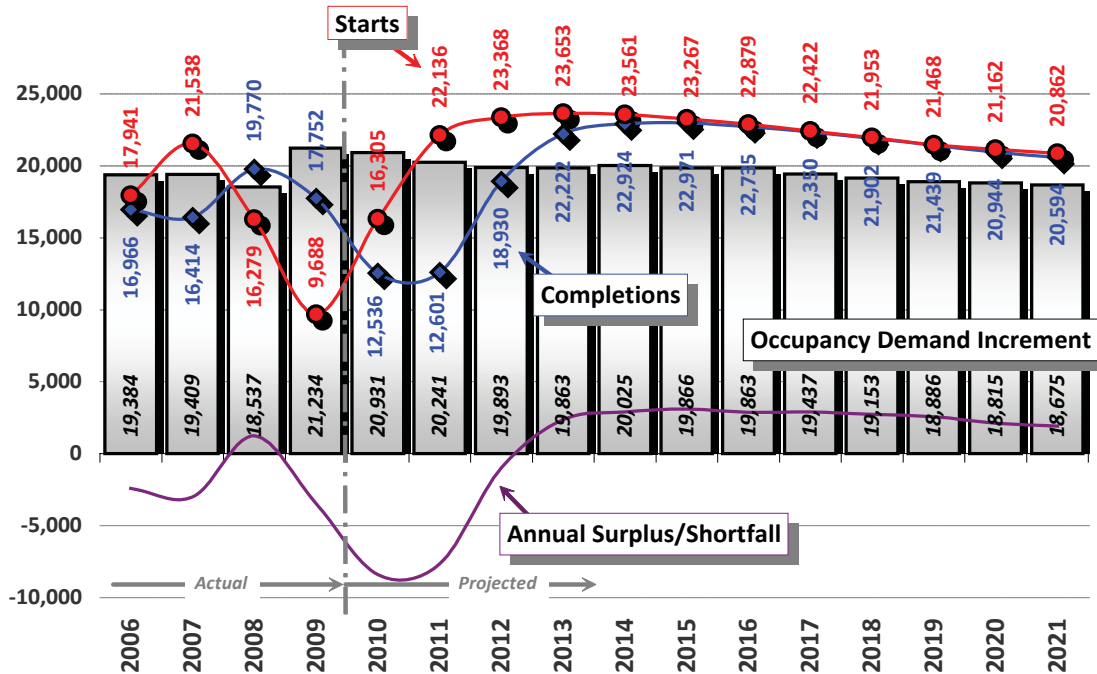


Housing Market Cycles in the Metro Vancouver Region

Vancouver CMA Housing Supply & Demand, 2006 to 2021



Prepared for:



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Prepared for:
Rennie Marketing Systems

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Table of Contents

Introduction	1
Historical and Projected Housing Market Conditions	3
Fundamentals of the Regional Housing Market: the Supply Side	3
Fundamentals of the Regional Housing Market: the Demand Side	4
The Apartments & Suites Sub-market	6
The Ground Oriented Housing Sub-Market	8
Conclusions & Strategic Considerations	9
Technical Background to the Housing Market Projections	11
The Housing Data	11
The Region's Changing Demography	12
Housing the Region's Future Population	13
Sensitivity Testing: Constant Maintainer Rate Scenario	16
Sensitivity Testing: Alternative Population Projection	17

Introduction

With arrival of spring, the perennial questions about the condition of Metropolitan Vancouver's housing markets are again blooming. *Is it over-built? Under-built? Balanced? Will housing starts increase or decrease? Will inventories increase or decrease? What about prices?* It would be nice if the questions were as easy to answer empirically as they are to ask. Unfortunately they are not, as the available data required to answer these questions are limited in both supply and quality. Having said this, it is important to use the data that *are* available to measure – if not precisely, then at least in orders of magnitude – the current and near-term balance of supply and demand in order to provide information on the conditions Vancouver's housing market will face over the months and years to come.

This brief report¹ reviews the available data, working from the base of Statistics Canada's 2006 Census (the most recent comprehensive survey of the region's housing stock), Canada Mortgage and Housing Corporation's (CMHC) housing starts and completions data from 2006 to March of 2010, and Urban Futures' most recent population and housing demand projections to 2021. The results show a housing market that is surprisingly robust but one that will be significantly challenged to keep up with housing demand in the coming years.

The report has been divided into two major sections: an executive overview of projections of near- and medium-term market conditions, and a supporting technical appendix. The executive overview summarizes the evaluation of projected near-term (2010 to 2013) and medium-term (to 2021) trends in housing supply and demand in the Vancouver Census Metropolitan Area (in this report referred to as the Vancouver CMA, with boundaries that are contiguous on all sides with the Greater Vancouver Regional District), and presents some strategic considerations raised by these trends. The projections focus on two market sectors: ground oriented development (which includes single detached homes, row housing, and side-by-side duplexes) and apartments and suites (which includes units in buildings with three or more dwellings in detached, low-rise, and high-rise structures, thus including suites and flats in detached dwellings). While these two sub-markets include within them units that may generally be seen as being acceptable substitutes for each other (for example, a consumer would likely consider a unit in a side-by-side duplex as a substitute for a single detached house, but would likely not consider an apartment in a high-rise building as such a substitute), the boundary between them is not impermeable and is becoming increasingly blurred.

Further to this, it is important to emphasize the detail of these sub-market definitions. CMHC places houses with suites – where there are effectively two or more dwelling units in a detached structure – in the *apartments and other* category and not in the *single detached, side-by-side duplex, and row* category, which form the ground oriented grouping. As these starts data are only for dwelling units constructed with a building permit, there have historically been few suites included in the data, as most suites were constructed informally (i.e. without permits). The recent increase in the propensity to use permits for the construction of suites has changed this situation, making it essential to acknowledge suites in the apartment sub-market projections.

1 In 2004, we wrote a brief report that – in light of the then prevailing pace of residential development – addressed the question of whether an overbuilt housing market was looming in the Lower Mainland. Our findings at that time were that “given projected population change and the housing occupancy patterns the answer was an “overwhelming no!” for the ground oriented market and a “balanced no” for the apartment market.” We further concluded that “the ground oriented market (in the Lower Mainland) should be able to support development activity in the range of 12,400 starts per year over the rest of this decade, with the apartment market able to support 6,900 starts per year”.

Note that the definition of “apartment” used in this earlier report differs from that used in this report – apartment and suites - which includes all units in houses with a suite as well as those in the standard low and high rise buildings. In turn, this means a difference in the definition of the ground oriented market, which previously included houses with suites but no longer does. As housing starts data place detached houses with suites in the apartment and others category, it is necessary to use the current definition.

The technical appendix to this report provides more details about formal definitions and terminology, including information about moving from a housing “start” to a “completion”. The appendix also documents the methodology and data used to prepare the demand and supply projections for the two sub-markets presented in this report. This includes a discussion of the demographic factors that will drive population growth and change within the metropolitan region, age and structure type specific housing demand patterns, and the resulting regional housing occupancy demand that would be required to accommodate projected population growth and change in Metropolitan Vancouver.

The exploration of current and projected housing market conditions is relevant far beyond the real estate industry. Municipalities receive significant income from development charges and levies on residential construction. Construction trades also represent a significant share of regional employment and economic activity. Ten percent of the Vancouver region’s labour force in 2009 (126,000 workers) were in construction trades, with about 60 percent of all construction, by value, being residential. Construction also plays a significant role in the broader provincial economy, accounting for 6.3 percent of the province’s Gross Domestic Product (GDP) in 2008 and for 14 percent of the growth in real GDP between 2005 and 2008.² Thus, whether developer, worker, politician, homeowner, tenant, architect or planner, we all have an interest in assessing where housing markets are and where they are going in the coming years.

