

Increasing Housing Density in Single Detached Neighbourhoods

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Coriolis Consulting Corp.



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Summary

Background

Most of the developed residential land in Metropolitan Vancouver is occupied by single detached housing at a relatively low density. Many of these low density neighbourhoods are good places (from a planning perspective) to accommodate more housing units, but residents often resist redevelopment that would transform the character of the neighbourhood. As a result, municipalities are increasingly trying to facilitate the housing intensification of low density areas in ways that retain the essential elements of neighbourhood character.

Metro Vancouver retained Coriolis Consulting Corp. to examine the experience with residential intensification and identify the characteristics that are associated with successful projects.

This report was prepared with funding provided by Metro Vancouver and the Provincial Ministry of Community Services, Smart Development Partnership.

Scope

This study focuses on ways to increase the overall residential density in single detached neighbourhoods without significantly altering their character. This form of residential intensification is in contrast to the complete redevelopment of single family neighbourhoods to much higher density forms of housing, in which the new neighbourhood (while attractive, marketable, and successful) bears no resemblance to what existed previously.

Intensification involves development that is inherently small in scale: small sites, small numbers of units, small physical forms that fit comfortably into their surroundings.

These intensification projects include single detached units with secondary suites, several attached or detached units on what was previously one or a few single detached lots, single detached units with coach-house type units above garages in the rear of the lot, and other similar forms.

The scope of the project included:

- creating profiles of 20 completed projects in Greater Vancouver.
- creating 5 detailed case studies of intensification projects.
- interviewing developers who are building intensification projects.

- identifying design features that contribute to the success of intensification projects.
- making recommendations targeted at municipalities and developers.

20 Profiles of Completed Projects

One way to encourage densification is to publicize successful examples, demonstrating to municipalities, developers, and community groups that this type of development can be viable and attractive. This project included the selection of 20 completed projects that illustrate successful intensification in a variety of neighbourhoods.

LOCATION OF PROJECTS THAT ARE PROFILED

Municipality	Number of Profiles
Burnaby	4
Coquitlam	2
Delta	1
Langley	1
New Westminster	2
North Vancouver City	3
North Vancouver District	1
Richmond	1
Vancouver	4
White Rock	1
Total	20

These 20 completed projects show that:

1. Intensification projects can fit well in their neighbourhoods if they:
 - Reflect the design character of the existing houses in the area.
 - Have high quality landscaping.
 - Use careful design to create privacy from the street and adjacent properties.
 - Pay attention to daylight angles.
 - Manage off-street parking well.
 - Use a variety of colours and materials.
2. Corner sites offer great potential for infill in a low impact way, because of the opportunity for units to be addressed to different streets.
3. Early acceptance of the idea of intensification in an established single family neighbourhood depends on the pioneer projects being done well.

4. Many projects are creating units that are owned, not rental. In the very long term, this may make future intensification more difficult, because these properties will require strata title owners to agree on redevelopment. Assemblies of strata units will be more challenging than assemblies of single detached lots because strata lot assembly is an “all or nothing” proposition whereas single family lot assembly allows the flexibility to assemble different numbers of adjacent lots.
5. Single family houses with one rental suite, duplexes, and small strata developments (two to four units) appear to account for most of the gains in housing capacity.

Five Case Studies

Five projects or neighbourhoods were selected for detailed analysis as case studies to show how design, development economics, and regulatory approaches interact to affect the success of an intensification project.

LOCATION OF CASE STUDIES

Municipality	Number of Case Studies
Burnaby	1
Delta	1
North Vancouver City	1
Vancouver	2
Total	5

The case studies show that intensification will not be viable in all cases, because more density on its own is not always enough to make redevelopment successful. Projects are successful when the right mix of site characteristics, market opportunity, regulations, design guidelines, and economic parameters comes together. Consequently, it is important to be careful in selecting areas for intensification and in choosing appropriate density targets.

Developer Interviews

Developers were interviewed about their recent experience with intensification projects and about their suggestions for how to encourage more of this type of redevelopment.

Developers tend to be smaller firms. Many are builders/developers of single detached or duplex projects who decide to pursue an opportunity for a slightly larger project, rather than larger developers looking for a scaled-down project. The prevalence of small developers has implications for municipalities, because it is important to create the circumstances that will appeal to smaller firms.

The comments from developers were highly consistent even though their projects were in a variety of municipalities and neighbourhoods.

