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Development Potential and Housing Starts in the Lower Mainland

**Andrew Ramlo and David Baxter
Urban Futures Incorporated & Urban Futures Institute**

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Summary

The question in the back of many people's minds, given the pace of residential real estate development activity in the Lower Mainland during the past two years, is whether an overbuilt market is looming. Given projected population change and the housing occupancy patterns the answer is an "overwhelming no!" for the ground oriented market and a "balanced no" for the apartment market. Recent trends and the current interest rate environment show the ground oriented market 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. Attainment of this level of starts for the ground oriented sector relies on a supportive regulatory environment and availability of accessible sites. To the extent that this does not prevail in the future, the level of apartment starts will be higher and the level of ground oriented starts will be lower as people continue to modify their housing occupancy in the face of continued constraints on the development of ground oriented housing.

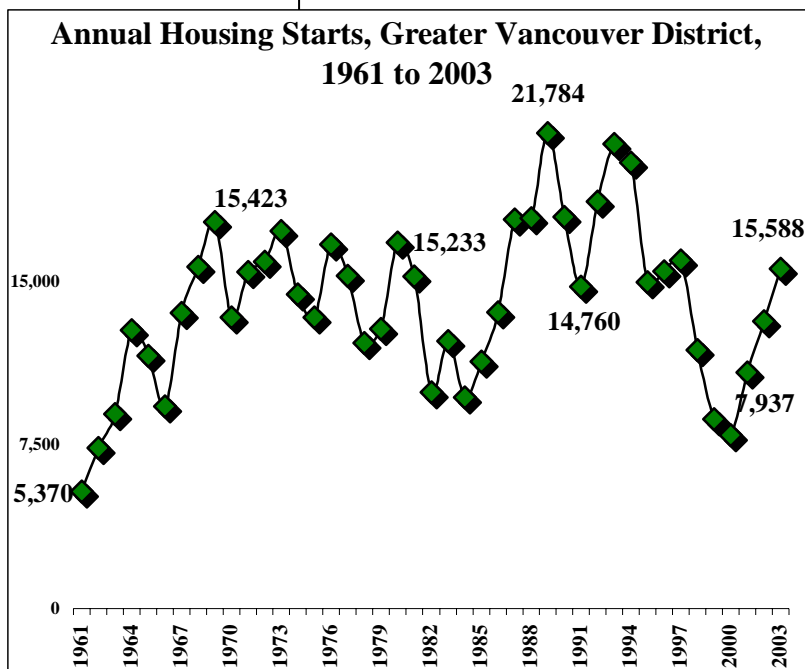
Introduction

In an economic context, residential real estate is considered to be a very durable asset that is fixed in location. At any point in time, real estate markets are characterized by having a very large stock of accumulated assets, with annual additions being relatively small compared to the number of units in the existing stock. Residential real estate markets, therefore, have more in common with equities markets than they do with the market for fresh bread, with conditions in the existing stock setting the theme for new supply rather than the cost of the new supply setting the theme as it does for perishables.

Additionally, the durability required of real estate means long construction periods, introducing significant lags between the decision to add units to the stock and the point when these units are available for occupancy. These lags mean that the market conditions that prevail when a unit is started are often vastly different from those that prevail when it is completed. Compounding the temporal and information gap between production and absorption is a composition effect where many developers respond to the market signals that more units are required, but as the units will not reach the market for a year or more, there is little feed back as to when enough units have been started to satisfy potential future demand.

The development industry, therefore, operates in relatively volatile conditions, with cycles of overbuilding followed by under-building being the norm in the marketplace. For example, there have been 17 turns in direction in the annual number of dwelling units started in the GVRD over the past forty years (Figure 1).

Figure 1



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*One of the ways that
volatility in the housing
market could be reduced
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when they are completed.*

*The pattern of supply is
driven by changes in
potential demand, as limited
by the regulatory, financial
and physical constraints on
development. Population
growth and change in part
shapes this potential
demand, and hence there is
a general correspondence
between demographic
change and the supply of
additional dwelling units.*

Given this pattern, the industry has developed a number of risk management techniques to attempt to deal with the volatility in new supply, with pre-selling of units being one of the most common approaches. This approach to risk management operates much like a futures contract, by selling the dwelling to the end purchaser before construction starts rather than when the unit is completed and ready for occupancy. Unfortunately this does little to reduce volatility in the market, as it merely shifts risk to the end purchaser, and may in fact increase volatility, as it offers strong incentives to developers to start as many projects as possible in “hot” markets, while end purchasers may not be aware of the volume of units in the pipeline.

One of the ways that volatility could be reduced is to provide better information at the time that units are started as to what the demand conditions are likely to be when they are completed. This would involve matching projections of the number of units required and the number of units started that will come to market in the future, thereby providing a proxy for market response. In such a projection exercise, dwelling unit starts would be the most appropriate measure, as starts are the decision point: the question would be “how many units should be started each year in the future given demand projections?”