² BC Stats: http://www.bcstats.gov.bc.ca/data/bus_stat/bcea/BCEAchnd.asp

Historical and Projected Housing Market Conditions

Fundamentals of the Regional Housing Market: the Supply Side

Short periods of time are typically the focus of discussions of change in housing markets, with the number of housing starts this month being compared to those from last month, or at best, to those from the same month last year. While such a short-term focus may be understandable, it ignores the longer-term cyclical patterns and high volatility that characterizes the residential real estate market. These fundamental changes are shown in CMHC's housing starts data (which include only units for which building permits have been issued) for the Vancouver CMA. The pattern is one of persistent annual changes in the number of housing starts, in both direction and level, with no consistent direction or timing of change.

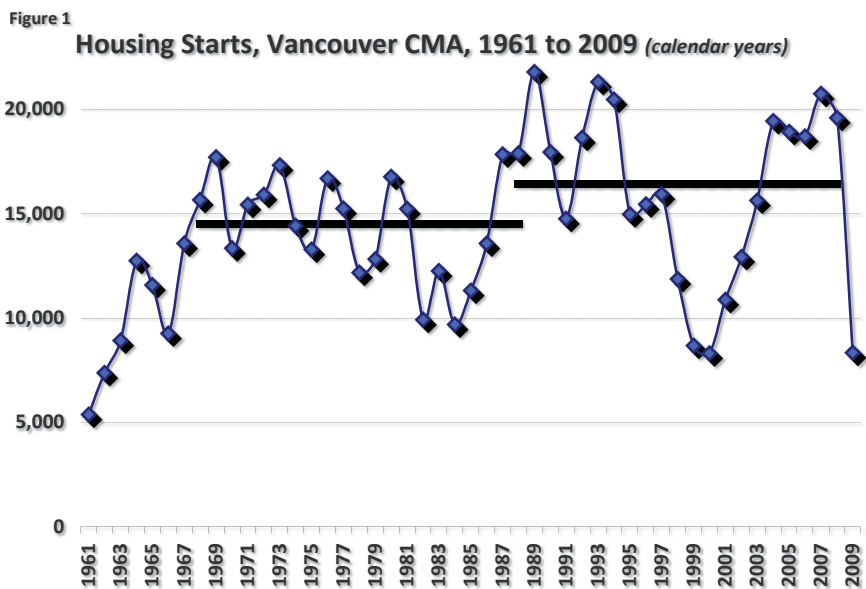
Three relatively recent peaks stand out in the historical starts data, with the region's record number of starts seen two decades ago in 1989, when construction of 21,784 units commenced; the second-highest

number of starts was in 1993 (21,302 units); and the third-highest was the 20,736 starts in 2007 (Figure 1). It is interesting to note that the fourth-highest peak was the 17,704 units started way back in 1969: it approached this peak four times in the subsequent two decades, a period of time that saw the greatest stability in starts within the region. This two-decade period represented the entry of the baby boom generation into the housing market as they left the parental home.

As with most things, the ups bring with them inevitable downs. In residential construction, peaks have invariably been separated by deep and sometimes wide valleys. The trough that followed the 1993 peak saw housing starts drop to almost one-third of earlier levels, with only 8,687 units started in 1999 and 8,299 in 2000. With 2007 representing another peak, starts fell off slightly in 2008 (to 19,591), and then much more significantly in 2009. Only 8,338 units were started in 2009, just about equaling the low from 2000. Beyond 2000's low, it is necessary to go all the way back to 1963 to match 2009's level of regional housing starts.

The long-run demand that underlies the mountainous terrain of annual housing starts can be indicated by the average level of starts over a two-decade period. In the cycle from 1968 to 1988 that corresponded to the entry of the baby boomers into the housing market, an average of 14,496 dwelling units were started each year, ranging from a high of 17,889 in 1969 to a low of 9,681 in 1984 (a 57 percent range about the mean). In the next long cycle, from 1988 to 2008, the annual average number of housing starts was 16,410, ten percent higher than in the preceding cycle. The range from 1989's 21,784 starts to 2004's 8,119 was much greater, representing variance about the mean of 85 percent (50 percent greater variance than in the previous two decades). Thus, while the average annual number of housing starts in the region has been gradually increasing, it has been doing so with increasing volatility.

It is important to briefly consider why residential construction demonstrates this type of volatility. In part it is driven by economic conditions, as demonstrated by the plunge in starts that matched **a)** the 1981 to 1983 recession, **b)** the 1998 to 2001 slowdown, and **c)** the current recession that started in 2008.



Demographic change also plays a role: for example, the high international and domestic migration rates to the province during the 1992 to 1994 period resulted in additional increments of demand during this period that stimulated increases in housing starts. Additionally, volatility can also result from prevailing financing conditions, with rising interest rates and tightening credit conditions slowing growth in demand and falling rates and loosening credit stimulating growth.

Having acknowledged these sources of volatility, much of the volatility results from the significant time lags that exist between construction initiation and the completion and occupancy of a dwelling unit. Units that are started under one set of market conditions can be completed and ready for occupancy in a period that is drastically different from when they were started. This is particularly the case with the apartment segment of the market, where construction imposes, depending on the size of the building, a twelve to thirty month wedge between project initiation and the units' ultimate occupancy. This means that signals with respect to the required level of additions to supply must be based on the anticipation of future demand rather than actual measured market absorption. In this context, individual builders' anticipations of future market conditions are often very similar, with their collective actions resulting in a level of starts that is either too high or too low relative to the effective market demand that is realized when construction is completed. Simply put, in times of rapidly-increasing demand there is a tendency for too many units to be started, while in times of slowly-increasing demand, too few units are started. The time lags help to explain why construction has, and will continue to, swing through cycles of ups and downs in starts and completions, with only fleeting moments of Goldilocks-esque "just right" equilibriums.

The focus on housing starts in this section, and in the general discussion of housing market activity, stems from their importance as representing the beginning of the employment and investment activity involved in residential construction, and hence as a bellwether of both housing market and economic conditions. From a pure housing market perspective, however, it is the completion of units that is most relevant, as this marks the point at which supply can be matched with demand (there is no demand for housing starts per se, but rather only for completed and occupiable dwellings). And while the number of starts and completions are related – a unit must be started in order to be completed – the correspondence is not perfect either numerically or temporally, as more or fewer units may ultimately be constructed as a result of ongoing design changes. As the next sections show, these two factors have a significant impact on the assessment of current and near-term conditions in housing markets.

It is important not to lose sight of the big picture when considering housing starts and completions – there is a consistent, explainable and projectable level of required housing starts in the region, an average level that annual starts will move towards through the volatility of market cycles. This level is the annual number of housing starts necessary to accommodate the changing and growing population of the region. While economic, market, and financing conditions may shift the timing of increments of demand, in the long run people, and markets, will find a way to ensure that supply responds to people's lifecycle patterns of housing occupancy.

Fundamentals of the Regional Housing Market: the Demand Side

Two major components are involved in the projection of housing demand within the region, one demographic and the other behavioural. The demographic component includes a consideration of changes in both the total size of the region's population and in the number of people in each age group.

The population of the Vancouver CMA is projected to grow by 21 percent between 2009 and 2021 as it accommodates an additional 490,000 people. The age composition will change significantly as a result of the 55 to 74 population growing by 60 percent (245,000 additional people), the 75-plus population by 40 percent (58,000 more people), the 15 to 54 population by only ten percent (123,000 additional people), and the under-15 population by 18 percent (64,000 additional people).

