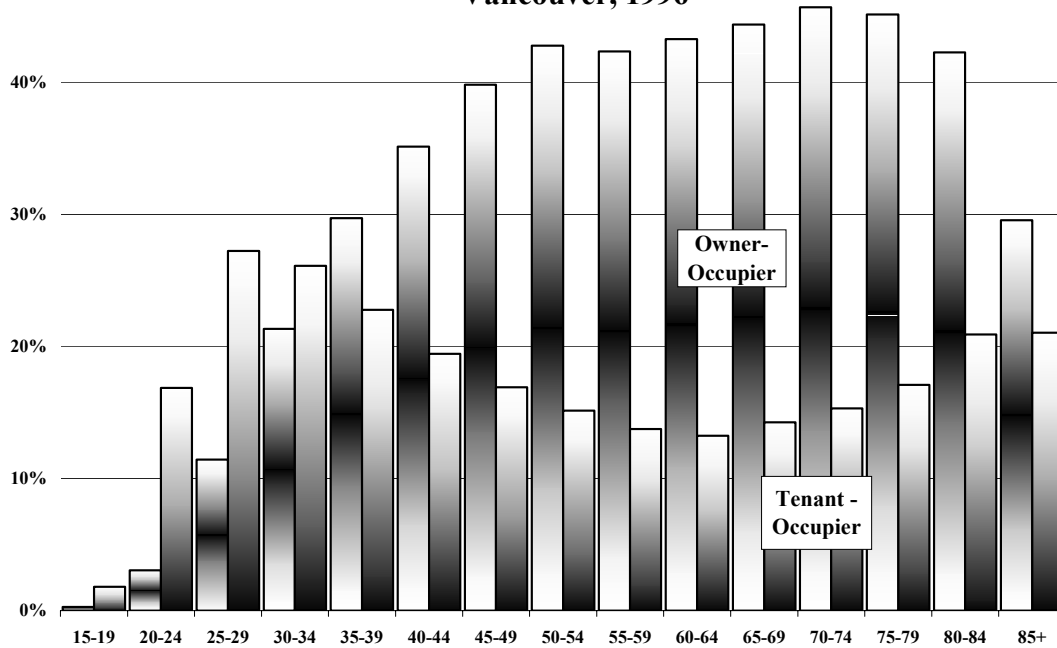
The two tenure categories used in this analysis are owner-occupier households and rental, or tenant occupier, households. Owner occupancy means that the one or more people who own title to the property are also members of the household that occupies the dwelling. First nations or band housing is also included in the owner-occupancy category, even though, strictly speaking, the occupants of the housing do not hold title, in the usual sense, to the dwelling. Such housing is included as owner occupied because functionally it is owner-occupied. Note that "condominiums" are a type of ownership that can be used for a unit of any structure type, including single detached houses. Condominiums are not necessarily apartments, apartments are not necessarily condominiums, owner occupied apartments are almost always condominiums, and condominiums can be either owner or tenant occupied.

Rental housing is not occupied by any one of the persons who own it, but rather is leased by the occupants from the owner either on a short or long term basis, the most common arrangement being where the accommodation is obtained in exchange for monthly rent paid to a landlord.

E. Age and Tenure Specific Maintainer Rates

The percentage of people in an age group who maintain households living in owner-occupier accommodations increase significantly with age, from its extremely low 0.3% of the people in the 15 to 19 age group to a high of 46% in the 70 to 74 age group (Figure 8).

Figure 8: Age and Tenure Specific Household Maintainer Rates, Metropolitan Vancouver, 1996



It is in the younger population that most tenants are found, with 2% of the people in the 15 to 19, and 17% in the 20 to 24, age groups maintaining households living in rental housing, about 6 times the percentage for owner-occupier housing. In the 25 to 29 age group, the ratio is about 2.5 to 1, with 27% maintaining tenant occupier households and 11% maintaining owner-occupier households. The difference between rates are less significant in the 30 to 34 age group, with only 5% separating the 26% tenant occupier maintainer rate and the 21% for owner-occupancy.

It is in the 35 to 39 age group that owner occupancy for the first time prevails over rental tenure, with 30% of the population in this age group maintaining owner-occupier households and 23% maintaining tenant occupier households. From the 25 to 29 age group to the 60 to 64 age group, the maintainer rates for rental occupancy decline. In contrast, rates for owner occupancy continue to increase, reaching a peak of 46% in the 70 to 74 age group.

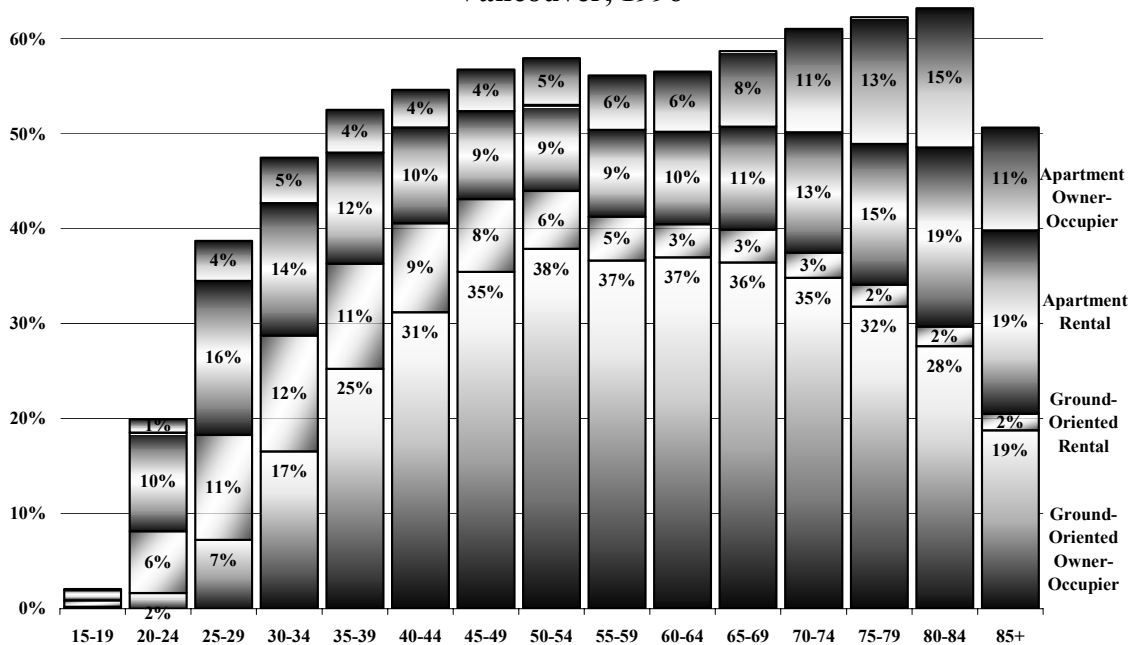
The 60 to 64 age group marks a turning point, showing the end of the decline of rental tenure rates, and the beginning of an increase that has the rental tenure maintainer rate grow from 13% in the 60 to 64 age group to 21% in the 80 plus age groups. Age specific tenure rates change in the older age groups, so much so that by the 85 plus age group the rates resemble those of the 35 to 39 age group, with 30% of the people 85 years of age and older maintaining owner occupier households and 21% maintaining tenant occupier households.

The high degree of rental tenure in the younger age groups is the result of young people having fewer economic resources and a wide range of choices (and variability) in their lives. Highly mobile, in terms of jobs, housing and relationships, this population needs the low entry, occupancy, and exit costs offered by rental housing. As people age, a greater stability, in terms of jobs, housing, and relationships, comes into their lives, along with increased personal and household incomes. The result is an increasing shift to owner-occupancy through the working years and into the early stages of retirement. Death of a spouse, income constraints, and a need to convert capital to income result in an increase in rental tenure in the older age groups. As with the structure type rates, historical trends indicate that there are short run changes in ownership and rental maintainer rates in response to changing economic conditions⁴. These changes have been modest, and have corrected with subsequent stages in the economic cycle. For the purposes of this report, the 1996 age and tenure specific maintainer rates are treated as constants.

F. Tenure and Structure Type Specific Maintainer Rates

Having considered the life cycle of housing demand by structure types and by tenure separately, the next step is to put the two concepts together to examine occupancy of the structure types by tenure. As might well be expected, there is a distinct pattern to tenure by structure type and age (Figure 9). For example, the 20 to 24 age group's 8% maintainer rate for the ground-oriented housing is overwhelmingly rental tenure: 6% of the people in this age group maintain households living in ground-oriented rental accommodation, while only 2% maintain households living in owner-occupied ground-oriented units. Its 11% rate for apartments is also overwhelming for rental, with 10% maintaining households living in rental apartments and only 1% maintaining households living in owner-occupied apartments.

Figure 9: Age, Tenure & Structure Type Maintainer Rates, Metropolitan Vancouver, 1996



The situation is reversed in the 30 to 34 age group, where 17% of the population maintain households living in owner-occupied ground-oriented units, while only 12% maintain households living in rental ground-oriented accommodation, 14% maintain households in rental apartments, and 5% in owner-occupied apartments. Thus this age group may be seen as the transition stage between renting and owning ground-oriented housing. Never again in the life cycle do owner-occupier ground-oriented maintainer rates fall below the 30 to 34 age group's level.

Note that throughout the life cycle, while owner occupancy of ground-oriented housing is the norm (from 25% to 38% of the people in the 35 to 84 age groups are maintainers of households in owner-occupier ground-oriented housing), there is always a significant percentage of people who maintain households living in ground-oriented housing, but occupy it as tenants (from between 2% to 12% in the 30 plus age groups). Financial constraints, employment mobility and life style objectives will always combine to ensure a market for the rental ground oriented, even in a market where the owner occupied unit is both the norm and the goal. Having said this, households living in rental ground oriented housing are primarily maintained by people in the 25 to 49 age groups, the result of this age group's need for ground oriented accommodation while raising children.

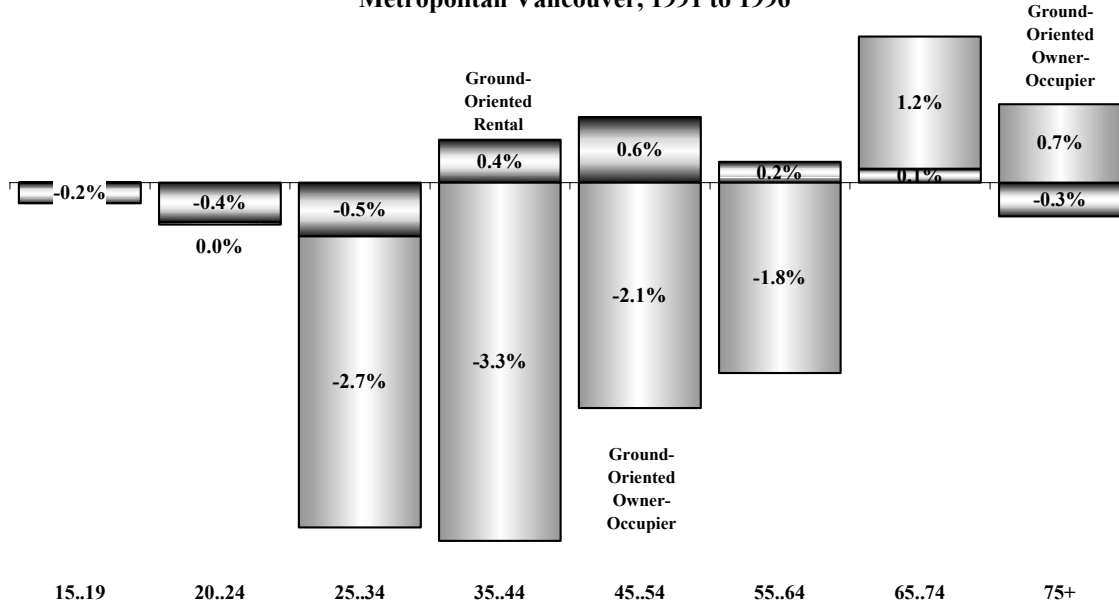
In 1996, the apartment market in Metropolitan Vancouver was overwhelmingly for rental occupancy. In the 25 to 29 age group, for example, 16% of the people maintain households living in rental apartments, 4 times the 4% rate for owner occupied apartments. Only in the 50 and older age groups is there a significant level of apartment owner-occupancy. In the 50 to 54 age group, 5% maintained apartment owner-occupier households compared to 9% for households in rental apartments. The apartment owner occupancy rate increases with age, to 8% in the 65 to 69 age group, to 13% in the 75 to 79, and 15% in the 80 to 84, before dropping slightly to 11% in the 85 and older age group. The aging of the region's population holds enormous promise for the condominium apartment market.

Published historical data do not permit examination of long term changes in tenure and structure type age specific maintainer rates. Data available from custom tabulations from the 1991 and 1996 Census permit general consideration of the short-term trends that prevailed over this period.

