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# Analysis of the Financial Viability of New Purpose-Built Rental Housing at Transit-Oriented Locations in Metro Vancouver

Main Report

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Metro Vancouver

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# Summary

## Introduction

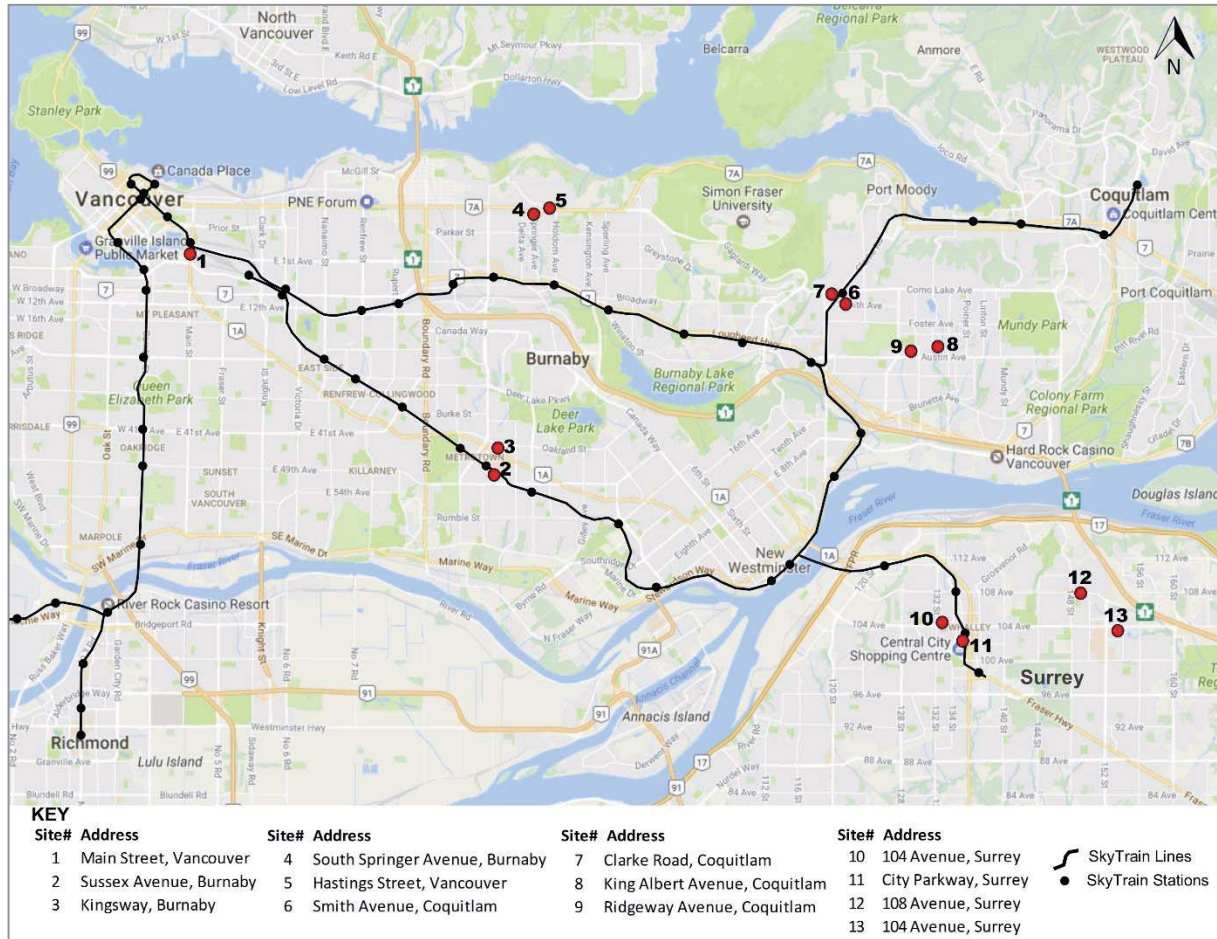
As Metro Vancouver grapples with the challenge of housing affordability, there is growing interest in finding ways to encourage and assist the construction of more purpose-built rental housing, especially in transit-oriented locations. The supply of new rental unit construction is not keeping pace with growth in the number of households looking to rent because there are financial challenges that limit the market's ability to develop new projects. The challenges are particularly acute in the delivery of rental units that are affordable to those with low and very low incomes.

In 2017, Metro Vancouver, alongside strategic partners including BC Housing, TransLink, BC Non-Profit Housing Association, and Vancity Credit Union, completed a study to expand the region's understanding of the constraints and opportunities related to building new rental housing, particularly housing affordable to low and very low income households in transit-oriented locations across the region. The study contributes to a broader set of policies and research undertaken by Metro Vancouver and other agencies to support affordable housing in the region.

Coriolis Consulting Corp. was retained by Metro Vancouver to quantify the financial challenges of new rental housing construction and suggest ways to facilitate the construction of new market and affordable rental projects.

## Approach

Housing market conditions vary widely across the region, so this analysis uses case studies from different submarkets to show how the financial challenges differ based on land values, rents, and costs.



The case study sites are occupied by older, low density improvements and they are in locations in which planning policy favours redevelopment to higher density. All the sites have transit access; some are near rapid transit stations and some have good bus service.

For each case study site, the development of new strata housing, new market rental housing, and new affordable rental housing is modeled in financial terms to see whether rental construction (at market or affordable rents) is viable and, if not, to measure the size of the financial “shortfall” that makes rental housing non-viable. The financial modeling is used to address questions such as:

- To what extent is the problem caused by construction cost?
- To what extent is the problem caused by land values?
- Can the removal of profit (for example, by having rental housing developed by non-profit agencies) improve the prospects for new rental construction?
- Could lower expectations for return on investment, or lower lending rates, address the problem?

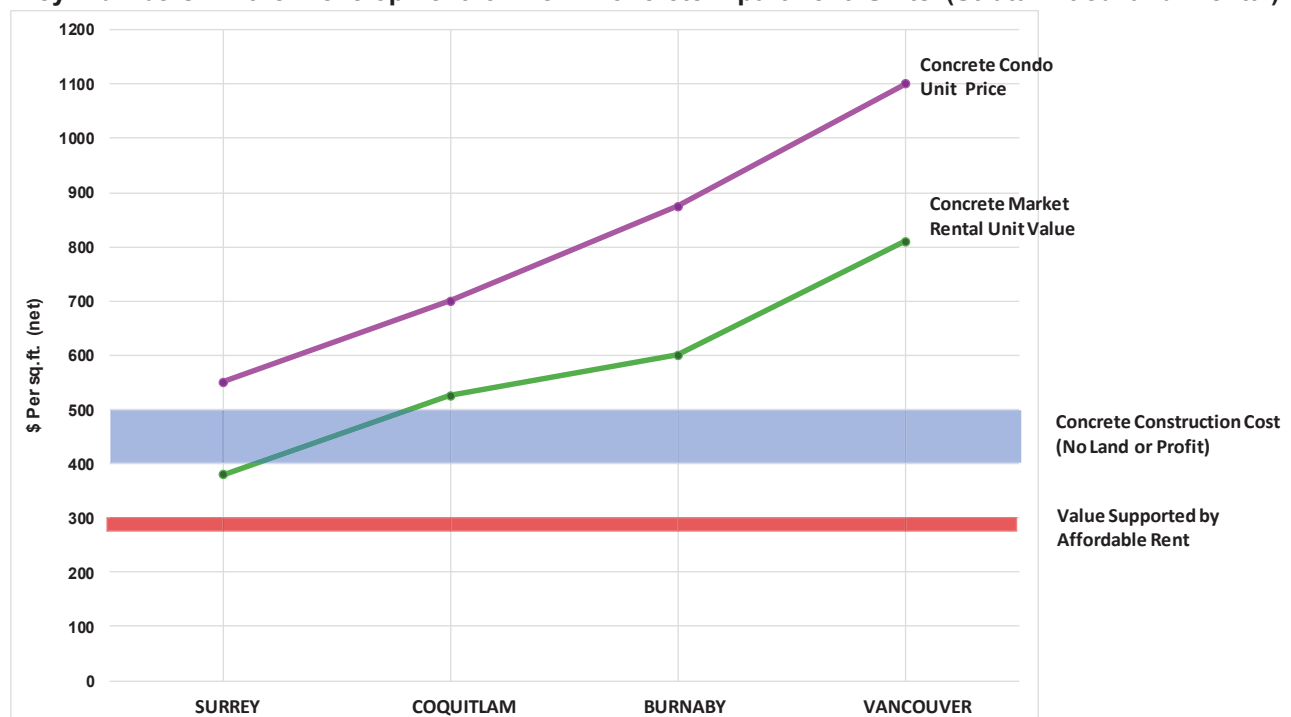
- Are there rent structures (e.g. mix of market and below market) that could make affordable rental financially viable?

## Case Study Results

The detailed case study financial analysis is presented in the main report. For the purpose of this summary, the case study results have been generalized to show the key findings and the implications.

The graph below summarizes the financial analysis for high density concrete construction.

### Key Numbers in the Development of New Concrete Apartment Units (Strata Titled and Rental)



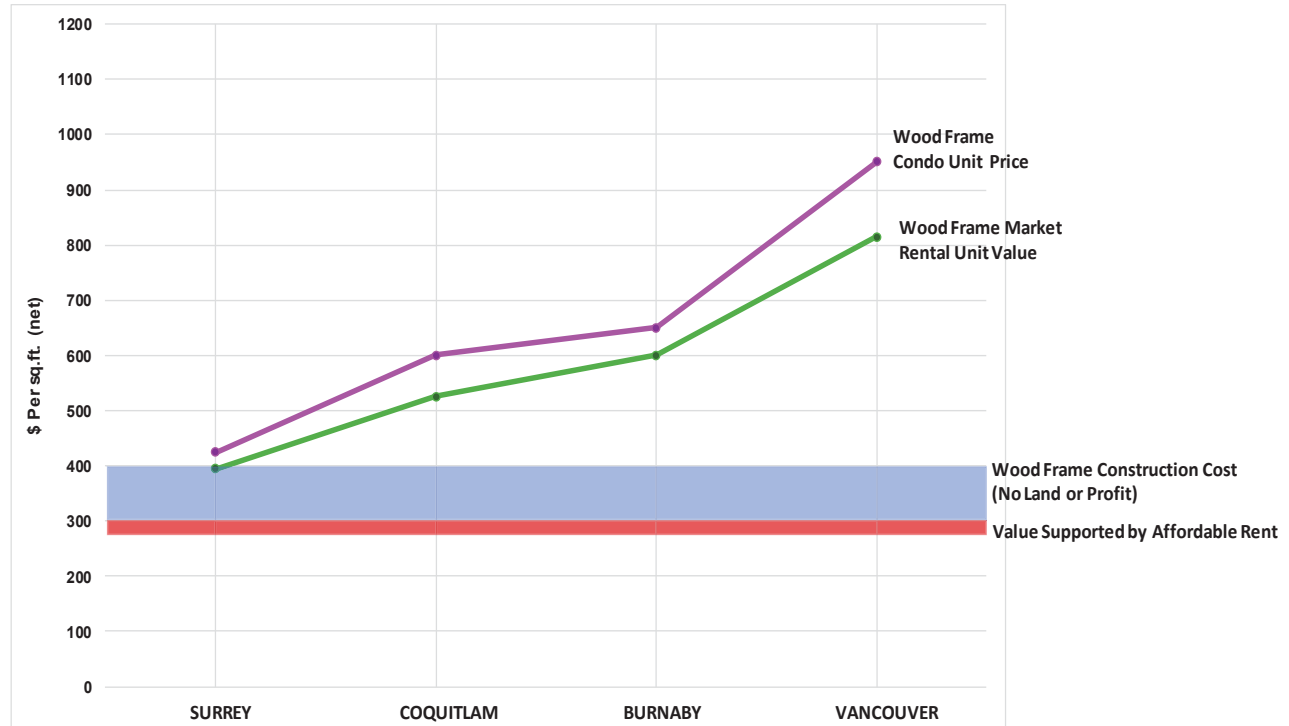
The figures illustrated in the graph are:

- **Condominium Price:** This is the sales price, in dollars per square foot of net saleable area, of new concrete strata units.
- **Rental Value:** This is the market value of a new purpose-built concrete rental unit, as if purchased or created by an investor to rent out. The spread between the rental value and the condo sales price is in the range of \$200 to \$300 per square foot across the region.
- **Construction Cost:** This is the all-in construction cost (not including land value or developer profit) per net square foot to build the unit. This cost includes all hard costs of construction, all soft costs (e.g. professional fees, marketing, insurance), municipal charges, and financing during construction.
- **Value Supported by Affordable Rent:** This is the value of the unit that an investor would pay for a purpose built rental unit if rent is geared to household incomes specified by the client. Affordable studio and 1BR units are aimed at households earning \$30,000 per year and 2BR units are aimed at households

earning \$50,000 per year<sup>1</sup>. We assume that 32% of income is applied to rent. Many agencies use a ratio of 30%, but lenders often use a range of 30% to 35% when evaluating ability to pay for housing.

The next graph shows the same figures for wood frame construction.

**Key Numbers in the Development of New Wood Frame Apartment Units (Strata Titled and Rental)**



These two graphs support important observations about the challenges of creating new rental housing.

The first challenge is that the tested affordable rents support less value than it costs to build the units, even before consideration of land cost or profit. This means that new rental units targeted at households in the \$30,000 to \$50,000 bracket can only be developed if one or more of these conditions are met:

- The construction cost of the unit must be reduced.
- The land must be free or very low value<sup>2</sup>.
- The housing developer is content to earn a project management fee and the investor is content to earn a relatively low return on investment, but they are not compensated for risk to the extent the private sector normally expects.
- The rent is topped up by a subsidy.

The second challenge is that at the lower end of the regional market even full market rents are not high enough to support new high density concrete purpose-built rental housing because the value of the unit is

<sup>1</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

<sup>2</sup> In many parts of Metro Vancouver, the main financial challenge for rental housing is high land values supported by market strata residential. A major element in a rental housing strategy, therefore, must be finding ways to reduce land cost. There are only two ways to do this: make land available at less than market value (which public sector and non-profit agencies could do) or use rezoning to create the capacity (density) for rental housing. Appendix 1 contains more information about these approaches.

lower than construction cost, before any allowance for land or profit. The numbers are better for wood frame units (which cost less per square foot than concrete units), with the value of the market rental unit just covering construction cost, but wood frame projects achieve much lower density than concrete.

The third challenge is the spread between the value of a strata unit and the value of a purpose-built market rental unit. Looking at the Coquitlam concrete numbers, a new purpose built rental unit at market rent has a value that is just a hair over construction cost, meaning there is little room for land cost or profit. But the strata unit in Coquitlam supports an additional \$200 per square foot or so. This extra value covers land and profit. Looking at the Vancouver part of the graph, the market rental unit provides \$300 or so of value above the construction cost, so there is considerable room for land cost and profit, which is good news in terms of the financial performance of the project. But, the strata unit adds another \$300 per square foot of value or so onto that. Where the spread between condo value and rental is large, it is not enough to just reduce the construction cost of the rental unit; it is also necessary to get the land value down to where it is affordable for a rental housing project.

For wood frame units, the spread between the value of a strata unit and the value of an affordable rental unit is less than the concrete situation. Because the gap is smaller, it takes less adjustment to costs or land values to make market rental work. However, the achievable density in wood frame is lower than the densities allowed at most rapid transit station areas that are redeveloping as high density mixed use neighbourhoods.

A fourth challenge for affordable rental housing is that rapid transit locations in Metro have generally been designated for high densities that can only be achieved in concrete construction. This can work where market rents are high enough to support the cost of concrete (provided the cost of land can be made affordable), but it does not work in places like Surrey or Langley where market rents do not support the cost of concrete construction even if land is free. In these markets, the best prospects for rental may be in locations designated for medium density in wood frame buildings.

Market prices for strata units and rental units within a given submarket vary significantly based on whether the units are concrete or wood frame, but do not vary much (i.e. at most 5% in some places and often close to 0% in others) based on the degree of transit service. There are main two reasons for this. First, in Metro, most higher density neighbourhoods have a good level of transit service because the locations chosen for higher density tend to be (or become) well served. There are not many examples of higher density residential development with weak transit service. It is not that the market does not value transit service; the market just generally appears to attach value to “good” service, whether it is by bus or rapid transit. Second, the Metro rental market has a very low vacancy rate. This low vacancy contributes to upward pressure on rents in all segments of the rental market. It is possible that higher vacancy rates (resulting from a significant increase in supply) would lead to more price differentiation based on factors such as level of transit service.

## Alternative Methods of Financing

In addition to evaluating ways to reduce construction cost and land value, we tested the implications of reducing the cost of capital:

- If long term mortgage financing is available at a low enough rate, projects could be financially viable even without major reductions in creation cost.
- Or, if investors in rental housing are willing to accept lower rates of return, projects could be financially viable without the same degree of other cost reductions. Private investors would not normally accept a lower return than they can make in comparable real estate investments, so the implication is that a

government, non-profit, or social-purpose investor is willing to earn a return that is less than market (but still positive) to achieve some purpose built rental stock.

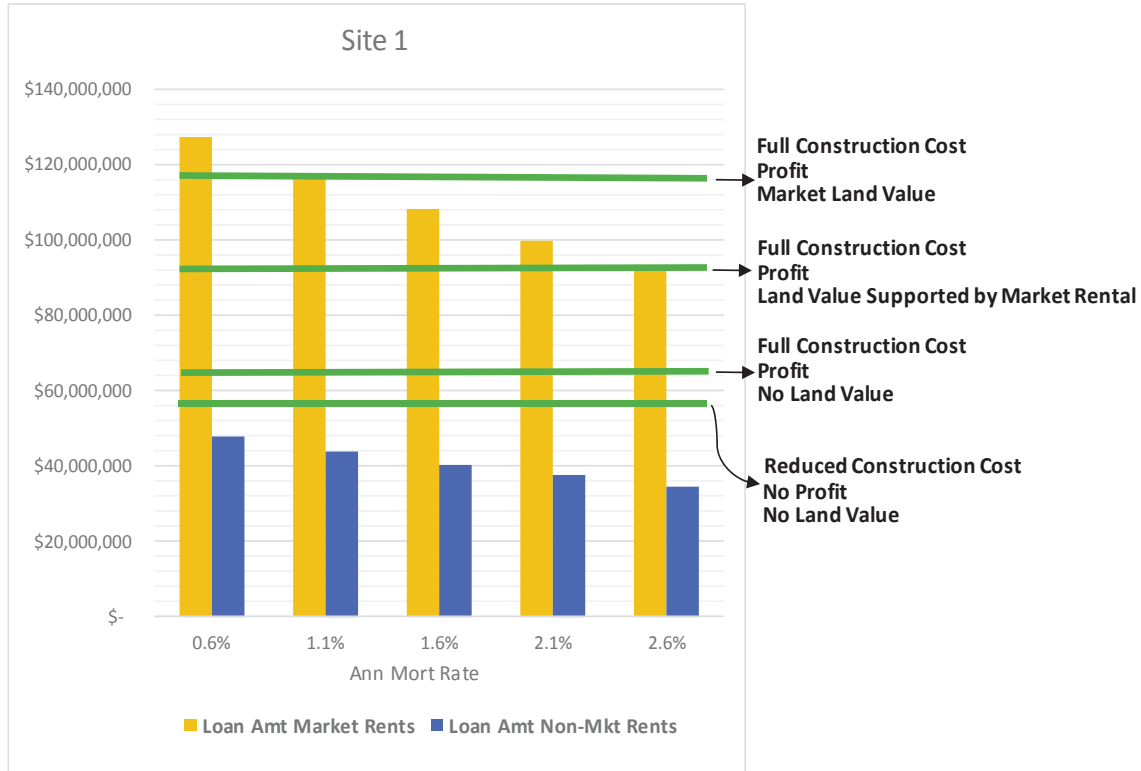
We used the case study sites to test how lower cost of capital might affect the ability to construct viable rental housing:

1. We estimate the creation cost of the rental housing project under four scenarios:
  - a. Full construction cost and profit plus land at full market value.
  - b. Full construction cost and profit plus land at reduced cost.
  - c. Full construction cost and profit with no land value.
  - d. Reduced construction cost (reduced parking, no interim financing fee), no profit, no land cost.
2. The we calculate the maximum mortgage that is supportable based on the net operating income from the market rents, using interest rates that drop from market (2.6%) in increments of half a percentage point.
3. We also calculate the maximum mortgage amount supportable based on net operating income from the assumed affordable rents, using the same interest rate scenarios as for market rents.
4. We compare the project cost with the supportable mortgage at different interest rates. These comparisons show the points at which the supportable mortgage is enough to cover cost.