The importance of these changes in the region's age composition for housing stems from the behavioural component of housing occupancy demand, as patterns of housing occupancy demand demonstrate a strong age specific (lifecycle) pattern. The standard measure of occupancy demand is through the household maintainer rate, or the percentage of the population in each age group that are primarily responsible for the financial support of the household in which they live. Age specific maintainer rates start at relatively low levels in the 15 to 19 age group (in the range of two percent as many are still living with their parents) and then increase significantly to 16 percent in the 20 to 24 age group, to 40 percent in the 25 to 34 age group, and to 53 percent in the 35 to 44 age group. From this age on, maintainer rates continue to increase, albeit more slowly, to reach their highest level of 60 percent in the oldest age groups.

Historically, a great degree of stability is seen in total household maintainer rates, with the percentage of the population in the Vancouver CMA who are household maintainers generally falling within the narrow range of 46 to 47 percent over the past three decades. Within this range there has been a long-run pattern of slight decline, from a high of a 47.2 percent maintainer rate in 1986 to a low of 46.1 percent in 2006. This stability demonstrates that people have a very strong preference for how they choose to live on their own and together, and that their demand for housing will be met both formally and informally within the market. Having noted this overall stability, it is also important to note that it masks two significant underlying trends.

The first trend involves a slight shift in age specific maintainer rates, represented by a decline in maintainer rates in the under-35 population (yes, it's the kids staying home to complete post-secondary education and to launch their careers), relative stability in maintainer rates for the 35 to 64 segment (family formation and rearing), a decline in maintainer rates in the 65 to 74 age group (as increasing life expectancies means people live together as couples for longer periods), and an increase in the 75-plus age group (as increasing disability-free life expectancies allow people to remain in private accommodation longer).

The second trend is a significant shift in the types of dwellings people live in at each stage in their lifecycle, with a noticeable increase over the past three decades in the propensity for people to live in apartments and suites, and a decline in the propensity for them to live in ground oriented dwellings. Following the patterns of these underlying trends into the future provides a projection of age and structure type specific occupancy patterns. When applied to the demographic projection for the region, a projection of occupancy demand growth in the range of 19,500 additional units each year is needed to accommodate growth and change in the region's population. This level of growth – higher than the average of the past two decades – reflects the impact of the high population growth rates in the 55 and older age groups matching the highest maintainer rates exhibited through this stage of the lifecycle. It is this level of demand that will establish the context for housing development this year and for the rest of the decade.

Before the housing sub-markets are considered, it is important to reiterate that CMHC housing starts data are only for units constructed with a permit; they exclude the addition of the so-called illegal or unauthorized suite. Historically this has meant that virtually all such suites were excluded from the starts data, as few municipalities would provide permits for suites in a single detached house. Consequently historical housing starts data fall below the level that the housing stock actually expanded by. More recently municipalities (and communities) have been more welcoming of suites in houses, permitting them subject to specific building codes. The result is that recent and future housing starts data should move closer to total new residential construction activity in the region, and hence there will be an increase in housing starts above the historical levels not only from demographic growth and change and changing behaviour, but also from greater coverage in the data.

The Apartments & Suites Sub-market

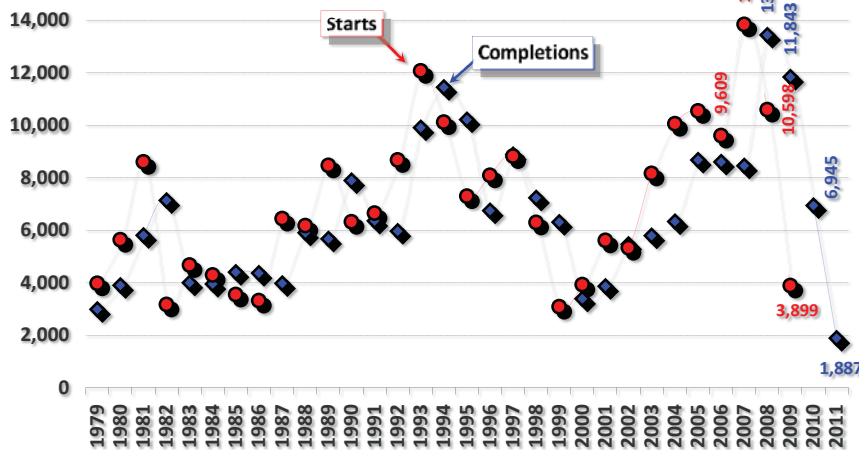
This section focuses on the patterns of development and demand for apartments and suites, including those in multi-unit buildings (including detached houses), and low- and high-rise apartment buildings. Starts of apartment units and suites demonstrate the same pattern of peaks and troughs outlined in the previous section. The most recent decade shows that relative to the lows of 3,088 to 3,934 apartment and suites started in the Vancouver CMA in 1999 and 2000, roughly the same number were started in 2009 (3,899). Between these two dates however a peak that was almost three and a half times greater was seen, with more than 13,800 units started in 2007 (Figure 2)³.

Within this volatility, the long construction lag times for apartments and suites is shown in the gap between the “starts” (red) and “completions” lines (blue) on Figure 2. The gap reflects construction

periods that average almost two years for high-rise buildings (with very large and complex projects requiring up to three years), almost 15 months for low-rise, and six to eight months for detached units with permitted suites.

The lag between starts and completions (and hence volatility) does bring one degree of predictability to housing market analysis: given the starts that occurred in 2007, 2008 and 2009, the number of units that will be completed and ready for occupancy over the next two years (in 2010 and 2011) are essentially known. To date there are more than 11,800 units under construction that would have been ready for occupancy by the last quarter of fiscal 2009, 6,945 in fiscal

Figure 2 Starts & their Completion by 2011, Apartments & Suites
Vancouver CMA, 1979 to 2011 (fiscal years)
only includes units constructed with building permits



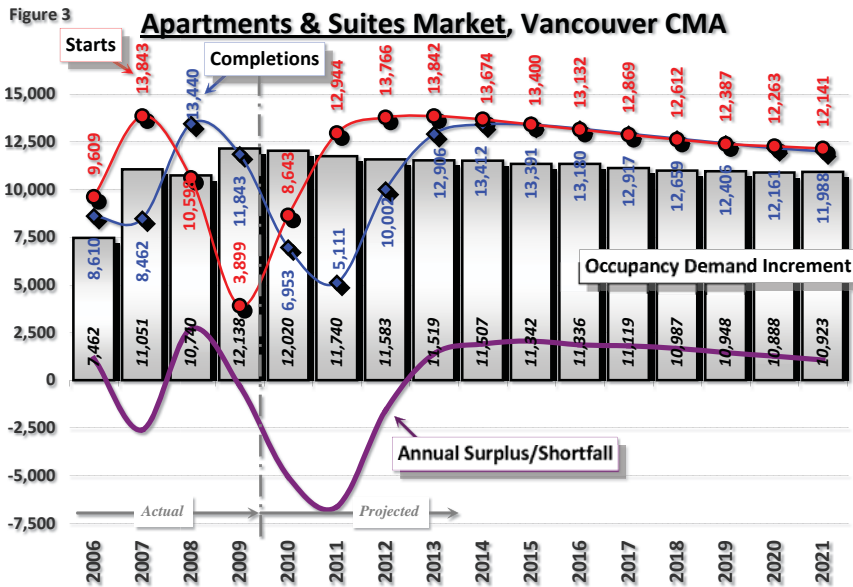
2010, and 1,887 in fiscal 2011. Note that not all of the starts over the past four years will necessarily be completed, as over the past four decades only 97 percent of the apartments and suites started in the Vancouver CMA were completed, the rest being lost due to design changes during the construction process or, in a few cases, abandonment of the project.