The answer to this question is not merely of academic interest. Over the past year we have had an increasing number of inquiries from the media, developers, purchasers, lenders, investors and other interested folks concerning the reasons behind and, more importantly, the sustainability of, recent increases in residential building activity in the Lower Mainland. The most recent population estimates from BC Statistics which showed that, in the face of 4,500 new residential dwelling starts in the City of Vancouver in 2003, its population declined (by an estimated 365 residents) only added to the questions about the health of the Lower Mainland’s housing market. [There have also been many questions about price increases, a topic we will deal with in a separate examination.] In this brief report, we present an approach to answering the questions concerning the level of development activity in the Lower Mainland by examining the extent to which changes in both demand and supply will shape the future of the housing starts in this region.

The Total Housing Market

Between 1991 and 2003 the Lower Mainland saw an average of 16,228 dwelling units added to its housing stock each year¹. Over this period additional supply ranged from a high of 24,799 units added in 1993 to a low of 8,544 units added in 2001, with some recovery to the 13,748 units added in 2003.

This pattern of supply was driven by changes in potential demand as they were limited by regulatory, financial and physical constraints on the development industry, to result in market or effective demand. Population growth and change shape much of potential demand, and hence there is a general correspondence between demographic change and the supply of additional dwelling units. Thus, the high level of additions in the early 1990s boom was during a period characterized by economic change and administrative restructuring domestically (specifically the provinces of Alberta and Ontario) pushing labour force migrants, families and retirees westward towards BC’s robust economy. In chorus, the

¹ The net supply of new units to the market is derived from housing starts data found in CMHC’s [Housing Now](#) annual publications. As a dwelling start generally takes more than a year from initial construction to occupancy by an end consumer, dwelling starts as reported by CMHC have been lagged by one year to be compared with annual population growth and occupancy demand: 1997 additions to supply presented here are CMHC’s 1996 dwelling starts. Note that while starts data do not include all additions to the housing stock (for example, they include only units where building permits are issued, and hence exclude illegal suites, they do provide a reasonable proxy for additional supply on a regional basis.

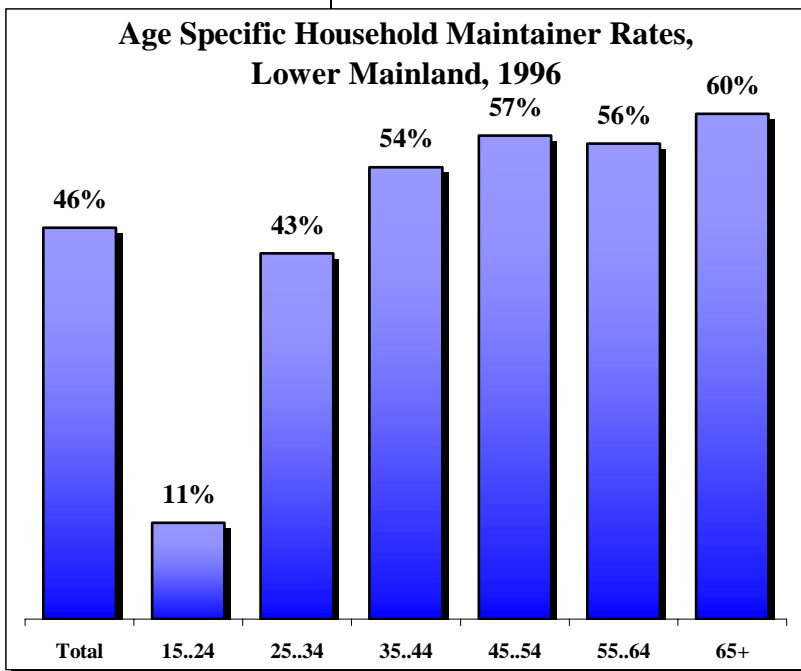
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province saw heightened levels of immigration as a result of international push factors such as the “Asian Tiger” economic boom, political uncertainty in Hong Kong and Taiwan and changes in Canadian immigration regulations.

By the late 1990s, with administrative and economic restructuring essentially complete in Ontario and Alberta, and with significant economic slowdowns in Asia and in British Columbia, the net inflow of domestic and international migrants to the Lower Mainland slowed dramatically as did development activity.