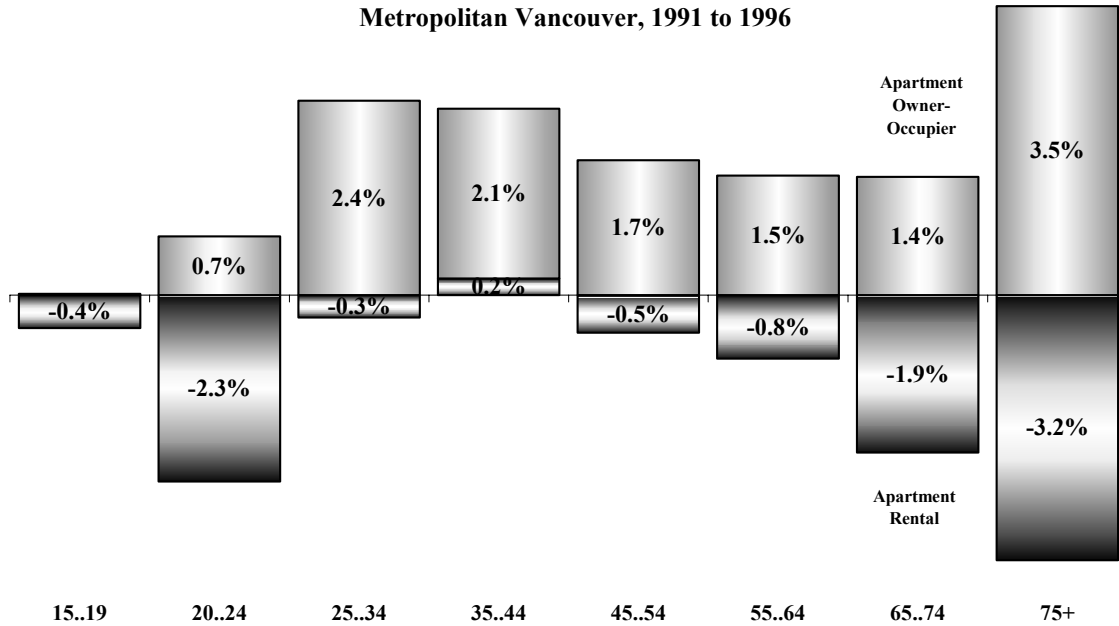
Between 1991 and 1996 household maintainer rates for all but the two oldest age groups declined in the Metropolitan Vancouver region: people under the age of 65 were less likely to maintain a household in 1996 than they were in 1991. The changes were not great, with the maintainer rate for the 15 to 19 age group dropping by 0.6%, for the 20 to 24 age group by 2.0%, the 25 to 34 age group by 1.1%, the 35 to 44 age group by 0.6%, the 45 to 54 age group by 0.3% and the 55 to 64 age group by 0.9%. In contrast the propensity for the 65 to 74 age group to maintain households increased by 0.9% and for the 75 plus age group by 0.7%. The data do not permit us to say why maintainer rates fell in the under 65 age groups, with possible explanations ranging from more people wanting to live together to more people having to live together.

The declines in the overall maintainer rates were the result of declines in ground oriented maintainer rates. The ground oriented maintain rate for the 15 to 19 age group dropped by 0.2%, the 20 to 24 age group by 0.4%, the 25 to 34 group by 3.2%, the 35 to 44 age group by 2.9%, the 44 to 55 by 1.5%, and the 55 to 64 group by 1.6%. In the two older age groups, the ground oriented maintainer rates increased by 1.3% in the 65 to 74 age group, and by 0.4% in the 75 plus age group. These declines were the result of declines in the owner occupier rates (Figure 10).

**Figure 10: Change in Age and Tenure Ground Oriented Structure Maintainer Rates
 Metropolitan Vancouver, 1991 to 1996**



**Figure 11: Change in Age and Tenure Apartment Structure Maintainer Rates
 Metropolitan Vancouver, 1991 to 1996**



The greatest declines in owner occupier ground oriented household maintainer rates were in the 25 to 64 age groups: the rate in the 25 to 34 age group declined by 2.7%, in the 35 to 44 age group by 3.3%, in the 45 to 54 age group by 2.1%, and in the 55 to 64 age group by 1.8%. Note that, even after these declines, between 38% and 43% of the people in these age groups maintained owner occupier households living in ground oriented accommodation. [As is shown in the next section, these rates are higher than those that prevail in Metropolitan Toronto.] Thus, while these declines occurred, they were at the margin, with the largest decline, the 3.3% reduction in the 35 to 44 age group, bring the maintainer rate for this age group down from 31.4% in 1991 to 28.1% in 1996. The decreases in ground oriented owner occupier rates were not as a result of a shift to ground oriented rental. Age specific maintainer rates for ground oriented rental did not change significantly (between -0.5% in the 25 to 34 age group and +0.6% in the 45 to 54 age group) between 1991 and 1996.

In the 65 to 74 and 75 and older age groups, ground oriented owner occupier household maintainer rates increased. These increases were not the result of a buying splurge on the part of the 65 plus population, but rather of the increasing health and life expectancy of the older population that permits them to remain in their homes longer than previous generations. The result of this aging in place has been an increase in maintainer rates for both apartments and ground oriented units from the older population.

In every age group except 15 to 19 year olds the propensity of people to maintain owner occupier apartment households increased substantially over this five year period (Figure 11). The increase took apartment owner occupier maintainer rates in the 25 to 34 age group from 2.1% in 1991 to 4.5% in 1996 (an increase of 2.4%), in the 35 to 44 age group from 2.2% to 4.2% (an increase of 2.1%), in the 45 to 54 age group from 3.0% to 4.6% (a 1.7% increase), in the 55 to 64 age group from 4.5% to 6.0% (an increase of 1.5%), in the 65 to 74 age group from 7.9% to 9.3% (an increase of 1.4%) and in the 75 and older age group from 9.6% to 13.2% (a 3.5% increase).

In the 25 to 64 age groups, there was little change in apartment rental maintainer rates. In the 20 to 24 age groups, and 65 and older age groups, apartment owner occupancy rates increases were accompanied by decreases in apartment rental occupancy. The household maintainer rate for rental apartments decreased by 2.3% in the 20 to 24 age group, by 1.9% in the 65 to 74 age group and by 3.2% in the 75 plus age group. Thus in the 65 and older age groups, the propensity to be maintainers of owner-occupier households, both ground oriented and apartment, grew between 1991 and 1996.

The data on maintainer rates do not provide an explanation of why these changes occurred: it is only possible to conclude that the age specific maintainer rates for ground oriented owner occupier households declined, and that for owner occupier apartments increased, between 1991 and 1996. The decline in ground oriented owner occupancy could be caused by a reduction in the divorce rate (fewer single parent households), an increase in the cohabitation rate (more people living together, either by choice or necessity), or a shift to the apartment market. The increase in the apartment owner occupancy could be explained by more apartment dwellers choosing to live alone, a general increase in the propensity to live in apartments, or a shift from the ground oriented market. Without information on why the shift occurred, it is difficult to form assumptions about the degree to which it might occur in the future: as a result, it is appropriate to stick with the assumption of constant 1996 maintainer rates, particularly in light of the similarity in maintainer rates in other parts of Canada, as is discussed in the next section.

G. Regional Population and Housing Occupancy.

Economic conditions do affect household maintainer rates, by both tenure and structure types, which means both that maintainer rates change and that they tend to be the same at corresponding points in the economic cycle. This long term stability means that long term housing forecasts generally rely on constant long term maintainer rates.

It is possible to argue that the assumption of constant rates may not be appropriate in metropolitan regions experiencing long term population growth. There is a common argument that, as the number of people in a region increases, housing occupancy patterns change. The underlying rationale to the argument is that more people mean higher densities, and that regional population growth brings with it pushes and pulls that change people's housing behaviour. The pushes are increased competition for the use of land and increased transportation costs, both of which will compel people to use less land in order to reduce housing and accessibility costs. The pulls are the metropolitan life styles that place a greater emphasis on a home as a base for an urban life style rather than a home as a yard and lawn.

There are clearly size related differences in housing occupancy patterns between regions: the pattern in a small town is different from that in a medium sized city, which is in turn different from the pattern in a metropolitan region. The question is the extent to which size alone causes this difference. As the following comparison of 1996 household maintainer rates in the Metropolitan Vancouver and Metropolitan Toronto regions shows, while household maintainer rates are different in metropolitan regions of different sizes, the differences are in the detail not in the general pattern (as they were in a comparisons⁵ of their 1991 maintainer rates). Occupancy of ground oriented and apartment housing is determined by people's life cycle requirements, not by the number of other people living in the metropolitan region.

Before presenting this comparison, it is necessary to return to the discussion of the boundaries of housing markets. The Metropolitan Vancouver housing market has here been defined as the combined Greater Vancouver and Fraser Valley Regional Districts: to repeat, the actual market now includes Squamish and Gibsons, and does not include the Fraser Canyon communities around Spuzzum and Boston Bar. Having said this, the combination of the Greater Vancouver and Fraser Valley Regional Districts is a pretty good approximation of the Metropolitan Vancouver housing market.

Just as the Metropolitan Vancouver housing market must include its suburbs, so must the Metropolitan Toronto housing market. This means including its long distant commuter suburbs, such as Burlington, Richmond Hill, and Oshawa. To do so means combining the counties of Durham, Hamilton, Halton, Peel, Toronto, and York into a single region with a combined 1996 population of 5.1 million people. This is more than twice the Metropolitan Vancouver region's current population, and a million more than this region's projected 2040 population. If regional population is a determinant of housing occupancy, then Metropolitan Toronto, Canada largest metropolitan region, should provide insights as to how maintainer rates in Metropolitan Vancouver might change in response to its population continuing growth.

The question is “how different is housing occupancy in the Metropolitan Toronto region, with its subway, its street cars, its toll and free ways, its GO trains, and its 5 million people, from that of Metropolitan Vancouver?”

The answer is “Not very”.

Figure 12 shows age specific household maintainer rates for the Metropolitan Toronto and Vancouver Regions in 1996. They are strikingly similar, with the propensity to be a household maintainer in both regions rising sharply from the 15 to 19 age group to a general plateau in the 45 to 69 age groups (in the 57% to 59% range), rising again in the early retirement stage to age 75 to 84 (with rates in the 59% to 63% range), and then dropping to the 46% to 51% range in the 85 plus age group (when institutional residency becomes more predominant).

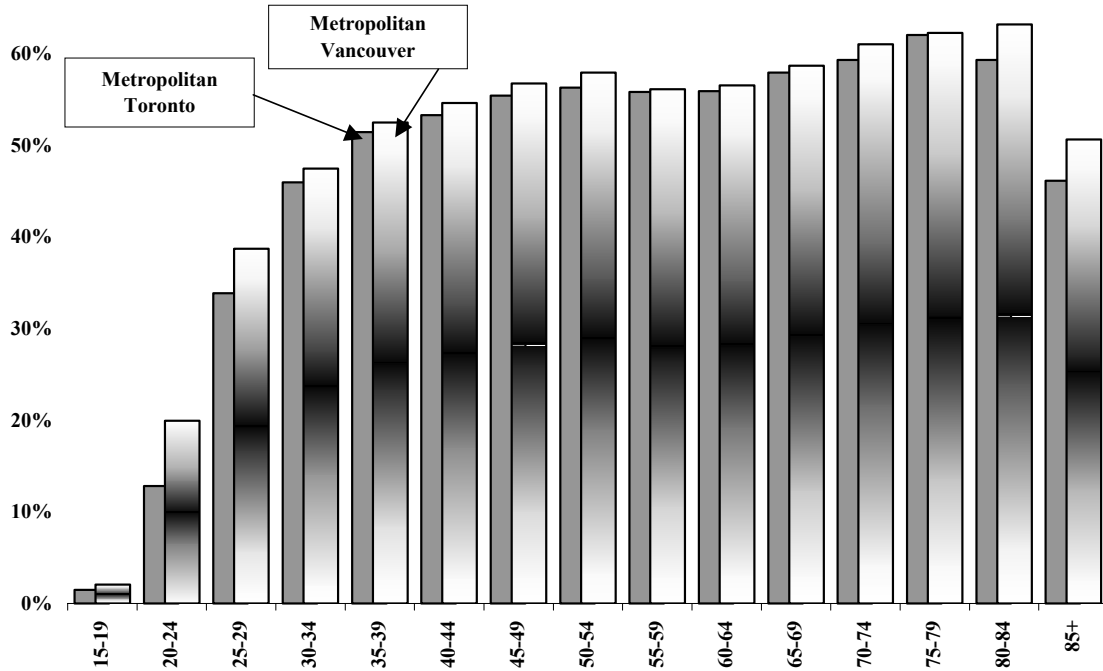
Certainly there are differences between the two, as are shown on Figure 13, but these are not very significant. Overall, private household maintainer rates are slightly higher in the Metropolitan Vancouver Region than they are in Metropolitan Toronto, particularly in the under 55 population. The greatest differences are in the 20 to 24 and 25 to 29 age groups: 19.9% of the 20 to 24 year olds in this region are household maintainers, compared to only 12.8% in Metropolitan Toronto (a 7.1% difference), with the corresponding values for the 25 to 29 age group being 38.7% and 33.9% (a difference of 4.9%). Maintainer rates in the 80 and older age groups are also higher in Metropolitan Vancouver than they are in Metropolitan Toronto: 3.9% more of the people in the 80 to 84 age group, and 4.5% more of those in the 85 plus age group are household maintainers in this region than in Metropolitan Toronto.