For this summary, we use the case study results for concrete rental in Vancouver and Surrey to illustrate the range of outcomes.



**Vancouver Case Study: Concrete**



**Surrey Case Study: Concrete**



The mortgage rate testing can be summarized as follows:

- Lower cost of capital can make market rental viable even if projects must pay full market value for land.
- Lower cost of capital can only make affordable rental viable in some locations (e.g. Surrey) in combination with other actions including reduced construction cost, elimination of land cost, and elimination of profit. However, in locations with higher construction cost (e.g. Vancouver), even very low interest rates in combination with reduced cost and no land value are not enough to make projects viable; further assistance is needed.

## **Strategies for Market Rental Housing**

Because of the diversity of market conditions and planning contexts across the region, there is not a single action plan that will be appropriate and effective everywhere.

We have suggested a variety of possible directions for rental housing action that can be considered by individual communities or stakeholders, depending on their situations and their objectives.

### **Reducing Construction Cost**

There are several straightforward ways to reduce the cost of new rental units without compromising their quality:

- Reduce requirements for structured parking. It is not necessary to eliminate all parking (a large part of the first level of underground parking is made up of excavation and foundation costs that would be absorbed anyway), but reducing requirements to eliminate extra levels of parking is a significant gain.
- Reduce municipal charges. Reductions in DCCs (DCLs in Vancouver) are not enough on their own, but can be part of a package of cost reductions
- Reduce construction financing costs. Typically, development projects require interim loans during construction. Interest costs for this construction financing are significant. Reducing these charges could be achieved if government is willing to make the funds available as low-cost loans for rental housing construction or if lenders are willing to absorb this short-term cost as part of a bundled overall lending strategy that includes a commitment for long term financing

### **Encourage wood frame rental in medium density areas**

Wood frame construction costs less than concrete. Land values also tend to be lower in medium density areas than in high density areas (in terms of dollars per square foot of site). Consequently, the financial gap between market strata and market rental is lower in these areas.

This suggests there is value in encouraging market rental in locations other than very high density (concrete) neighbourhoods such as those generally found around rapid transit stations. Rental housing should have good access to transit (especially if costs are being reduced by lowered parking requirements), but this can be found in many Frequent Transit Network corridors with good bus service.

### **Reducing Rental Project Operating Costs**

The Community Charter provides municipalities the ability to reduce property taxes using a Revitalization Tax Exemption Bylaw (Sec 226 of Community Charter). Reduced operating cost means that rents could be somewhat lower than they otherwise would have been or means that more of the gross rental income is available to put toward debt service. Of course, local governments would have to make up the foregone property tax revenue from marginally higher taxes on the rest of the assessment roll.

### **Reducing Land Cost**

Making sites available at little or no cost is one way to achieve this goal, but this only works if public sector or non-profit entities have land they are willing to make available on favourable terms. Barring the availability of “free” sites, the approach most readily available to municipalities is to use density bonusing or negotiated public benefits at rezoning to achieve new rental housing. This approach assumes there are sound planning reasons for higher density than allowed under current zoning and assumes that the municipality and the community are willing to accept that some new density will be used to generate rental housing rather than other public benefits such as daycare, community space, or public art.

The amount of extra density needed to reduce land cost sufficiently to make market rental attractive will vary widely across the region because land values are so different. The amount of extra density needed will also depend on whether projects are wood frame or concrete and whether projects are a mix of market strata and market rental or are all market rental.

### **Reducing the Cost of Capital**

Another way to make market rental viable is to provide access to capital at less than market rates. This can be achieved by injecting equity at below market returns and/or providing mortgage financing at lower than market rates.

This obviously requires access to a pool of funding that is available at below market interest rates. This could be of interest to government, on the premise that providing funds at less than market interest could have a lower and shorter-lived cost than a perpetual direct subsidy to rents.

For private investors or for commercial lenders, below-market investment or mortgages are not attractive. There is a need for a financing mechanism that recognizes that rental projects may yield below-market (or even negative) returns in the short term, but can yield strong returns in the long term as rents rise. Such an approach would require flexibility in setting interest rates and some patience regarding the recovery of the principal. The main report includes a proposal for an alternative financing structure for rental housing in which lenders/investors accept low returns in the short term but participate in long term revenue growth.

## **Strategies for Affordable Rental Housing**

Supporting the construction of affordable rental housing is a much harder financial challenge, because the gap is so much wider. As shown in the case studies, there are no cases in which a private developer could produce affordable rental units (at the target rent rates), because the value of these units is not enough to cover construction costs, provide a profit, and cover land acquisition. This is true even for wood frame construction and for parts of the region where land values are low.

### **Reduced Creation Cost**

For concrete construction, reducing construction cost is not sufficient to make projects work. Concrete affordable rental housing requires an extensive combination of cost reductions, elimination of land value, and low cost of capital.

Affordable wood frame rental housing can work if the following conditions are met:

- Land has no cost either because an agency puts the land in at no value or because extra density has been made available via rezoning at no cost. However, wood frame housing has a limit on achievable density, so adding density in areas already designated for medium density will not yield much extra capacity.

- Construction costs are lowered due to reduced parking standards, reduced municipal fees, and reduced interim financing.
- There is little or no developer profit, meaning the housing is built by project managers on behalf of government or non-profit agencies with no risk.

### **Construction Cost Offset by Higher Density for Market Strata**

Granting extra density can eliminate land cost for rental housing, but eliminating land cost is not enough to make concrete affordable rental viable (because the rents don't cover the construction cost, let alone land value). Where strata residential land values are sufficient, it is possible to add enough extra density (for market strata) that there is (a) no land cost for the rental component and (b) the cost of rental construction is partly offset by extra land value from strata units. In exchange for additional market strata density, the developer would deliver affordable rental units on a turnkey basis. Obviously, this only works if communities are willing to accept the additional density.

The tradeoff (extra strata density for affordable rental) is different in every residential submarket in the region, but in almost every case it would be possible to achieve some new rental in exchange for granting additional strata density.

### **Construction Cost Offset by Higher Density for Market Rental**

In parts of the region where new market rental housing supports land value, then new affordable rental could be facilitated by granting additional density for market rental. Because market rental supports less land value than strata, the amount of extra market rental density needed to support new affordable rental is much higher than the amount of new strata density that would be needed.

This approach does not work where new market rental does not support any land value.

### **Reduced Cost of Capital**

As with market rental, the availability of capital at below market rates can narrow or close the gap if the interest rate reduction is big enough.

However, reduced cost of capital only helps the affordable rental cases if the reduction in capital cost is very large and layered onto other measures including reduced construction cost and reduced land value.

This obviously requires a concerted approach involving senior governments, local government, lenders/investors, and non-profits.

### **Mixed Income**

Projects with all market rental are already financially challenged on typical development sites. Various interventions (cost reductions, land value reductions, lower cost of capital) are needed to make these projects viable. Making a portion of these rental units affordable just increases the amount of help the project needs. Including some market rental units in an affordable project helps, but other interventions are clearly needed.

A very different approach to "mixed income" is the approach described above as increasing the market strata density. Dialing up the market strata density (i.e. more units available to purchasers who can afford to pay market value) can create the potential to fund affordable rental units (or market rental units) aimed at different income groups.

### **Rent Subsidy**

A completely different approach is to subsidize rents (or income) to allow moderate income households to pay market rent. While we have not modelled this scenario, it is easy to see what is required:

- First, the steps needed to make market rental viable must be implemented.
- Second, the difference between affordable rent and market rent is the needed subsidy.

The amount of needed subsidy will differ widely across the region because of the varying gap between market rent and affordable rent. To illustrate the range, the Vancouver case study indicates that for a 1 bedroom unit the market rent is \$1,850 per month whereas the calculated affordable rent is \$800, meaning a subsidy of over \$1,000 per month. The Surrey case indicates a subsidy of \$400 per month for a 1 bedroom unit (the market rent is \$1,200 and the affordable rent is \$800).

## 1.0 Introduction

### 1.1 Background

As Metro Vancouver grapples with the challenge of housing affordability, there is growing interest in finding ways to encourage and assist the construction of more purpose-built rental housing. Growth in the market value of homes for sale - for all housing forms - has outpaced income growth for many households, who are turning to the rental market. But rents are rising too, in part because the supply of new rental unit construction is not keeping pace with growth in the number of households looking to rent.

There are several reasons why purpose-built rental housing construction has lagged. Changes to the federal tax structure for rental housing starting in the 1970s reduced the appeal of rental housing as an investment. Rent controls, while yielding short term benefits for renters, have tended to reduce private investor interest in new rental housing construction. Sharply rising condominium prices in markets such as Metro Vancouver have driven up residential land prices and made condominium development very profitable, making it hard to obtain sites for rental housing projects.

While some new strata units enter the rental pool, these units are not secured as rental for the long term. As the number of households who are permanent renters grows (due in part to the rising price of ownership), the need for a secured (i.e. purpose-built) rental stock increases. This concern about the adequacy of the rental housing stock is exacerbated by the fact that a large proportion of existing rental stock in the region is aging and is, to varying degrees, at risk of demolition and redevelopment. New purpose-built rental is needed to meet the growing need and to replace units that will be lost to redevelopment.

To explore ways to facilitate the construction of new purpose-built rental housing, a strategic partnership of regional and provincial agencies was formed. Metro Vancouver, BC Housing, TransLink, BC Non-Profit Housing Association, and Vancity credit union are cooperating in a project to quantify the financial challenges of new rental housing construction and find workable rental solutions, particularly at locations that are well-served by public transit so that households can lessen their combined housing and transportation costs. One component of this broad initiative involves analyzing ways in which the financial viability of new rental housing development can be improved, to encourage and assist non-profits, government agencies, and private developers to build more purpose-built rental units.

Metro Vancouver retained Coriolis Consulting Corp. for this study.

### 1.2 Documentation

This Main Report contains all of the findings and recommendations, but it only includes examples of the individual case study financial analysis. The complete case study analysis is contained in the separate Technical Appendix.

### 1.3 Professional Disclaimer

This document may contain estimates and forecasts of future growth and urban development prospects, estimates of the financial performance of possible future urban development projects, opinions regarding the likelihood of approval of development projects, and recommendations regarding development strategy or municipal policy. All such estimates, forecasts, opinions, and recommendations are based in part on forecasts and assumptions regarding population change, economic growth, policy, market conditions, development costs and other variables. The assumptions, estimates, forecasts, opinions, and recommendations are based on interpreting past trends, gauging current conditions, and making judgments about the future. As with all judgments concerning future trends and events, however, there is uncertainty and risk that conditions change or unanticipated circumstances occur such that actual events turn out differently than as anticipated in this document, which is intended to be used as a reasonable indicator of potential outcomes rather than as a precise prediction of future events.

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In no event shall Coriolis Consulting Corp. be liable to any party for any indirect, incidental, special, or consequential damages whatsoever, including lost revenues or profits.

## 2.0 Purpose

There are financial challenges that constrain the development of new rental housing in Metro Vancouver, where construction costs are high, land values are high, and the availability of development sites is limited by existing land use, zoning, and competition from developers of strata title housing for sale.

The purpose of this study is to show the extent of the financial challenge - the magnitude of the gap between the actual financial performance of new rental housing and the performance that is necessary to support more construction - and to examine some ways to close the gap.

The results of the study are intended to increase awareness regarding the financial challenges of developing new rental housing and identify the most effective levers that can be applied by municipalities, regional agencies, non-profits, financial institutions, senior governments, and others. The study examines locally-based tools that can affect construction cost, land cost, and financing, as these are tools that are in the hands of local governments, non-profits, the development industry, and regional agencies. The study outcomes can also inform provincial and federal agencies with regard to the potential role of income supplements (or rent subsidies), capital availability, or low-cost financing in addressing the financial challenges.

The study explores ways to address financial challenges within the existing framework of municipal land use authority, using tools such as zoning and development regulations as they currently exist in BC.

This study does not address federal policy or the direct government construction of new housing; while these may be important elements in a comprehensive housing affordability strategy, they do not address directly the challenges of making new construction financially viable for more stakeholders.



## 3.0 Approach

Housing market conditions differ widely across the region. Construction costs are broadly similar (other than differences in municipal fees), but housing prices, rent rates, and land values differ greatly. Different market conditions might warrant different solutions, so this analysis uses case studies from different submarkets. The case studies illustrate the gap that has to be narrowed to make new rental housing work financially and show how this might be achieved in sample markets that cover the range across the region.

The case study sites have these characteristics:

- They are currently occupied by older, low density improvements (low density relative to what is achievable under redevelopment). In some cases, the existing use is low density commercial space and in some cases it is older, low density rental housing. It may seem odd to be exploring how to make redevelopment of rental housing viable, even if it is for more rental housing, but there are locations in Metro (e.g. at some rapid transit stations) where redevelopment could be desirable because of the potential to significantly increase density and the number of units. This is clearly a challenging trade-off - to retain older stock at lower rents or to facilitate a significant increase in stock (and unit longevity), albeit at higher rents – but it has to be addressed because of the age of some of the existing stock and the under-use of land with excellent transit access.
- They are in locations in which planning policy and zoning favour redevelopment to higher density.

All of the case study sites have good transit access, but some are at or near rapid transit stations and some have good bus service.

For each case study site, the steps in the analysis are as follows:

- How much is the site worth, based on its existing use and zoning?
- What land value is supported by redevelopment to market strata at the density allowed by existing zoning or planning policy?
- What would it cost to develop the site for rental housing and can this cost be supported by rental income, either at market rent or at below-market rent that is geared to income?
- How much could a rental housing developer afford to pay for the land and how does this compare to the value of the land?

By answering these questions, it is possible to address the matter of the financial “shortfall” that makes rental housing non-viable:

- To what extent is the problem caused by construction cost, and can the problem be mitigated by finding ways to bring down the hard or soft costs of construction? For example, can reduced parking requirements, financing charges, or municipal fees make enough of a difference?
- To what extent is the problem caused by land values, and can the problem be mitigated by finding ways to bring down the amount that has to be paid for land? Land cost could be reduced if non-profits or government agencies own land that they are willing to make available for rental housing without being paid full value for the land. Or, land cost could be reduced via rezonings that generate new allowable density that is available at less than market value.

- What is the role of profit in determining viability, and can the removal of profit (for example, by having rental housing developed by non-profit agencies) improve the prospects for new rental construction?
- Could lower expectations for return on investment, or lower long-term lending rates, address the problem?
- Are there rent structures (e.g. mix of market and below market) that could make affordable rental financially viable?

The selected case study sites are in Vancouver, Burnaby, Coquitlam, and Surrey.

Because the analysis relies on case studies, there are some inherent limitations in the output.

The case studies are in four municipalities and four housing submarkets that illustrate a wide range of market conditions, but they obviously do not analyze all circumstances in the region. The case studies can be used to characterize the rental housing challenge, and point to broad directions that could result in more units, but more work will be needed to use these directions to develop specific policy and regulations for each community.

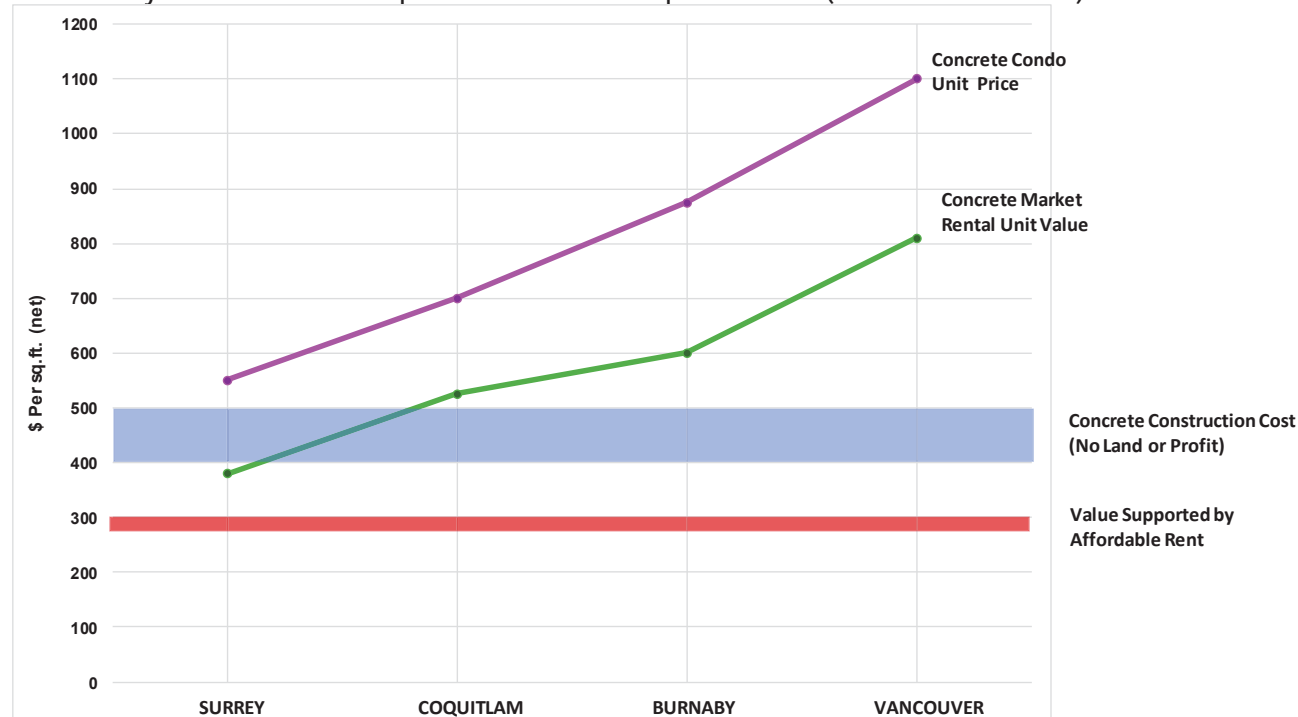
These case studies were all completed in the first half of 2017. Housing prices continue to rise in the region, so the rental challenge is likely to get worse. Updated numbers will be needed in any municipality that wants to produce an action plan for rental housing.

## 4.0 Framing the Problem

Before looking at the case studies in detail, it is helpful to see the generalized outcomes of the cases because they illustrate the nature and extent of the rental housing challenge in different parts of the region.

Exhibit 1 illustrates some key numbers in the development of new concrete strata title apartments and new concrete rental units in different parts of the region, as if developed by private sector developers who have to compete in the market place to acquire development property and who want to earn a profit. Concrete construction is by far the most common structure type for high density multifamily development at locations such as rapid transit stations. Generally, at densities below FSR 2.5 new units are wood frame. Development at high density nodes in Metro Vancouver tends to be at FSR 3.0 or more, in concrete towers.

Exhibit 1: Key Numbers in the Development of New Concrete Apartment Units (Strata Titled and Rental)



The values shown in Exhibit 1 are:

- Condominium Price:** This is the sales price, in dollars per square foot of net saleable area, of new concrete units in each of our four areas. The prices range from just over \$500 per square foot in North Surrey to \$1,100 per square foot in Vancouver. There are of course projects selling outside this range, especially at the high end. These prices are from the case study locations, chosen to illustrate the price range that accounts for the bulk of the regional market.
- Rental Value:** This is the market value of a new purpose-built concrete rental unit, as if purchased by an investor to rent out. This value is based on prevailing market rent and the market’s expectation of return on investment as expressed by a cap rate. The math is simple: net operating income (market rent minus operating expenses) divided by the prevailing cap rate (about 4% for new buildings) yields the amount an investor is willing to pay for the unit as an income-producing asset. The range is from less than \$400 per net rentable square foot in Surrey to about \$850 in Vancouver. The spread between the rental value

and the condo sales price is higher in Vancouver than in Surrey, but can be roughly characterized as \$200 to \$300 per square foot across the region.