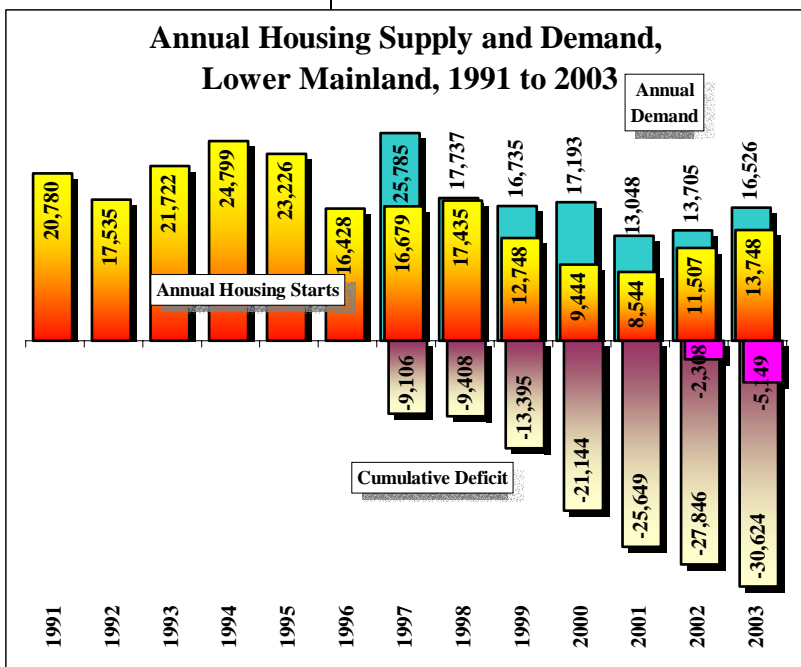
Over the past few months, population growth in the region has picked up slightly, which is responsible, in part, for the recent increase in demand. For example, the most recent quarter of migration data (3rd quarter of 2003) to the province show that, for the first time since the fall of 1997, more people moved to British Columbia (and hence, given the economic situation in the rest of the province, to the Lower Mainland) from other provinces than moved from it, resulting in increasing demand for housing.

Figure 2



The extent to which such demographic change drives housing demand is calculated using household maintainer rates, or the percentage of people in an age group who have the primary financial responsibility for a household (Figure 2). Household maintainer rates are the critical link in housing market analysis, as they describe how people are housed over the life cycle at a point in time, and also give a strong indication of how they might like to be housed, subject to the constraints of supply, prices and incomes. This life cycle occupancy pattern provides a standard for measuring market performance.

Figure 3



Applying the pattern of household maintainer rates derived from the 1996 Census to the change in the population that subsequently occurred in the Lower Mainland provides a measure of the additional number of dwelling units that would have been required to accommodate growth and change in the region’s population over this period. As Figure 3 shows, accommodating the region’s changing population at 1996’s occupancy patterns would have required annual additions to the stock of dwellings in the range of between 13,048 (in 2001) to 25,785 (in 1997) units, for an average of 17,250 dwellings added to the stock each year during the seven year period. The actual level of additions was well below this potential demand, ranging from 8,544 (2001) to 17,435 (1998), or an average of 12,900 units per year during the period, 25% below the level of potential demand.

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Over the 1996 to 2003 period, additions to the housing stock did not keep up with the growth in potential demand, creating a cumulative shortfall of 30,000 dwellings by the end of 2003.

Over the 2001 to 2003 period, a cumulative shortfall of over 5,000 units has been created as supply has not expanded as fast as potential demand based on demographic change and 2001's patterns of housing occupancy.

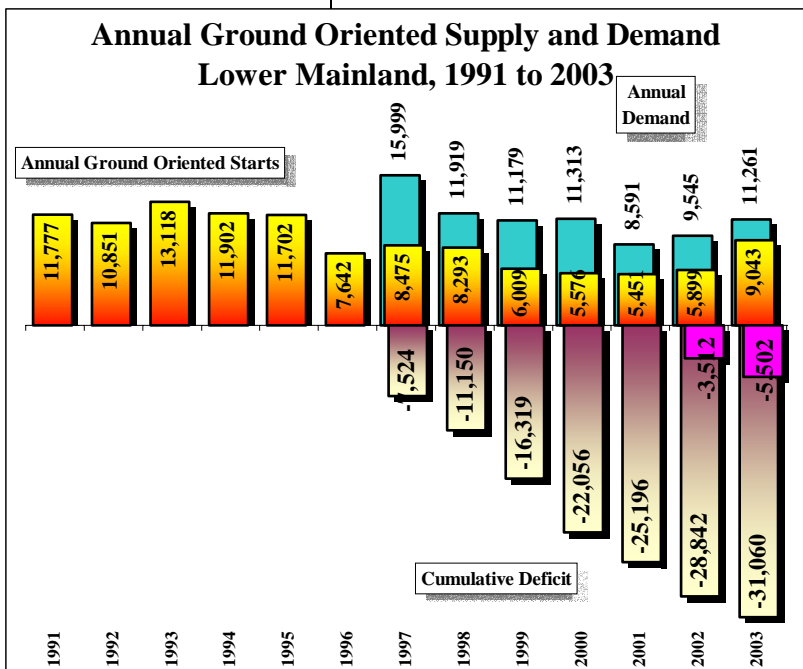
Relating the supply and potential demand for housing given people's 1996 pattern of housing occupancy shows that in 1997 total net additions of 16,679 units to the housing supply fell short of potential demand by roughly 9,000 units (Figure 3). In itself one annual shortfall is of little consequence as, given the time required for development approval and construction, the number of units supplied in any one year rarely matches annual potential demand.

Shortfalls become consequential if they occur over a number of years. As Figure 3 shows, the gap between potential demand and additional supply grew continuously over the period, with a resultant growth in the shortfall from the 9,106 units in 1997 to the cumulative gap of 30,160 units in 2003. To appreciate the magnitude of this gap, consider that in 2003 almost 14,000 units were started in the Lower Mainland: it would take over two years at this level of development activity just to eliminate the cumulative deficit built up over the prior seven years when supply did not expand as fast as potential demand.