This corresponds to the fact that one person households account for a much greater percentage of households in Metropolitan Vancouver than in Metropolitan Toronto. Whether this is the result of life style preference or relatively greater housing affordability in this region is not possible to say: all that the data permit us to conclude is that currently, in every age group, a person is more slightly more likely to be a household maintainer in this region than in the larger Metropolitan Toronto region.

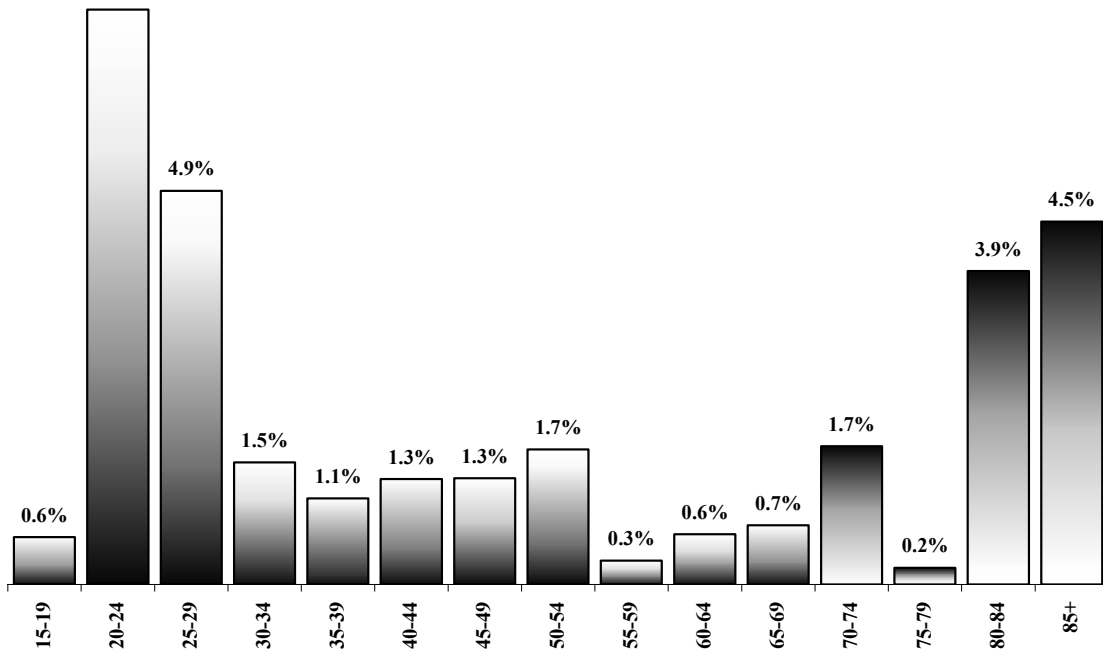
It is possible that, as this region grows, the propensity for young adults in this region to maintain their own households may, out of either life style or economic considerations, decline to Toronto levels. If this occurs, given the modest difference between maintainer rates for the two regions, it would have a negligible impact on overall housing demand projections. Where the greatest population growth in this region will be is in the 45 to 79 age groups, where the maintainer rates are virtually identical in the two metropolitan regions.

While it would be tempting to conclude from this general similarity in household maintainer rates that there are no great differences between the two regions, in spite of their great difference in population, such a conclusion would be hasty. There are significant differences, as the following graphs show, but they are at a much more detailed level.

**Figure 12: Overall Household Maintainer Rates
 Metropolitan Vancouver and Metropolitan Toronto, 1996**



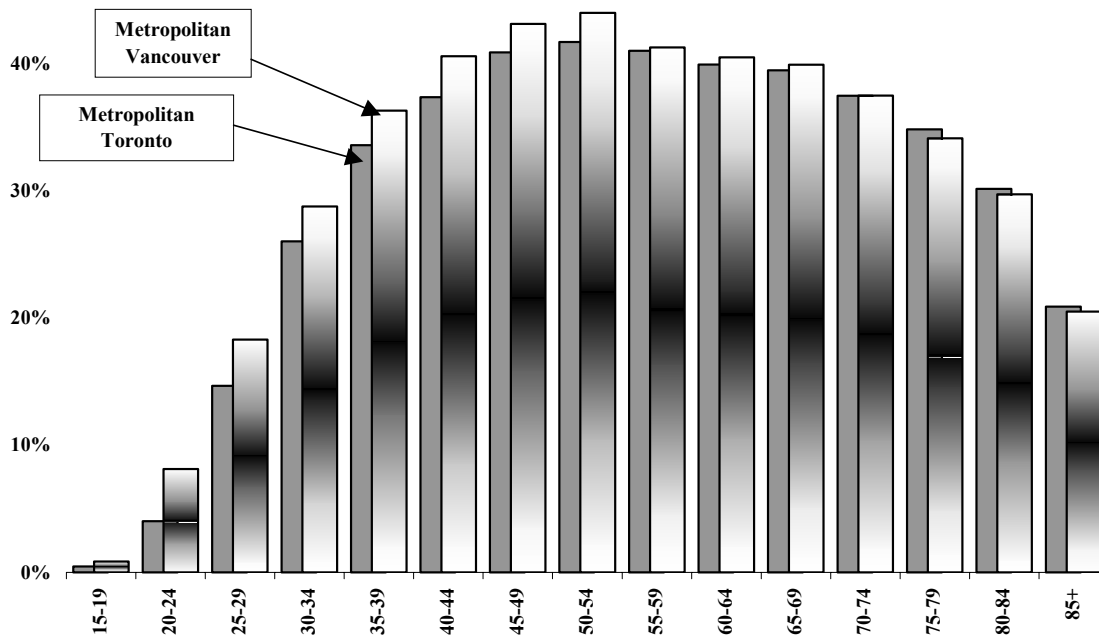
**Figure 13: Household Maintainer Rates
 Difference between Metropolitan Toronto and Metropolitan Vancouver, 1996**



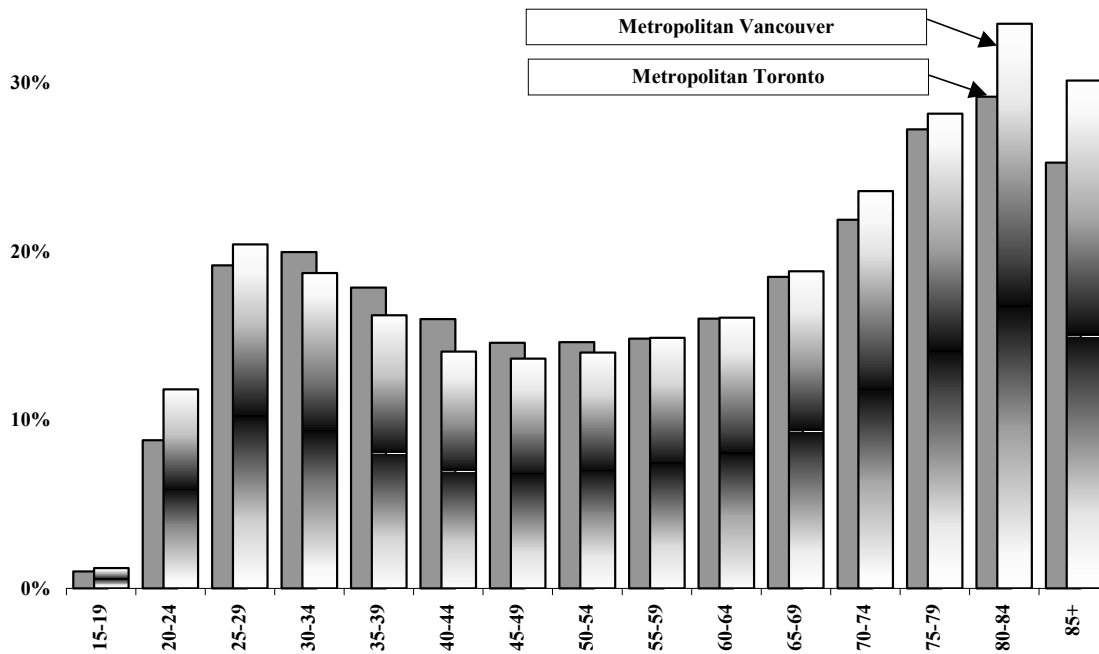
The level of detail is not at the major structure type level: there is also no substantial difference between age specific maintainer rates for ground oriented or for apartment households in the two regions. The ground oriented maintainer rates (Figure 14) follow exactly the same pattern in both regions, climbing from the 15 to 19 age group to a peak in the 42% to 44% range in the 50 to 54 age group before declining to 21% in the 85 plus age group. In the under 55 age groups, there is a slightly higher propensity for people to be maintainers of households living in ground oriented accommodation in Metropolitan Vancouver than there is in Metropolitan Toronto (Figure 16). For example, in the 20 to 24 age group, the ground oriented maintainer rate in this region is 8%, 4% greater than the 4% rate in Metropolitan Toronto. In the 55 and older age groups, there is essentially no difference between the two regions.

Similarly, there is no great difference between apartment maintainer rates (Figure 15). Both regions demonstrate an increasing propensity of a person being the maintainer of a household living in an apartment that reaches 20% of the people in the 25 to 34 age group, then a decline to the 14% range in the 50 to 54 age group, followed by an increase to the 29% to 34% range in the 80 to 84 age group, and then a decline in the 85 plus age group. In the under 30 and over 70 age groups, there is a slightly higher propensity in this region to be the maintainer of a household living in an apartment than in Metropolitan Toronto: the converse applies in the 30 to 54 age group. While the fact that we have a slightly higher propensity to live in ground oriented accommodation than people in the same age groups in Toronto have, it is a bit surprising to see that we also have, in the younger and older population, a higher propensity to live in apartments. Having said this, the differences are not significant, particularly in the 45 to 79 age groups where the greatest population growth in both regions increase will occur.

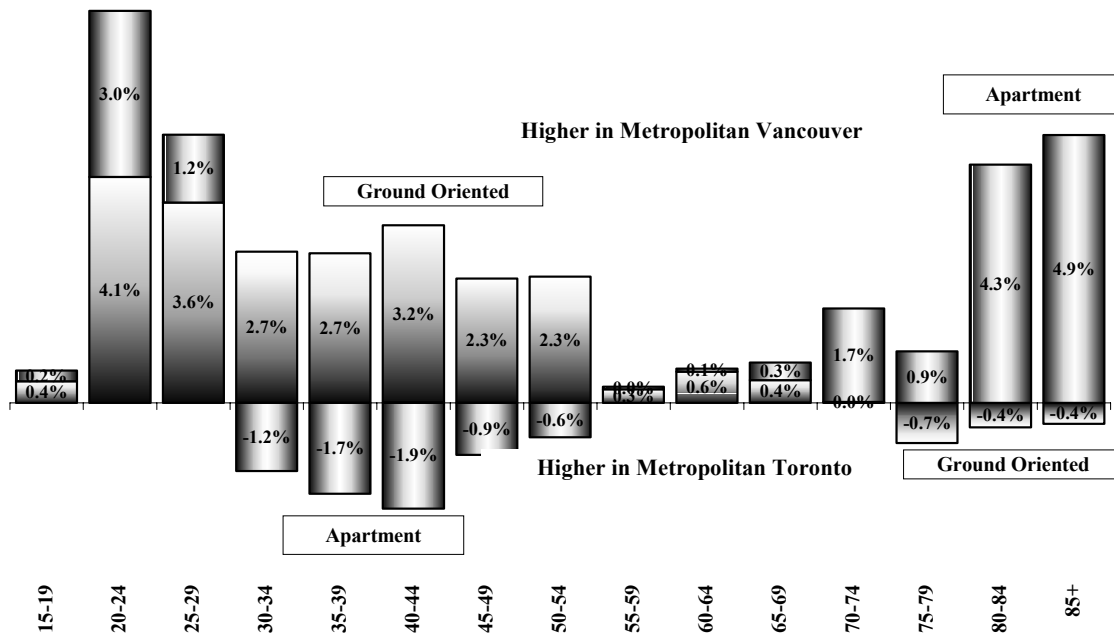
**Figure 14: Ground Oriented Household Maintainer Rates
Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 15: Apartment Household Maintainer Rates
Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 16: Ground Oriented and Apartment Household Maintainer Rates
Difference between Metropolitan Toronto and Metropolitan Vancouver, 1996**



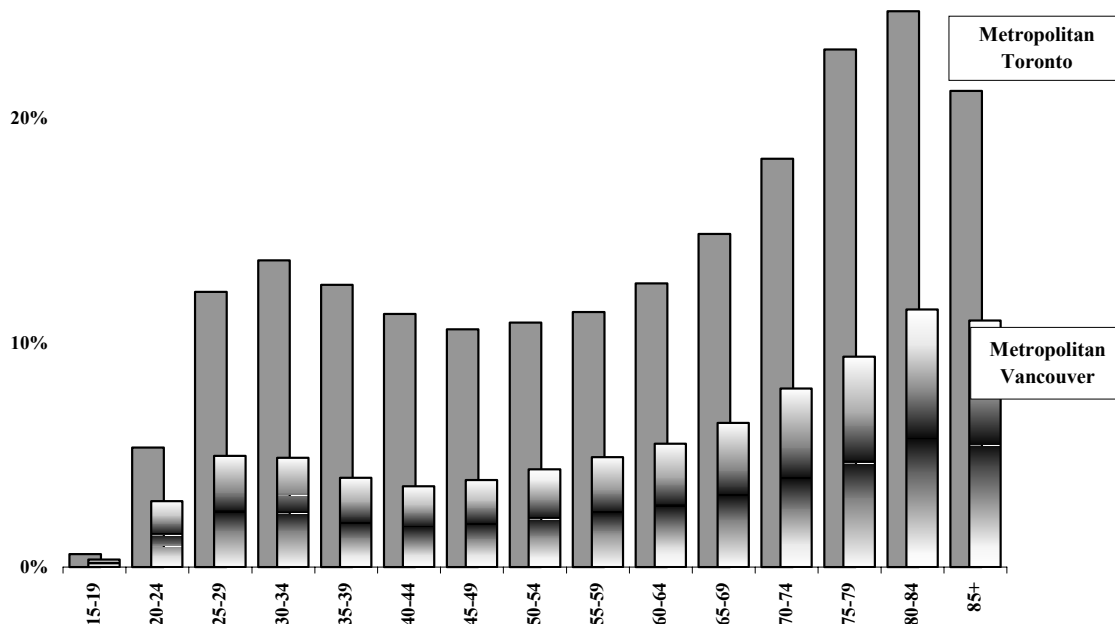
While the overall apartment maintainer rate is very similar in the two regions, within this major structure type category there are major differences. The propensity of people in Metropolitan Vancouver to maintain households living in apartments living in high rise (5 or more storeys) buildings is well below that in Metropolitan Toronto (Figure 17) while exactly the opposite situation prevails in the low rise (apartments in buildings of less than 5 storeys, Figure 18).