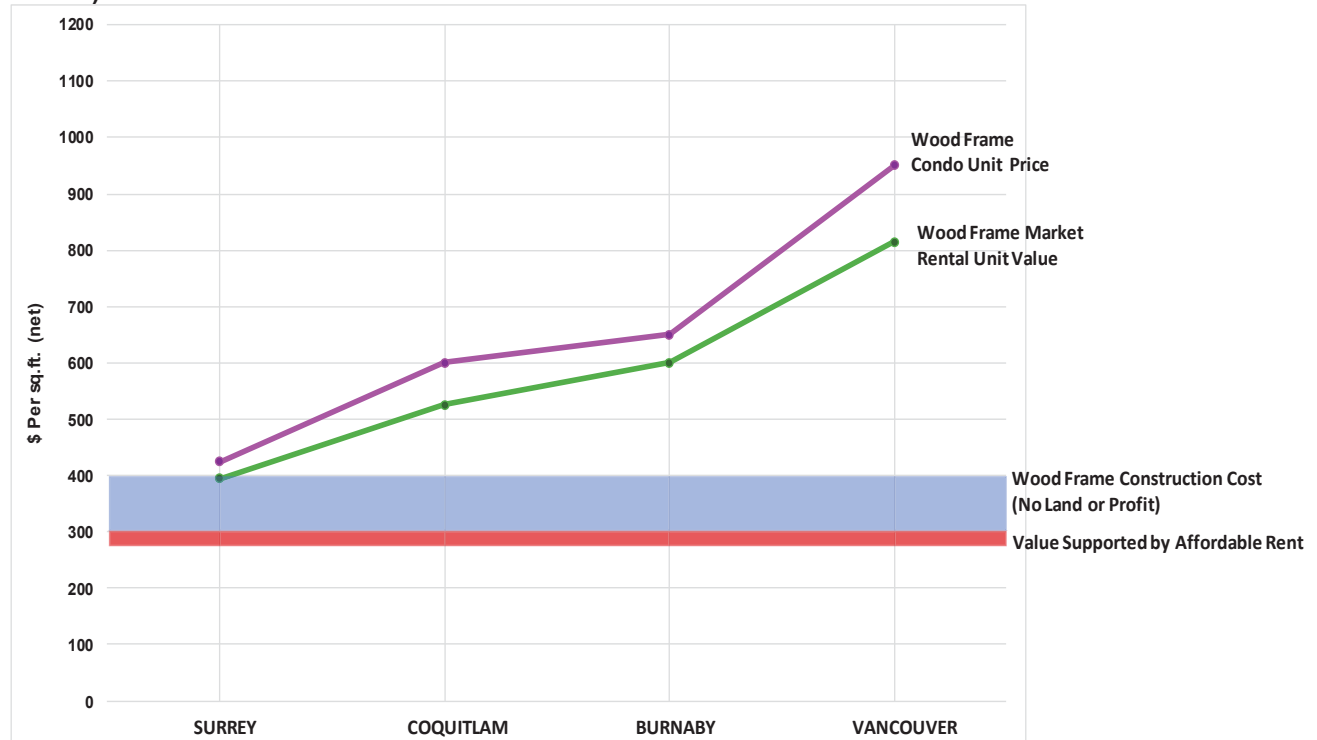
- **Construction Cost:** This is the estimated all-in construction cost (not including land value or developer profit) per net square foot to build the unit, assuming a high density concrete building. This cost includes all hard costs of construction, all soft costs (e.g. professional fees, marketing, insurance), municipal charges (e.g. permit fees, DCCs/DCLs), and interim financing during construction. The cost is shown as a band of about \$400 to \$500 per square foot, with the range based on differences around the region in parking requirements, fees, sustainability and energy requirements, and contractor/trades prices (which tend to be higher in the core). Costs also vary depending on the price point the product is targeting.
- **Value Supported by Affordable Rent:** this is the value of the unit that an investor would pay for a purpose built rental unit if rent is geared to household incomes specified by the client. For these estimates, it is assumed that affordable studio and 1BR units (60% of the units) are aimed at households earning \$30,000 per year, while 2BR units (40% of the units) are aimed at households earning \$50,000 per year<sup>3</sup>. For the calculation of affordable rent, we assume that 32% of income is applied to rent. Many agencies use a ratio of 30% for this purpose, but lenders often use a range of 30% to 35% when evaluating ability to carry a mortgage. Recognizing that the numbers are challenging for rental in this region, we have opted for a slightly higher ratio of housing cost to income. We use the same cap rate as for market rental, although it could be argued that investors might demand a higher rate of return in a rent-geared-to-income project because of risk regarding future escalating in rents. As shown, the value of this income-linked rental housing is about \$275 to \$300 per square foot.

Exhibit 2 shows the same numbers for wood frame construction.

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<sup>3</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

**Exhibit 2: Key Numbers in the Development of New Wood Frame Apartment Units (Strata Titled and Rental)**



These two graphs support some important observations about the regional housing market and the challenges of creating new rental housing.

The first challenge is that the target affordable rents support less value than it costs to build the units, even before consideration of land cost or profit. The spread is larger for concrete, but even in wood frame the value of the unit is just below the cost to build it. This means that new rental units targeted at households in the \$30,000 to \$50,000 bracket can only be developed if one or more of these conditions are true:

- The construction cost of the unit must be reduced.
- The rent has to be topped up by a subsidy.
- The land must be free or very low value<sup>4</sup>.
- The housing developer is content to earn a project management fee and the investor is content to earn a relatively low return on investment, but they are not compensated for risk to the extent the private sector normally expects.

If this sounds like public sector or non-profit housing, it is because these conditions are typical of this form of housing.

<sup>4</sup> In many parts of Metro Vancouver, the main financial challenge for rental housing is high land values supported by market strata residential. A major element in a rental housing strategy, therefore, must be finding ways to reduce land cost. There are only two ways to do this: make land available at less than market value (which public sector and non-profit agencies could do) or use rezoning to create the capacity (density) for rental housing. Appendix 1 contains more information about these approaches.

This tells us that there is a segment of the rental housing market with modest incomes whose needs are highly unlikely to be met by private sector rental housing developers without some form of assistance or intervention.

The second challenge is that at the lower end of the regional land market (represented by Surrey in this example), even full market rents are not high enough to support new high density concrete purpose-built rental housing. The value of the unit at market rent is lower than construction cost before any allowance for land or profit. The numbers are better for wood frame units (which cost less per square foot than concrete units), with the value of the market rental unit just covering construction cost, but wood frame projects achieve much lower density than concrete. Wood frame, mixed use projects (retail at grade, residential above) in the 4 to 6 storey range can achieve density of say FSR 2.5 to at most 3.5, whereas concrete projects can achieve much more than that. In areas with relatively low land values, the main avenue for supporting new rental housing will involve reducing construction cost. Land must be available at low (or no cost), but this is easier to achieve in these areas because land value is low.

The third challenge is the spread between the value of a strata unit and the value of a purpose-built market rental unit. Looking at the Coquitlam part of the concrete graph (Exhibit 1), a new purpose built rental unit at market rent has a value that is just a hair over construction cost. But the strata unit in Coquitlam supports an additional \$200 per square foot or so of value. This extra value covers land and profit. Looking at the Vancouver part of the graph, the market rental unit provides \$300 or so of value above the construction cost, so there is room for land cost and profit, which is good news in terms of the financial performance of the project. But, the strata unit adds another \$300 per square foot of value or so onto that. Where the spread between condo value and rental is large, it is not enough to just reduce the construction cost of the rental unit; it is also necessary to get the land value down to where it is affordable for a rental housing project.

Exhibit 2 offers some good news. For wood frame units, the spread between the value of a strata unit and the value of a market rental unit is less than the concrete situation. Because the gap is smaller, it takes less adjustment to costs or land values to make market rental work. However, as noted already the achievable density in wood frame is lower than the densities allowed at most rapid transit station areas being redeveloped as high density mixed use neighbourhoods.

This suggest that facilitating market rental or affordable rental will be financially easier in medium density neighbourhoods rather than high density neighbourhoods.

## 5.0 Case Study Analysis

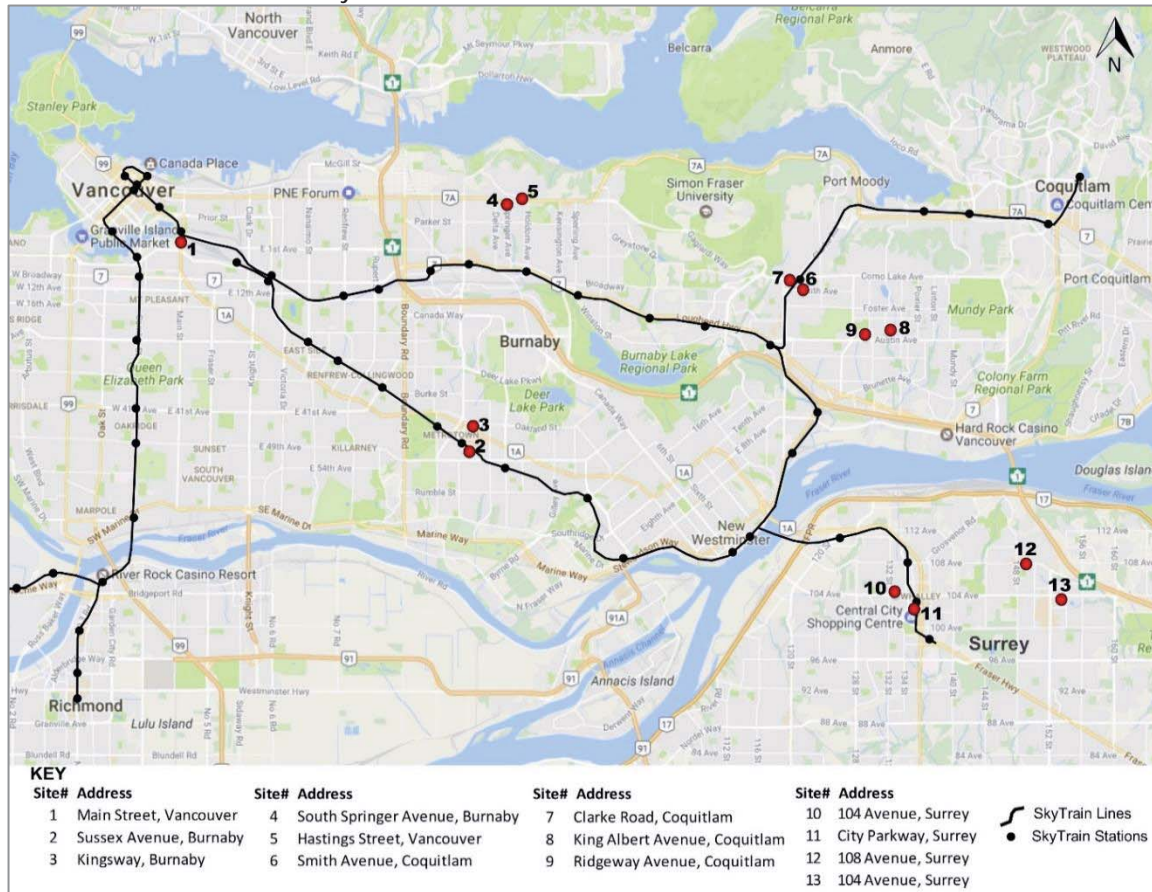
The case study sites were chosen to illustrate a broad range of circumstances across Metro Vancouver.

The criteria used for site selection were:

- **Market Diversity.** Broadly speaking, Metro Vancouver can be divided into housing market subareas based on price (sales price of new units, rent rates for new units, and residential land values). The high end of the market includes Vancouver (particularly the west side) and West Vancouver; the upper middle includes North Vancouver, Burnaby, and Richmond; the lower middle includes Coquitlam; and the low end of the market includes North Surrey, and Langley. Four subareas were selected to illustrate a range: Vancouver (Main Street area), Burnaby, Coquitlam, and North Surrey.
- **Existing Use.** The financial viability of residential redevelopment depends in part whether redevelopment supports enough land value that a developer can afford to acquire the property and demolish the existing use. The case study sites include older, low density commercial properties and older, low density rental housing properties to see whether market redevelopment is even viable.
- **Transit.** Housing near good transit service can help with affordability if it enables households to reduce their transportation costs. However, if demand for housing in good transit locations is strong, market pricing (sale or rent) could be higher as a result. We tested sites near rapid transit stations and on locations with good bus service to see if there is much difference in the numbers.

Using these criteria, we chose 13 sites as shown below:

Exhibit 3: Location of Case Study Sites



For each case study site, we show:

- Basic information about the site.
- The market value of a new strata unit, a new market rental unit (if purchased by an investor), and the market value of an affordable rental unit (if purchased by an investor, with the obligation to maintain the affordable rent). The values for market rental and affordable rental units are calculated by capitalizing the net operating income at 4%. This approach means we do not need to make an assumption about the mix of equity or mortgage financing; we simply calculate how much an investor would pay for the unit, which can then be compared with the cost to create it. In Section 6.0 we explore the implications of assuming below market return on investment or below-market mortgage financing.
- The all-in construction cost for each type of unit
- Break-outs of components of construction cost (structured parking, interim financing, local government levies) that could be reduced by changed to regulations or by availability of financing on favourable terms.
- Profit (assuming a typical developer profit of 13% of revenue).

The most important direct comparisons to make for each case study are:

- The difference between value and all-in cost for each type of unit.



- The difference between strata, market rental, and affordable rental value, which illustrates the financial gap to be overcome.
- The parking, financing, local government levies, land, and profit values, as these show how much financial “room” is taken up by these components.

The case study analysis for each site is summarized on the following pages. Appendix 2 contains samples of the pro forma analysis, for Site 2 (in Burnaby), to illustrate how the analysis is structured. The full set of pro formas for all case study sites is in the separate Technical Appendix.

Each case study is summarized on a standardized sheet. The outcomes of the case studies, however, are best seen as patterns rather than site-specific conclusions, so following the case study summaries we outline the main implications.

**Exhibit 4: Summary of Analysis for Each Case Study Site**

**Site 1**

**Location:** Vancouver East, False Creek Flats along Main Street  
**Site Size:** 52,272 sq. ft.  
**Existing Use:** Older low density commercial building  
**Assessed Value:** \$12,000,000  
**Zoning:** Zoned FC-1 which allows mixed-use commercial, residential, and industrial uses up to 5.0 FSR

**Financial Summary:**

Summary of Analysis	Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
			Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1 Concrete Strata Residential	160	\$53,488,772	\$1,100	\$555	\$53	\$21	\$24	\$143	\$401
2a Market Rental Concrete	205	\$29,090,649	\$807	\$483	\$37	\$19	\$24	\$105	\$218
2b Market Rental Wood Frame	138	\$29,132,053	\$815	\$381	\$33	\$12	\$24	\$106	\$328
3a Affordable Rental Concrete	205	-\$21,404,022	\$302	\$423	\$37	\$19	\$24	n/a	n/a
3b Affordable Rental Wood Frame	138	-\$5,310,326	\$304	\$324	\$33	\$12	\$24	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>5</sup>
Studio	\$1,550	\$800
1 Bedroom	\$1,850	\$800
2 Bedroom	\$2,700	\$1,333
3 Bedroom	\$2,900	\$1,333

<sup>5</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

**Site 2**

**Location:** Burnaby, Metrotown area on Sussex Avenue  
**Site Size:** 57,065 sq. ft.  
**Existing Use:** Older low density rental apartment buildings  
**Assessed Value:** \$23,413,600  
**Zoning:** Zoned C-3 which allows commercial use up to 6.0 FSR. Designated high density multifamily residential with some commercial in the OCP, which allows up residential of 6.3 FSR (5.0 FSR max for residential)

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Concrete Strata Residential	300	\$63,447,947	\$875	\$499	\$61	\$19	\$6	\$114	\$262
2a	Market Rental Concrete	355	\$21,765,947	\$638	\$465	\$73	\$19	\$6	\$83	\$90
2b	Market Rental Wood Frame	142	\$18,389,318	\$609	\$340	\$56	\$11	\$6	\$79	\$190
3a	Affordable Rental Concrete	355	-\$44,702,554	\$273	\$422	\$73	\$19	\$6	n/a	n/a
3b	Affordable Rental Wood Frame	142	-\$6,357,531	\$273	\$303	\$56	\$11	\$6	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>6</sup>
Studio	\$1,300	\$800
1 Bedroom	\$1,500	\$800
2 Bedroom	\$2,150	\$1,333
3 Bedroom	\$2,450	\$1,333

<sup>6</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

**Site 3**

**Location:** Burnaby, Metrotown area on Kingsway  
**Site Size:** 28,643 sq. ft.  
**Existing Use:** Older low density commercial buildings  
**Assessed Value:** \$9,297,000  
**Zoning:** Zoned RM-3 which allows multi-family use up to 1.5 FSR. Designated RM5s in the OCP, which allows mixed-use development up to 11.0 FSR

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Concrete Strata Residential	150	\$31,735,504	\$875	\$500	\$61	\$19	\$6	\$114	\$261
2a	Market Rental Concrete	180	\$8,705,935	\$616	\$464	\$73	\$20	\$6	\$80	\$72
2b	Market Rental Wood Frame	72	\$9,367,314	\$616	\$343	\$57	\$11	\$6	\$80	\$192
3a	Affordable Rental Concrete	180	-\$22,326,831	\$276	\$424	\$73	\$20	\$6	n/a	n/a
3b	Affordable Rental Wood Frame	72	-\$3,179,371	\$277	\$306	\$57	\$11	\$6	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>7</sup>
Studio	\$1,300	\$800
1 Bedroom	\$1,500	\$800
2 Bedroom	\$2,150	\$1,333
3 Bedroom	\$2,450	\$1,333

<sup>7</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

**Site 4**

**Location:** Burnaby, Hastings area on Springer Avenue  
**Site Size:** 13,376 sq. ft.  
**Existing Use:** Older low density rental apartment building  
**Assessed Value:** \$3,497,000  
**Zoning:** Zoned RM-3s which allows medium density apartment residential up to 1.5 FSR. Designated Medium Density Apartment Residential in the OCP. Assume 1.5 FSR is achievable.

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Wood Frame Strata Residential	21	\$3,468,165	\$650	\$362	\$47	\$11	\$6	\$85	\$203
2a	Market Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2b	Market Rental Wood Frame	25	\$2,312,298	\$559	\$345	\$57	\$11	\$7	\$73	\$141
3a	Affordable Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3b	Affordable Rental Wood Frame	25	-\$1,286,491	\$274	\$314	\$57	\$11	\$7	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>8</sup>
Studio	\$1,300	\$800
1 Bedroom	\$1,500	\$800
2 Bedroom	\$2,150	\$1,333
3 Bedroom	\$2,450	\$1,333

<sup>8</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

**Site 5**

**Location:** Burnaby, Hastings area on Hastings Street  
**Site Size:** 13,376 sq. ft.  
**Existing Use:** Older low density commercial building and used vehicle sales lot  
**Assessed Value:** \$5,285,000  
**Zoning:** Zoned C-4 which allows auto-oriented commercial use up to 1.0 FSR. Designated Medium Density Apartment Residential in the OCP. Assume 1.5 FSR is achievable.