Turning from the supply side to the demand side, the long-run projection indicates annual increments in demand for apartments and suites in the range of 11,000 units per year over the next decade, ranging from a high of 12,020 in 2010 to a low of 10,888 in 2020 (Figure 3). Note that this demand projection displays none of the volatility of the starts and completions data as it is a long run projection describing what demographic change and housing occupancy behaviour would bring to the region over the decade. While economic, financial, and housing market conditions will certainly add volatility from one year to the next, regional demand will trend towards this annual level of demand given demographic growth and change and how residents seek to be accommodated.

Compared to projected demand of 12,020 units, considering apartment starts through 2008 and 2009 as shown above, we would only expect 6,945 units to complete through 2010, with a further 1,887 in 2011 when the demand increment is projected to be for another 11,740 units. This indicates that the level of apartments and suites construction in the region must increase significantly over the coming years if the region’s residents are to be accommodated as they generally have been in the past.

³ Note that these data have been tabulated for fiscal rather than calendar years to utilize the most recently released data.

Relative to the low level of starts in 2009, Figure 3 presents one scenario for how new starts may develop through 2010 and 2011 and add to the units already under construction for completions in 2010 and further over the rest of the decade. The 6,953 units which are expected to be completed by the end of fiscal 2010, compared to the projected growth in occupancy demand of 12,020 units, would result in a shortfall of 5,067 units between potential and effective demand. Some of this shortfall will be accommodated through the surplus of units built up in previous years: since 2006 there have been 1,929 more units brought to the market than were required by consumer demand (again based on population growth and change). As some developers may have anticipated the shortfall situation, building activity should increase with starts in 2010 coming in above the 2009 low. If the pattern of starts for apartments and suites follows the recovery paths that have prevailed through earlier cycles, starts in fiscal 2010 are



expected to be in the range of 8,643 units. As a few of these starts would reach completion in 2010, total completions for the year are projected to be in the range of 6,953 units. Given the 1,929-unit inventory, this level of completions would result in a net cumulative shortfall of 4,104 units in 2010.

The low level of starts in 2009 (3,899 units) and the fact that most of the units started through 2010 will be completed post-2011, means that completions for 2011 would fall to only 5,111 units. Again, relative to a projected occupancy demand increment of 11,740 units in 2011, additional supply would fall short of demand in 2011, this time by 6,629 units. Given the lead-time required to purchase sites and get permits and applications in place, starts are expected to increase to 12,944 starts by 2011.

By 2012, with additional demand for 11,583 units and expected completions of 10,002 units, an annual shortfall of 1,581 units would still be seen. It would be 2013 before the inevitable slowing of completions due to low levels of starts in 2009 and 2010 will have been offset by increased starts in subsequent years. With occupancy demand in 2013 growing by 11,519 units and supply by 12,906 units, a modest annual surplus of 1,387 units would be seen.

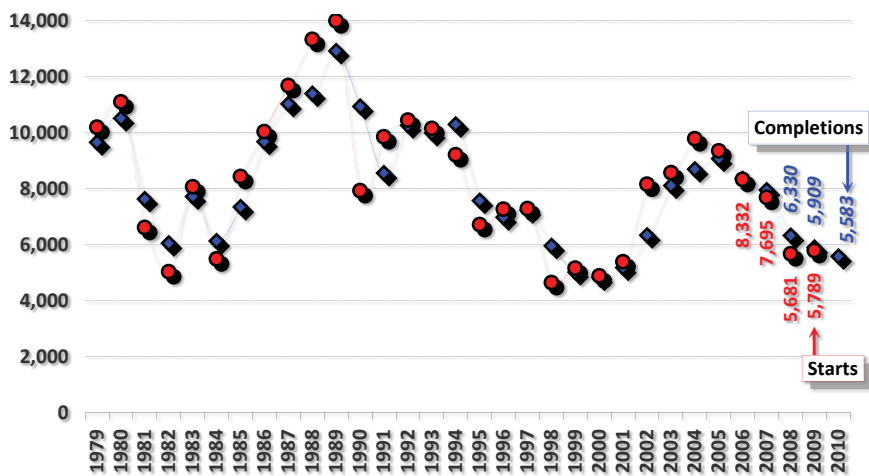
By 2013 the cumulative effect of annual shortfalls between 2009 and 2012 will result in a cumulative mismatch between potential demand and supply of 12,300 units. There are three market responses that could arise with respect to this shortfall. First, it can simply be accommodated by unpermitted housing starts in illegal – whoops, unauthorized – accommodation. If this happens it will not be reflected in the housing starts data but will be reflected in subsequent Census counts of how the occupied housing stock has changed. Second, this unmet demand may simply go away in the short-term, with people compelled to remain in their parents’ basements or living with friends. While such doubling-up may prevail for a while, the historical stability of overall maintainer rates would indicate that the demand will likely spring up in future years in higher than projected housing demand. Finally, and least likely, the additional demand could shift from the apartment and suites side of the market towards ground oriented units. However, higher unit prices in the ground oriented market would make demand shifts in this direction relatively unlikely. Typically the shift is seen in the other direction, with individuals not able to accommodate themselves within the ground oriented market choosing, at least in the short-term, to accommodate themselves in apartments and suites.

So overall, the analysis would indicate that, on average, housing starts (and therefore completions) in the range of 11,000-13,000 apartments and suites should be seen annually to accommodate projected occupancy demand in the region. In the short-term, the low levels of starts seen in 2009 and 2010 would see potential supply fall below the level of expected demand, resulting in a shortfall within this segment of the housing market. It would not be until 2013 that the low levels of starts of these two years would be offset by increasing levels of building activity.

The Ground Oriented Housing Sub-Market

The pattern of ground oriented housing starts (including single detached, duplex, and row housing) is distinctly different from that of apartments and suites. Record levels of ground oriented starts in the region all occurred before 1995 and were also characterized by a much lower degree of year to year variability (Figure 4).

Figure 4 Starts & their Completion by 2010, Ground Oriented Units
Vancouver CMA, 1979 to 2011 (fiscal years)
does not include detached dwellings with suites



In both sub-markets, the past decade has seen change – from lows to highs and back to lows – with only 4,650 ground oriented starts in the Vancouver CMA in 1998 being slightly below the 5,589 started in fiscal 2009, compared to a peak of 9,783 units started in 2004 (and the 14,000 units started back in 1989).

Note that the lag between the starts and completions lines is much narrower than it is for apartments and suites. This is the result of the shorter construction period for ground oriented accommodation which averages just under one year. Note also that, over the past four decades, the same average completion-to-starts ratio of 97 percent prevailed in both sub-markets. With this ratio and average completion times, there are 5,213 ground oriented units currently under construction that would be ready for occupancy in 2010, with only a few started later in the year that would not reach the market until 2011.

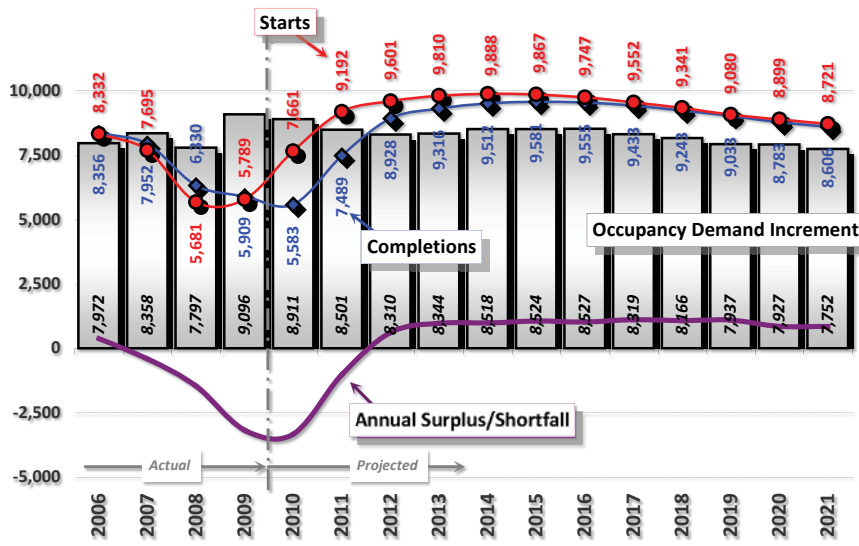
oriented units currently under construction that would be ready for occupancy in 2010, with only a few started later in the year that would not reach the market until 2011.