In each and every age group people in Metropolitan Vancouver are less than half as likely to maintain households living in high rise buildings than they are in the same age group in Metropolitan Toronto (Figure 19). The greatest differences are in the young adult and old age groups: for example, the 4.9% high rise apartment maintainer rate in the 30 to 34 age group in Metropolitan Vancouver is 8.9% below the 13.8% rate for the same age group in Metropolitan Toronto. In the 80 to 84 age group, the 11.5% maintainer rate in Metropolitan Vancouver region is 13.3% below the 24.8% rate in Metropolitan Toronto.

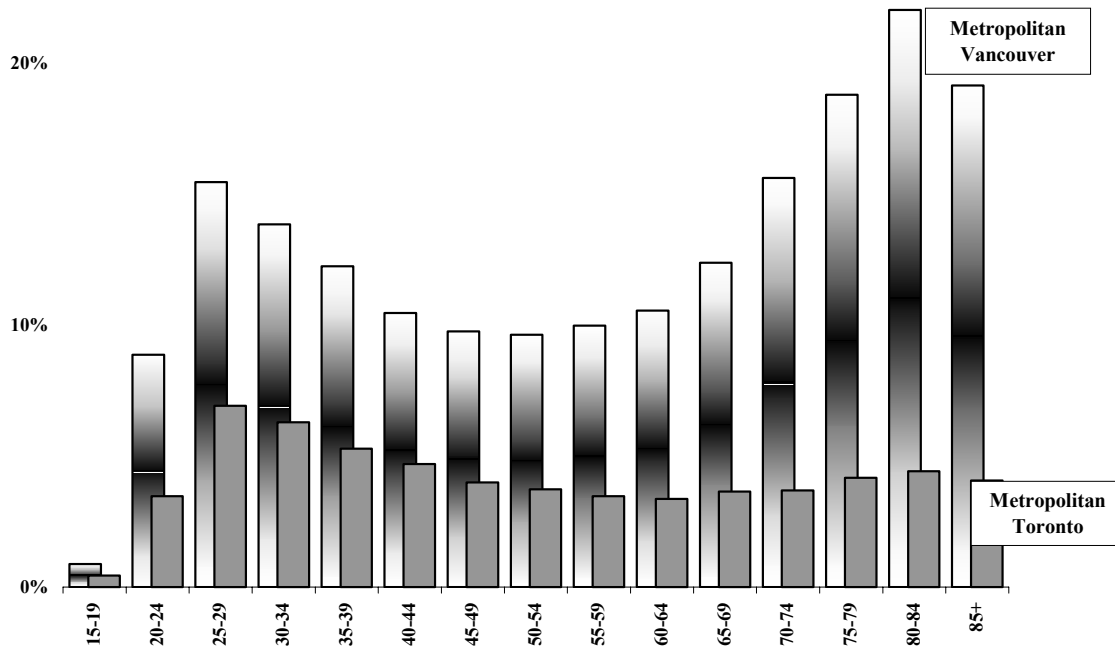
In contrast, people in the Metropolitan Vancouver region are more than twice as likely to maintain households living in low rise apartment buildings than they are in Metropolitan Toronto (Figure 18). Again the greatest differences are in the young adult and 65 and older population: the higher rates for low rise apartments in Metropolitan Vancouver are the mirror image of the lower rates for high rise apartments.

Apartment living is clearly a life cycle phenomenon, one defined by age not the number of people living in the region. Regional supply characteristics, however, determine the density at which apartment living occurs. To the extent that population density affect housing occupancy, we can expect that as this region grows, if land use planning and development policies permit it, that within roughly today's propensity to live in apartments, there will be an increasing propensity to be in high rise, and a decreasing propensity to be in low rise, buildings.

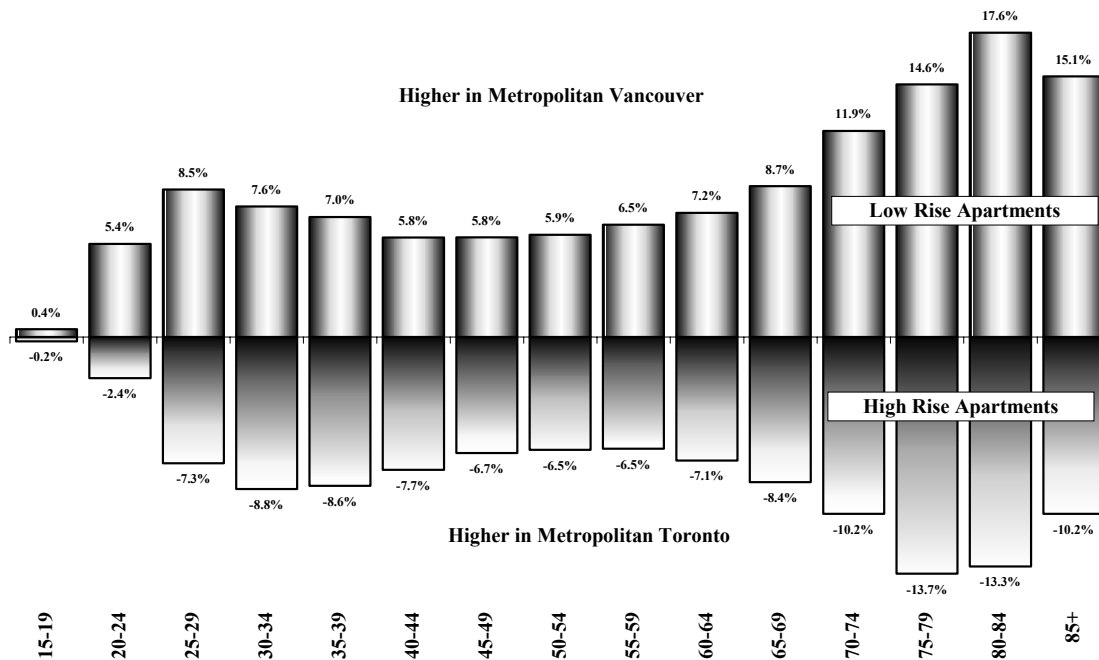
**Figure 17: Apartments in Buildings of 5 or More Storeys, Household Maintainer Rates
Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 18: Apartments in Buildings of Less than 5 Storeys, Household Maintainer Rates
 Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 19: Apartment Maintainer Rates by Structure Type
 Difference between Metropolitan Toronto and Metropolitan Vancouver, 1996**

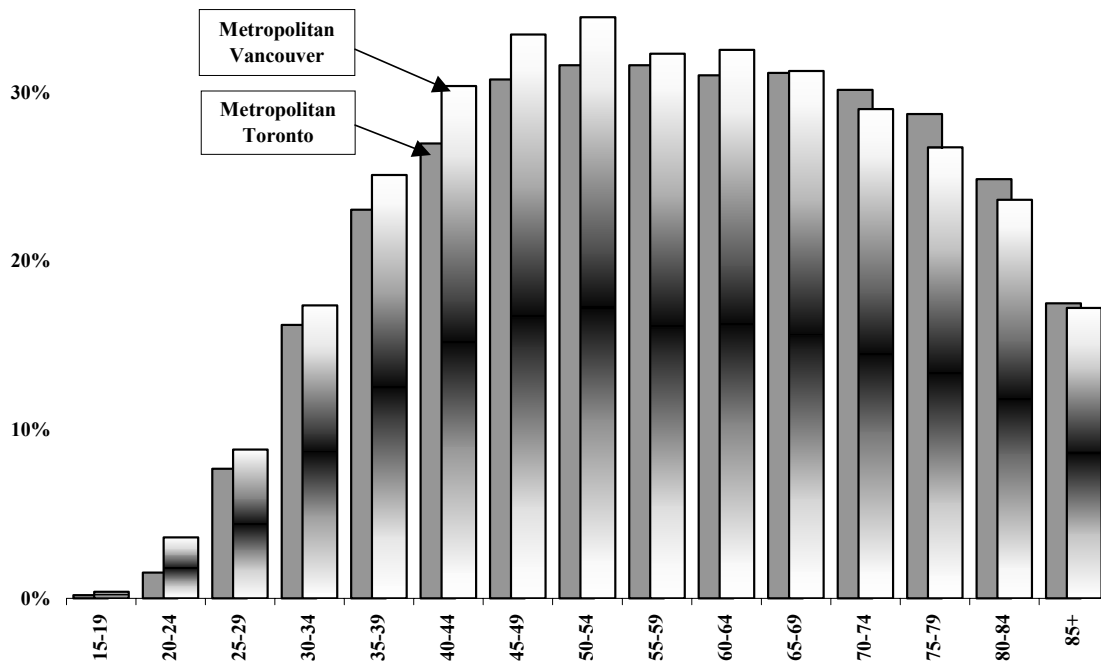


While age specific ground oriented household maintainer rates are generally the same in the two metropolitan regions, there are significant differences within this major structure type category. Surprisingly, the differences are not with respect to single detached, with maintainer rates for this structure type generally the same in the two regions (Figure 20). In both regions the percentage of people in an age group who maintain a household living in a single detached unit climbs to a peak in the 32% to 34% range in the 50 to 54 age group, remains generally at this level up to the 70 to 74 age group and then declines to 17% in the 85 plus age group, approximately the same level as it is in the 30 to 34 age group.

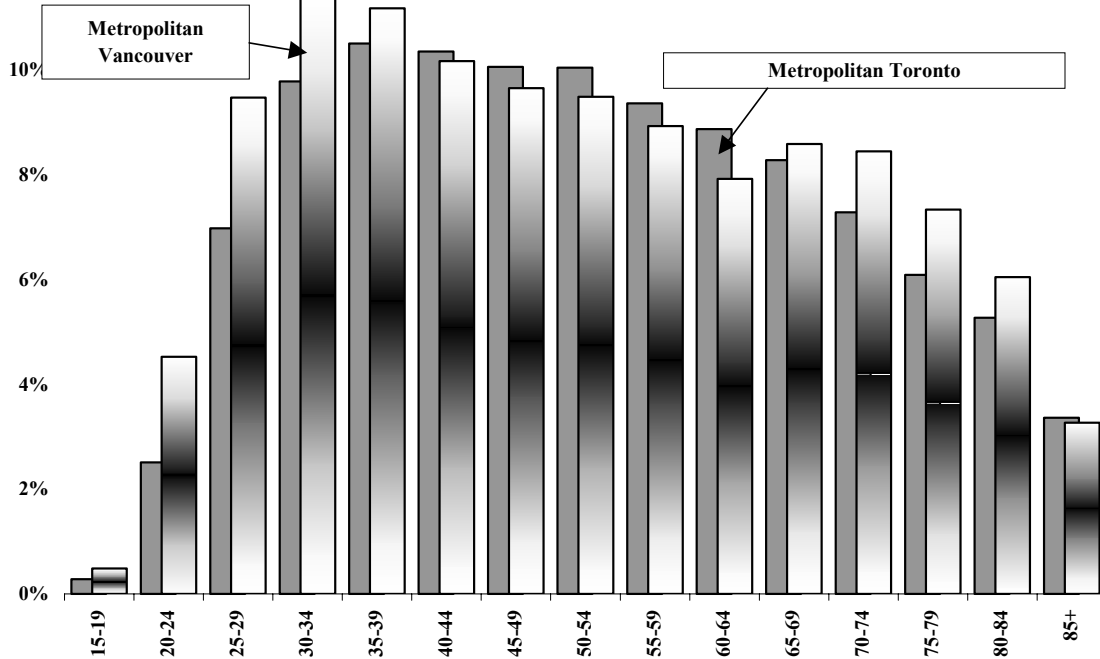
There are slight differences between the two regions: people in the under 65 age groups in this region are slightly more likely to be maintainers of households living in single detached house than they are in the Metropolitan Toronto region (Figure 22). For example, in the 40 to 44 age group, 30.4% of the people in this region are maintainers of households living in single detached dwellings, 2.4% more than the 27.0% of the same age group in Metropolitan Toronto.