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Strata Residential	21	\$4,596,615	\$650	\$357	\$47	\$11	\$6	\$85	\$208
2a	Market Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2b	Market Rental Wood Frame	25	\$3,167,467	\$650	\$345	\$57	\$11	\$7	\$73	\$143
3a	Affordable Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3b	Affordable Rental Wood Frame	25	-\$1,531,526	\$278	\$311	\$57	\$11	\$7	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable
Studio	\$1,300	\$800
1 Bedroom	\$1,500	\$800
2 Bedroom	\$2,150	\$1,333
3 Bedroom	\$2,450	\$1,333

**Site 6**

**Location:** Coquitlam, Burquitlam area on Smith Avenue  
**Site Size:** 122,404 sq. ft.  
**Existing Use:** Older low density rental apartment building  
**Assessed Value:** \$26,157,000  
**Zoning:** Zoned RM-2 which allows medium density apartment residential up to 1.4 FSR. Designated Medium Density Apartment Residential in the OCP. Assume 4.0 FSR is achievable based on RM-6 Zoning

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Concrete Strata Residential	520	\$53,522,256	\$700	\$480	\$76	\$27	\$15	\$91	\$129
2a	Market Rental Concrete	615	-\$858,672	\$518	\$453	\$90	\$27	\$15	n/a	n/a
2b	Market Rental Wood Frame	305	\$23,721,897	\$515	\$334	\$69	\$16	\$15	\$67	\$114
3a	Affordable Rental Concrete	615	-\$71,565,770	\$286	\$421	\$90	\$27	\$15	n/a	n/a
3b	Affordable Rental Wood Frame	305	-\$11,825,962	\$284	\$304	\$69	\$16	\$15	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>9</sup>
Studio	\$1,250	\$800
1 Bedroom	\$1,550	\$800
2 Bedroom	\$1,850	\$1,333
3 Bedroom	\$2,200	\$1,333

<sup>9</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

**Site 7**

**Location:** Coquitlam, Burquitlam area on Clarke Road  
**Site Size:** 46,650 sq. ft.  
**Existing Use:** Older low density commercial building  
**Assessed Value:** \$13,457,200  
**Zoning:** Zoned C-2 which allows 1.05 FSR of Commercial. Designated in the OCP for C-7 Transit Village Commercial, which allows mixed-use development up to 4.5 FSR

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Concrete Strata Residential	210	\$23,396,068	\$692	\$471	\$78	\$19	\$14	\$90	\$130
2a	Market Rental Concrete	250	\$1,119,865	\$524	\$449	\$91	\$19	\$16	\$68	\$6
2b	Market Rental Wood Frame	131	\$11,335,865	\$521	\$340	\$71	\$11	\$16	\$68	\$113
3a	Affordable Rental Concrete	250	-\$28,362,552	\$305	\$423	\$91	\$19	\$16	n/a	n/a
3b	Affordable Rental Wood Frame	131	-\$4,236,527	\$292	\$315	\$71	\$11	\$16	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>10</sup>
Studio	\$1,250	\$800
1 Bedroom	\$1,550	\$800
2 Bedroom	\$1,850	\$1,333
3 Bedroom	\$2,200	\$1,333

<sup>10</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).



**Site 8**

**Location:** Coquitlam, Austin Heights Area on King Albert Avenue  
**Site Size:** 43,560 sq. ft.  
**Existing Use:** Older low density rental apartment building  
**Assessed Value:** \$8,207,000  
**Zoning:** Zoned RM-2 which allows medium density apartment residential up to 1.4 FSR. Designated Medium Density Apartment Residential in the OCP. Assume 1.85 FSR is achievable based on RM-3 Zoning

**Financial Summary:**

Summary of Analysis	Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
			Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1 Strata Residential	85	\$9,493,314	\$550	\$340	\$65	\$11	\$15	\$72	\$139
2a Market Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2b Market Rental Wood Frame	101	\$7,807,784	\$519	\$338	\$78	\$11	\$15	\$72	\$114
3a Affordable Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3b Affordable Rental Wood Frame	101	-\$4,226,614	\$288	\$312	\$78	\$11	\$15	\$38	-\$62

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable
Studio	\$1,250	\$800
1 Bedroom	\$1,550	\$800
2 Bedroom	\$1,850	\$1,333
3 Bedroom	\$2,200	\$1,333

**Site 9**

**Location:** Coquitlam, Austin Heights area on Ridgeway Avenue  
**Site Size:** 18,600 sq. ft.  
**Existing Use:** Older low density commercial building  
**Assessed Value:** \$2,077,900  
**Zoning:** Zoned P-1 which allows civic uses up to 2.5 FSR. Designated Neighbourhood Centre in the OCP, which allows mixed-use development up to 4.0 FSR

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Concrete Strata Residential	74	\$7,444,871	\$691	\$484	\$86	\$20	\$14	\$90	\$117
2a	Market Rental Concrete	86	-\$875,570	\$510	\$458	\$99	\$20	\$16	n/a	n/a
2b	Market Rental Wood Frame	52	\$4,100,706	\$515	\$350	\$77	\$12	\$16	\$67	\$98
3a	Affordable Rental Concrete	86	-\$10,793,516	\$273	\$430	\$99	\$20	\$16	n/a	n/a
3b	Affordable Rental Wood Frame	52	-\$2,089,348	\$313	\$327	\$77	\$12	\$16	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>11</sup>
Studio	\$1,250	\$800
1 Bedroom	\$1,550	\$800
2 Bedroom	\$1,850	\$1,333
3 Bedroom	\$2,200	\$1,333

<sup>11</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

**Site 10**

**Location:** Surrey, City Centre area along 104 Avenue  
**Site Size:** 61,420 sq. ft.  
**Existing Use:** Older lowrise rental apartment building  
**Assessed Value:** \$7,315,000  
**Zoning:** Zoned RM-45, which allows residential up to 1.3 FAR. Designated Multiple Residential which allows mid to highrise residential up to 3.5 FAR

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Strata Residential	195	\$7,514,504	\$538	\$428	\$65	-\$51	\$16	\$70	\$40
2a	Market Rental Concrete	225	-\$11,876,587	\$388	\$402	\$72	\$18	\$19	n/a	n/a
2b	Market Rental Wood Frame	113	\$2,352,122	\$401	\$327	\$65	\$11	\$21	\$52	\$22
3a	Affordable Rental Concrete	225	-\$22,900,186	\$309	\$392	\$72	\$18	\$19	n/a	n/a
3b	Affordable Rental Wood Frame	113	-\$3,248,707	\$333	\$320	\$65	\$11	\$21	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable
Studio	\$1,000	\$800
1 Bedroom	\$1,200	\$800
2 Bedroom	\$1,450	\$1,333
3 Bedroom	\$1,750	\$1,333

**Site 11a**

**Location:** Surrey, City Centre area along City Parkway  
**Site Size:** 44,960 sq. ft.  
**Existing Use:** Older low density commercial building  
**Assessed Value:** \$8,642,200  
**Zoning:** Zoned C-8, which allows 0.8 FAR of commercial. Designated as Central Business District in the OCP, which allows mixed-use up to 7.5 FAR

**Financial Summary:**

Summary of Analysis	Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace							
			Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value	
1 Strata Residential	335	\$5,677,143	\$544	\$454	\$88	\$19	\$16	\$71	\$20	
2a Market Rental Concrete	385	-\$22,799,745	\$380	\$410	\$81	\$18	\$18	n/a	n/a	
2b Market Rental Wood Frame	110	\$1,830,722	\$395	\$325	\$69	\$11	\$20	\$52	\$19	
3a Affordable Rental Concrete	385	-\$41,658,457	\$293	\$399	\$81	\$18	\$18	n/a	n/a	
3b Affordable Rental Wood Frame	110	-\$3,630,148	\$322	\$317	\$69	\$11	\$20	n/a	n/a	

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable
Studio	\$1,000	\$800
1 Bedroom	\$1,200	\$800
2 Bedroom	\$1,450	\$1,333
3 Bedroom	\$1,750	\$1,333

**Site 11b**

**Location:** Surrey, City Centre area along City Parkway  
**Site Size:** 44,960 sq. ft.  
**Existing Use:** Older low density commercial building  
**Assessed Value:** \$8,642,200  
**Zoning:** Zoned C-8, which allows 0.8 FAR of commercial. Designated as Central Business District in the OCP, which allows mixed-use up to 7.5 FAR

**Financial Summary:**

Summary of Analysis	Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
			Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1 Strata Residential	335	\$12,529,733	\$550	\$431	\$68	\$18	\$17	\$72	\$47
2a Market Rental Concrete	385	-\$21,215,195	\$373	\$403	\$78	\$18	\$17	n/a	n/a
2b Market Rental Wood Frame	110	\$2,631,442	\$373	\$290	\$60	\$10	\$17	\$49	\$34
3a Affordable Rental Concrete	385	-\$40,073,906	\$279	\$392	\$78	\$18	\$17	n/a	n/a
3b Affordable Rental Wood Frame	110	-\$2,829,428	\$279	\$279	\$60	\$10	\$17	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable
Studio	\$1,000	\$800
1 Bedroom	\$1,200	\$800
2 Bedroom	\$1,450	\$1,333
3 Bedroom	\$1,750	\$1,333

**Site 12**

**Location:** Surrey, Guildford area along 108 Avenue  
**Site Size:** 191,228 sq. ft.  
**Existing Use:** Older lowrise rental apartment building  
**Assessed Value:** \$10,771,000  
**Zoning:** Zoned RM-45, which allows residential up to 1.3 FAR. Designated Urban Centre Multiple Residential which allows low to midrise residential up to 2.0 FAR

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Strata Residential	405	\$18,006,622	\$425	\$314	\$65	\$13	\$17	\$55	\$55
2a	Market Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2b	Market Rental Wood Frame	467	\$6,170,619	\$376	\$308	\$75	\$13	\$17	\$49	\$19
3a	Affordable Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3b	Affordable Rental Wood Frame	467	-\$16,710,362	\$282	\$297	\$75	\$13	\$17	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable
Studio	\$1,000	\$800
1 Bedroom	\$1,200	\$800
2 Bedroom	\$1,450	\$1,333
3 Bedroom	\$1,750	\$1,333

**Site 13**

**Location:** Surrey, Guildford area along 104 Avenue  
**Site Size:** 153,331 sq. ft.  
**Existing Use:** Older low density commercial building  
**Assessed Value:** \$11,687,500  
**Zoning:** Zoned CHI Highway Commercial, which allows 1.0 FAR of commercial uses. Designated for Town Centre in the OCP, which allows 2.5 FAR of mixed-use development

**Financial Summary:**

Summary of Analysis		Number of Units	Total Supportable Land Value	\$ psf of net saleable/rentable residential floorspace						
				Residential Unit Value	All In Costs	Parking Cost	Interim Financing	Local Government Levies	Profit	Land Value
1	Wood Frame Strata Residential	405	\$17,099,973	\$425	\$317	\$65	\$16	\$17	\$55	\$52
2a	Market Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2b	Market Rental Wood Frame	470	\$5,616,735	\$378	\$311	\$76	\$16	\$17	\$49	\$17
3a	Affordable Rental Concrete	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3b	Affordable Rental Wood Frame	470	-\$17,136,392	\$283	\$299	\$76	\$16	\$17	n/a	n/a

**Rental Rates:**

Summary of Rental Rates (per month)	Market	Affordable <sup>12</sup>
Studio	\$1,000	\$800
1 Bedroom	\$1,200	\$800
2 Bedroom	\$1,450	\$1,333
3 Bedroom	\$1,750	\$1,333

<sup>12</sup> Household income of \$30,000 per year is assumed to support a rent of \$800 per month for a Studio or 1 Bedroom (annual rent of \$9,600 or 32% of income). Household income of \$50,000 per year supports a rent of \$1,333 per month for a 2+ Bedroom unit (also 32% of income).

We now summarize the implications of these case studies.

**Is Affordable Rental Housing Financially Viable?**

All of the case studies show that concrete rental is not viable at the assumed affordable rents. In all cases, the units cost more than they are worth, from a private sector perspective. This is not an issue of land value or profit. The rents simply don't support construction cost. To get to the point at which the value is equal to the cost, costs must be reduced by \$100 to \$150 per square foot, land must be free, and there is no room for developer profit.

In all cases, a significant reduction in parking, elimination of municipal fees, and elimination of interim financing costs would not be enough to achieve the target savings of \$100 to \$150 per square foot.

So, concrete affordable rent will only work with significant subsidy of some form.

Where tested, affordable rental housing in wood frame buildings is also not viable. The gap is smaller, though. Reducing parking, interim financing, and municipal fees can make up the gap between cost and value and create small contributions to land and profit (but certainly not at market values).

Affordable rental, therefore, could be achieved using the following approaches to cost reduction:

- Consider sites that are suitable for wood frame density, not concrete density, because land values are lower and construction costs (per square foot) are lower (and can be reduced by lowering parking or fees). This probably means choosing sites on transit corridors other than at rapid transit stations, as much of the developable land near rapid transit stations has been designated for higher density than is achievable in wood frame construction.
- For wood frame projects, make development density available via rezoning at low cost (e.g. density bonusing that provides additional density without a CAC if the density is used for purpose built rental) and explore ways to reduce construction cost such as reduced parking, reduced municipal fees, and reduced interim financing costs. For example, a site zoned for FAR 1.5 could be allowed to go to FAR 2.5 if the extra density is used for affordable rental. The table below shows how the numbers could be improved for a wood frame project in Burnaby (Hastings) and Coquitlam (Austin Road).

	<b>Burnaby</b>	<b>Coquitlam</b>
Value of wood frame affordable rental unit	\$274	\$288
Cost of wood frame affordable rental unit	\$314 (no land or profit)	\$312 (no land or profit)
Gap	\$40	\$24
Reduction in parking cost due to reduced ratio	\$20	\$20
Elimination of interim finance fee	\$11	\$11
Elimination of local fees	\$7	\$15
Net	Approximately breakeven, so the project works if no land cost or profit.	+\$22 (so not all cost reductions are needed or a contribution to land value is possible)

**Is Market Rental Viable?**

In Vancouver, Burnaby, and Coquitlam, market rental in concrete and wood frame buildings supports enough value to cover all costs, generate a profit, and support some land value, but the land value is not equal to



market value (although it is much closer for wood frame). In these locations, the simplest way to facilitate new market rental housing is to reduce construction cost and provide density at a rate that is less than land value. In Metrotown for example, we estimate that market rental supports a land value of about \$90 per square foot buildable whereas market strata supports land value of \$260+. So, if bonus density for market rental is made available at \$90 per square foot or less, market rental is viable. This means less room for CAC than if the bonus density is made available for strata, but it yields market rental housing. This approach works in Vancouver, Burnaby, and Coquitlam. It does not work in Surrey because market rental in concrete buildings is not viable even if land is free.

So, in parts of the region where market rental in concrete is viable and supports some land value (albeit less than market value for strata), a straightforward solution is to make bonus density available at a cost that can be absorbed. In parts of the region where market rental in concrete is not viable, then the main approach must be reduction in construction cost.

Market rental in wood frame construction supports a land value and developer profit in Vancouver, Burnaby, and Coquitlam but not Surrey. The supported land values are less than for strata, but the gap is much lower than for concrete.

### **What is The Role of Transit?**

Our research shows that market prices for strata units and rental units within a given submarket vary significantly based on whether the units are concrete or wood frame but do not vary much (i.e. at most 5% in some cases and as little as 0% in others) based on the degree of transit service. One might expect that rents and sales prices would be lower in locations that have “less” transit service (e.g. bus only versus rapid transit). We think there are two main reasons why there are not significant differences:

- In Metro, most higher density neighbourhoods have a good level of transit service largely because the locations chosen for higher density tend to be (or become) well served. There are not many examples of higher density residential development with weak transit service. It is not that the market does not value transit service; the market generally appears to attach value to “good” service, whether it is by bus or rapid transit.
- The Metro rental market has a very low vacancy rate. This low vacancy contributes to upward pressure on rents in all segments of the rental market. It is possible that higher vacancy rates (resulting from significant increase in supply) would lead to more price differentiation based on factors such as level of transit service.

One financial challenge for new rental housing is that rapid transit locations in Metro have generally been designated for high densities that can only be achieved in concrete construction. This can work where market rents are high enough to support the cost of concrete (provided the cost of land can be made affordable), but it does not work in places like Surrey or Langley where market rents do not support the cost of concrete construction even if land is free. In these markets, the best prospects for rental may be in locations designated for medium density in wood frame buildings.

## 6.0 The Role of Mortgage Financing or Reduced Return on Investment

The previous section looks for ways to reduce the total creation cost of new rental housing, to see whether reduced construction costs or land cost can make the difference.

There is a completely different way that the playing field can be tilted to favour rental housing construction, based on the cost of capital:

- If long term mortgage financing is available at a low enough rate, projects could be financially viable even without major reductions in creation cost. The question of course is how low the mortgage rate must be.
- Or, if investors in rental housing are willing to accept lower rates of return, projects could be financially viable without cost reductions. Private investors would not normally accept a lower return than they can make in comparable real estate investments, so the implication is that a government, non-profit, or social-purpose investor is willing to earn a return that is less than market (but still positive) to achieve some purpose built rental stock.

Testing the implications of reduced mortgage rate or reduced return on investment can be simplified by simply applying different below-market mortgage financing rates, on the assumption that an investor willing to put in capital at a below-market rate (and eventually recover the investment plus the return) is not really any different than a lender accepting a below-market mortgage rate, except that the investor may not require the recovery of the equity on the same amortized basis as a lender would. However, it could be argued that an investor willing to place funds at a below market rate would want to recover the equity gradually (rather than simply collecting interest and not recovering the equity until some future sale) because a program of subsidized investment would probably need to revolve the loan fund via amortized recovery.

We selected four case study sites (one each in Vancouver, Burnaby, Coquitlam, and Surrey) to test how lower cost of capital might affect the ability to construct viable rental housing.

For each case study, we use this method:

1. First, we estimate the creation cost of the rental housing project under four scenarios. From highest to lowest these scenarios are:
  - a. Full construction cost and profit plus land at full market value.
  - b. Full construction cost and profit plus land at reduced cost (chosen to equal the previously calculated supportable land value). This reduced cost could presumably be achieved by a non-profit or government land owner putting in land at less than market value or via a rezoning creating new bonus density at less than market value.
  - c. Full construction cost and profit with no land value.
  - d. Reduced construction cost (reduced parking, no interim financing fee), no profit, no land cost.
2. Then we calculate the maximum mortgage that is supportable based on the net operating income from the market rents. The mortgage is assumed to have a 35 year amortization, monthly payments, and interest rates in scenarios dropping from market (2.6%) in increments of half a percentage point. For this calculation, we are not considering the ratio of loan to value that results from the calculated supportable mortgage principle and we are not making any assumptions about equity. We assume that any equity

injected (if necessary to satisfy lender requirements) would earn the same return as the mortgage. We also note that even if land is put in the analysis at no cost (e.g. because the density is provided at no cost via bonus zoning or the land owner is a non-profit or government agency) it has market value that would be considered as equity by the lender for the purpose of calculating loan to value ratio. We also assume that 100% of net operating income is available for debt service.

3. We also calculate the maximum mortgage amount supportable based on net operating income from the assumed affordable rents, using the same interest rate scenarios as for market rents.
4. We then compare the project cost with the supportable mortgage at different interest rates. These comparisons are illustrated in graph which show the points at which the mortgage is enough to cover cost. We do the analysis for each of the sites once for concrete construction and once for wood frame.

The output for each site is shown on the following pages, which include charts with the actual numbers and a graph illustrating the results.