One result of such under building was a change in household maintainer rates, with effective demand reducing the percentage of people in some age groups who were household maintainers. [In contrast, a result of overbuilding is often to increase the percentage of people in an age group who are household maintainers.] The under-building in the Lower Mainland housing market over the past seven years has led to a (slight) reduction in household maintainer rates, with the percentage of people maintaining a household in the younger age groups in 2001 being lower than those shown in Figure 2 for 1996.

Additional supply can also be tested against potential demand using the occupancy pattern calculated by the 2001 Census to describe how people are striving to be accommodated. Even with this new, more constrained occupancy pattern, the 11,507 new units brought to the market in 2002 was lower than the 13,875 we would have expected given population growth and change. Similarly, the addition of 13,748 units in 2003 was considerably lower than the 16,526 units we would have expected to be constructed given potential demand. Thus, even over the 2001 to 2003 period, a cumulative shortfall of 5,149 units has been created as supply has not expanded as fast as potential demand based on demographic change in the region.

Figure 4



From the Ground Up.

As a base for a housing starts projections, it is essential to first consider the segments of the housing market where the greatest un-met potential demand originates. As might be anticipated it is in the ground oriented (single detached, row and town house) market where occupancy patterns are most affected by under-building.

On average between 1996 and 2003, 6,960 new ground oriented units were supplied to the market each year (Figure 4). Given the demographic change that occurred in the post 1996 period, holding 1996's pattern of housing occupancy constant over this period would have resulted in an average annual demand for 11,400 new ground oriented units. Thus, over the period additional supply was 39 percent below potential demand.

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Figure 5

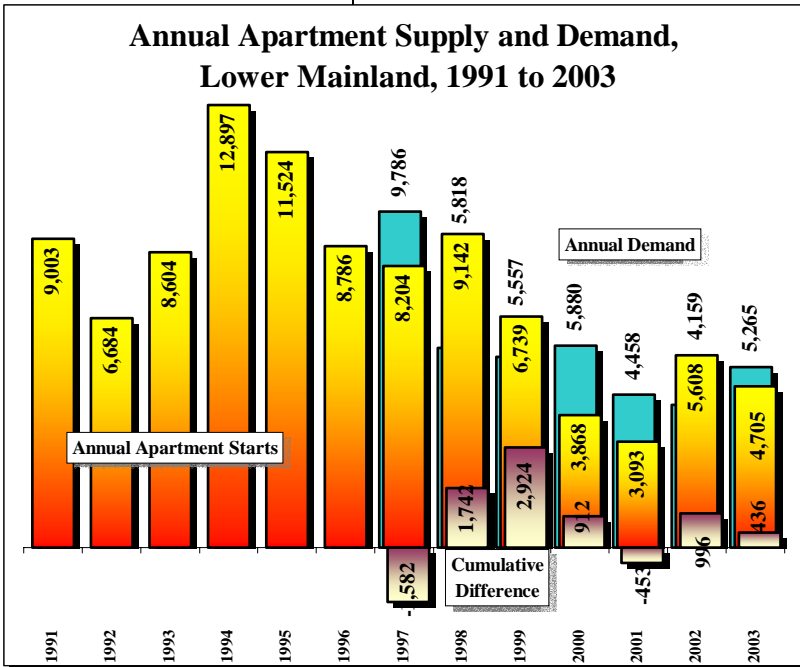


Figure 4 shows that annual additions to the ground oriented stock fell short of potential demand each year in the 1996 to 2003 period. By 2003 the cumulative difference between potential ground oriented demand and actual supply was over 31,000 units. Even in the post 2001 period (using the 2001 pattern of housing occupancy) population growth would have resulted in potential demand that was 5,502 units in excess of what was brought to the market. Effectively, by 2003 the ground oriented side of the market was in a deficit position of between 5,000 (with reference to 2001's maintainer pattern) and 31,000 units (with reference to the 1996 pattern.)

The pattern for apartment dwelling units both shows a much different picture and provides useful information on one of the consequences of the large cumulative deficit created on the ground oriented side of the market (Figure 5)². Between 1996 and 2003 population growth and 1996's housing pattern would have resulted in average annual demand of 5,800 new apartment units. Over the same period an average of 5,900 new apartment units were supplied to the market annually, resulting in a relatively balanced apartment market. Each year supply and potential demand were relatively close, with a net deficit in one year being balanced by a surplus in the following. Thus, under-building in the ground oriented market was the sole source of the cumulative deficit in the region's housing market.

On the supply side people may attribute a relatively balanced apartment market to savvy developers who have added significant apartment capacity through redevelopment in the downtown core and other regional town centres. On the demand side people may herald the savvy planners for being able to shape the nature of housing demand with housing policies aimed at higher density forms of residential living throughout the region. The reality is that good old economics, of both the market and land varieties, have been the major factor in shaping the mix of available housing within the region.