Given the demographic and housing occupancy patterns projected for the region, average annual growth in ground oriented occupancy demand over the next decade will average slightly above 8,000 units per year (Figure 5). Mapping the pattern of growth in demand, an additional 8,911 units would be expected to be built to accommodate the region’s growing population in 2010, dropping slightly to 8,501 in 2011 and 8,310 in 2012 before increasing back towards 8,500 units by 2015-16. From this point demand is expected to fall below 8,000 units annually by the end of the projection period.

Over the past three years, annual ground oriented housing starts have fallen well below this demographically-based increment in demand. Much like the situation in the apartment and suites segment of the market, this results in a current shortfall of some 5,000 units between potential demand and completions.

Figure 5 presents this historical supply and demand situation and one scenario for how the market may respond to the shortfall. Again based on the historical patterns of recovery in ground oriented development in the region, it is expected that developers will expand the level of ground oriented starts in 2010 to the range of 7,661 units, or back towards levels seen in 2007. However, given the low level of ground oriented starts in 2009 and the number of 2010 starts that would be ready for occupancy within the year, the

Figure 5 **Ground Oriented Market, Vancouver CMA (net of suites)**



5,583 completions projected for 2010 will fall below the 8,911-unit increment in occupancy demand. This would add another 3,300 units to the cumulative shortfall that has built up in this segment of the market since 2007. Completion of 2010's starts in 2011 is expected to add another 7,489 units to the ground oriented housing stock, still below the increment in demand expected for the year. To the extent that development continues in the range of 8,700 to 9,900 units per year, there will be a modest annual surplus which will gradually reduce the cumulative deficit between long-run demand and development activity.

That said, if this level of ground oriented construction is not met in the coming years,

the short-term market responses would be to see additional demand pushed towards the apartment side of the market and, more specifically, into the detached units with suites (legal or otherwise) sub-market. Conversely some potential demand could sit on the sideline until supply catches up (so yes, the kids may remain at home for even longer).

The longer-term market response to ground oriented supply not fulfilling expected levels of occupancy demand would be to permanently shift some future demand from the ground oriented side of the market towards apartments and suites. Over the longer-term this would be reflected in a permanent decline in maintainer rates for ground oriented accommodation and an increase for apartments and suites beyond those already reflected in the demand projections.

Conclusions & Strategic Considerations

The ground oriented sub-market has not been building enough units to match projected demand since 2007, and hence is already under-built by more than 5,500 units. The apartment and suites market on the other hand has built up an inventory of roughly 1,900 units since 2007. Thus, in the near-term, some of the ground oriented demand may have shifted into the apartment and suites sub-market. By the end of 2010, however, the low level of housing starts seen in recent years would see both sub-markets underbuilt relative to accommodating the region's residents. As the region's population ages and grows over the next decade, it will require average annual housing starts in the range of 19,000 housing units, a level that it has achieved in the past, but which current levels fall well below. Even with a significant recovery in starts throughout the rest of 2010, a total of only 12,500 dwelling units are expected to complete, for a current-year shortfall of almost 8,400 units. This situation is also expected to characterize 2011, as construction lags will mean that the higher level of starts this year and next will not catch up to increasing demand until 2013.

The biggest development challenges will face the ground oriented side of the market. Even with a continuation of the historical shift of housing patterns from ground oriented towards the apartment and suites side of the market, the projected demand for ground oriented accommodation is expected to remain at levels which are in excess of what the market is able to supply. This suggests that a resolution between the supply of, and demand for, ground oriented housing may require changes that are not reflected in the demand projection. The nature, magnitude, and direction of these changes will depend on how strong

the attachment to ground oriented accommodation is for newly-forming households in the region. If it is strong enough that the short-term behavioural shifts to apartments and suites shifts back towards ground oriented accommodation as these households enter lifecycle milestones such as family formation, increments in ground oriented demand that were expected to be accommodated within the Vancouver CMA may be pushed to adjacent jurisdictions, specifically the Fraser Valley and Sea to Sky regions, where ground oriented supply may be more readily available. Alternatively, householders may continue to blur the boundary between the two sub-markets within the CMA by converting single detached houses into detached duplexes with suites and flats (either with permits or without). In both cases, there should be a keen interest on the part of planners and municipalities to determine the degree and direction of the market's response to strong demand for ground oriented accommodation.

In considering the apartments and suites side of the market, in addition to strong demand generated from the region's growing and changing population, a constrained ground oriented market may push more future demand towards this segment of the market. Major challenges for the apartments and suites market will focus more towards price points as purchaser credit conditions will continue to tighten on both the lending rate and mortgage qualification sides over the next two years. Finish levels and unit sizes will have to adjust to the price point and financing realities. Developers will have to pay particular attention to prices paid for land to ensure that they do not overpay on the residual value as it is pushed down in the market place.

While the large swings of residential building activity will certainly continue to characterize the region's housing markets in the coming years, the overall level of housing demand generated by the region's residents and newcomers is expected to remain strong over the next decade, with opportunities for both segments of the market. The challenges will lie in recognizing the particularities of each market and finding creative ways of addressing them.

Technical Background to the Housing Market Projections

The Housing Data

Before reviewing the details of the demographic projections for the region, it is important to understand the origins and limitations of the housing data being used for the analysis. Data on construction (*the supply side*) come from CMHC's surveys of residential construction, which define a dwelling unit start as occurring when **"the concrete has been poured for the whole of the footing around a structure"**; and a completion as occurring when **"all the proposed construction work on a dwelling unit has been performed, although under some circumstances a dwelling may be counted as completed where up to ten percent of the proposed work remains to be done"**.⁴

This definition of a dwelling start – commencing with the pouring of footings – imparts a distinct character on the housing supply data, as they specifically exclude the addition (or deletion) of a dwelling unit by way of "conversions and/or alterations within an existing structure". This is of particular importance in this region, as it excludes suites in houses unless they are explicitly planned for in the construction of a new house. And, if they are, the house is not a single detached unit (as it is not single), it is not a semi-detached or double house (as the units are not side-by-side, but rather one above the other) nor is it a row house (again as the units are not side-by-side). It therefore falls into the "apartment and other" category, which includes everything from multi-unit high-rise and low-rise buildings to buildings with two or more stacked units (duplexes, stacked townhouses, triplexes, double duplexes, and units with suites). Thus the supply side data covers a much greater range of dwelling types than what might first come to mind; an issue which becomes challenging when considering specific aspects of the housing market. Data on the occupancy of structures (*the demand side of the market*), on the other hand come from Statistics Canada's periodic Census tabulations, which uses its own set of definitions for each structure type. This is yet another aspect of the data which makes considering specific aspects of the market sometimes challenging.

Recognizing the definitional challenges, there are four major components that drive demand for housing, of which change in occupancy demand is overwhelmingly the most important. Occupancy demand is measured as the number of housing units occupied by the region's residents at a given point in time. Occupancy demand increases or decreases in response to changes in the population, either in terms of changes in the absolute number of people or its underlying demographic composition. As indicated earlier, the most important demographic dimension is the age composition of the population, as occupancy demand follows a very regular lifecycle pattern. The data source for housing occupancy demand is Statistics Canada's Census of Canada, which records data on permanently occupied dwellings and their occupants every five years.