The main comments were:

1. The developers were generally positive about their experiences and in most cases are likely to continue to look for opportunities for intensification projects.
2. This kind of project is a niche opportunity for small builders and developers. Because the developers tend to be small, they are interested in projects that do not require large site assemblies, rezoning, complex approvals processes involving lengthy neighbourhood consultations, or high risk.
3. It is essential that allowable densities are high enough to make it financially viable to acquire/demolish an existing single detached home. But densities must result in projects that are a good fit in the neighbourhood.
4. Developers observe that there is almost always some neighbourhood opposition to densification projects. Consequently, their main suggestion for encouraging more projects is for municipalities to put the necessary zoning in place in advance. Supportive OCP policies are not sufficient, as developers still must go through rezoning which adds to the time, costs, and risk of the approvals process. This is why some developers have opted to under-utilize potential density, building lower density projects under existing zoning rather than pursuing rezoning to take advantage of higher density contemplated in an OCP policy.

Design

Successfully integrating new higher density housing projects into communities that have previously been developed at a comparatively lower density requires attention to building form, site layout and design details. Projects that manage to add density while not seeming out of place with adjacent lower density development tend to include some or all of these design features:

- the building form matches the scale and design of surrounding development.
- site layout and building design preserve privacy for individual units within the project and existing adjacent properties.
- there is good attention to design detail in pedestrian access and entries.
- colour is either kept simple or used judiciously to add visual interest and variety.
- building materials are of high quality.
- the visual impact of off-street parking and access is minimized by placing garages at the rear or through the use of elevation changes and landscaping.

- the quality of landscaping is high.

Conclusions

1. There has been a wide variety of completed intensification projects in low density neighbourhoods throughout Metropolitan Vancouver. Most of these projects have involved replacing one or more single detached units with new single detached units on smaller lots, single detached units with coach houses, a few detached strata units, or a few attached multifamily units.
2. Most projects have been completed by small builders who are generally more familiar with the single detached or duplex market than with larger multifamily projects. The size, experience, and financial resources of these firms tend to make them more comfortable with projects that are small. Consequently, these developers tend to look for projects that will not require multiple lot site assemblies, rezoning, extensive community consultation processes, or large development cost.
3. While most intensification projects appear to involve some degree of neighbourhood opposition, it appears that projects that pay close attention to neighbourhood character have been the most readily accepted. Essentially, the more a project looks like its context, the more acceptable it is. This suggests that intensification projects should pay close attention to detail and put a priority on fitting in rather than on innovative design.
4. Many intensification projects have under-utilized the potentially available density, especially when rezoning is required to achieve additional density that might be anticipated in an OCP designation. Small developers favour a predictable, low-risk process (even it is on paper less profitable) than having to engage in a lengthy approval process that necessarily carries some political risk.
5. Most projects have occurred on one or two lots. There are few examples in which three or more lots have been assembled. This is not surprising, considering that most projects are developed by small firms and considering that most single detached areas in Metropolitan Vancouver contain a mix of older houses (that can be acquired for redevelopment) and newer houses that are too valuable to be candidates for redevelopment.
6. Most projects have achieved a density gain in the range of two to four housing units per single detached lot. For this type of intensification to have a material impact on total regional housing capacity, many lots will have to redevelop.
7. Given the potential for community opposition, the first intensification projects in a neighbourhood must be excellent examples in order to avoid a backlash against future projects.

8. While municipalities and small developers are both interested in densification projects, their different perspectives on approvals processes can result in a situation in which there are fewer projects being developed than desired. Municipalities may prefer to not pre-zone, as the rezoning process allows them to control design, impose obligations for off-site works, make developers (rather than the municipality) take the heat in a rezoning process, and negotiate voluntary amenity contributions. However, smaller developers are often not interested in rezoning, so they will opt for lower density, already-zoned uses. If municipalities want more take-up of the intensification contemplated in their plans, they should use approaches that avoid the uncertainty and complexity of rezoning. Assuming that the key municipal concerns are ensuring community acceptability, controlling design, and securing amenity/infrastructure contributions, municipalities can address their concerns using a regulatory approach with these components:

Design	Municipalities can use Development Permits to manage the form and character of intensive residential development.
Neighbourhood acceptance	The municipality can undertake public consultation in advance of an area-wide rezoning and involve the community in identifying appropriate infill areas, creating design guidelines, and addressing concerns.
Adjacent public realm improvements	Municipalities can require upgrading of adjacent roads and infrastructure as a condition of issuing a building permit, even when no rezoning is involved.
Community amenity contributions	The Local Government Act allows amenity density bonusing, in which municipalities can establish a schedule of amenity contributions to be provided in exchange for density above a defined base. Municipalities can use amenity density bonusing in infill areas, rather than individually negotiating each rezoning, to obtain contributions for amenities.

Using these tools, it should be possible to create a regulatory environment for intensification that addresses neighbourhood concerns, meets the needs of local government, and encourages developers to make full use of the additional density that the municipality wants to achieve.