The general pattern of maintainer rates for all other ground oriented structure types (side by side duplex, up down duplexes and suites in houses, row houses, mobile, single unit attached to non-residential) is also the same in the two regions (Figure 21). There is a slightly higher propensity for people in the under 40 and over 65 age groups in Metropolitan Vancouver to live in these non-single detached yet ground oriented housing forms than there is in Metropolitan Toronto, with the converse applying in the 40 to 64 age groups. The conclusion? It is most likely distance between work and home, not structure type, which is the major difference in ground oriented housing occupancy patterns between the two regions.

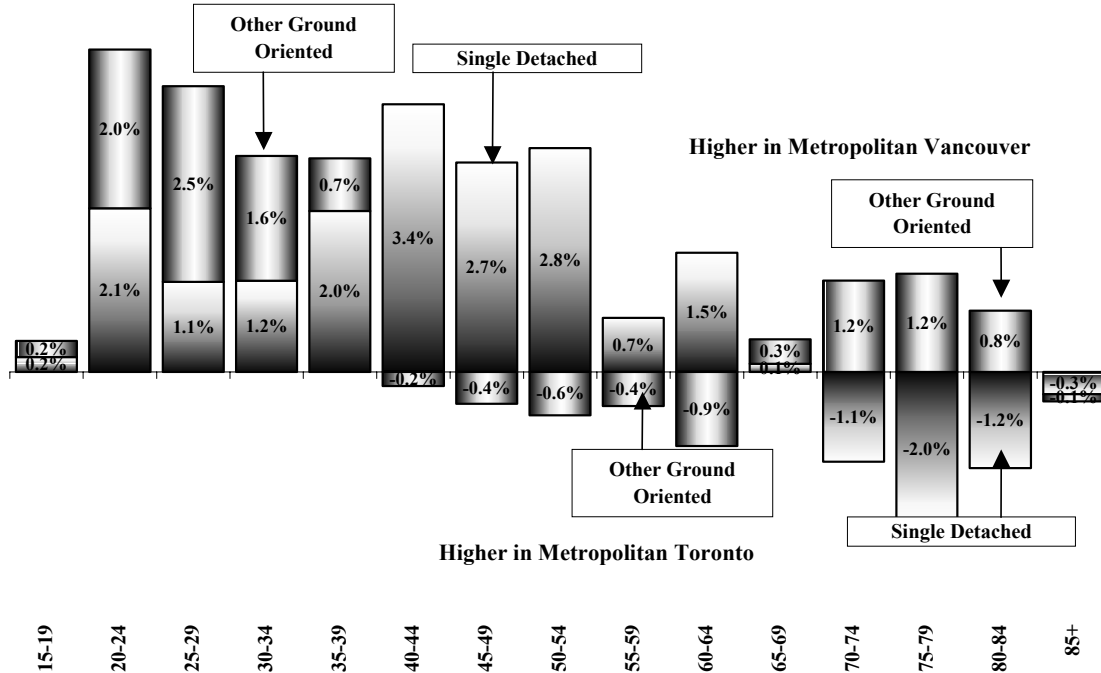
**Figure 20: Single Detached Household Maintainer Rates
 Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 21: Other Ground Oriented (Not Single Detached) Household Maintainer Rates
Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 22: Single Detached and Other Ground Oriented Household Maintainer Rates
Difference between Metropolitan Toronto and Metropolitan Vancouver, 1996**

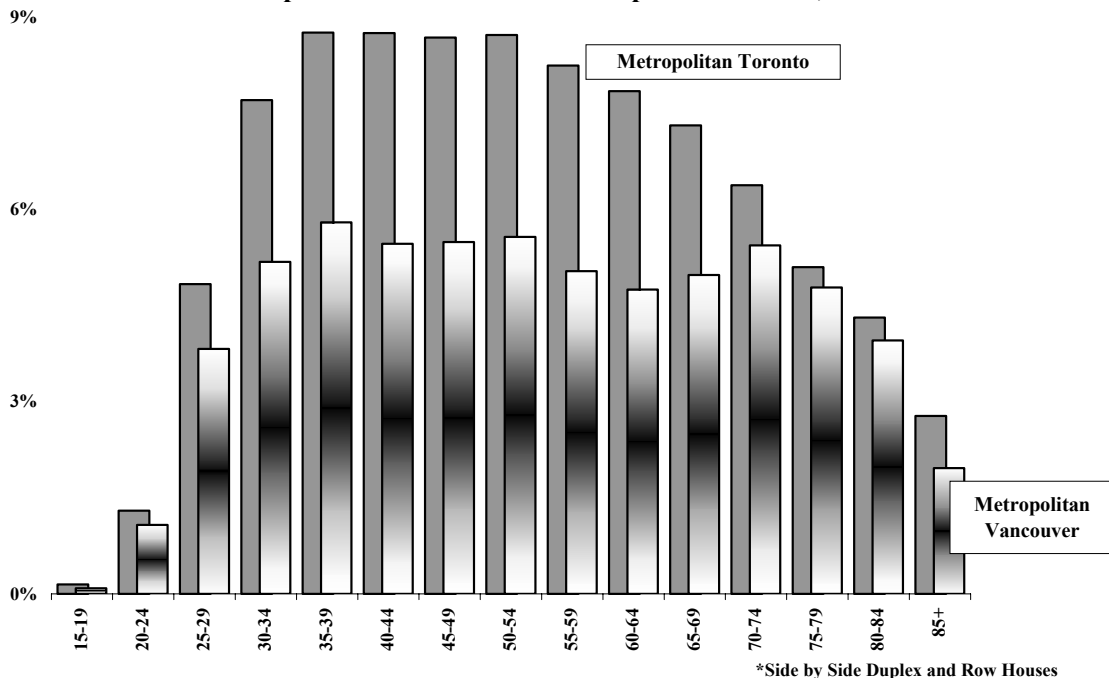


There is an interesting difference between housing occupancy patterns within the other ground oriented category: people in Metropolitan Toronto have a greater propensity to live in side by side attached ground oriented units (two or more ground oriented units in a row: that is, side by side duplexes or row houses) than people do in Metropolitan Vancouver (Figures 23 and 25). Conversely, people in this region have a much greater propensity to maintain household living in what Statistics Canada calls an apartment or flat in a detached duplex, which is to say an up down duplex or a house with a suite in it (Figures 24 and 25).

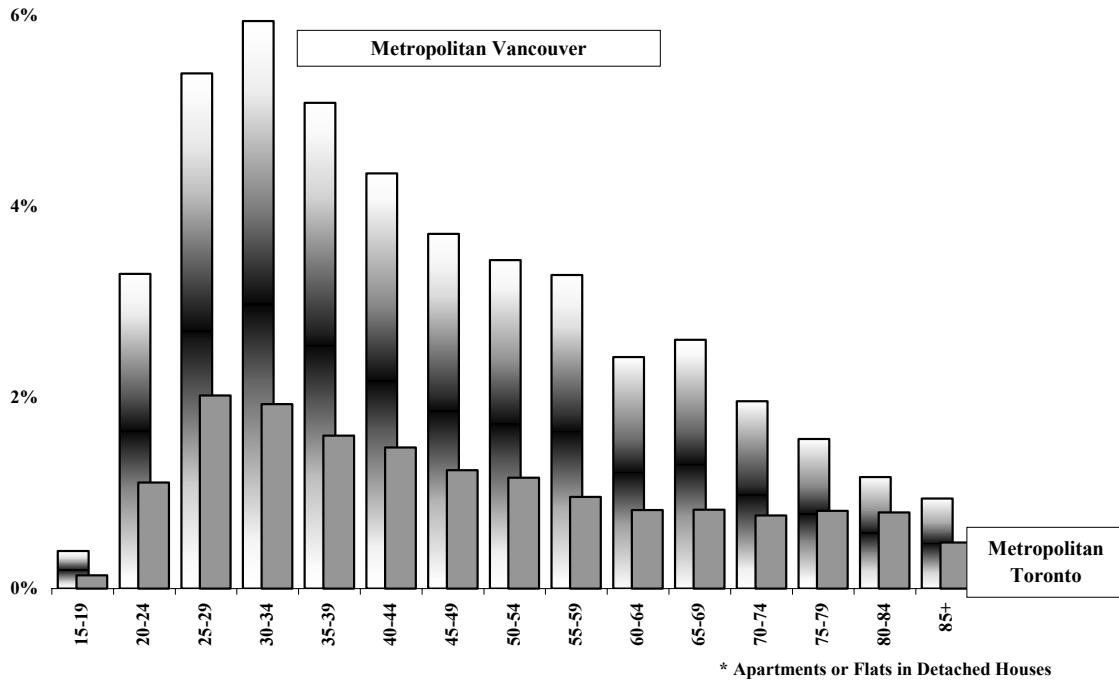
For example, in Metropolitan Toronto, in the 40 to 44 age group, 8.7% of the people are maintainers of households living in side by side attached dwelling, 3.3% more than the 5.5% of the people in the same age group in Metropolitan Vancouver. In the same age group, 4.4% of the population maintains households living in suites or flats in detached houses, 2.9% more than the 1.5% of the age group who do so in Metropolitan Toronto. [There are two other ground oriented structure types, neither of which is a significant component of the market in either region: there is a marginally greater propensity to maintain households in mobile and moveable dwellings in this region, and a marginally lesser propensity to maintain households living in single dwellings attached to non-residential buildings, than there is in Metropolitan Toronto.]

In conclusion, there is a great similarity between age specific maintainer rates at the general structure type level in these two regions: 65% of the households in this region live in ground oriented units as do 64% in Metropolitan Toronto. This general similarity is not limited to these two metropolitan regions: the same patterns are repeated in almost every metropolitan region in North America⁶. There are regional differences, but as with the differences between Vancouver and Toronto, these are a) on the margin, b) most noticeable in detailed structure types, not in the general ground oriented and apartment categories, and c) mainly the result of supply factors.

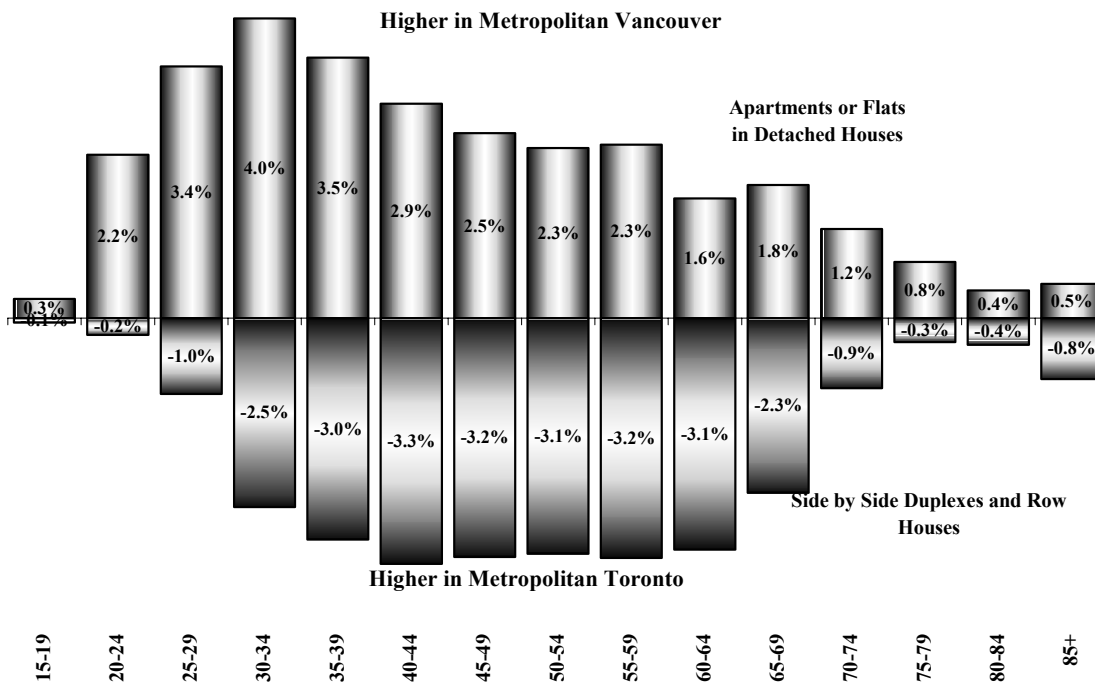
**Figure 23: Attached* Ground Oriented Household Maintainer Rates
Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 24: Apartments or Suites in Houses* Household Maintainer Rates
 Metropolitan Vancouver and Metropolitan Toronto, 1996**



**Figure 25: Side by Side and Suites in Houses Household Maintainer Rates,
 Difference between Metropolitan Toronto and Metropolitan Vancouver, 1996**



It is most likely that, as this region grows, its apartment market will shift towards a greater emphasis on high rise development, and the attached ground oriented market towards a greater emphasis on side by side attached dwellings. The extent to which this occurs will depend upon future land supply, planning, zoning and development policies. This report is concerned with describing the context in which such supply adjustments will occur: as a result, the projections presented here are for the two major structure type (ground oriented and apartment) and tenure type (owned and rented) categories. In the next section of this report, the 1996 rates shown in Figure 9 will be used, together with The Urban Futures Institute's population projection for Metropolitan Vancouver, to estimate the future occupancy demand for housing in Metropolitan Vancouver assuming constant 1996 household maintainer rates.