**Exhibit 5: Implications of Reduced Mortgage Rate or Reduced Return on Investment for Selected Case Study Sites**

**Site 1 (Vancouver, Main Street) Concrete**

**Scenario 1**

Market Value of Land	All in Construction Cost of Concrete Apartment Project	Total
\$53,488,772	\$64,421,202	\$117,909,974

**Scenario 2**

Residual Land Value of Concrete Rental Apartment	All in Construction Cost of Concrete Apartment Project	Total
\$29,090,649	\$64,421,202	\$93,511,851

**Scenario 3**

Pay Nothing for Land	All in Construction Cost of Concrete Apartment Project	Total
\$0	\$64,421,202	\$64,421,202

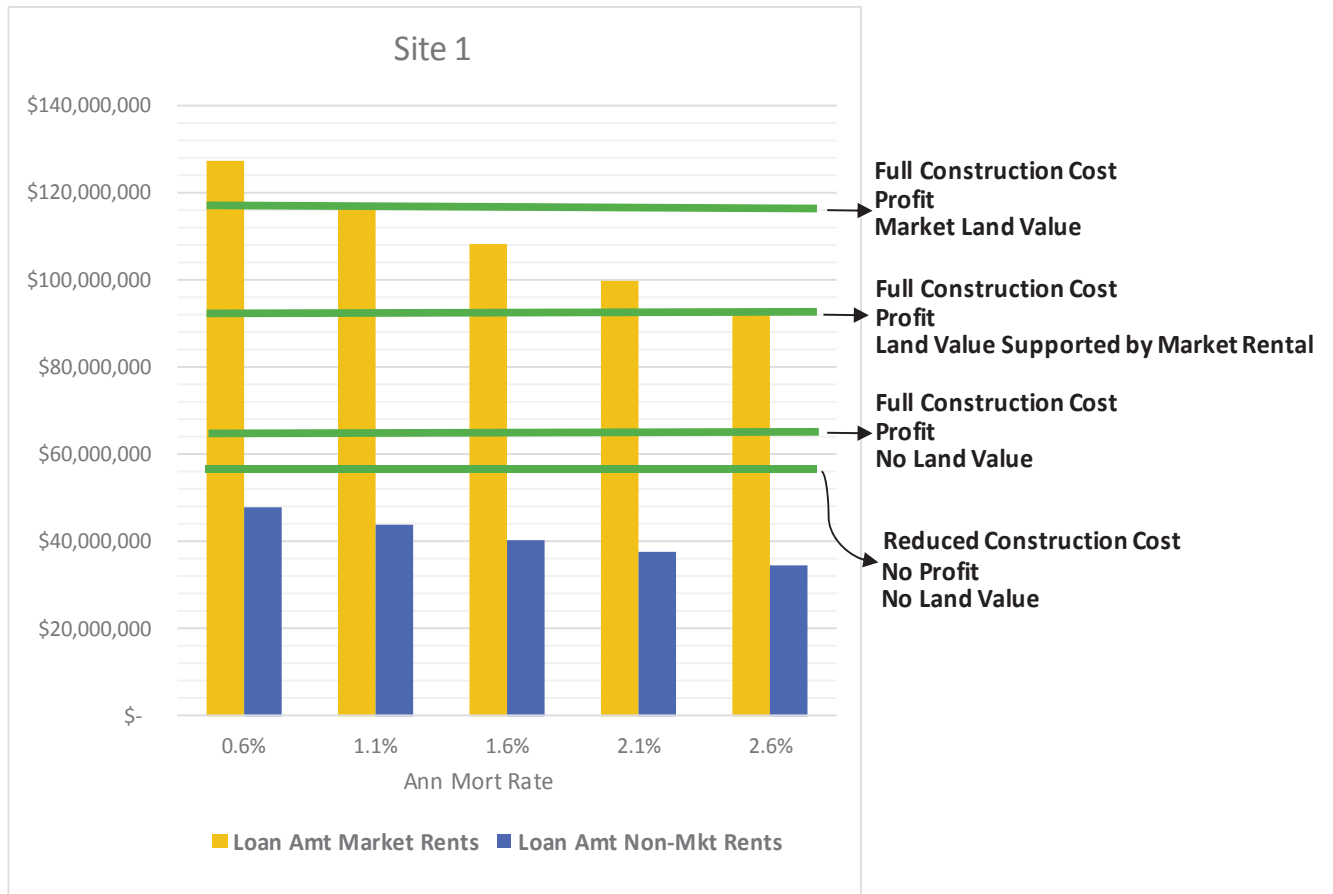
**Scenario 4**

Pay Nothing for Land	All in Cost Less Financing, Profit, Parking Reduced to 0.5 Spaces per Residential Unit	Total
\$0	\$59,679,971	\$59,679,971

NOI of Market Concrete Rental Apartment	
Annual	Monthly
\$4,032,537	\$336,044

NOI of Affordable Concrete Rental Apartment	
Annual	Monthly
\$1,508,788	\$125,732

Annual Mortgage Interest Rate	Max Loan Amount Based on NOI	
	Market Rents	Affordable Rents
2.6%	\$92,798,571	\$34,720,917
2.1%	\$100,029,598	\$37,426,432
1.6%	\$108,107,193	\$40,448,693
1.1%	\$117,149,264	\$43,831,816
0.6%	\$127,291,880	\$47,626,712



**Site 1 (Vancouver, Main Street) Wood**

**Scenario 1**

Market Value of Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$53,488,772	\$33,816,790	\$87,305,562

**Scenario 2**

Residual Land Value of Wood Frame Rental Apartment	All in Construction Cost of Wood Frame Apartment Project	Total
\$29,132,053	\$33,816,790	\$62,948,843

**Scenario 3**

Pay Nothing For Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$0	\$33,816,790	\$33,816,790

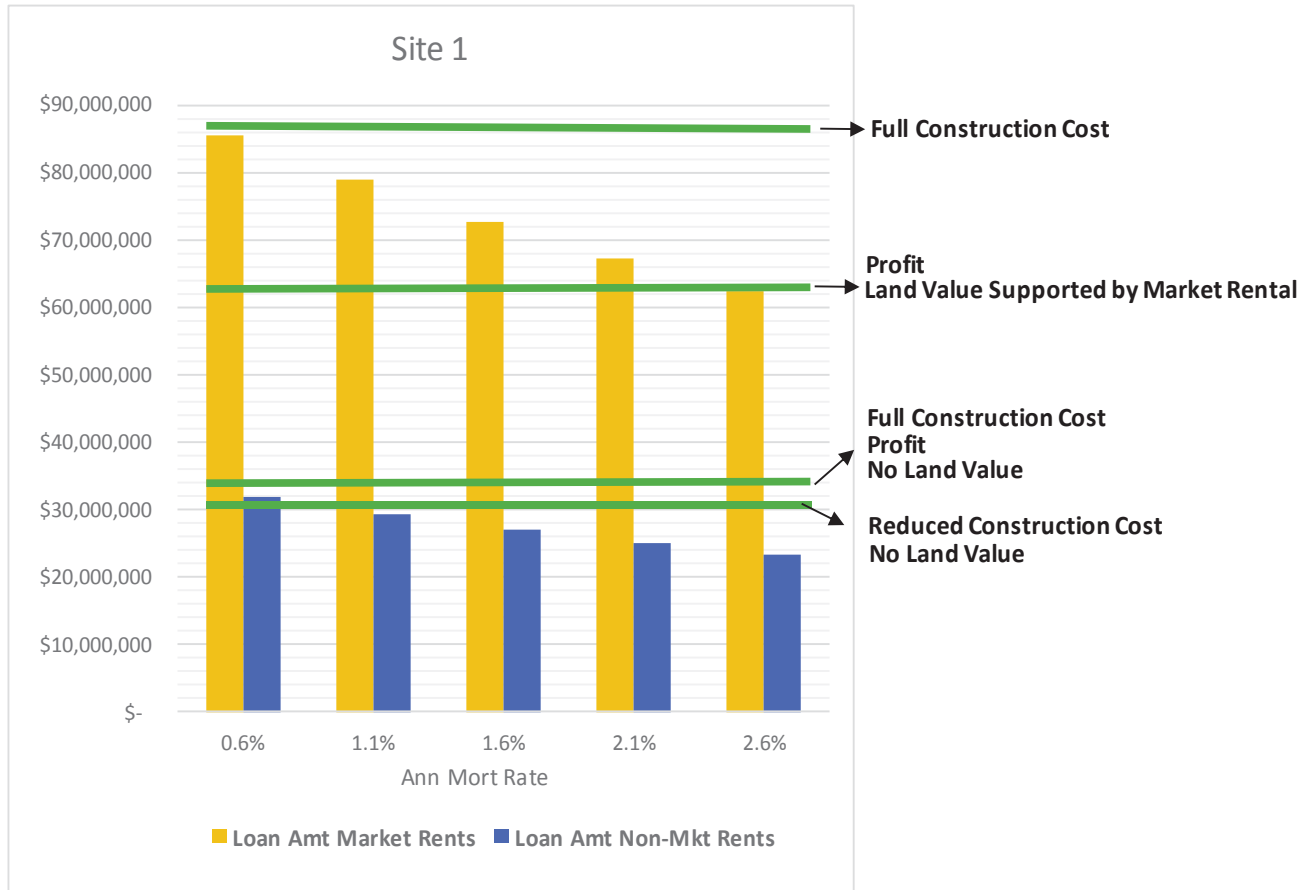
**Scenario 4**

Pay Nothing For Land	All in Cost Less Financing, Profit, Parking Reduced to 0.5 Spaces per Residential Unit	Total
\$0	\$31,156,134	\$31,156,134

NOI of Market Wood Frame Rental Apartment	
Annual	Monthly
\$2,714,560	\$226,213

NOI of Affordable Wood Frame Rental Apartment	
Annual	Monthly
\$1,013,392	\$84,449

Annual Interest Rate	Max Loan Amount Based on NOI	
	Market Rents	Affordable Rents
2.6%	\$62,468,689	\$23,320,629
2.1%	\$67,336,358	\$25,137,813
1.6%	\$72,773,907	\$27,167,743
1.1%	\$78,860,707	\$29,440,049
0.6%	\$85,688,354	\$31,988,926



**Site 3 (Burnaby, Metrotown) Concrete**

**Scenario 1**

Market Value of Land	All in Construction Cost of Concrete Apartment Project	Total
\$31,735,504	\$56,504,452	\$88,239,956

**Scenario 2**

Residual Land Value of Concrete Rental Apartment	All in Construction Cost of Concrete Apartment Project	Total
\$8,705,935	\$56,504,452	\$65,210,387

**Scenario 3**

Pay Nothing for Land	All in Construction Cost of Concrete Apartment Project	Total
\$0	\$56,504,452	\$56,504,452

**Scenario 4**

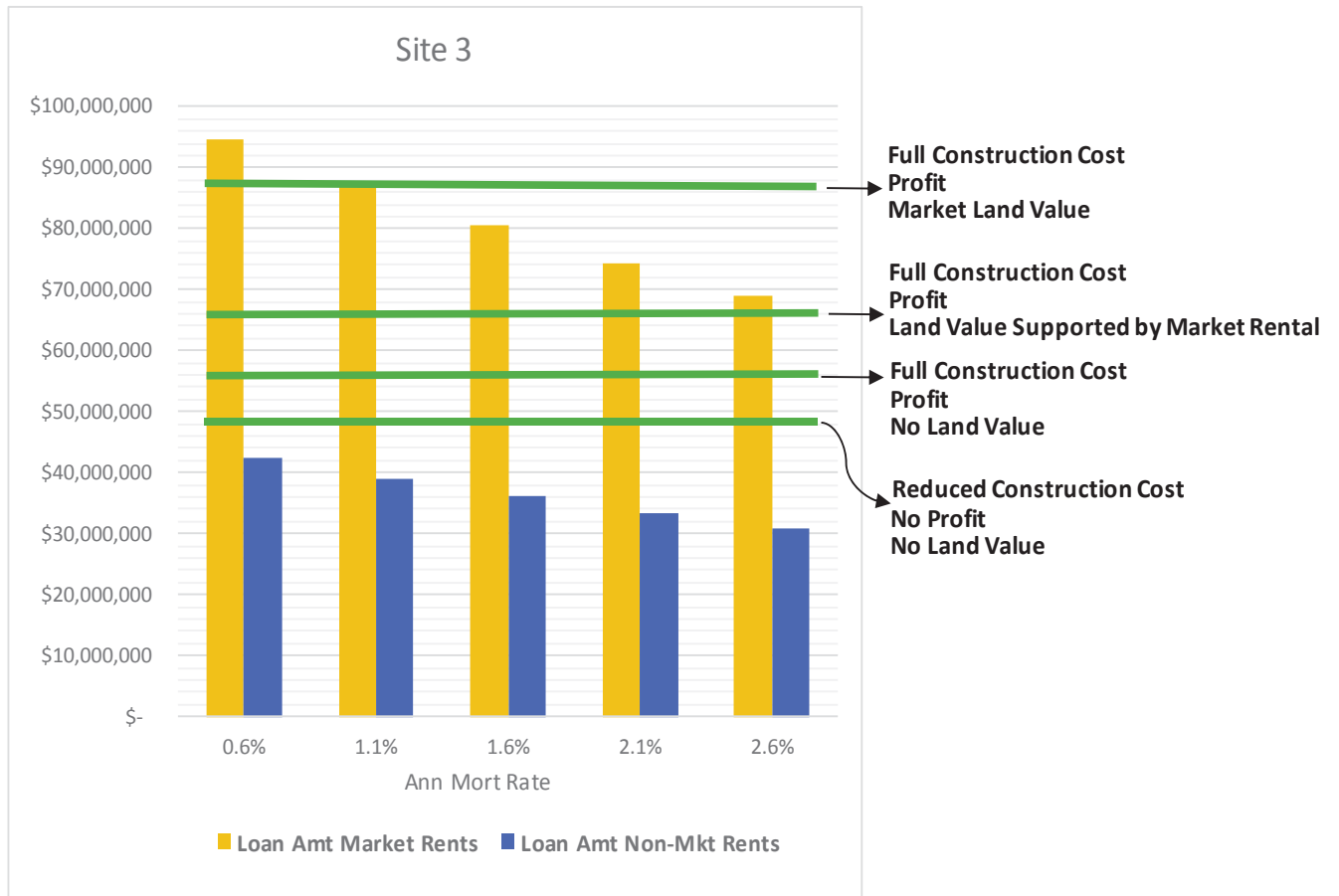
Pay Nothing for Land	All in cost less financing, profit, 0.5 space parking requirement	Total
\$0	\$48,340,533	\$48,340,533

NOI of Market Concrete Rental Apartment	
Annual	Monthly
\$2,999,558	\$249,963

NOI of Affordable Concrete Rental Apartment	
Annual	Monthly
\$1,345,122	\$112,094

Annual Mortgage Interest Rate	Max Loan Amount Based on NOI	
	Market Rents	Affordable Rents
2.6%	\$69,027,180	\$30,954,564
2.1%	\$74,405,899	\$33,366,598
1.6%	\$80,414,328	\$36,061,019
1.1%	\$87,140,171	\$39,077,158
0.6%	\$94,684,643	\$42,460,402





**Site 3 (Burnaby, Metrotown) Wood**

**Scenario 1**

Market Value of Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$31,735,504	\$16,715,051	\$48,450,555

**Scenario 2**

Residual Land Value of Wood Frame Rental Apartment	All in Construction Cost of Wood Frame Apartment Project	Total
\$9,367,314	\$16,715,051	\$26,082,365

**Scenario 3**

Pay Nothing for Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$0	\$16,715,051	\$16,715,051

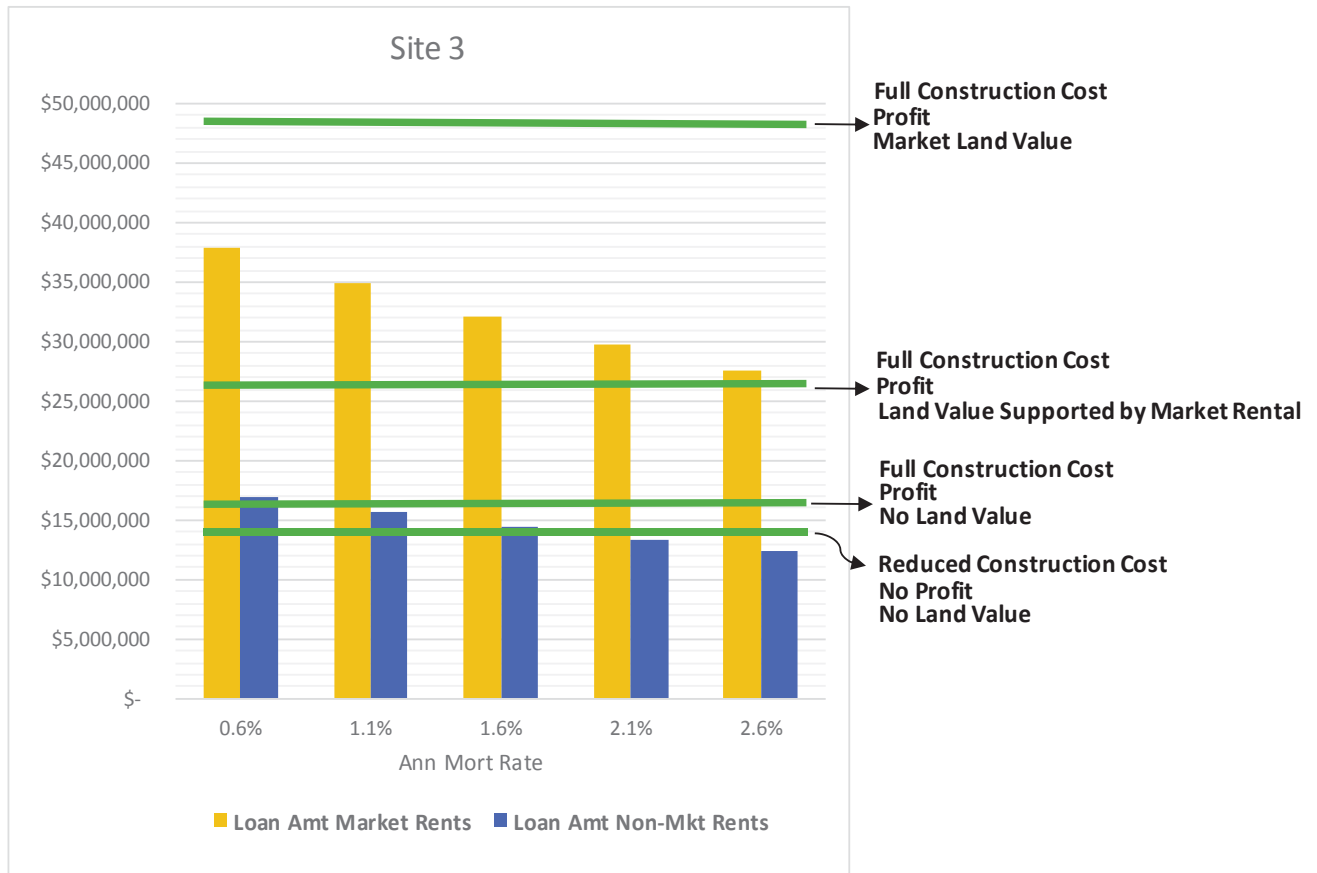
**Scenario 4**

Pay Nothing for Land	All in cost less financing, profit, 0.5 space parking requirement	Total
\$0	\$14,120,092	\$14,120,092

NOI of Market Wood Frame Rental Apartment	
Annual	Monthly
\$1,199,741	\$99,978

NOI of Affordable Wood Frame Rental Apartment	
Annual	Monthly
\$538,725	\$44,894

Annual Interest Rate	Max Loan Loan Amount	
	Market Rents	Affordable Rents
2.6%	\$27,608,978	\$12,397,381
2.1%	\$29,760,318	\$13,363,407
1.6%	\$32,163,524	\$14,442,529
1.1%	\$34,853,677	\$15,650,500
0.6%	\$37,871,259	\$17,005,498



**Site 7 (Coquitlam, Burquitlam) Concrete**

**Scenario 1**

Market Value of Land	All in Construction Cost of Concrete Apartment Project	Total
\$23,396,068	\$80,689,898	\$104,085,966

**Scenario 2**

Residual Land Value of Concrete Rental Apartment	All in Construction Cost of Concrete Apartment Project	Total
\$1,119,865	\$80,689,898	\$81,809,762

**Scenario 3**

Pay Nothing for Land	All in Construction Cost of Concrete Apartment Project	Total
\$0	\$80,689,898	\$80,689,898