In addition to occupancy demand, residential construction also responds to relative levels of vacancy, demand from the replacement of old units, and demand for secondary residences. Vacancy demand comprises units that are unoccupied as they are being maintained, renovated, or repaired, as well as units that are for sale or rent and those that have been sold or rented but are not yet occupied.

Replacement demand simply refers to construction that is necessary in order to replace units that have been demolished or converted to other uses. Finally, there is also some portion of residential construction to accommodate demand for secondary residences for people with permanent residences elsewhere. There are no reliable measures of these secondary elements of demand for the Metro Vancouver housing market, as there are no formal surveys conducted of unoccupied units in the housing stock.

Changes in occupancy demand also demonstrate a cyclical pattern, reflecting in part the cycles of the

⁴ Note that the number of units completed may not equal the number started, as construction may be abandoned on some units after they are started, or plans may be altered during construction to add or delete units.

provincial economy, mobility and migration, and the underlying demographic changes experienced in the region. Based on how the population grew and changed in the Vancouver CMA between 1976 and 2009, residential occupancy demand averaged 13,881 units annually, while total starts averaged 15,195 units, the difference between the two representing construction to accommodate replacement demand and secondary residents. This brief review of the supply and demand aspects of the market lays the groundwork for considering the regional population outlook and how it will impact housing demand and supply within the region over the next decade.

The Region's Changing Demography

Combining the composition of the region's 2009 population with their aging and future migration, natality, and mortality provides the demographic framework for change in the region's population over the next

decade. This projection shows a population that grows larger, albeit at a relatively slow (and slowing) rate when compared to its history.

The trend-based projection takes the Vancouver CMA from its 2009 population of 2.3 million residents to 2.6 million by 2016 and 2.8 million by 2021 (Figure 6). Over this period, the Lower Mainland would add an average of just over 40,000 new residents each year as it grows by 21 percent, or at an average rate of 1.6 percent per annum.

Figure 7 shows that net international migration will be a significant driver to this growth, just as it has been since the early-1990s. By 2021 net international migration is expected to add in the range of 30,000-37,000 people annually to the regional population, versus 9,100 people annually through natural increase (births minus deaths), and 3,000 people annually through net inter-provincial migration. Following its historical trend, the intra-provincial flow of people is expected to continue to draw residents away from the region (increasing into the range of 12,000 by 2021) as some of the region's "equity refugees" take advantage of significant equity built up in their primary residences and move to other amenity regions throughout the province.

The implications of the aging of the region's population are highlighted by compositional changes. For example, growth rates for the 65-plus population would be more than five times greater than those for the working-aged population between 2009 and 2021. Thus, while future

Figure 6

Population Growth, Vancouver CMA, 1986 to 2009; projected to 2021

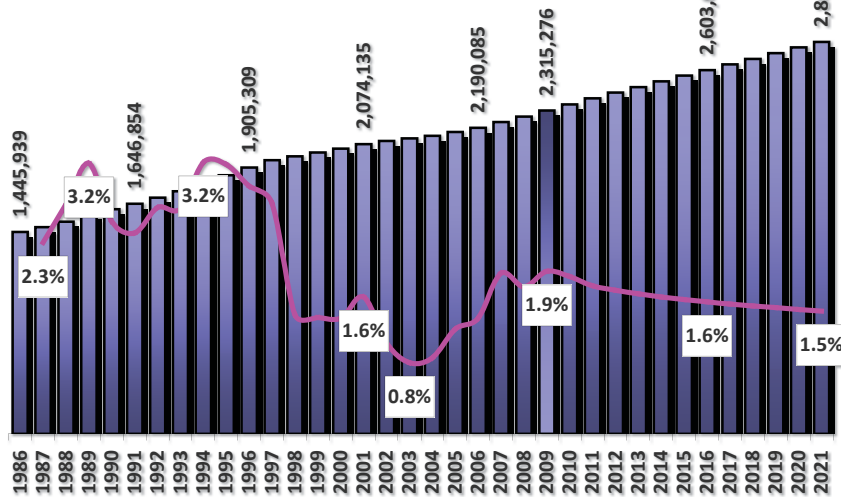
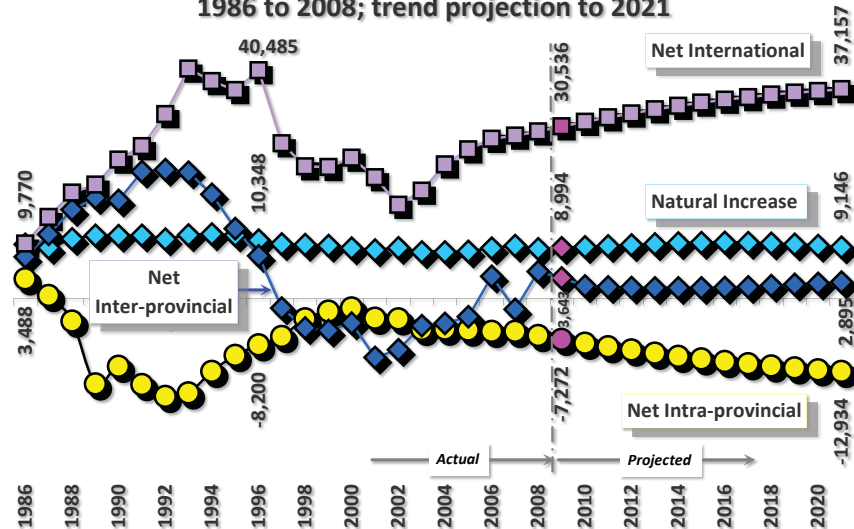


Figure 7

Components of Change, Vancouver CMA 1986 to 2008; trend projection to 2021



times greater than those for the working-aged population

growth in the region's population will be modest, the change in its age composition will be more significant.

Figure 8

Population Change by Age, Vancouver CMA, 2009 to 2021

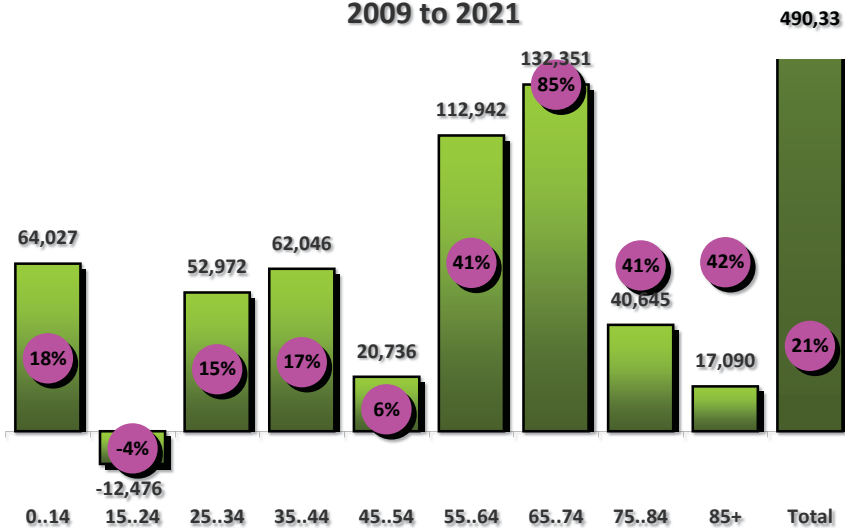


Figure 8 quantifies these changes, with all of the 55-plus age groups growing much more rapidly than the population as a whole. The most rapidly-growing age group is expected to be 65 to 74 year olds (85 percent growth), driven by the early part of the boom generation aging into retirement over this period. This will also be the age group that would add the greatest absolute number of people, growing by 132,351 people (representing more than a quarter of total growth). Comparatively, each of the 25 to 54 age groups are projected to grow by between six and 17 percent, while the 15 to 24 group is projected to decline by four percent (a decline of 12,476 people) between 2009 and 2021.