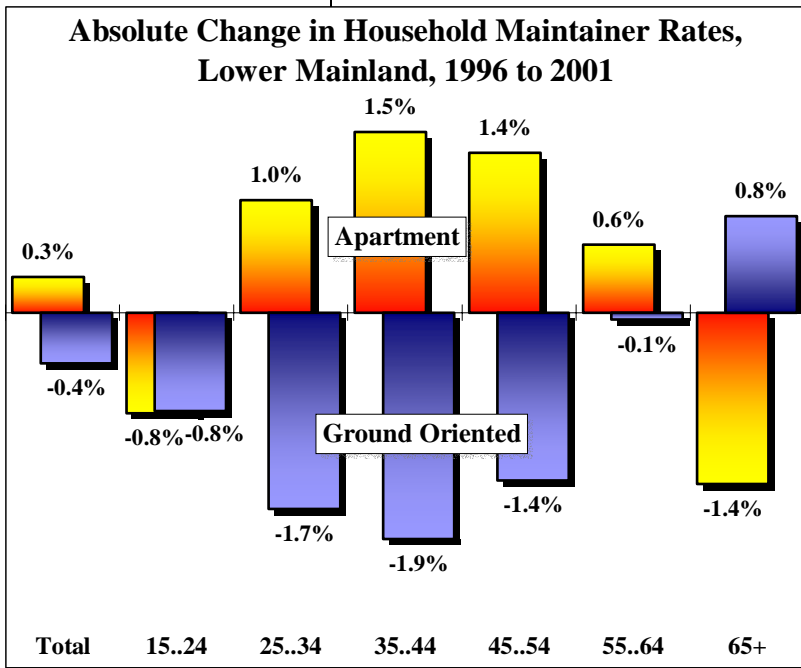
Classical land economics leads to a situation where, over time, competition for land between uses results in a pattern where higher land prices characterize the more accessible and desirable sites ensuring that, zoning willing, they will be used more intensively (i.e., at higher densities). Lower density uses, such as housing families requiring yards for the sandbox and Mr. Turtle Pool will (again zoning willing) be pushed to less accessible (i.e., outlying areas) where land prices are not as great. At the margin, some people who otherwise would locate in ground oriented accommodation will shift to apartments to reduce transportation / housing costs, which in turn will lead to a shift in the pattern of household maintainer rates.

² Apartments are considered units in high rise and low rise buildings. Suites in detached duplexes have also been included in the apartment segment of the market as they are closer functionally to an apartment than a ground oriented unit. As a large portion of these structure types are added informally (the "unauthorized suite" added without permits), it is difficult to gauge the degree to which additions to this structure type is contributing to the supply of additional apartment units throughout the region. To the degree that there is a net annual addition of unauthorized accommodation (net of demolitions and removal of such suites) apartment starts data under-represent the total additions to the apartment stock.

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Compounding land economics are local politics wherein more accessible (and higher priced) sites within the urban centres in the region are being used more intensively with the blessing of municipalities keen on redevelopment. In contrast, affordable lower density ground oriented family housing projects are being proposed for areas where current voting residents occupying ground oriented housing do not welcome the idea of sharing the neighbourhood. The end result was a situation where development cannot respond effectively to potential demand, and where lack of supply moves people at the margin towards apartments (or towards Squamish) and away from ground oriented housing in this region.

Figure 6



In this sense, changes in housing preferences have, in part, been the result of available supply rather than demand preferences, as people have been compelled to trade off the historical pattern of maintaining ground oriented homes for higher density living due to both accessibility and availability considerations. As a result, part of the shortfall in ground oriented development over the past seven years has been met by a change in housing occupancy, and hence by a shift in household maintainer rates towards apartments. This accessibility/supply induced change in housing occupancy is reflected in the changes in household maintainer rates between 1996 and 2001 (Figure 6). Over this period most age groups saw declines in ground oriented maintainer rates, which were matched, at least partially, by increasing rates on the apartment side of the market.

The youngest and eldest age groups were the two exceptions to the trend. The 15 to 24 group experienced declining maintainer rates for both structure types, largely associated with more kids staying longer in (or in some instances returning to) the parental home: by 2001, 40 percent of the 20 and 29 age group in the Lower Mainland lived with their parents, almost double the 22 percent experienced in 1981. Changing maintainer rates for the eldest age group showed a different pattern, with increasing rates for ground oriented accommodation (0.8 percentage points) being more than offset by declines in apartment rates (1.4 percentage points), the result of increasing disability free life expectancy for both men and women, and longer life expectancy for males increasing the percentage of seniors living in couples.