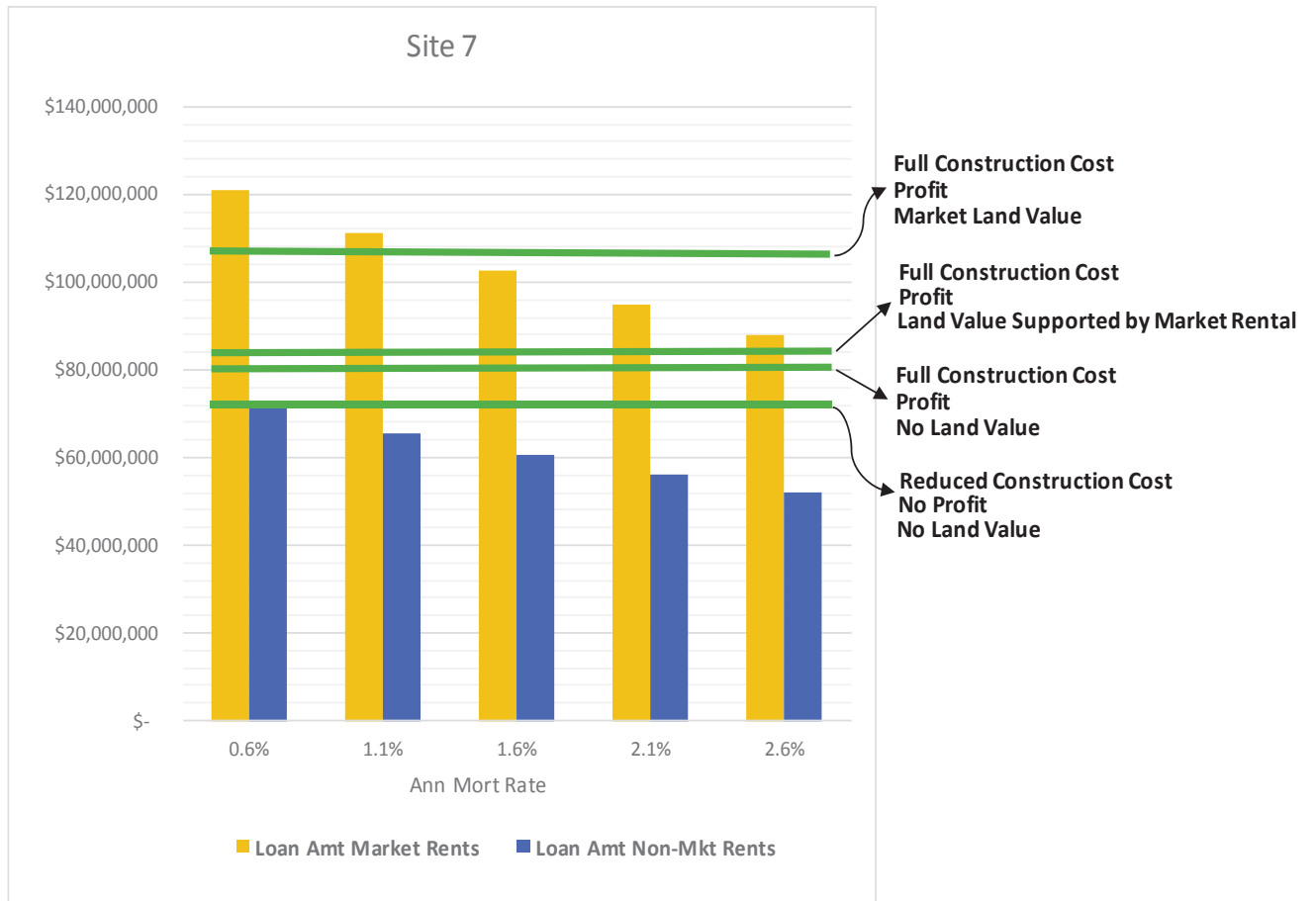
**Scenario 4**

Pay Nothing for Land	All in Cost Less Financing, Profit, Parking Reduced to 0.5 Spaces per Residential Unit	Total
\$0	\$66,482,327	\$66,482,327

NOI of Market Concrete Rental Apartment	
Annual	Monthly
\$3,826,251	\$318,854

NOI of Affordable Concrete Rental Apartment	
Annual	Monthly
\$2,254,469	\$187,872

Annual Mortgage Interest Rate	Max Loan Amount Based on NOI	
	Market Rents	Affordable Rents
2.6%	\$88,051,417	\$51,880,850
2.1%	\$94,912,538	\$55,923,497
1.6%	\$102,576,920	\$60,439,434
1.1%	\$111,156,440	\$65,494,580
0.6%	\$120,780,206	\$71,165,007



**Site 7 (Coquitlam, Burquitlam) Wood**

**Scenario 1**

Market Value of Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$23,396,068	\$34,113,391	\$57,509,459

**Scenario 2**

Residual Land Value of Wood Frame Rental Apartment	All in Construction Cost of Wood Frame Apartment Project	Total
\$11,335,865	\$34,113,391	\$45,449,256

**Scenario 3**

Pay Nothing For Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$0	\$34,113,391	\$34,113,391

**Scenario 4**

Pay Nothing For Land	All in Cost Less Financing, Profit, Parking Reduced to 0.5 Spaces per Residential Unit	Total
\$0	\$28,099,987	\$28,099,987

NOI of Market Wood Frame Rental Apartment	
Annual	Monthly
\$2,153,735	\$179,478

NOI of Affordable Wood Frame Rental Apartment	
Annual	Monthly
\$1,234,328	\$102,861

Annual Interest Rate	Max Loan Amount	
	Market Rents	Affordable Rents
2.6%	\$49,562,714	\$28,404,923
2.1%	\$53,424,728	\$30,618,284
1.6%	\$57,738,884	\$33,090,773
1.1%	\$62,568,156	\$35,858,481
0.6%	\$67,985,218	\$38,963,057



**Site 11a (Surrey, City Centre) Concrete**

**Scenario 1**

Market Value of Land	All in Construction Cost of Concrete Apartment Project	Total
\$5,677,143	\$118,337,580	\$124,014,722

**Scenario 2**

Residual Land Value of Concrete Rental Apartment	All in Construction Cost of Concrete Apartment Project	Total
\$0	\$118,337,580	\$118,337,580

**Scenario 3**

Pay Nothing for Land	All in Construction Cost of Concrete Apartment Project	Total
\$0	\$118,337,580	\$118,337,580

**Scenario 4**

Pay Nothing for Land	All in Cost Less Financing, Profit, Parking Reduced to 0.5 Spaces per Residential Unit	Total
\$0	\$100,972,608	\$100,972,608

NOI of Market Concrete Rental Apartment	
Annual	Monthly
\$4,546,726	\$378,894

NOI of Affordable Concrete Rental Apartment	
Annual	Monthly
\$3,539,098	\$294,925

Annual Mortgage Interest Rate	Max Loan Amount Based on NOI	
	Market Rents	Affordable Rents
2.6%	\$104,631,317	\$81,443,324
2.1%	\$112,784,372	\$87,789,530
1.6%	\$121,891,941	\$94,878,714
1.1%	\$132,086,967	\$102,814,357
0.6%	\$143,522,868	\$111,715,878





**Site 11a (Surrey, City Centre) Wood**

**Scenario 1**

Market Value of Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$5,677,143	\$31,771,341	\$37,448,483

**Scenario 2**

Residual Land Value of Wood Frame Rental Apartment	All in Construction Cost of Wood Frame Apartment Project	Total
\$1,830,722	\$31,771,341	\$33,605,742

**Scenario 3**

Pay Nothing For Land	All in Construction Cost of Wood Frame Apartment Project	Total
\$0	\$31,771,341	\$31,771,341

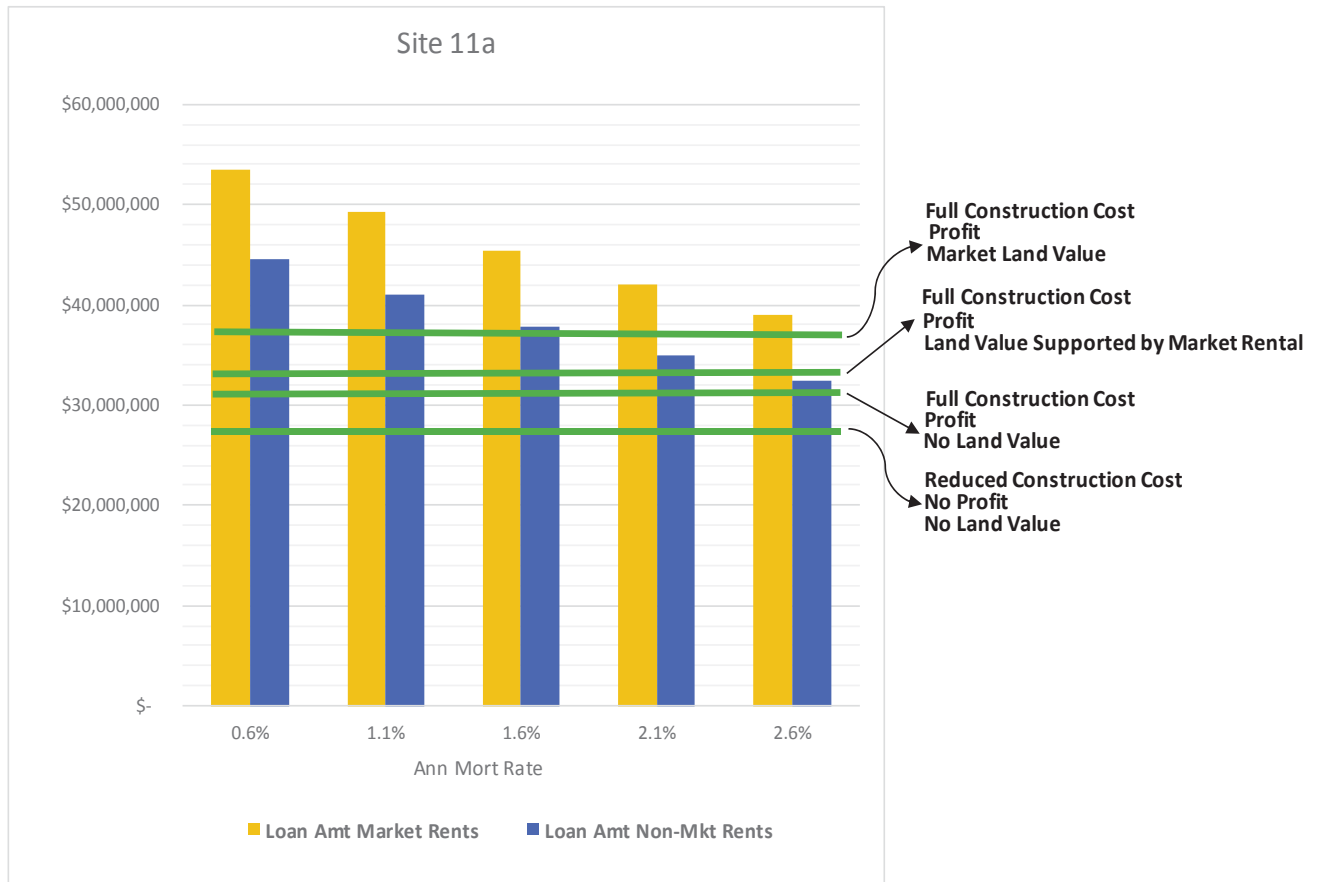
**Scenario 4**

Pay Nothing For Land	All in Cost Less Financing, Profit, Parking Reduced to 0.5 Spaces per Residential Unit	Total
\$0	\$27,538,507	\$27,538,507

NOI of Market Wood Frame Rental Apartment	
Annual	Monthly
\$1,696,630	\$141,386

NOI of Affordable Wood Frame Rental Apartment	
Annual	Monthly
\$1,411,594	\$117,633

Annual Interest Rate	Max Loan Amount	
	Market Rents	Affordable Rents
2.6%	\$39,043,625	\$32,484,238
2.1%	\$42,085,973	\$35,015,467
1.6%	\$45,484,502	\$37,843,037
1.1%	\$49,288,819	\$41,008,224
0.6%	\$53,556,175	\$44,558,657



The mortgage analysis supports these conclusions:

- Lower cost of capital can make market rental projects viable even if projects must pay for land and cannot achieve construction cost reductions.
- Lower cost of capital is not enough on its own to make affordable rental projects viable. These projects require a comprehensive approach including lower cost of capital, lower construction cost, and reduced (or eliminated) land cost. In cases where construction costs are particularly high, even more assistance is required.

## 7.0 Strategies for Supporting Creation of New Rental Housing

The case studies and the mortgage testing provide a variety of insights into how to support more rental housing development. There is no quick fix and there is no simple solution that works across the whole metropolitan area, mainly because of significant differences in housing market conditions.

The financial analysis also shows that there are many possible combinations of actions that can be considered. Reducing construction cost, taking land cost out of the picture, reducing the cost of capital...all of these can help to varying degrees in different parts of the region. In some places, shaving construction cost is enough to make rental housing attractive to the private sector. In other places, just lowering construction cost is not enough.

The analysis also shows that the prescription for making high density concrete construction work for rental housing is different than for wood frame. The kind of medicine is similar, but the dose is quite different.

Rents that are considered affordable don't even cover the cost of constructing new units in high density locations where concrete construction is needed to achieve target densities. Even in lower cost wood frame construction, delivering affordable rental units usually requires reducing construction cost, eliminating land value, eliminating profit, or making capital available at low rates.

Because of the diversity of market conditions and planning contexts across the region, there is not a single action plan that will be appropriate and effective everywhere.

So, we have elected to suggest possible directions for rental housing action that can be considered and applied by individual communities or stakeholders, depending on their situations and their objectives.

We have grouped these suggested directions into two categories:

- Strategies for market rental housing
- Strategies for affordable rental housing

### 7.1 Strategies for Market Rental Housing

#### **Reducing Construction Cost**

There are several straightforward ways to reduce the cost of new rental units without compromising their quality:

- Reduce requirements for structured parking. The cost savings associated with lower structured parking are significant. It is not necessary to eliminate all parking (a large part of the first level of underground parking is made up of excavation and foundation costs that would be absorbed anyway), but reducing requirements to eliminate extra levels of parking is a significant gain.
- Reduce municipal charges. Reductions in DCCs (DCLs in Vancouver) can help make market rental work. This change is not enough on its own, but in a package with other cost reductions can make projects work in some cases.
- Reduce construction financing costs. Typically, development projects require interim or bridge loans during construction. Once the project is complete, long term financing (typically a mortgage) is arranged

and the interim financing is paid out. As shown in the case studies, interest charges for construction financing are significant. Reducing these charges would mean that a lender is willing to tie up significant capital for 18 to 24 months, at less than market interest, with some risk. This could only be achieved if government is willing to make the funds available as a subsidy to rental housing construction or if a lender or investor is willing to absorb this short-term cost as part of a bundled overall lending strategy that includes a commitment for long term financing. In essence, the foregone interest on the construction loan could be folded into the long-term mortgage (either by increasing the principal or by a small increase in the long-term financing rate).

### **Encourage wood frame rental in medium density areas**

Wood frame construction costs less than concrete. Land values also tend to be lower in medium density areas than in high density areas (in terms of dollars per square foot of site). Consequently, the financial gap between market strata and market rental is lower in these areas.

This suggests there is value in encouraging market rental in locations other than very high density (concrete) neighbourhoods such as those generally found around rapid transit stations. Rental housing should have good access to transit (especially if costs are being reduced by lowered parking requirements), but this can be found in many Frequent Transit Network corridors with good bus service.

### **Reducing Rental Project Operating Costs**

We have not modelled this strategy, but there is one way that local governments can reduce the operating cost of rental housing projects. The Community Charter provides municipalities the ability to reduce property taxes using a Revitalization Tax Exemption Bylaw (Sec 226 of Community Charter). Reduced operating cost means that rents could be somewhat lower than they otherwise would have been or means that more of the gross rental income is available to put toward debt service. Of course, local governments would have to make up the foregone property tax revenue from marginally higher taxes on the rest of the assessment roll.

### **Reducing Land Cost**

This strategy is not crucial in housing submarkets where land values are low. In Surrey, for example, multifamily land values are relatively low, so there is little to be gained by trying to reduce this cost. In the other tested locations, though, there is a material spread between the land value supported by strata residential and the land value supported by market rental residential. In these places, the gap is too large to be closed just by reducing construction cost.

Appendix 1 explores ways to reduce land cost. Obviously, making sites available at little or no cost is one way to achieve this goal, but this only works if public sector or non-profit entities have land they are willing to make available on favourable terms. Barring the availability of “free” sites, the approach most readily available to municipalities in Metro Vancouver is to use density bonusing or negotiated public benefits at rezoning to achieve new rental housing. This approach assumes there are sound planning reasons for higher density than allowed under current zoning and assumes the municipality and the community are willing to accept that some new density will be approved to generate rental housing, as opposed to using new density as the means to obtain other kinds of public benefits such as daycare, community space, or public art. This does not have to be an all-or-nothing proposition. Additional density can be granted for a mix of public benefits, including some combination of rental housing and community amenities. Because market rental rates are sufficient in most Metro Vancouver communities to cover all the cost of construction and support some land value, it will usually not be necessary to make density available at no cost; it is enough to make it available for less than market value. Developers and investors can make market returns on this rental housing; all that is needed is a reduction in the land cost via the granting of additional density on terms that are supportable.

The amount of extra density needed to reduce land cost sufficiently to make market rental attractive will vary widely across the region because land values are so different. The amount of extra density needed will also depend on whether projects are wood frame or concrete and whether projects are a mix of market strata and market rental or are all market rental.

### **Reducing the Cost of Capital**

Another way to make market rental viable is to provide access to capital at less than market rates. This can be achieved by injecting equity at below market returns and/or providing mortgage financing at lower than market rates.

As shown in the test cases in Section 6.0, reducing the cost of capital allows new market rental projects to cover all costs, provide a developer profit, and make a significant contribution to land (in some cases enough to pay market value for land). However, this obviously requires access to a pool of funding that is available at below market interest rates. This could be of interest to government, on the premise that providing funds at less than market interest could have a lower and shorter-lived cost than a perpetual direct subsidy to rents.

For private investors, or for commercial lenders, below-market investment or mortgages are not attractive. There is a need for a financing mechanism that recognizes that rental projects may yield below-market (or even negative) returns in the short term, but can yield strong returns in the long term. Such an approach would require flexibility in setting interest rates and some patience regarding the recovery of the principal.