Recommendations

1. Recognizing that most intensification projects will be done by small developers or small builders, municipalities should try to do as much work as possible to prepare

the neighbourhood and provide for a straightforward approvals process for intensification projects. The need for rezoning can discourage small developers from trying to achieve the maximum density contemplated in infill areas. However, sensitive design, contribution to community amenities, a high quality public realm, and community involvement are likely to help gain neighbourhood acceptance of infill. Municipalities should consider:

- community consultation in advance of designating areas for intensification, so that developers do not have to convince the neighbourhood on a site-by-site basis. Municipalities should use this process to involve residents in identifying appropriate sites and creating design guidelines.
- pre-zoning sites on which intensification is encouraged, rather than making developers do site-by-site rezonings. Zoning in advance will create certainty for residents and for developers, will eliminate some developer risk, and is likely to make developers more interested in tapping the maximum achievable density.
- providing detailed design guidelines to help developers create projects that fit well in the context. If design guidelines are developed in consultation with the community in advance, developers and residents will benefit.
- planning in advance for the kinds of neighbourhood amenities that will be needed to meet the needs of more residents in established communities, as an input to the design of density bonus schedules in amenity zones. Demonstrating an understanding of the need to address increased load on community amenities is probably an important element in achieving community support for densification.

A system that combines pre-zoning (to reduce uncertainty and decrease the complexity of approvals), development permits (to enshrine appropriate design guidelines), municipally-driven area-wide community consultation, and a well-thought out community amenity strategy implemented in part with amenity bonus zoning will produce more successful intensification projects than a system that requires developers to rezone on a site-by-site basis.

2. Careful attention should be paid to detailed zoning parameters to ensure that they are supportive of the design guidelines and avoid creating inadvertent obstacles to infill projects on small sites.
3. Zoning and development permit area regulations for infill areas should be clear, unambiguous, easy to interpret and adhere to, and suitable for small sites. The aim is to make it as easy as possible for developers to understand the regulatory process and to achieve the kinds of projects that are desired. Municipalities should also ensure that developers know the circumstances in which development variance permits are typically granted for small infill projects.

4. The target for density should be chosen based on neighbourhood fit, financial viability, and whether the implied housing form is of interest to small developers active in the local marketplace
5. Municipalities should try to encourage densities and building forms that are conducive to the provision of new rental units on freehold sites (e.g. a basement suite plus a coach house along with a new single detached unit). These rental units have several advantages over small strata projects:
 - they are more straightforward for small builders, who may not be interested in creating and administering small strata corporations.
 - they provide rental housing which is inherently more affordable for some people than new strata units and which is more flexible for a variety of household types.
 - they can help make home ownership more affordable for people, by providing mortgage helpers.
 - while admittedly a very long term concern, if the ownership is not fractured into strata units eventual redevelopment and further densification will be easier than would be the case if the first round of densification involves the creation of many small strata corporations.
6. Municipalities should focus on intensification that can be achieved on one or two lots. Density that can only be achieved on assembled sites of three or more lots is likely to be under-used.
7. Developers should pay close attention to details of design, siting, landscaping, parking, and access. It is possible to create intensification projects that enhance neighbourhood character rather than detract from it. One weak project, especially if it is a pioneer, can make it difficult for subsequent projects to gain approval. Developers who want to be active in this market niche should invest in good quality design and earn a reputation for creating neighbourly projects.
8. There is a growing willingness on the part of municipal Councils and planners to advocate increased density. Developers should challenge municipalities to stand behind their OCP policies regarding densification and should be more willing to pursue small site rezonings for higher density if they are satisfied that Councils are on side.

1.0 Introduction

1.1 Background and Objectives

Increasing the housing capacity of already-developed urban residential land in Metropolitan Vancouver is increasingly important, for several reasons:

- There is a diminishing supply of vacant land available for new residential development in the metropolitan area, so an increasing share of new units must be created in redevelopment projects. Accommodating growth within the region's existing urban footprint will be challenging unless densities increase in a wide variety of neighbourhoods.
- Continued strong demand for housing, coupled with the limited supply of easily developable sites, is causing housing prices to increase rapidly. Housing affordability is a major concern in the region; increasing the total supply of development capacity, by increasing densities, is one way to moderate price increases.
- The residential market situation is creating pressure for the transition of commercial and industrial lands to residential use, so there are concerns about the region's ability to continue to accommodate employment growth. If the conversion of industrial land to residential use is slowed, there will be even more need to increase densities on existing residential land to accommodate regional growth.
- Making urban neighbourhoods more pedestrian-oriented and transit-supportive requires that residential development occur at higher densities than exist in most of the region's single detached housing areas. Creating neighbourhoods that are more transit-supportive is a key component in a strategy to reduce total emissions from automobiles.