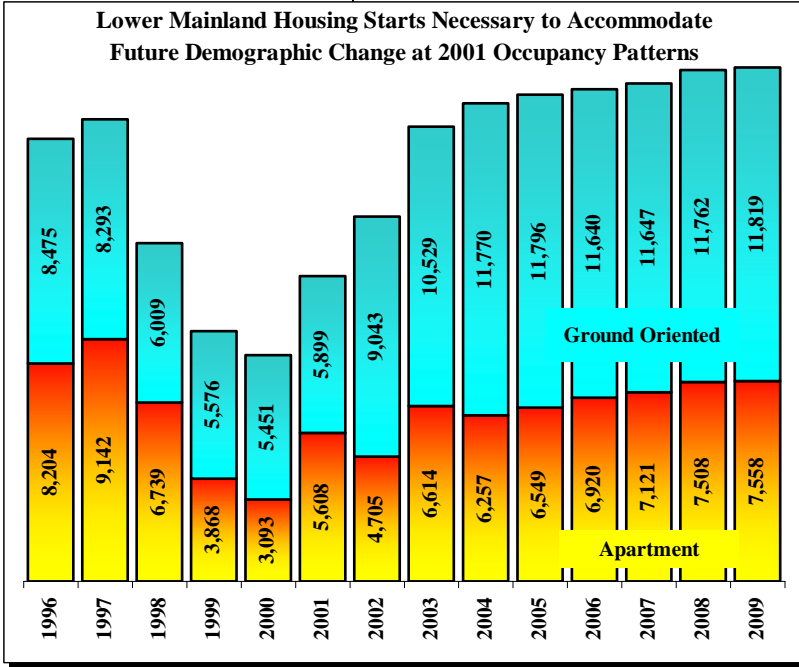
Each of the 25 to 64 age groups saw declines in ground oriented maintainer rates that were associated with almost proportional increase in apartment rates. As an example, consider rates for the 45 to 54 age group between 1996 and 2001: the decline of 1.4 percentage points from 43.5 to 42.1 percent of the 45 to 54 population maintaining ground oriented accommodation was directly matched by a 1.4 percentage point increase (from 13.8 to 15.1 percent) in apartment household maintainer rates. What we cannot discern from the data is why such changes occurred. They may have been caused by the accessibility/density trade off, or by a change in preference, or by lack of suitable supply. Nor can we know from the data if people who left the region and moved to adjacent regions did so because they could not find suitable housing here, or for other reasons. But the data do allow us to examine the consequences of these changes on future potential demand, and hence on the supply of additional dwelling that a changing population will require in the future.

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Development Potential

So you ask “what does all this mean for the state of the residential real estate market over the coming years?” Well, at the most general level, it appears that the housing market in the Lower Mainland is moving towards a period of relative balance between annual potential demand and supply (Figure 7). Using 2001 housing occupancy patterns and projected

Figure 7



population growth and change over the rest of the decade, total annual additional housing **demand** is expected to grow from 17,496 additional³ units occupied in 2004 and 18,026 in 2005 to a total of 19,378 additional units occupied in 2010. This means that the number of new housing **starts** in 2004 would be 18,026, with annual starts increasing to 19,378.

The 17,143 units started in 2003 that will come on stream this year are slightly below both the 17,496 units required to meet potential demand in 2004, and the long term average of 18,724 required to accommodate future demographic change in the region. Having said this, the trend in development is certainly consistent with a market striving to accommodate future changes in demand. Note that development in this range would not be sufficient to reduce the cumulative shortfalls that are implicit in using either the 2001 or the 1996 occupancy patterns and the demographic change that has occurred since these Census dates.

Given 2001 age and structure type specific maintainer rates and projected population change from 2004 on, the greatest potential for additions to the Lower Mainland’s housing market would most definitely be on the ground oriented side of the housing market. In order to meet potential demand generated by future demographic change, starts of ground oriented units would have to increase from the 10,529 units started in 2003 to 11,770 ground oriented starts this year, increasing to 11,819 starts in 2009 to meet anticipated increases in occupancy demand in 2010, for an average of 11,739 starts per year over the rest of this decade. The recent pattern of ground oriented starts (2002’s 9,043 starts that came to the market in 2003, and 2003’s 10,529 starts which will be available for occupancy in 2004) confirms both the direction and magnitude of change necessary to meet anticipated future increases in ground oriented demand, although in both years the starts were below the level necessary to meet potential demand in the years that they became available for occupancy.

In contrast, the additional supply of apartments has kept relative pace with potential demand. Over the next five years the annual supply of apartment units would have to grow from 6,257 units started in 2004 to 7,558 started in 2009 (for an annual average of 6,614) in order to accommodate future demographic change at 2001 occupancy patterns. The 6,985 apartments started in 2003 are above the level required to meet 2004 occupancy demand, but are within

³ A note on precise values is appropriate. The exact values that result from projection of demand are present in the section to ensure that no confusion arises from rounding of values. In reality these values are merely indices of order of magnitude. In the conclusion to this paper where the projection of future housing starts is presented, order of magnitude, not precise values are used.

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the range required over the longer run. So long as apartment starts in 2004 do not rise above the 2003 level, the apartment market will remain in reasonable balance.