IV. Housing Demand in Metropolitan Vancouver, 1999 to 2040

The constant maintainer rate assumption focuses projections on the consequences of population growth and demographic change on the housing market. Taking constant rates and multiplying them by the projected number of people in an age group in the future results in the estimated number of dwelling units that would be required if people in each age group in the future were to be housed with the same occupancy pattern as people in the age group are today.

The result is a projection that the net occupancy demand for housing in Metropolitan Vancouver will increase by 98% between 1999 and 2040: there will need to be a net of 847,400 more dwelling units added to the housing stock in the region to accommodate the 1,819,300 person (80%) increase in population (Figure 26). Over the next decade, accommodating the 457,000 person (20%) increase in population will be accompanied by a 217,900 (25%) increase in the number of households in the region (Figure 27).

Figure 26: Additional Housing Occupancy Demand, Metropolitan Vancouver, 1999 to 2040

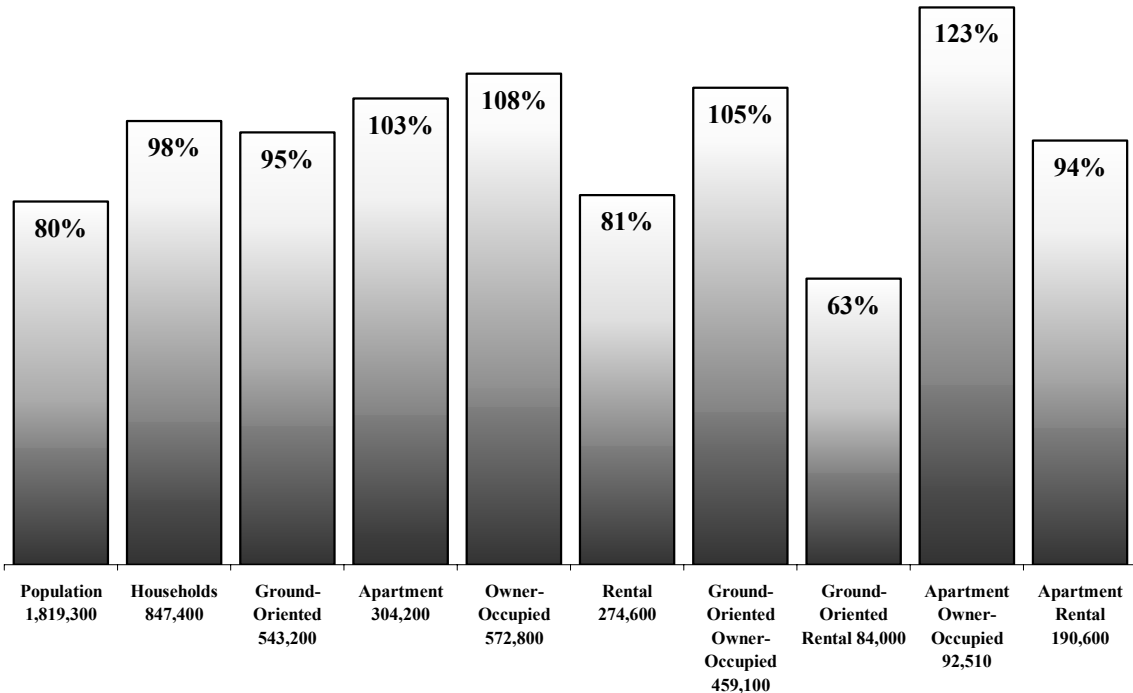
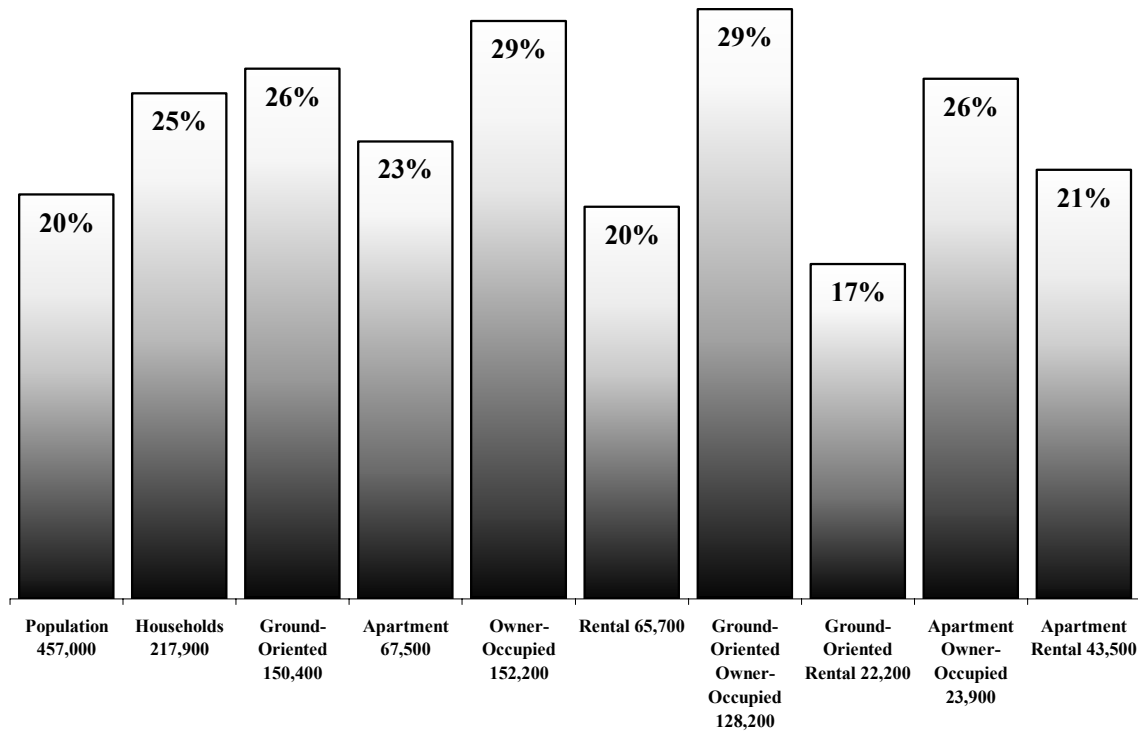


Figure 27. Additional Housing Occupancy Demand, Metropolitan Vancouver, 1999 to 2010



The reason that the growth rate in the demand for housing is higher than that of the population as a whole is that the 45 and older age groups – those with the highest household maintainer rates – will grow much faster than the overall population, the result of the aging of the region's population that will occur in the coming decades.

Given the facts that the 40 to 69 age groups have some of the highest ground-oriented household maintainer rates, and that these age groups will have the greatest projected absolute and percentage growth, it comes as no surprise that the greatest absolute increase will be in the demand for ground-oriented accommodation. There will be a net increase in ground-oriented housing occupancy demand of 26% over the next decade (150,400 more ground oriented households) and of 95% over the next four decades (543,200 additional ground-oriented households). In the next decade, the apartment stock will experience slower relative expansion, with the number of apartments increasing by 23% (67,500 units). Over the longer term, however, the apartment stock will expand by slightly greater percentage than the ground oriented stock, increasing by 103% (304,200 units) between 1999 and 2040. This long term growth in apartment demand will be driven mainly by the growth the 50 and older age groups, supplemented by the less rapid growth of the under 30 population, where high apartment maintainer rates occur.

Not surprisingly, given the preference for owner occupancy in the 50 and older age groups, the demand for owner occupier housing will increase much faster (29% in the next decade and 108% over the next four) and by many more units (152,200 more owner occupier households in the next decade and 572,800 in the next four) than will the demand for rental accommodation (a 20%, 65,700 household, increase in the next decade and an 81%, 274,600 household, increase in the next four) which will just keep pace with population growth.

The greatest absolute increase in housing demand in the region over the next four decades will be for additional ground oriented units for owner occupancy, which will account for over half of the total increases in demand for housing between 1999 and 2040. Over the next decade, demand for ground oriented owner occupier housing will increase by a net of 128,200 households, a 29% increase, 59% of the total increase in the region. Between now and 2040, there will be a 105% increase in the number of owner occupied ground oriented households, with the additional 459,100 households of this type accounting for 54% of the increase over the four decade period. The smaller long run share for ground oriented owner occupancy is the result of the above average growth in demand for owner occupied apartments in the second half of the period.

The demand for ground-oriented rental accommodation, while increasing by 23,900 households in the next decade and 84,000 households over the next four, will grow slower (17% over the next decade and 63% between now and 2040) than that for other household types, and slower than the population as a whole. This will be the result of the relatively slow growth in the under 45 population (and particularly in the 20 to 35 age groups) where the highest ground-oriented rental household maintainer rates are found.

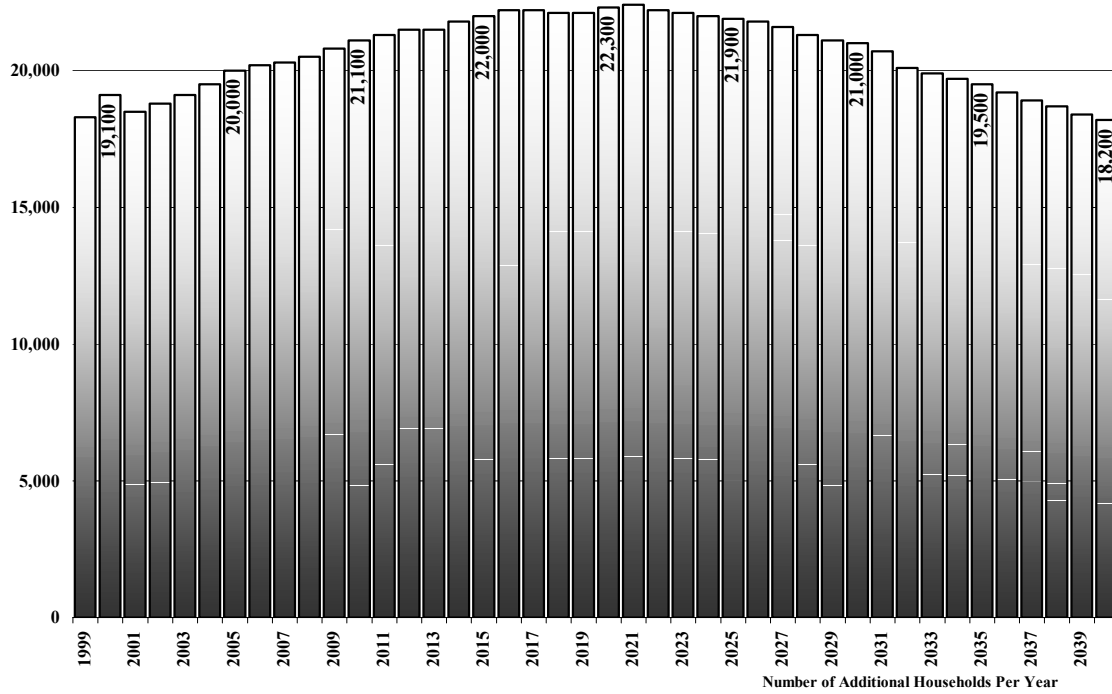
The relatively high levels of apartment owner occupancy in the rapidly growing 55 and older age groups mean that demand for owner-occupied apartments will increase more rapidly than any other housing type over the longer term: a 123% increase (92,510 households) may be anticipated over the next 40 years. In the near term, the number of owner occupied apartments will grow slightly faster as overall housing occupancy demand (23%, 22,300 more occupied units) as overall housing demand. This is one area where the constant maintainer rate projection may be conservative: the shift from rental to owner occupancy of apartments in the 65 and older population observed between 1991 and 1996 may continue, leading to owner occupancy have a even greater share of the apartment market than indicated using the constant rates.

Assuming that there is no shift between rental and ownership propensities in the apartment sector will mean that in the near term the rental sector will increase at about the same rate as the population as a whole, with the gains from the rapidly growing 55 plus population being moderated by the slower growth of the under 30 population. Demographic change alone will lead to a 21% (43,500 household) increase in the number of tenant occupied apartment dwellings in the next decade, and a 94% (190,600 household) increase in the rental apartment stock over the next four decades.