This paints the picture of a region characterized by demographic change, as the aging of one-third of the region's current population towards retirement over the next decade will result in one of the most significant changes to the region's population experienced over the past half-century.

Housing the Region's Future Population

Over the coming decades, changes in housing occupancy demand will be primarily determined by two factors. The first will be demographic, specifically changes in the size and composition of the region's population. The second will be socio-economics, particularly people's expressed housing preferences and the extent to which they might change over the coming years.

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

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

Further, the conversion of units from and to non-residential uses can alter the supply of residential accommodation without necessarily being reflected in construction or demolitions data. In this vein, construction may also include replacement (new units constructed to replace units demolished or converted to other uses) that do not represent net additions to the housing stock. Construction of

secondary residences that are occupied only part of the time (and are not part of resident occupancy demand) would be included as new construction (but not in terms of occupancy demand), while secondary suites added to the dwelling stock may not show up as new construction but would represent a new dwelling unit to accommodate a permanent resident in the region (occupancy demand).

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

As was noted earlier, there are many specific structure types used to classify units of housing. While each type may appear distinct and discrete, in reality they form part of a continuum of both structures and uses that have no defining boundaries and are subject to interpretation: what classifies as single detached in one system may be classified as an apartment under five storeys in another.

Therefore, in order to reduce as much as possible the ambiguity in interpretation of the projections presented here, two major structure types are used, reflecting the degree to which households may be willing to substitute one structure type for another. The first is the ground oriented classification, which attempts to capture dwellings that would attract households seeking the “feel” of the single detached home. Included in this grouping (by Census structure type definitions) are the single detached home (one dwelling in a structure, the structure not being attached to any other structure), houses with two – and only two – dwelling units in them (such as side-by-side duplexes), row houses (three or more units side-by-side in a structure with no stacking of units), plus a single unit attached to a non-residential structure and mobile homes. The second is the apartments and suites classification, which includes dwellings in both low- and high-rise buildings and flats and suites in detached duplexes.

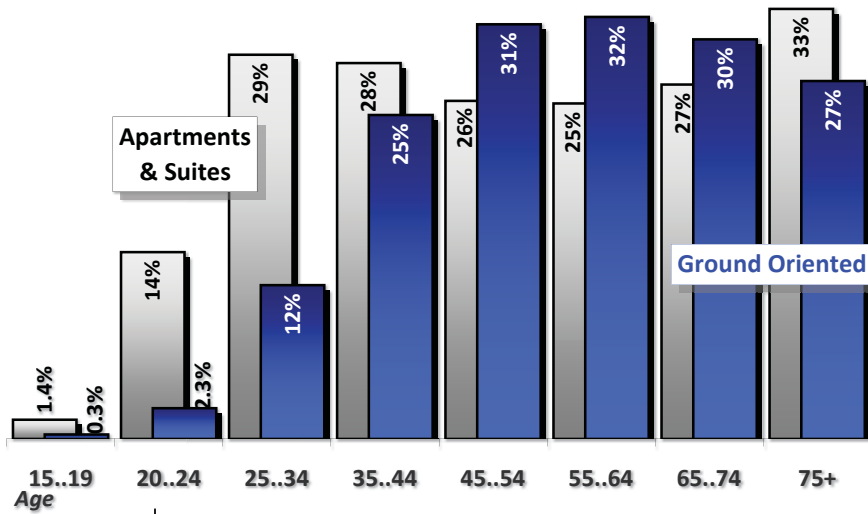
There is a distinct relationship between a household maintainer’s age (i.e. their stage in the lifecycle) and what type of structure type that their household lives in (Figure 9). For example, a person in the Lower Mainland is generally more much more likely to maintain a household in a ground oriented unit through the family-rearing and early retirement stages of the lifecycle than an apartment or suite.

On the other hand, a resident in the region is more likely to maintain a household living in an apartment or suite in the younger and older age groups. Apartments and suites are an important dwelling form for the 75-plus age group. For both this older and the younger groups the decision to live in an apartment through these stages of the lifecycle is a decision that is driven by financial limitations, lifestyle choices, and/or physical constraints.

In looking at how these lifecycle patterns have changed historically in the region and how they might do so in the coming years, the general pattern of change that is expected to continue to characterize housing in the region over the next decade is one of a continued decline in the propensity for people to maintain ground oriented accommodation in favour of apartments and suites (Figures 10 and 11). The historical shift in maintainer rates towards apartments is a result of a variety of push and pull factors ranging from the push of increasing land values within the relatively constrained geographic market of the region, to the pull of smaller family sizes (and reduced space requirements) than previous generations. While apartment

Figure 9

2006 Age Specific Household Maintainer Rates, Vancouver CMA



rates are projected to increase and offset the declines for ground oriented living, it should be noted that ground oriented rates are still expected to remain higher than those for apartments for all of the 45 to 74 age groups by 2021.

In considering the range of socio-economic factors that may impact the pattern of housing demand in the future, it is important to recognize the large stock of ground oriented housing that already exists in the region. While the region will remain predominantly ground oriented over the coming years, continued population growth and change will support shifts, at the margin, towards other forms of housing as a result of accessibility, land values and increased diversification of

consumers. Additionally, high real energy prices may further contribute to increasing transportation costs and, along with a growing awareness of environmental impacts, reinforce (again at the margin) the role that accessibility cost and land value play in shifting housing occupancy patterns towards higher density forms of housing. The extent to which this is expressed in land use change will depend in part on social and economic factors, and in part on the degree to which regional and local land use policy provides for flexibility.

Figure 10

Age Specific Household Maintainer Rates, Ground Oriented, Vancouver CMA

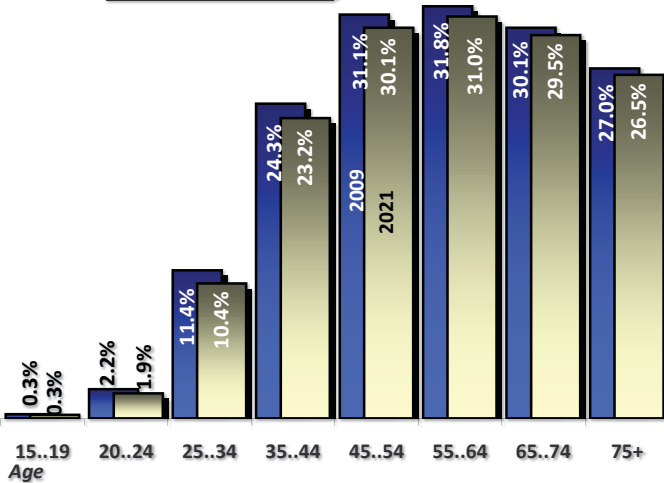
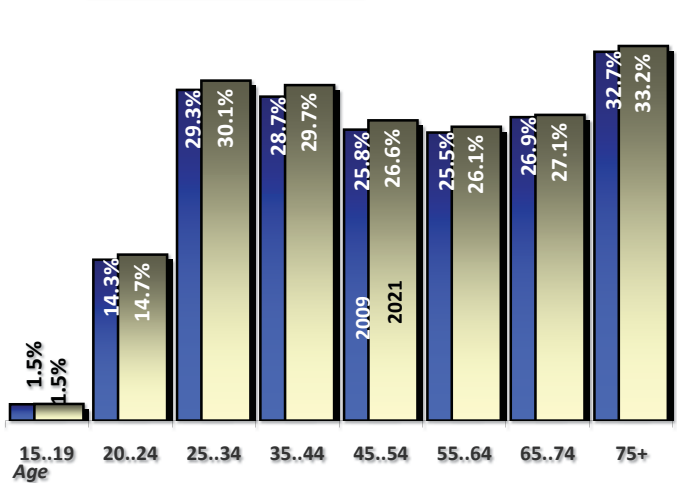


Figure 11

Age Specific Household Maintainer Rates, Apartments & Suites, Vancouver CMA



Combining these lifecycle patterns of household maintainership with the 21 percent growth in population (490,334 more people) in the region would result in a 26 percent increase in total household occupancy demand, or a total of 235,647 new units added to the region over the next decade (Figure 12). The greatest relative growth would be seen in the apartments and suites segment of the market, growing by 28 percent over the coming decade as 135,912 new units would need to be added to accommodate projected occupancy demand.