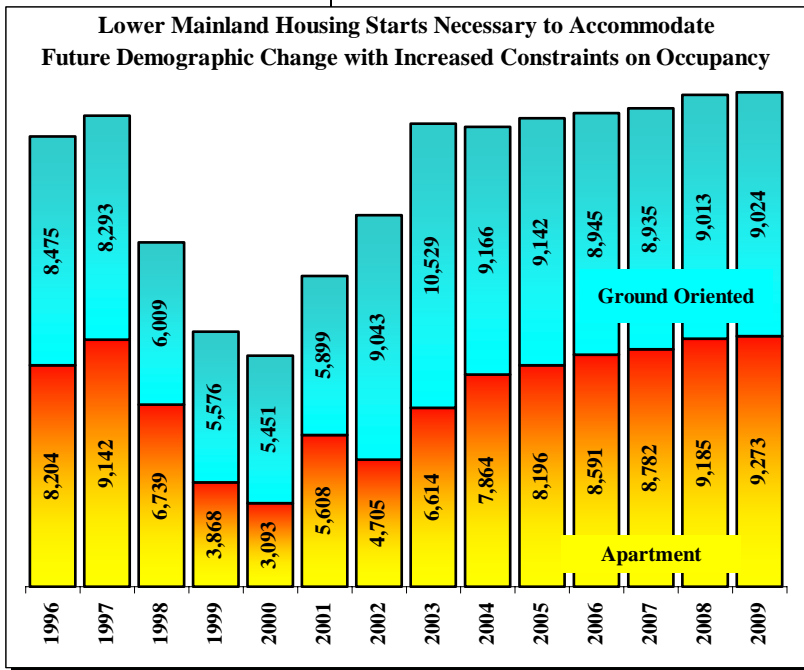
Changing Directions: Increasing Constraints of Ground Oriented

The previous examination of demand relied on holding the housing occupancy pattern constant at its 2001 level in order to determine the extent to which demographic change will dictate supply over the rest of the decade. Earlier, it was noted that housing occupancy patterns had not remained constant over the 1996 to 2001 period: it is therefore important to consider the possible impact of changes in housing maintainer rates over the rest of this decade. These changes may follow one of two directions.

The first would be a continuation of the 1996 to 2001 trend which saw a slight downward shift in ground oriented maintainer rates and a slight increase in apartment maintainer rates. If the policy, accessibility and economic conditions that prevailed over the most recent period prevail over the coming decade, and bring about a shift in structure type specific housing occupancy of the same magnitude it will have a relatively modest impact on the projected total number of annual housing starts, but a big impact on the structure type composition of these starts.

The total number of starts required accommodate the region's residents over the rest of the decade under these constrained conditions would range from 17,030 starts in 2004 to 18,297 in 2009, for an

Figure 8



average of 17,686 (Figure 8). The continued squeezing of ground oriented maintainer rates would result in the average annual number of ground oriented starts to drop down to an annual average of 9,037 over the rest of the decade, three quarters of the level required to accommodate demographic change over the rest of the decade at constant occupancy patterns. As might be anticipated, the average annual number of apartment starts of 8,469 units per year is thirty percent above the level required to accommodate demographic change at 2001's occupancy pattern. The mix in starts under this increasing constraints on ground oriented scenario is also significantly different between the mix in the 2003 starts, with 2003's 10,529 ground oriented starts being above the level required, and its 6,985 apartment starts being below the corresponding level in the increasing constraints scenario.

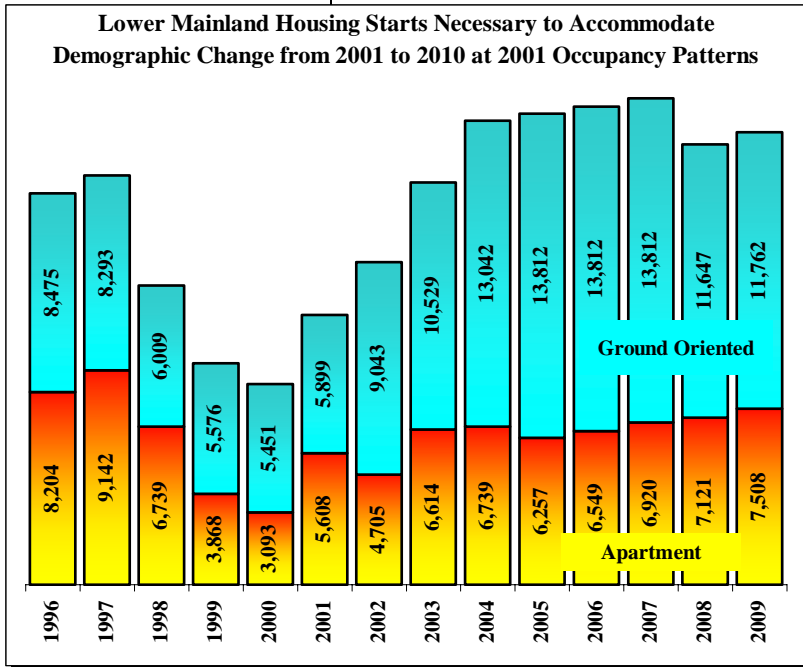
When looking back at the 1996 to 2001 period when ground oriented maintainer rates fell, it is essential to recall this was a relatively poor economic period, indicated not only by of low levels of building activity and significant constraints on household purchasing power, but also by unprecedented net out-migration from the lower mainland to other provinces. With better economic conditions it may be anticipated that at least some of the financial constraints on ground oriented demand may be loosened, and hence that the increasing constraints scenario, at least under current economic and financial conditions, will not be representative of future housing demand.