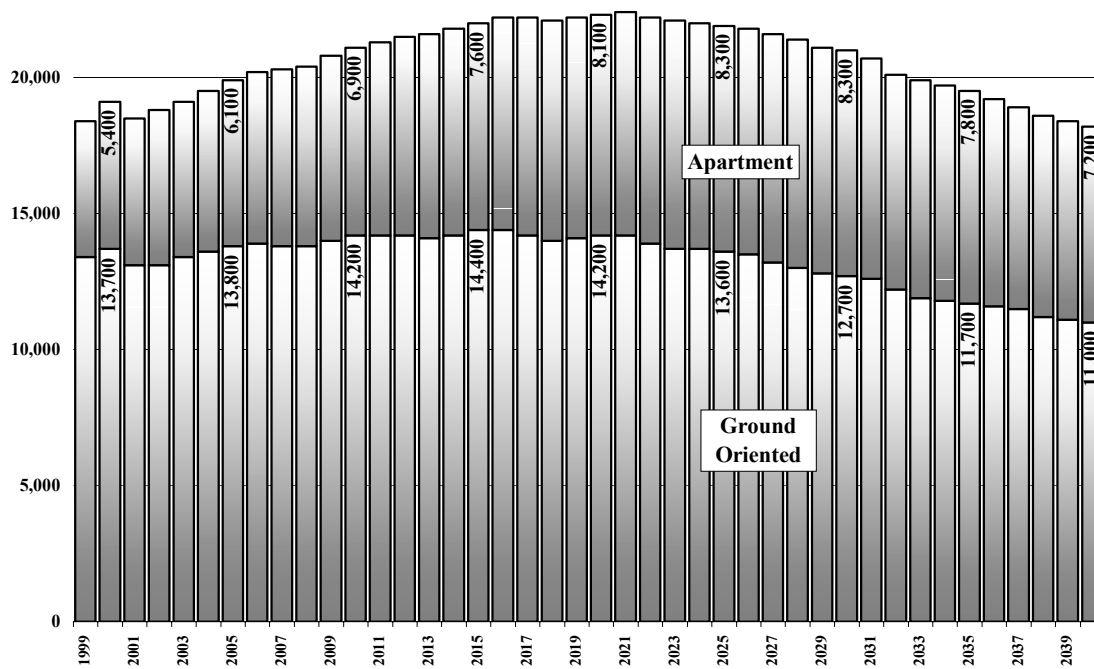
On an annual basis, a demographically based projection of housing occupancy demand shows a relatively steady pattern of annual increases, with between 18,000 and 22,400 additional occupied dwellings added to the housing stock each year (Figure 28). The somewhat smaller increases in the 1999 to 2003 period (18,000 to 19,9000 per year) are the result of the projected slow population growth in this period, as is the slowing in increases in demand after 2021.

In the first decade of the projection period, demographic change will focus demand on the ground-oriented sector, with annual net occupancy demand for about 13,000 ground oriented and 5,400 apartment units (a 71% to 29% split) between 1999 and 2003, increasing to 14,200 ground oriented and 6,900 apartments by 2010 (Figure 29). During the last decade of the projection, the mix would have changed, with the annual growth in demand being comprised of 60% (11,700 households) in ground oriented and 40% (7,700 households) in apartments. Within the next 20 years, the aging of the region's population will push apartment development to relatively high levels, in both absolute and percentage terms.

Figure 28: Projected Additional Housing Demand, Metropolitan Vancouver, 1999 to 2040

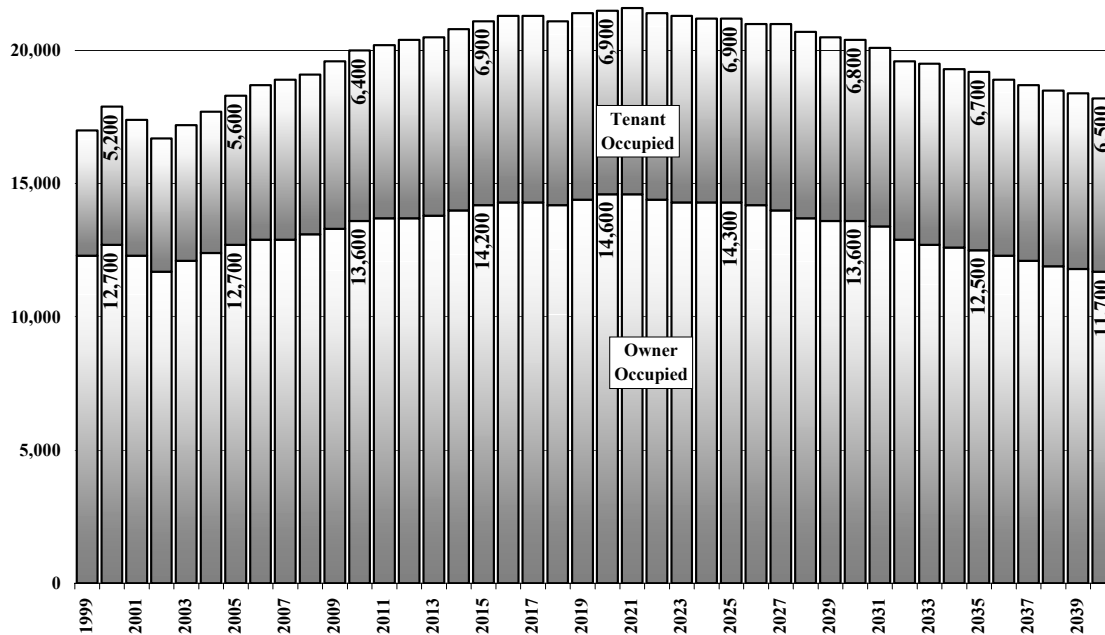


**Figure 29: Projected Annual Additional Housing Demand by Structure Type
 Metropolitan Vancouver, 1999 to 2040 (Number of Additional Households)**



In terms of tenure, population growth in the older age groups will maintain the focus on owner-occupier units, with about 13,800 net additional owner occupied units, and 5,800 rented units demanded on average each year in the next decade (Figure 30). By the last decade of the projection period the annual average growth in occupancy demand will be comprised of 12,600 owner occupied and 6,800 rental units. Aging will keep a relative balance to the owner-occupier and rental markets, with owner-occupier households accounting for approximately two thirds, and rental households approximately one third, of increases in occupancy demand.

Figure 30: Projected Annual Increase in Housing Demand by Tenure Type, Metropolitan Vancouver, 1999 to 2040 (Number of Additional Households)



This apparent constancy of tenure shares conceals a shift from ground oriented owner occupancy to apartment owner occupancy and from ground oriented rental to apartment rental (Figures 31 and 32). In the first decade of the projection increases in demand will focus on the ground-oriented owner-occupier sector, with a net additional 11,600 owner-occupier ground-oriented households, 2,000 rented ground-oriented households, 3,800 rental apartments, and 2,100 additional owner-occupied apartments required each year. This will result in an average mix of housing demand increases during the decade of 59% in ground oriented owner occupied, 10% in ground oriented rental, 11% in apartment owner occupied and 20% in apartment rental.

By the last decade of the projection period, while the average net annual number of additional households would still be in the 19,300 households per year range, the mix will have changed. Average annual increases in ground-oriented owner-occupied households will have declined to 9,700 additional households, the number of additional rental ground-oriented will have decreased to 1,900 per year, for rental apartments will have increased to 4,800 additional units per year, and for owner-occupier apartments will have increase to an average of 2,800 additional units. This will result in a mix of housing demand increases during the decade that averages 50% ground oriented owner occupier households, 10% in ground oriented rental units, 25% in rental apartments and 15% for owner occupied apartments.

Figure 31: Additional Households by Structure & Tenure, Metropolitan Vancouver, 1999 to 2040

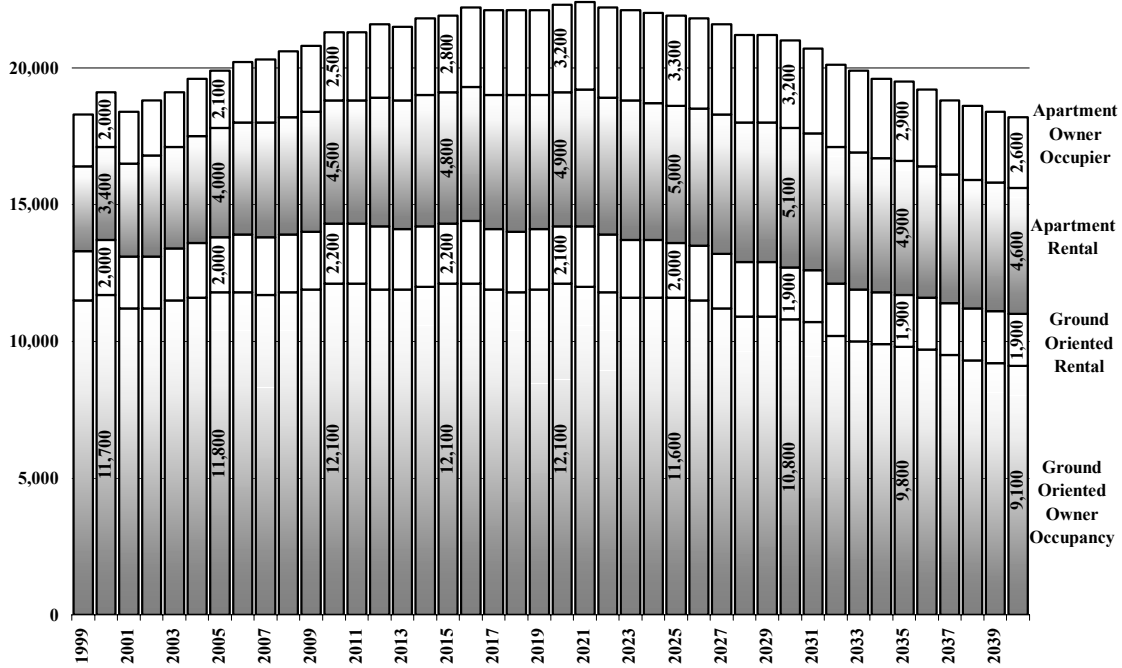
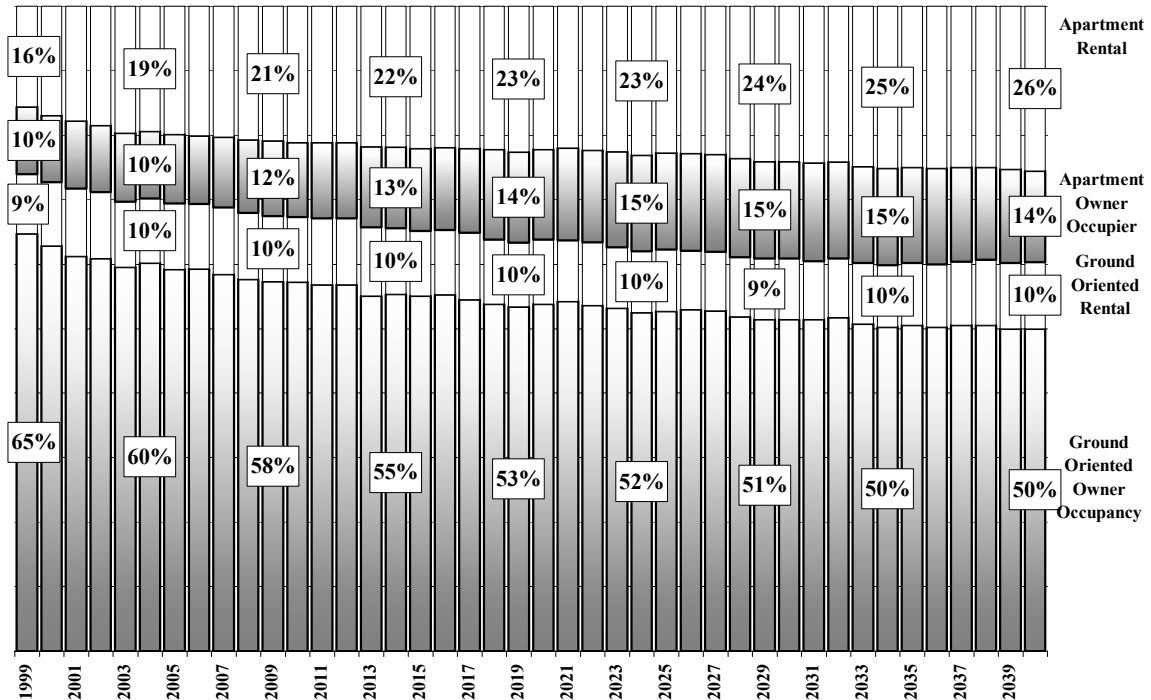


Figure 32: Percent Distribution of Additional Households, Metropolitan Vancouver, 1999 to 2040



Thus, even with the assumption of constant 1996 age, tenure and structure type specific maintainer rates, demographic change will bring a shift in the composition of increases in housing demand. Apartment owner occupancy will see its share on net annual demand increases grow from 10% to 14%, rental apartments from 16% to 26%, while ground oriented owner occupancy will decrease from 65% to 50%, and rental ground oriented will increase from 9% to 10%, of annual increases in occupancy demand

This growth projection assumes that household maintainer rates would remain constant at the 1996 level. In concluding this section, it is appropriate to consider some of the long run behavioral factors that may cause these maintainer rates to change. The first, and probably most significant, long run behavioural factor that will affect housing demand in the region will be increasing urbanization within the confines of the region's designated green zones: land supply constraints will, on the margin, push households towards higher density forms of housing.

Within the ground-oriented format, small lot single detached, duplex, and row housing will increasingly form an alternative to the traditional single detached house, particularly for households with affordability constraints (such as the young ground-oriented rental sector, two wage earner households, and empty nester households) and a shift from low rise to high rise formats within the apartment dwelling population.