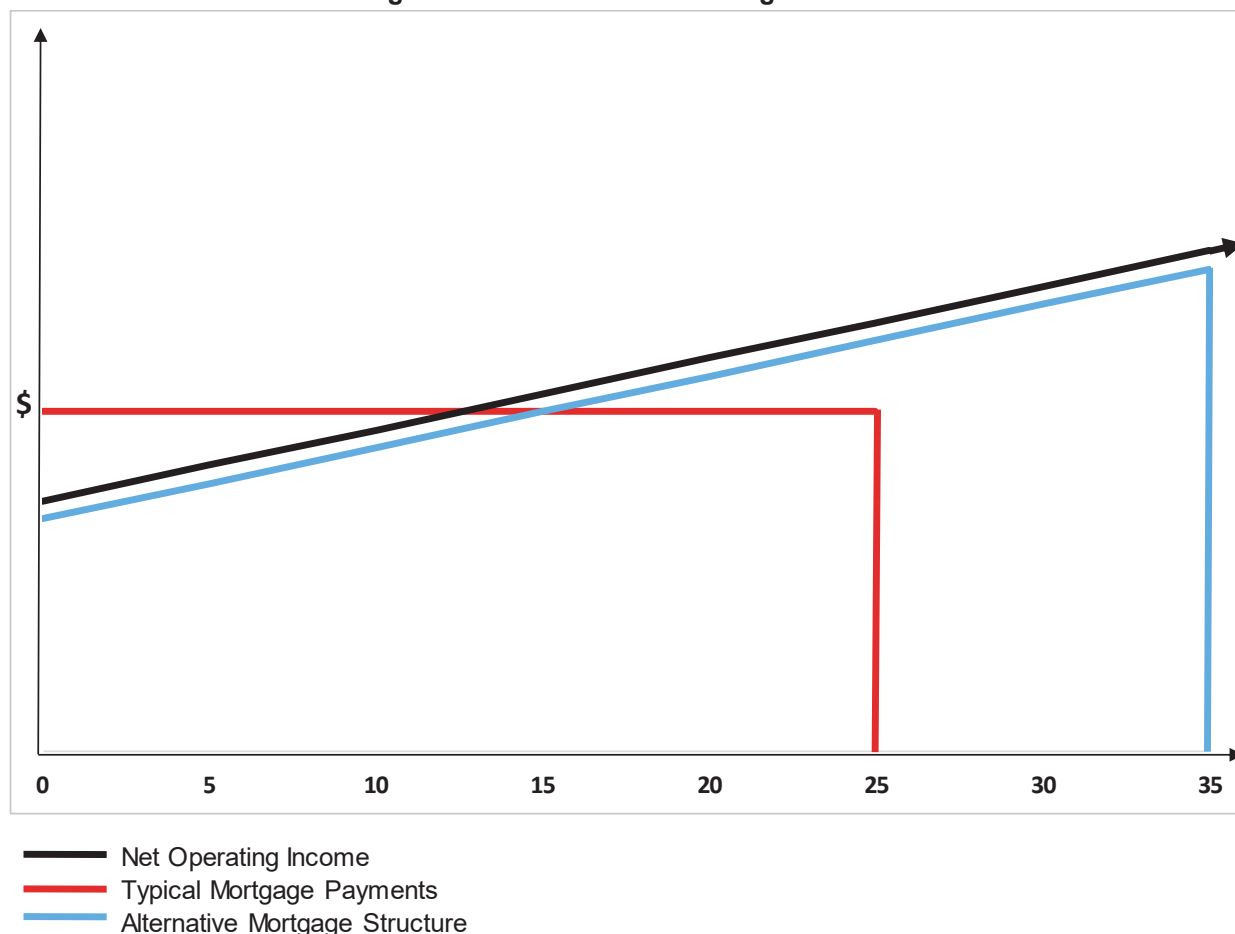
There are various ways financing could be structured to make rental projects attractive. We have outlined one approach that could support new construction, even when short term performance is weak, by taking advantage of long term upside:

- A new rental housing project (either market rental or affordable) will generate positive net operating income (i.e. rental revenue minus all operating expenses, but before deducting mortgage payments) almost immediately assuming a short rent-up period due to low market vacancy rates. This is illustrated by the black line in Exhibit 6. This net operating income will rise over time because rents are likely to increase faster than the rate of inflation on operating expenses.
- Now, assume that this project requires mortgage financing and that the amount that must be borrowed is too high (due to construction cost or land cost) or that the market interest rate is too high, such that annual total mortgage payments are initially higher than annual net operating income. This is illustrated by the red line in Exhibit 6. Also assume that this mortgage has a typical amortization period of 25 years. As shown in Exhibit 6, these assumptions about typical mortgage financing result in three different financial conditions over time: (a) in the *short term* (the first 10 years or so in this illustration), the project would lose money because rent revenue is not enough to cover operating expenses and mortgage payments; (b) In the *medium term* (years 10 to 25 in this illustration), growth in rental revenue means that net operating income is greater than the mortgage payment, so there is income available that could offset some or all of the loss in the short term; (c) in the long term (after 25 years in this illustration), the mortgage is paid off, so the project now generates much more net income.
- The typical structure of a mortgage would likely mean this project would not be built, because of the losses in the first 10 years or so. However, an alternative financing structure could address this challenge. The repayment of the mortgage principal and the rate of return (i.e. the interest rate) would vary over time based on the project's ability to pay. This is illustrated by the blue line in Exhibit 6. In this new structure, the life of the mortgage can be divided into three phases: (a) in the short term the mortgage payment is lower than it otherwise would have been (i.e. lower interest rate and/or reduced repayment of principal,

to match the project’s ability to pay); (b) in the medium term the mortgage payment is somewhat higher than it would otherwise have been, taking advantage of the growth in rental revenue; (c) in the long term (illustrated here as years 25 to 35) the mortgage payments continue for longer than they otherwise would and the annual payments continue to increase as rent revenue grows.

The combination of a longer payment period and rising payments (taking advantage of rent growth) mean that the overall return could match or even exceed the return from a conventional mortgage. This could appeal to long term investors, to governments willing to invest in rental housing with the expectation of eventual good returns, to non-profits with patient capital, or lenders willing to accept reduced returns in the short term in order to achieve strong yields in the long term.

**Exhibit 6: Alternative Financing Structure for Rental Housing**



## 7.2 Strategies for Affordable Rental Housing

Supporting the construction of affordable rental housing is a much harder financial challenge, because the gap is so much wider. As shown in the case studies, there are no cases in which a private developer could produce affordable rental units (at the target rent rates), because the value of these units is not enough to cover construction costs, provide a profit, and cover land acquisition. This is true even for wood frame construction and for parts of the region where land values are low.



### **Reduced Creation Cost**

For concrete construction, reducing construction cost is not sufficient to make projects work. Concrete affordable rental housing requires an extensive combination of cost reductions, elimination of land value, and low cost of capital.

Affordable wood frame rental housing can work if the following conditions are met:

- Land has no cost either because an agency puts the land in at no value or because extra density has been made available via rezoning at no cost. However, wood frame housing has a limit on achievable density, so adding density in areas already designated for medium density will not yield much extra capacity.
- Construction costs are lowered due to reduced parking standards, reduced municipal fees, and reduced interim financing.
- There is little or no developer profit, meaning the housing is built by project managers on behalf of government or non-profit agencies with no risk.

### **Construction Cost Offset by Higher Density for Market Strata**

Approving extra density can eliminate or reduce the land cost for rental housing. However, simply eliminating land cost is not enough for concrete affordable rental (because the rents don't cover the construction cost, let alone land value). Where strata residential land values are sufficient, it is possible to add enough density (for market strata) that there is (a) no land cost for the rental component and (b) the cost of rental construction can be partly offset by extra land value from strata units. In exchange for additional market strata density, the developer would deliver affordable rental units on a turnkey basis. Obviously, this only works if communities are willing to accept the additional density.

Using the Vancouver case study site, for example, we have estimated that a new affordable concrete rental unit costs about \$400 per square foot to build, but the affordable rent only supports a value of about \$300 per square foot. There is a shortfall of \$100 per square foot of rental housing that has to be made up somehow. We also estimated that every extra square foot of strata density generates about \$400 in land value (in addition to developer profit). This means that a developer could be willing to create, own, and operate up to 4 square feet of affordable rental housing in exchange for each extra square foot of strata density that is available (assuming there is a reasonable way to physically accommodate the market strata and affordable rental components on the site and assuming the City would expect no public benefit contribution other than the affordable rental space). If the target size of the affordable rental unit is say 500 square feet, the developer would need an additional 125 square feet of strata density for each affordable rental unit.

In Surrey, the shortfall for the affordable concrete rental unit is also \$100 per square foot (the unit costs more or less the same, or about \$400 per square foot, but the affordable rental only supports a value of \$300 per square foot). However, in the Surrey case study site we estimated that concrete strata units only support about \$50 per square feet of land value. This means that a developer would be willing to create, own, and operate up to 0.5 square feet of affordable rental housing (\$50 divided by \$100) in exchange for each extra square foot of strata density that is available (assuming there is a reasonable way to physically accommodate the market strata and affordable rental components on the site and assuming the City would expect no public benefit contribution other than the affordable rental space). If the target size of the affordable rental unit is say 500 square feet, the developer would need an additional 1,000 square feet of strata density for each affordable rental unit.

Vancouver can achieve more affordable rental housing than Surrey for a given increase in strata density because land values in Vancouver are so much higher. In both cases, though, the local government (and the

community) must be willing to accept higher density and must be willing to accept less in the way of community amenity contributions (other than the affordable housing) that would otherwise have been available from rezoning sites to higher density.

The tradeoff (extra strata density for affordable rental) is different in every residential submarket in the region, but in almost every case it would be possible to achieve some new affordable rental units in exchange for granting additional strata density.

### **Construction Cost Offset by Higher Density for Market Rental**

In parts of the region where new market rental housing supports land value, then new affordable rental units could be facilitated by granting additional density for market rental. This approach would be less broadly applicable in the region, because there are submarkets in which new market concrete rental does not support any land value. In places where market rental does support land value these land values are much lower than strata land value, so the amount of extra market rental density needed to support new affordable rental is much higher than the amount of new strata density that would be needed.

### **Reduced Cost of Capital**

As shown in the mortgage calculations, the availability of capital at below market rates can close the gap for market rental in all cases, if the interest rate reduction is big enough.

However, reduced cost of capital only helps the affordable rental cases if the reduction in capital cost is large (down to less than 1%, whereas market rates are 2.6% for mortgages and at least 4% for equity) and layered onto other measures including reduced construction cost and reduced land value.

This obviously requires a concerted approach involving senior governments, local government, lenders/investors, and non-profits.

### **Mixed Income**

The Partners are interested in knowing whether mixed income rental housing can help solve the financial gap. In this approach, rental housing projects would include a mix of market rentals and a spectrum of affordable rentals, with rents varying in accordance with income. Presumably the lowest rents would be the affordable rents used in our analysis, the highest rents would be market, and there would be various rents in between based on income.

However, as can be seen from the case studies, projects with all market rental are already financially challenged. Various interventions (cost reductions, land value reductions, lower cost of capital) are needed to make these projects viable. Dropping the rent of any units from market to affordable rent increases the amount of help the project needs. Our affordable rental scenarios show the effect of all units being at the affordable rent, so a mix of market and affordable rents would put a project's performance between our bookends of all market and all affordable.

A very different approach to "mixed income" is "mixed tenure", with some strata and some affordable rental units. Dialing up the market strata density (i.e. more units available to purchasers who can afford to pay market value) can create the potential to fund rental units aimed at different income groups.

### **Rent Subsidy**

A completely different approach to making affordable rental work is to subsidize rents (or income) to allow moderate income households to pay market rent. While we have not modelled this scenario, it is easy to see what is required:

- First, the steps needed to make market rental viable must be implemented.

- Second, the difference between affordable rent and market rent is the needed subsidy.

The amount of needed subsidy will vary widely across the region because of the varying gap between market rent and affordable rent. To illustrate the range, the Vancouver case study indicates that for a 1 bedroom unit the market rent is \$1,850 per month whereas the calculated affordable rent is \$800, meaning a subsidy of over \$1,000 per month. The Surrey case indicates a subsidy of \$400 per month for a 1 bedroom unit (the market rent is \$1,200 and the affordable rent is \$800).

## Appendix 1: Tackling the Land Value Challenge

In most of Metro Vancouver one of the biggest challenges to creating purpose built rental housing is high land value. Essentially, strata title multifamily use supports land values that are too high to be affordable for a developer of rental housing that has to acquire a site at market value.

There are only a few ways in which the land value gap can be addressed.

One option is to significantly reduce construction cost, so that the rental housing developer can channel these savings toward land acquisition. This only works, of course, if the construction cost savings are enough to close the land value gap. This appears to be a possible approach for market rental in some circumstances:

- In submarkets where multifamily land values are low. In Surrey for example, strata multifamily residential land values for concrete construction are about \$50 per square foot buildable; in comparison, this amount can be shaved from construction cost by reducing parking requirements.
- In locations where wood frame construction can use all available density. In many locations, the gap between market strata and market rental for wood frame buildings is not that large, such that cost reductions can make the difference.

However, in many locations where concrete construction is likely, the land value gap between strata residential and market rental is too high to make up just with construction cost savings. In these cases, it is necessary to find ways to reduce the cost of land.

Land cost reductions can be achieved in two ways:

- The owner of a site is willing to put the land into a project at less than market value. This is, of course, challenging for any agency that has to buy land at market price and then put it into a project at less than this amount. This requires a source of cash that does not require a return on investment and that does not need to be repaid except perhaps in the very long term. However, for agencies that already own land at low book value (i.e. they acquired it a long time ago), it is possible to provide the land at less than current market value without a new cash outlay. This requires that the agency can afford to not recover its land value in cash form.
- Extra density is approved for a development site on favourable terms. Providing this extra density has the effect of reducing land cost. This is usually implemented via rezoning, using either density bonusing or negotiated community amenity contributions.

Density bonusing is a zoning approach that is allowed by Section 482 of the Local Government Act. Density bonusing allows a municipality to zone a parcel of land for a base density that can be developed without providing any amenity or public benefit plus an optional higher density that can be achieved in exchange for providing a defined amenity or benefit.

For example, suppose a site is zoned for multifamily residential use at FSR 3.0. This existing zoning means the site has a market value (based on FSR 3.0 strata residential). This site could be rezoned so that the developer can develop up to (say) FSR 4.0 on the condition that the developer provides a public benefit in exchange for the extra FSR 1.0. The benefit could be that the developer uses the extra 1.0 to build rental housing. The extra density that is granted this way means that no land cost must be absorbed by the rental housing. The base density of FSR 3.0 would be developed as strata, with units selling for market value and thereby recovering all of the land value. The rental housing added into the project just has to recover its construction costs and provide a profit; it does not have to support a land value. This approach requires that the local government is willing to grant additional density (presumably meaning the extra density is appropriate in terms of planning, urban design, and engineering considerations) to be used for rental housing, rather than expecting the public benefit to be in the form of community amenity (e.g. day care, public art,

community space). Combinations of benefits are possible; in the illustration above, the municipality could require that half of the bonus FSR 1.0 be used for rental housing and the other half be obtained in exchange for a cash in lieu contribution to be applied to community facilities.

Density bonus bylaws require that the achievable extra density and the required public benefit be spelled out in detail in the zoning bylaw.

An alternative to density bonusing that is common in BC is to negotiate with developers for public benefits at the time of rezoning. These negotiations are done on a site-by-site basis in response to rezoning applications to change use and/or density. In these cases, the municipality seeks a negotiated package of public benefits to help deal with the impacts or costs to the community of densification and redevelopment. The negotiated package of public benefits can include the provision of rental housing.

As with density bonusing, this allows the rental component to be viable because it does not have to absorb the market cost of land. Usually these negotiations involve a mix of public benefits depending on the site, such as open space, public art, daycare, offsite engineering works, community or recreation space, and some form of affordable housing.

These are reasonable and effective ways to reduce the land value problem for rental housing. By granting additional density (above existing zoning), the local government creates the potential to add rental housing capacity without this new housing having to absorb full market value (or any value) for land.

## Appendix 2: Sample Pro Formas (Site 2, Burnaby, Metrotown)

**Site 2:**

**Estimated Supportable Land Value for Concrete Strata Apartment Project**

Metrotown Area 6525-6585 Sussex Avenue

Major Assumptions (shading indicates figures that are inputs; unshaded cells are formulas)

<b>Site Size</b>	57,065 sq.ft.	
<b>Assumed Density</b>	5.00 FAR	
<b>Total Gross floorspace</b>	285,325 sq.ft.	
<b>Commercial Floorspace</b>	0 sq.ft.	
<b>Market Strata Residential floorspace</b>	285,325 gross square feet	
Net saleable space	242,526 sq.ft. or	85% of gross area
Average Gross unit size	951 sq.ft. gross	
Average Net unit size	808 sq.ft.	
Number of units	300 units or	229 upa
Residential Parking Stalls	330 stalls or	1.10 per unit
Commercial Parking Stalls	0	1.00 per 46 square metres
Total Parking Stalls	330 stalls or	1.50 per unit
<b>Commercial Value</b>		
Avg Lease Rate	\$0.00 psf net	
Vacancy	5.0%	
Cap Rate	5.0%	
Leaseable Area	95.0% of gross commercial area	
Capitalized Value Per Sq.Ft	\$0 per ft. of commercial space	
<b>Strata Revenue and Value</b>		
Average Sales Price Per Sq. Ft.	\$875 per sq.ft. of net saleable residential space	
<b>Pre-Construction Costs</b>		
Allowance for Rezoning Costs	\$100,000	
Allowance for CAC/Density Bonus Payment	\$0	
<b>Construction Costs</b>		
Allowance for Demolition of Existing Buildings	\$0	
Servicing and Infrastructure	\$0	
Connection fees	\$50,000	
Commercial Hard Construction Costs	\$230	
Residential Hard Construction Costs	\$240	
Parking Costs	\$45,000 per stall	
Overall Average Hard Costs	\$292 per gross square foot of residential space (cost of parking included in cost psf)	
Landscaping	\$100,000	
Soft Costs/Professional Fees	9.0% of demo, hard costs, servicing costs, landscape	
Project Management	3.0% of demo, hard costs, servicing costs, landscape, soft costs, rezoning	
Contingency on hard and soft costs	5.0% of above	
<b>Local Government Levies</b>		
GVRD Sewer Levy - Apartment	\$590 per apartment unit	
GVRD Sewer Levy - Non Residential	\$0.443 per sq.ft. of floorspace	
Commercial DCCs	\$0.50 per sq.ft. of floorspace	
Residential DCCs	\$3.55 per sq.ft. of floorspace	
School Site Acquisition Charge	\$600 per unit	
<b>Financing Assumptions</b>		
Financing rate on construction costs	5.0% on 50% of costs, assuming a and a total loan of	2.00 year construction period 75% on costs
Financing fees	1.0% of financed construction costs	
Financing on Land Acquisition	5.0% during approvals and construction on	50% of land cost
<b>Marketing and Commissions</b>		
Commissions/sales costs	3.0% of gross strata market residential revenue	
Marketing	2.0% of gross strata market residential revenue	
Commercial leasing	17.0% of Year 1 lease income	
Commercial TI/Marketing	\$25 psf	
Commercial sales commission upon lease-up	2.0%	
<b>Property Taxes During Development</b>	\$100,000	
<b>Allowance for Developer's Profit</b>	15.0% of total costs or	13.0% of gross revenue



## Analysis

### Revenue

Gross Market Residential Sales Revenue	\$212,210,469
Less Commissions and Sales Costs	\$6,366,314
Net Residential Sales Revenue	\$205,844,155
Commercial Value	\$0
Commercial Sales Commission	\$0
Net Commercial Value	\$0
Total Net Value	\$205,844,155

### Project Costs

Allowance for Rezoning Costs	\$100,000
Allowance for CAC/Density Bonus	\$0
Allowance for Demolition of Existing Buildings	\$0
Servicing and Infrastructure	\$0
Hard Construction Costs	\$83,328,000
Landscaping	\$100,000
Soft Costs/Professional Fees	\$7,508,520
Project Management	\$2,731,096
Contingency on Above	\$4,688,381
Residential Marketing	\$4,244,209
Commercial Leasing	\$0
Commercial Marketing	\$0
GVRD Sewer Levy - Apartment	\$177,000
GVRD Sewer Levy - Non Residential	\$0
DCCs - commercial	\$0
DCCs - residential	\$1,012,904
School Site Acquisition Charge	\$180,000
Less Property Tax Allowance During Development	\$100,000
Construction Financing	\$3,906,379
Financing Fees	\$810,574
Total Project Costs Before Land Related	\$108,887,062

**Allowance for Developer's Profit** \$27,672,245

**Residual to Land, Closing Costs and Land Carry** \$69,284,847

Less financing on land during construction \$3,897,273

Less property purchase tax \$1,939,627

**Residual Land Value** \$63,447,947

**Residual value per sq.ft. buildable** \$222

**Residual value per sq.ft. of site area** \$1,112

**Estimated Supportable Land Value for Concrete Rental Apartment Project**

**Metrotown Area 6525-6585 Sussex Avenue**

*Major Assumptions (shading indicates figures that are inputs; unshaded cells are formulas)*

**Site and Building Size**

Site Size	57,065 sq.ft.	
Assumed Density	5.00 FAR	
Total Gross Floorspace	285,325 sq.ft.	
Commercial Space	0 sq.ft.	
Total Gross Rental Housing Floorspace	285,325 sq.ft.	
Net Residential Floorspace	242,526 sq.ft. rentable	85% of gross area
Average Net Unit Size	683 sq.ft.	
Number of Units	355 units	
Residential Parking Stalls	391 or	1.10 per unit
Commercial Parking Stalls	0	
Number of Parking Stalls	391 in total	

**Construction Costs**

Demolition Costs	\$0	
Site Servicing	\$0	
Landscaping	\$100,000	
Building Construction Costs - Residential	\$225	
Building Construction Costs - Commercial	\$230	
Parking Construction Costs	\$45,000 per stall	
Total Hard Construction Costs	\$287 per gross sq.ft. assuming parking structure	
Hard Costs Used in Analysis	\$287	
Soft Costs/Professional Fees	9% of hard costs and parking	
Development Management	3%	
Contingency on Costs	5%	
Metro Vancouver DCC Charge	\$590.00 per apartment unit	
Metro Vancouver DCC Charge	\$0.44 per sq.ft. of commercial space	
Municipal DCCs	\$3.55 per sq.ft. of residential building area	
Municipal DCCs	\$0.50 per sq.ft. of commercial building area	
SSAC	\$600 per unit	
Interim Financing on construction costs and land	5.0% on 50% of construction costs for	2.0 years
Share of Costs Financed	75.0%	
Financing on land	5.0%	
Share of Land Financed	50.0%	
Financing fees	1.00%	