Changing Directions: A Recovering Ground Oriented Sector

With improving economic conditions, a more substantial regional transportation system, and the potential for increased supply of land suitable for ground oriented supply (for example, in the Burke Mountain area of Coquitlam and in Mission's urban reserve), development activity may not only be able to accommodate future demographic change at 2001 occupancy patterns, but also may be able to respond to the pent up demand that developed as a result of

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Figure 9

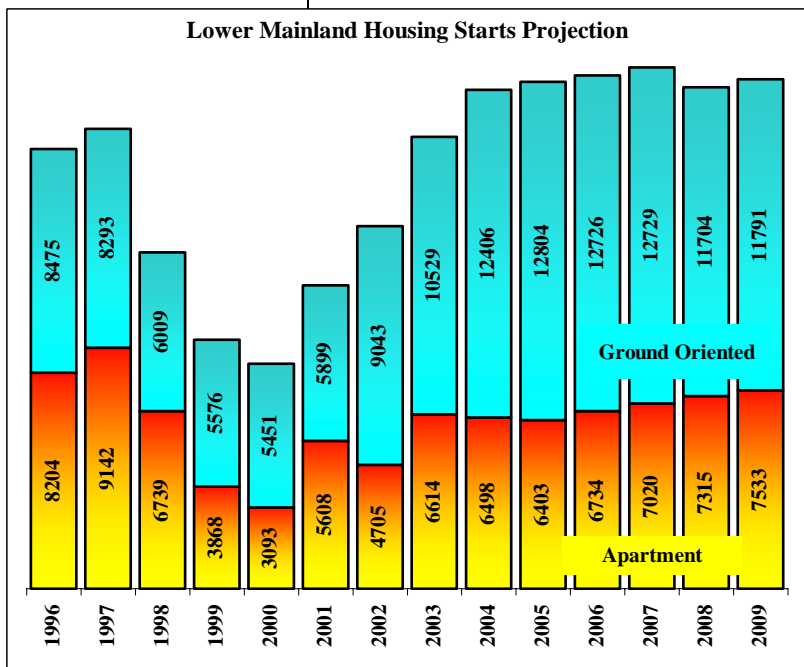


starts in 2002 and 2003 being lower than required to accommodate potential demand. Under these conditions, total housing starts would be slightly higher, and ground oriented housing starts would be significantly higher, than under the conditions discussed thus far.

If demographic change in this decade, both that which has already occurred and that which is projected to occur, is accommodated at 2001 occupancy patterns, ground oriented starts would average 12,981 units per year, increasing from 2003's 10,529 starts to 13,042 this year and continuing in the 11,647 to 13,812 range over the rest of this decade. With this pattern of development, it would still take until 2008 to eliminate the pent up demand left over from the past two years.

In contrast, the number of apartment starts required would remain generally in the under 7,000 starts per year until 2007, when the last of the slight surplus of apartment units that has built up over the past two years has been absorbed. In total, such a scenario, which would rely on strong and continued economic growth in the region, would see housing starts average 19,830 units per year over the rest of the decade, increasing from 2004's 19,781 starts to reach 20,732 in 2007 and then slowing slightly to reach 19,270 starts in 2009.

Figure 10



The Projection

On the basis of the foregoing analysis and consideration of the economic prospects for the region for the rest of the decade, the level of housing starts that may be reasonably anticipated for the rest of decade will be an average of 19,300 total starts per year, comprised of 12,400 ground oriented and 6,900 apartment starts. There would be 12,500 ground oriented starts in 2004, and 6,500 apartment starts (Figure 10). This level and composition of housing starts over the rest of this decade would accommodate demographic change without overbuilding the market.

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If the rest of the decade is economically robust, and if ground oriented land supply increases as a result of accessibility improvements, and local governments and neighbourhoods attaching a priority to accommodating families, (developers sharpening their pencils to make it happen), the annual ground oriented starts could move up into the range of 14,000 units per year, in which case apartment starts would be slightly lower, in the range of 6,800 per year, with total starts annual in the range of 21,000 units.

Alternatively, if the hard economic times and increasing constraints on ground oriented development that characterized the late 1990s return, total starts would be lower, in the range of 17,700 per year. This drop would be entirely the result of increasing the restrictions on the supply of accessible ground oriented additions to the housing stock, thereby reducing annual starts to this segment of the housing market to the range of only 9,000 units per year. The resultant shifting towards apartment occupancy would bring annual apartment starts up into the range of 8,600 units per year.

Having outlined the level of starts that would be appropriated to accommodate population growth and change in the region over the rest of this decade based on demographic projections, it is essential to close with a comment about interest rates. The estimated level of housing starts for the region are predicated on there being no fundamental shift in the financial environment that shapes either consumer demand or development costs. Any substantial increase in interest rates would, by simultaneously reducing demand and increasing costs, dramatically slow development activity. This is a topic that we are addressing in another paper to be released shortly.