Accompanying this pattern will also be a shift, again on the margin, towards owner-occupier apartments. With increasing life expectancies, some people in the 65 and older population will have an increasing propensity to "cash in" on the equity build up in their homes, and yet will still seek the security of owner occupancy. This shift will be almost unnoticed in the ground-oriented market (given the size of this market), but will have a significant effect on the condo apartment market. The condo apartment market will also benefit from increased investment demand as individual investors seek portfolio diversification through the ownership of condo units for rental, primarily to the youngest adult age groups (this portion of the market will be sensitive to economic conditions and hence labour force migration) and to the oldest age groups.

V. Conclusions

Over the long run, housing occupancy demand in Metropolitan Vancouver will increase faster than its population, the result of the aging of current residents and of the migrants who come to join these residents. While population growth of 80% over the 1999 to 2040 period will establish the basis for significant increases in housing demand, demographic change will compound these increases, with these two demographic factors leading to a 98% increase in housing demand.

From a demographic perspective, the level and composition of growth in demand will be relatively consistent throughout the next four decades, with average annual growth in occupancy demand between 18,000 and 22,300 net additional households formed each year. Of this total, slightly less than two thirds of the additional households will be in ground oriented units and slightly more than two thirds will be owner-occupiers (in both ground oriented and apartments).

The dominant household type will be the traditional ground oriented owner-occupancy household, compatible with a population where the majority of the residents, and of the population growth, are between the ages of 45 and 75. Each year, between 9,100 and 12,100 additional owner-occupier households will be added to the ground oriented housing market. The second most predominant form will be the traditional rental apartment, with between 3,100 and 5,100 more rental apartment households added to the housing stock each year.

Most significant in terms of growth will be owner-occupier apartment households, which will increase by 1,900 households per year in the near term and 3,300 per year in the longer term. Finally, the rental ground oriented market will show the slowest rate of increase, but will still record increases of between 1,800 and 2,300 households per year.

This projection rests on two assumptions. The first is that age specific maintainer rates will remain relatively constant at their 1996 levels. This is consistent with historical patterns over the past three decades. Any shifts between the two structure types are likely to be modest: where major changes can occur is within these major categories, as people, and land uses, shift towards higher density ground oriented and higher density apartment formats.

The second assumption is that the population projection reasonably corresponds to the actual population growth in the region. This projection indicates a long term annual population growth rate in the range of 1% to 2%, well below the 2% to 4% range of annual growth that the region experienced in the past: the projection, therefore, is conservative. Within the framework of this slowing of growth, the projection shows the aging of the population that will occur over the coming decades, a situation that leads to the specific pattern of housing demand projected here.

Population growth and demographic change will ensure that housing markets in the region will have a very strong long run future, with demand for all structure and tenure types increasing over the next four decades. What about the short run - what about right now? To answer that requires consideration of data that measures what is happening in the short run, specifically data that concerns additions to the housing stock, not in terms of households, but in terms of dwellings.

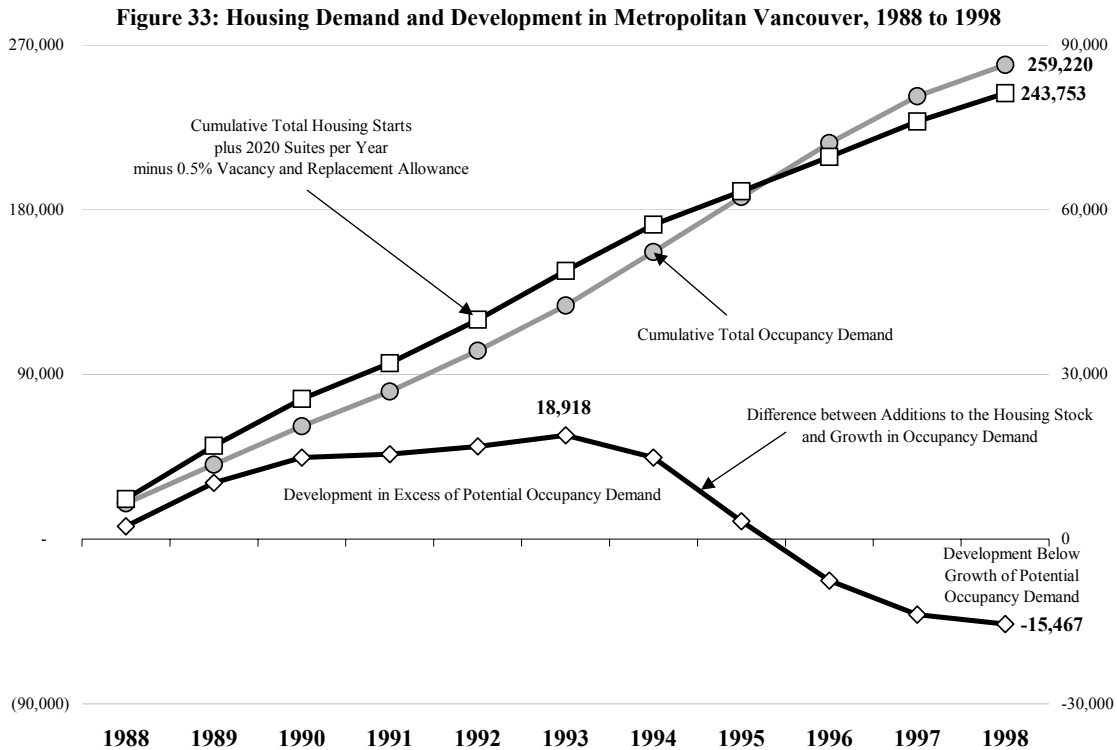
It is necessary to consult two data sources for information on dwelling additions. The first is data on the formal housing sector, that is, data on housing construction that is done with building permits, building inspectors and planning approval. Such development data, which comes from CMHC's starts records, overstates housing demand slightly, as dwelling starts meet not only net increases in occupancy demand but also replace units demolished or converted to non-housing uses, ensure an inventory of vacant units, and provide for secondary residences. Having noted this, the overwhelming majority of new dwelling construction is to meet increases in occupancy demand. Since 1998, formal sector dwelling unit starts have varied from a high of 23,800 in 1993 to a low of 13,600 in 1998, with an average of 20,200 units constructed each year during the 1988 to 1998 decade. Note that the 1998 annual number of starts (13,600) is 3,600 lower than the model projected 17,200 increase in households in the region for 1998.

The second data source concerns the informal housing development sector, where we find housing construction done without building permits, building inspectors, or planning approval. This overwhelmingly involves the additions of illegal suites (often referred to as secondary suites, unauthorized accommodation or informal densification). It requires only \$10,000 in construction costs to build an illegal suite to the housing stock, while it takes at least \$65,000 in construction costs to build an apartment unit with permits: illegal building activity has become a major source of affordable housing not only in Metropolitan Vancouver, but throughout North America.

As such informal development is done without official involvement, there is little in the way of data on the characteristics of this market. The census does give some indication of the extent of this sector. In 1991, there were 26,455 rental "flats or apartments in detached duplexes" in Metropolitan Vancouver: in 1996, there were 36,560 such units, a 10,100 unit increase (2,020 units per year). There was also a 7,415 increase in the number of owner occupiers in such suites.

While some of these units may have been developed with a permit and hence should be removed from the count of informal additions, to some unmeasured extent these would have to be replaced with other units that were not (due to their illegal nature) picked up in the census. Thus, 2,020 units per year added to the housing stock from the informal sector is a reasonable (and probably conservative) estimate of the extent of this source of supply.

Figure 33 shows the cumulative number of formal sector building unit starts plus 2,020 illegal suites per year between 1988 and 1998 minus a 0.5% allowance for vacancy, replacement, conversion and secondary residences: this cumulative development of 243,753 units is the estimated total number of dwelling units added to the housing stock in the region in the past decade. It also shows the cumulative net households established in region during this period, as estimated using 1991 and 1996 age specific headship rates and BC Statistics age group population estimates for this each year in this period: this cumulative occupancy demand of 259,220 is the total number of households estimated to have been added in the region over the past decade.



The difference between these two indicates the relationship between building activity and demand. Over the long run: the difference should be modest as building activity is driven by demand. In the short run, however, there may be a difference between development and demand. For example, during the 1992 to 1994 apartment boom, development exceeded demand: in 1993, occupancy demand increased by 24,680 households while an estimated 26,720 dwelling units were added to the housing stock: the housing stock increased by 2,040 more units than the number of households. As a result of this over supply, an inventory of units built up, with cumulative overbuilding reaching a peak of 18,918 units in 1993. In response to this excess, building activity slowed, with the excess units absorbed by 1995.

In 1998, in contrast, the estimated increase in households was 17,200 and the estimated addition to the housing stock was 15,620 units (13,600 starts plus 2,020 illegal suites minus a 0.5% vacancy replacement allowance), indicating a shortfall of 1,580 units. Shortfalls have occurred each year since 1995, leading to a situation where the cumulative growth in demand of 259,200 households is 15,467 more than the cumulative growth in supply of 243,753 additional units. To house the current estimated population of the region at 1996 household formation rates would require building activity since 1996 to have been 15,467 units higher than it has been.

This discrepancy means that one or more of the following has occurred over the past three years:

- a) The true rate of informal sector additions to the housing since 1996 has been significantly higher than the 2,020 per year estimated for the 1991 to 1996 period using the census data. As the cost gap between development in the un-permitted and permitted sector continues to widen, it is logical to expect significant increases in the informal sector as a source of housing units. To the extent that this is happening, formal sector completions data will progressively underestimate additions to the housing stock - perhaps Saturday sales of drywall should be used as a housing market indicator.
- b) Population growth since 1996 has been lower than is indicated by the projection. While the population projection indicated relatively slow growth of the region's population after 1996 (averaging 47,000 people per year from 1996 to 1999), compared to the 56,000 per year average for the first half of the decade, it may well be that the actual growth from 1996 to 1999 was below the estimated values. To the extent that these already reduced estimates of growth are above what actually occurred, growth in housing demand will be lower than projected.
- c) The current economic slowdown in British Columbia is pushing down household maintainer rates, with more people being accommodated in the average dwelling, as tenants double up, and young adults return to, or do not leave, the parental home. Maintainer rates decline⁷ in periods of poor economic conditions: BC is certainly in a period of poor economic conditions right now. This reduction of maintainer rates, as more people find that economics, rather than choice, determines who they live with, means that housing demand estimates based on 1996 rates will over-estimate the total number of units required in the short run.

It is likely that all three have occurred in response to prevailing conditions in the region's economy, with rising costs and falling prices in the formal sector pushing development in to the informal sector, slower than projected population growth as both immigration falls and out-migration occurs, and people doubling up to cut housing costs. Once British Columbia is able to effectively respond to the economic challenges and opportunities it faces, un-doubling of households and rising headship rates, a reduction in the relative role of the informal development sector and population growth will all lead to an expansion of development activity to first eliminate the current shortfall between cumulative demand and development, and then to expand the housing stock to accommodate the current resident's of the province as their housing requirements change as well as to accommodate new comers to the province. We can therefore anticipate housing development activity (including illegal suites) in the short run (the next two to three years) to be slightly below the range of 18,600 units per year projected here, in the medium term (from 2003 to 2006) to be slightly above projected 19,700 units per year, and that the average from the next decade will be in the range of 19,500 per year. Housing development and housing markets have a great long run future: the issue to create the short run conditions that will ensure that this future can be realized.

Notes:

¹ 5 years age groups have been aggregated into broader categories in order to simplify the graph.

² For a detailed discussion of increases in life expectancy, see What Can You Expect?: Life Expectancy in Canada, 1921 to 2021, The Urban Futures Institute, July 1998.

³ For a discussion about structure type maintainer rates and their relative stability over time, please refer to the Urban Futures Institute report Homes in British Columbia's Future: Demographics and Long Run Housing Demand, 1998.

⁴ For a discussion about tenure type maintainer rates and their relative stability over time, refer to the Urban Futures Institute report Homes in British Columbia's Future: Demographics and Long Run Housing Demand, 1998.

⁵ See Home in Metropolitan Vancouver's Future: Housing Demand by Structure Type, 1996 to 2021 (The Urban Futures Institute, 1996).

⁶ For examples, see Homes in America's Future: Demographics of Housing Demand For the Nation, Regions and States, 1995 to 2025 (The Urban Futures Institute, 1998).

⁷ See Homes in British Columbia's Future and Housing Alberta's Future Population: Demographics and Housing Demand, 1998 to 2028 (The Urban Futures Institute, 1998), for a discussion of the relationship between economic cycles and maintainer rates.

The Urban Futures Institute and The Land Centre Publication Series on Housing Demand in British Columbia

This joint publication series of The Urban Futures Institute and The Land Centre focus on the 25 non-metropolitan regions of British Columbia (listed below). The reports were prepared to provide two sources of information about housing demand in these regions. First, they present demographically based projections of housing demand in each region for the period 1996 to 2021. Second, they provide background information on the housing stock and housing occupancy patterns in these regions, and how these changed over the 1991 to 1996 period. The preparation of these reports was funded in part by The Real Estate Foundation of British Columbia, whose assistance and support is gratefully acknowledged.

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