**Other Creation Costs and Allowances**

Rezoning	\$100,000	
Allowance for Rezoning/Density Bonus Payment	\$0	
Initial Apartment Lease Up Costs	\$1,000 per unit	
Fees, legal and survey for rental portion	\$0	
Commercial leasing costs	17% of Year 1 lease income	
Commercial TI/Marketing	\$25 psf of commercial area	
Property Taxes During Development	\$100,000	
Commission on Sale of Rental Units	0.0% of value	
Commission on Sale of Commercial Space	0.0% of value	

**Apartment Operating Revenue, Cost and Value Assumptions**

<b>Market Rental Rates</b>		
Residential Units (average)	\$1,870 per unit per month or	\$2.74 per sq.ft. per month
Laundry Revenue	\$0.00 per unit per month (in-suite)	
Parking Revenue	\$35 per stall per month	
Residential Vacancy Allowance	2.0%	
<b>Property Tax Allowance</b>		
Residential Assessment (upon completion of new building)	\$75,000,000 (see capitalized value below)	
Residential Tax Rate	0.379%	
Residential Property Taxes	\$284,355	3.6% of effective gross revenue
Residential Operating Costs - excluding taxes	\$4,200 per unit per year or	18.7% of effective gross revenue
Avg Lease Rate on Commercial Space	\$30	
Leaseable Area	95.0%	
Vacancy	5.0%	
Net GST (assuming self supply)	5.0% of capitalized value of rental units	

**Analysis**

**Net Operating Income and Value**

<i>Revenues</i>	
Apartment Gross Potential Rent	\$7,966,200
Parking Revenue	\$164,220
Laundry Revenue	\$0
Total Gross Potential Revenue	\$8,130,420
Apartment Vacancy	\$162,608
<i>Effective Gross Apartment Revenue</i>	\$7,967,812
Residential Property Taxes	\$284,355
Residential Operating Expenses	\$1,491,000
<i>Net Operating Income</i>	\$6,192,457
Capitalization Rate on Rental Apartment Space	4.00%
Capitalized Value of Rental Space	\$154,811,415
Less Sales Commissions	\$0
NOI from Commercial Space	\$0
Capitalization Rate on Commercial Space	5.00%
Value of Commercial Space	\$0
Less Sales Commissions	0
Overall Net Value	\$154,811,415

**Construction Costs**

Rezoning	\$100,000
Allowance for CAC/Density Bonus Payment	\$0
Demolition Costs	\$0
Site Servicing	\$0
Landscaping	\$0
Hard Construction Costs	\$81,793,125
Soft Costs/Professional Fees	\$7,361,381
Development Management	\$2,677,635
Contingency	\$4,596,607
Metro Vancouver DCC Charge - residential	\$209,450
Metro Vancouver DCC Charge - commercial	\$0
Municipal DCCs - residential	\$1,012,904
Municipal DCCs - commercial	\$0
SSAC	\$213,000
Fees, legal and survey for rental portion	\$0
Initial Apartment Lease Up Costs	\$355,000
Commercial Lease Up Costs	\$0
Commercial Marketing/TI	\$0
Property Taxes During Development	\$100,000
Interim Financing	\$3,690,716
Financing fees	\$1,021,098
Net GST (assuming builder holds units)	\$7,740,571
Total Construction Costs	\$110,871,488
Total Construction Costs per sq.ft.	\$389

**Developer's Profit Target** \$20,187,409

13% of value  
15% of costs

<b>Residual to Land, Closing Costs and Land Carry</b>	<b>\$23,752,519</b>
Less financing on land during construction	\$1,336,079
Less property purchase tax	\$650,493
<b>Residual Land Value</b>	<b>\$21,765,947</b>

<b>Residual value per sq.ft. buildable</b>	<b>\$76</b>
<b>Residual value per sq.ft. of site area</b>	<b>\$381</b>

### Estimated Supportable Land Value for Woodframe Rental Apartment Project

Metrotown Area 6525-6585 Sussex Avenue

Major Assumptions (shading indicates figures that are inputs; unshaded cells are formulas)

#### Site and Building Size

Site Size	57,065 sq.ft.	
Assumed Density	2.00 FAR	
Total Gross Floorspace	114,130 sq.ft.	
Commercial Space	0 sq.ft.	
Total Gross Rental Housing Floorspace	114,130 sq.ft.	
Net Residential Floorspace	97,011 sq.ft. rentable	85% of gross area
Average Net Unit Size	683 sq.ft.	
Number of Units	142 units	
Residential Parking Stalls	156 or	1.10 per unit
Commercial Parking Stalls	0	
Number of Parking Stalls	156 in total	

#### Construction Costs

Demolition Costs	\$0	
Site Servicing	\$0	
Landscaping	\$100,000	
Building Construction Costs - Residential	\$150	
Building Construction Costs - Commercial	\$230	
Parking Construction Costs	\$35,000 per stall	
Total Hard Construction Costs	\$198 per gross sq.ft. assuming parking structure	
Hard Costs Used in Analysis	\$198	
Soft Costs/Professional Fees	9% of hard costs and parking	
Development Management	3%	
Contingency on Costs	5%	
Metro Vancouver DCC Charge	\$590.00 per apartment unit	
Metro Vancouver DCC Charge	\$0.44 per sq.ft. of commercial space	
Municipal DCCs	\$3.55 per sq.ft. of residential building area	
Municipal DCCs	\$0.50 per sq.ft. of commercial building area	
SSAC	\$600 per unit	
Interim Financing on construction costs and land	5.0% on 50% of construction costs for	1.5 years
Share of Costs Financed	75.0%	
Financing on land	5.0%	
Share of Land Financed	50.0%	
Financing fees	1.00%	

#### Other Creation Costs and Allowances

Rezoning	\$100,000	
Allowance for Rezoning/Density Bonus Payment	\$0	
Initial Apartment Lease Up Costs	\$1,000 per unit	
Fees, legal and survey for rental portion	\$0	
Commercial leasing costs	17% of Year 1 lease income	
Commercial TI/Marketing	\$25 psf of commercial area	
Property Taxes During Development	\$100,000	
Commission on Sale of Rental Units	0.0% of value	
Commission on Sale of Commercial Space	0.0% of value	

#### Apartment Operating Revenue, Cost and Value Assumptions

Market Rental Rates		
Residential Units (average)	\$1,870 per unit per month or	\$2.74 per sq.ft. per month
Laundry Revenue	\$0.00 per unit per month (in-suite)	
Parking Revenue	\$35 per stall per month	
Residential Vacancy Allowance	2.0%	
Property Tax Allowance		
Residential Assessment (upon completion of new building)	\$59,900,000 (see capitalized value below)	
Residential Tax Rate	0.379%	
Residential Property Taxes	\$227,105	7.1% of effective gross revenue
Residential Operating Costs - excluding taxes	\$4,200 per unit per year or	18.7% of effective gross revenue
Avg Lease Rate on Commercial Space	\$30	
Leaseable Area	95.0%	
Vacancy	5.0%	
Net GST (assuming self supply)	5.0% of capitalized value of rental units	

**Analysis**

**Net Operating Income and Value**

<i>Revenues</i>	
Apartment Gross Potential Rent	\$3,186,480
Parking Revenue	\$65,520
Laundry Revenue	\$0
Total Gross Potential Revenue	\$3,252,000
Apartment Vacancy	\$65,040
<i>Effective Gross Apartment Revenue</i>	\$3,186,960
Residential Property Taxes	\$227,105
Residential Operating Expenses	\$596,400
<i>Net Operating Income</i>	\$2,363,455
Capitalization Rate on Rental Apartment Space	4.00%
Capitalized Value of Rental Space	\$59,086,379
Less Sales Commissions	\$0
NOI from Commercial Space	\$0
Capitalization Rate on Commercial Space	5.00%
Value of Commercial Space	\$0
Less Sales Commissions	0
Overall Net Value	\$59,086,379

**Construction Costs**

Rezoning	\$100,000
Allowance for CAC/Density Bonus Payment	\$0
Demolition Costs	\$0
Site Servicing	\$0
Landscaping	\$0
Hard Construction Costs	\$22,579,500
Soft Costs/Professional Fees	\$2,032,155
Development Management	\$741,350
Contingency	\$1,272,650
Metro Vancouver DCC Charge - residential	\$83,780
Metro Vancouver DCC Charge - commercial	\$0
Municipal DCCs - residential	\$405,162
Municipal DCCs - commercial	\$0
SSAC	\$85,200
Fees, legal and survey for rental portion	\$0
Initial Apartment Lease Up Costs	\$142,000
Commercial Lease Up Costs	\$0
Commercial Marketing/TI	\$0
Property Taxes During Development	\$100,000
Interim Financing	\$774,613
Financing fees	\$283,164
Net GST (assuming builder holds units)	\$2,954,319
Total Construction Costs	\$31,553,892
Total Construction Costs per sq.ft.	\$276

**Developer's Profit Target** \$7,704,864

13% of value  
15% of costs

<b>Residual to Land, Closing Costs and Land Carry</b>	<b>\$19,827,622</b>
Less financing on land during construction	\$892,243
Less property purchase tax	\$546,061
<b>Residual Land Value</b>	<b>\$18,389,318</b>

<b>Residual value per sq.ft. buildable</b>	<b>\$161</b>
<b>Residual value per sq.ft. of site area</b>	<b>\$322</b>

**Estimated Supportable Land Value for Affordable Concrete Rental Apartment Project**
**Metrotown Area 6525-6585 Sussex Avenue**
**Major Assumptions (shading indicates figures that are inputs; unshaded cells are formulas)**
**Site and Building Size**

Site Size	57,065 sq.ft.	
Assumed Density	5.00 FAR	
Total Gross Floorspace	285,325 sq.ft.	
Commercial Space	0 sq.ft.	
Total Gross Rental Housing Floorspace	285,325 sq.ft.	
Net Residential Floorspace	242,526 sq.ft. rentable	85% of gross area
Average Net Unit Size	683 sq.ft.	
Number of Units	355 units	
Residential Parking Stalls	391 or	1.10 per unit
Commercial Parking Stalls	0	
Number of Parking Stalls	391 in total	

**Construction Costs**

Demolition Costs	\$0	
Site Servicing	\$0	
Landscaping	\$100,000	
Building Construction Costs - Residential	\$225	
Building Construction Costs - Commercial	\$230	
Parking Construction Costs	\$45,000 per stall	
Total Hard Construction Costs	\$287 per gross sq.ft. assuming parking structure	
Hard Costs Used in Analysis	\$287	
Soft Costs/Professional Fees	9% of hard costs and parking	
Development Management	3%	
Contingency on Costs	5%	
Metro Vancouver DCC Charge	\$590.00 per apartment unit	
Metro Vancouver DCC Charge	\$0.44 per sq.ft. of commercial space	
Municipal DCCs	\$3.55 per sq.ft. of residential building area	
Municipal DCCs	\$0.50 per sq.ft. of commercial building area	
SSAC	\$600 per unit	
Interim Financing on construction costs and land	5.0% on 50% of construction costs for	2.0 years
Share of Costs Financed	75.0%	
Financing on land	5.0%	
Share of Land Financed	50.0%	
Financing fees	1.00%	

**Other Creation Costs and Allowances**

Rezoning	\$100,000	
Allowance for Rezoning/Density Bonus Payment	\$0	
Initial Apartment Lease Up Costs	\$1,000 per unit	
Fees, legal and survey for rental portion	\$0	
Commercial leasing costs	17% of Year 1 lease income	
Commercial TI/Marketing	\$25 psf of commercial area	
Property Taxes During Development	\$100,000	
Commission on Sale of Rental Units	0.0% of value	
Commission on Sale of Commercial Space	0.0% of value	

**Apartment Operating Revenue, Cost and Value Assumptions**

Market Rental Rates		
Residential Units (average)	\$1,013 per unit per month or	\$1.48 per sq.ft. per month
Laundry Revenue	\$0.00 per unit per month (in-suite)	
Parking Revenue	\$35 per stall per month	
Residential Vacancy Allowance	2.0%	
Property Tax Allowance		
Residential Assessment (upon completion of new building)	\$66,200,000 (see capitalized value below)	
Residential Tax Rate	0.379%	
Residential Property Taxes	\$250,991	5.7% of effective gross revenue
Residential Operating Costs - excluding taxes	\$4,200 per unit per year or	34.0% of effective gross revenue
Avg Lease Rate on Commercial Space	\$30	
Leaseable Area	95.0%	
Vacancy	5.0%	
Net GST (assuming self supply)	5.0% of capitalized value of rental units	

**Analysis**

**Net Operating Income and Value**

<i>Revenues</i>	
Apartment Gross Potential Rent	\$4,316,232
Parking Revenue	\$164,220
Laundry Revenue	\$0
Total Gross Potential Revenue	\$4,480,452
Apartment Vacancy	\$89,609
<i>Effective Gross Apartment Revenue</i>	\$4,390,843
Residential Property Taxes	\$250,991
Residential Operating Expenses	\$1,491,000
<i>Net Operating Income</i>	\$2,648,852
Capitalization Rate on Rental Apartment Space	4.00%
Capitalized Value of Rental Space	\$66,221,307
Less Sales Commissions	\$0
NOI from Commercial Space	\$0
Capitalization Rate on Commercial Space	5.00%
Value of Commercial Space	\$0
Less Sales Commissions	0
Overall Net Value	\$66,221,307

**Construction Costs**

Rezoning	\$100,000
Allowance for CAC/Density Bonus Payment	\$0
Demolition Costs	\$0
Site Servicing	\$0
Landscaping	\$0
Hard Construction Costs	\$81,793,125
Soft Costs/Professional Fees	\$7,361,381
Development Management	\$2,677,635
Contingency	\$4,596,607
Metro Vancouver DCC Charge - residential	\$209,450
Metro Vancouver DCC Charge - commercial	\$0
Municipal DCCs - residential	\$1,012,904
Municipal DCCs - commercial	\$0
SSAC	\$213,000
Fees, legal and survey for rental portion	\$0
Initial Apartment Lease Up Costs	\$355,000
Commercial Lease Up Costs	\$0
Commercial Marketing/TI	\$0
Property Taxes During Development	\$100,000
Interim Financing	\$3,690,716
Financing fees	\$1,021,098
Net GST (assuming builder holds units)	\$3,311,065
Total Construction Costs	\$106,441,982
Total Construction Costs per sq.ft.	\$373

**Developer's Profit Target** \$8,635,258

13% of value  
15% of costs

<b>Residual to Land, Closing Costs and Land Carry</b>	<b>-\$48,855,934</b>
Less financing on land during construction	-\$2,748,146
Less property purchase tax	-\$1,405,234
<b>Residual Land Value</b>	<b>-\$44,702,554</b>

<b>Residual value per sq.ft. buildable</b>	<b>-\$157</b>
<b>Residual value per sq.ft. of site area</b>	<b>-\$783</b>

**Estimated Supportable Land Value for Affordable Woodframe Rental Apartment Project**

**Metrotown Area 6525-6585 Sussex Avenue**

*Major Assumptions (shading indicates figures that are inputs; unshaded cells are formulas)*

**Site and Building Size**

Site Size	57,065 sq.ft.	
Assumed Density	2.00 FAR	
Total Gross Floorspace	114,130 sq.ft.	
Commercial Space	0 sq.ft.	
Total Gross Rental Housing Floorspace	114,130 sq.ft.	
Net Residential Floorspace	97,011 sq.ft. rentable	85% of gross area
Average Net Unit Size	683 sq.ft.	
Number of Units	142 units	
Residential Parking Stalls	156 or	1.10 per unit
Commercial Parking Stalls	0	
Number of Parking Stalls	156 in total	

**Construction Costs**

Demolition Costs	\$0	
Site Servicing	\$0	
Landscaping	\$100,000	
Building Construction Costs - Residential	\$150	
Building Construction Costs - Commercial	\$230	
Parking Construction Costs	\$35,000 per stall	
Total Hard Construction Costs	\$198 per gross sq.ft. assuming parking structure	
Hard Costs Used in Analysis	\$198	
Soft Costs/Professional Fees	9% of hard costs and parking	
Development Management	3%	
Contingency on Costs	5%	
Metro Vancouver DCC Charge	\$590.00 per apartment unit	
Metro Vancouver DCC Charge	\$0.44 per sq.ft. of commercial space	
Municipal DCCs	\$3.55 per sq.ft. of residential building area	
Municipal DCCs	\$0.50 per sq.ft. of commercial building area	
SSAC	\$600 per unit	
Interim Financing on construction costs and land	5.0% on 50% of construction costs for	1.5 years
Share of Costs Financed	75.0%	
Financing on land	5.0%	
Share of Land Financed	50.0%	
Financing fees	1.00%	

**Other Creation Costs and Allowances**

Rezoning	\$100,000	
Allowance for Rezoning/Density Bonus Payment	\$0	
Initial Apartment Lease Up Costs	\$1,000 per unit	
Fees, legal and survey for rental portion	\$0	
Commercial leasing costs	17% of Year 1 lease income	
Commercial TI/Marketing	\$25 psf of commercial area	
Property Taxes During Development	\$100,000	
Commission on Sale of Rental Units	0.0% of value	
Commission on Sale of Commercial Space	0.0% of value	

**Apartment Operating Revenue, Cost and Value Assumptions**

<b>Market Rental Rates</b>		
Residential Units (average)	\$1,013 per unit per month or	\$1.48 per sq.ft. per month
Laundry Revenue	\$0.00 per unit per month (in-suite)	
Parking Revenue	\$35 per stall per month	
Residential Vacancy Allowance	2.0%	
<b>Property Tax Allowance</b>		
Residential Assessment (upon completion of new building)	\$26,400,000 (see capitalized value below)	
Residential Tax Rate	0.379%	
Residential Property Taxes	\$100,093	5.7% of effective gross revenue
Residential Operating Costs - excluding taxes	\$4,200 per unit per year or	34.0% of effective gross revenue
Avg Lease Rate on Commercial Space	\$30	
Leaseable Area	95.0%	
Vacancy	5.0%	
Net GST (assuming self supply)	5.0% of capitalized value of rental units	



**Analysis**

**Net Operating Income and Value**

<i>Revenues</i>	
Apartment Gross Potential Rent	\$1,726,493
Parking Revenue	\$65,520
Laundry Revenue	\$0
Total Gross Potential Revenue	\$1,792,013
Apartment Vacancy	\$35,840
<i>Effective Gross Apartment Revenue</i>	\$1,756,173
Residential Property Taxes	\$100,093
Residential Operating Expenses	\$596,400
<i>Net Operating Income</i>	\$1,059,680
Capitalization Rate on Rental Apartment Space	4.00%
Capitalized Value of Rental Space	\$26,491,990
Less Sales Commissions	\$0
NOI from Commercial Space	\$0
Capitalization Rate on Commercial Space	5.00%
Value of Commercial Space	\$0
Less Sales Commissions	0
Overall Net Value	\$26,491,990

**Construction Costs**

Rezoning	\$100,000
Allowance for CAC/Density Bonus Payment	\$0
Demolition Costs	\$0
Site Servicing	\$0
Landscaping	\$0
Hard Construction Costs	\$22,579,500
Soft Costs/Professional Fees	\$2,032,155
Development Management	\$741,350
Contingency	\$1,272,650
Metro Vancouver DCC Charge - residential	\$83,780
Metro Vancouver DCC Charge - commercial	\$0
Municipal DCCs - residential	\$405,162
Municipal DCCs - commercial	\$0
SSAC	\$85,200
Fees, legal and survey for rental portion	\$0
Initial Apartment Lease Up Costs	\$142,000
Commercial Lease Up Costs	\$0
Commercial Marketing/TI	\$0
Property Taxes During Development	\$100,000
Interim Financing	\$774,613
Financing fees	\$283,164
Net GST (assuming builder holds units)	\$1,324,599
Total Construction Costs	\$29,924,173
Total Construction Costs per sq.ft.	\$262

**Developer's Profit Target** \$3,454,555

13% of value  
15% of costs

**Residual to Land, Closing Costs and Land Carry** **-\$6,886,739**  
 Less financing on land during construction -\$309,903  
 Less property purchase tax -\$219,305  
**Residual Land Value** **-\$6,357,531**

**Residual value per sq.ft. buildable** **-\$56**  
**Residual value per sq.ft. of site area** **-\$111**