Occupancy demand for ground oriented accommodation (again net of homes with suites in them) is expected to grow more slowly, increasing by 24 percent between 2009 and 2021, with a total of just under 100,000 new units needed to accommodate projected occupancy demand.

Occupancy demand for apartments and suites will grow more rapidly (28 percent versus 24 percent for ground oriented), growing by an additional 135,912 units by 2021. Overall this would indicate that an average of just under 20,000 housing units would need to be added to the region annually between 2009 and 2021 to accommodate expected occupancy demand.

Sensitivity Testing: Constant Maintainer Rate Scenario

One question that arises is the degree to which future occupancy demand for apartments is driven by the expected shift in maintainer rates towards this structure type. In holding maintainer rates constant (i.e. no change in housing preferences over the projection period) and applying these rates to the same projection of population allows us to determine how sensitive the demand projections are to the changes in maintainer rates.

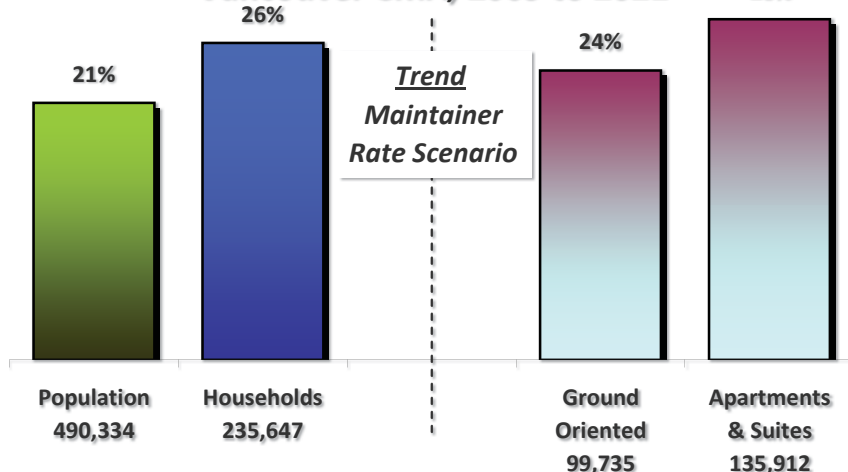
Figure 13 shows that while growth in total occupancy demand would change little (235,647 additional units demanded versus 239,788 under the constant maintainer rate scenario) a more significant change is seen if considered on a structure type basis.

If maintainer rates in the region were to remain as they were in the 2006 Census the difference in occupancy demand for ground oriented accommodation would be 19,800 units over the next decade between the two scenarios. This would be the equivalent of 2.4 years of development activity at an average of 8,300 ground oriented units that are expected under the trend maintainer rate scenario. Overall occupancy demand for ground oriented units would be almost 20 percent higher if maintainer rates were to remain as they are today.

In holding maintainer rates constant occupancy demand for apartments and suites would be reduced by just over 15,500 units, or the equivalent of 1.4 years of additional demand as per the average of 11,400 apartments and suites added annually under the trend scenario. Overall, occupancy demand for apartments and suites would be 11.5 percent lower under the constant maintainer rate scenario.

Figure 12

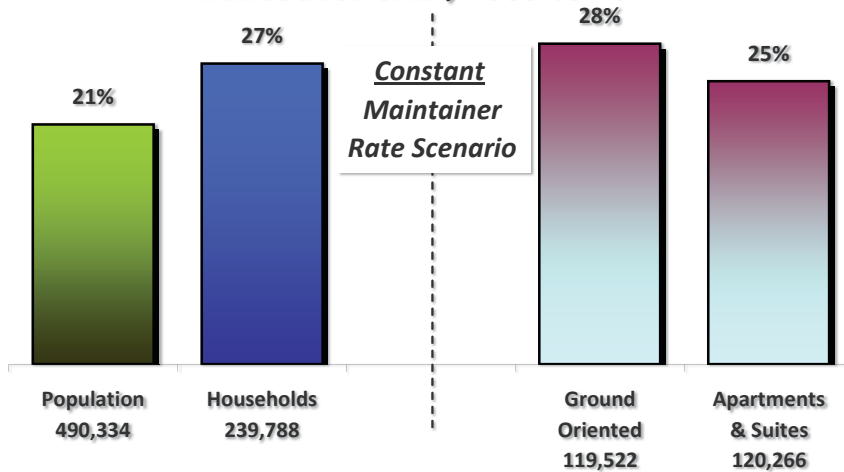
**Change in Population and Housing Demand
Vancouver CMA, 2009 to 2021**



which it will occur. Additionally, availability and cost may well push apartment maintainer rates above what we have projected under the trend scenario; in this context it is reasonable to assume that the trend

Figure 13

Change in Population and Housing Demand Vancouver CMA, 2009 to 2021



demand projection for each structure type for the next decade is reasonable, give or take one to two years on either side of 2021.

Sensitivity Testing: Alternative Population Projection

Another driver to change in the occupancy demand projections is the size and composition of the regional population. In addition to Urban Futures, BC Stats also maintains age specific population projections for the region. While the methodological approaches of compiling the two projections is similar, the major difference between the Urban Futures and BC Statistics projections lies in the projected level of immigration to Canada, and hence to BC and the Vancouver CMA. BC Statistics' projections

recognize Statistics Canada's baseline assumption that immigration will remain at 0.75 percent of the existing Canadian population each year in the future. This level of immigration is then allocated on a constant-share basis to British Columbia, and then using a net migration calculation, to the region over the coming decades.

Urban Futures' models adopt a different approach, one which explicitly recognizes the demographic consequences of an aging Canadian population on the demand for, and supply of, workers nationally. Thus, Urban Futures projects annual immigration to Canada to increase from its recent 0.76 percent of the existing population to 0.82 percent by 2020 to acknowledge our changing demography. This results in immigration to Canada reaching 306,000 by 2020 and 329,000 by 2036. This level of immigration is then allocated to BC and the Vancouver CMA on an increasing-share basis in the short-term, and on a constant-share basis over the longer-term, informed by observed historical levels of immigration.

In spite of these different assumptions about future levels of immigration, the two projections for the region are essentially indistinguishable in the short-term. That said, the higher immigration assumption becomes more prominent over the medium- and longer-terms (beyond 2021). These longer-term differences due to immigration are also reflected in an increase in the contribution of natural increase to population growth.

While the implications of the alternative population projection on housing occupancy demand are relatively modest over the next decade – resulting in a difference in occupancy demand of only 428 more ground oriented units and 1,900 fewer apartments – the difference becomes more prominent by 2031. In addition to immigration bringing more people to the region in Urban Futures' projection, the immigrant stream is typically characterized by a relatively youthful profile, adding new residents to the family-formation and family-rearing stages of the lifecycle where household maintainer rates are relatively high.