Municipalities in Metro Vancouver have been very successful at creating high density residential neighbourhoods in Downtown Vancouver, in Regional Town Centres, at some rapid transit stations, and other nodes. These large-scale, high density neighbourhoods have enabled the development of thousands of housing units in locations that are highly suitable to urban living.

However, the vast majority of the residential land base in Metropolitan Vancouver is occupied by single detached housing at a relatively low density. While many of these low density neighbourhoods are not in locations that would be suitable for higher densities, because they are not easily served by public transit and not near community amenities, there are many existing low density neighbourhoods that are good places (from a planning perspective) to accommodate more housing units. While planners may find these areas suitable for densification, residents of these areas often resist forms of

redevelopment that would dramatically transform the physical character of the neighbourhood or significantly increase the level of traffic and activity. As a result, municipalities are increasingly looking for ways to facilitate the housing intensification of low density areas in ways that retain the essential elements of neighbourhood character. If intensification can be shown to increase housing capacity while respecting neighbourhood character, residents of these areas may be more accepting of higher density.

Municipalities in the region are already experimenting with densification. The City of Vancouver's Eco-Density initiative is the most publicized of these initiatives, but there are others. These projects vary widely in terms of zoning approach, design, neighbourhood acceptance, and financial performance. There are varying degrees of success, from the perspective of developers, designers, neighbours, and local government.

Metro Vancouver is particularly interested in expanding the efforts at intensification in low density neighbourhoods, because they occupy such a large share of the region's land. Metro Vancouver wants to assist municipalities in adopting successful approaches.

Therefore, Metro Vancouver retained Coriolis Consulting Corp. to examine the experience with residential intensification and identify the characteristics that are associated with successful projects.

This study has three main objectives:

1. Identify and profile 20 good examples of different forms of successful intensification in existing low density residential neighbourhoods across the region.
2. Identify and evaluate 5 good case studies that illustrate how design, development economics, and regulatory approach interact to affect the success of intensification projects.
3. Based on these examples, develop practical suggestions that municipalities can use to facilitate intensification in suitable single detached neighbourhoods.

This report was prepared by Coriolis Consulting Corp. with funding provided by Metro Vancouver and the Ministry of Community Services, Smart Development Partnership.

1.2 Defining “Intensification”

This study focuses on ways to increase the overall residential density in already-developed single detached neighbourhoods, without significantly altering their physical character. This form of residential intensification is in contrast to the complete redevelopment of single family neighbourhoods to much higher density forms of housing, in which the new neighbourhood (while attractive, marketable, and successful) bears no resemblance to what existed previously.

Intensification (as defined here) involves development that is inherently small in scale: small sites, small numbers of units, small physical forms that fit comfortably into their surroundings.

These intensification projects include single detached units with secondary suites, several attached or detached units on what was previously one or a few single detached lots, single detached units with coach-house type units above garages in the rear of the lot, and other similar forms.

1.3 Organization of this Report

This report has six main parts:

- Section 2.0 provides an overview of current municipal planning policy regarding intensification within Metropolitan Vancouver.
- Section 3.0 profiles 20 completed projects in Metropolitan Vancouver. The profiles are in a standard format that presents basic information about the project (location, number of units, type of units, previous residential use, zoning, design). This section also extracts some general lessons from the profiles.
- Section 4.0 presents 5 case studies of projects or neighbourhoods that offer some particularly useful insights into the process of intensification. These case studies include good examples of successful, already-completed intensification, examples in which the level of intensification has been less than what was hoped, and one example of an emerging area in which there has been considerable planning and design work done in the hope of encouraging intensification.
- Section 5.0 summarizes the findings from interviews with some builders, developers, and designers involved in intensification projects.
- Section 6.0 concentrates on physical form and character issues associated with intensification and uses real projects to illustrate successful and not-so-successful design approaches.
- Section 7.0 contains conclusions and recommendations, with an emphasis on practical suggestions for municipalities and developers.

2.0 Review of Municipal Planning Policies about Intensification

Municipal planning policy regarding intensification in established single family neighbourhoods varies throughout the region. Some municipalities have taken a proactive approach such as rezoning existing single areas for higher density uses that have a form and character that fit well within the neighbourhood, while some municipalities have a more reactive approach, considering applications for rezonings and Official Community Plan (OCP) amendments on a case-by-case basis.

The following points summarize a review of the planning and zoning policies of Burnaby, Coquitlam, Delta, Langley, Maple Ridge, New Westminster, North Vancouver City, North Vancouver District, Port Coquitlam, Richmond, Surrey, and Vancouver:

1. In their OCPs or planning policy documents, most municipalities in the region recognize the diminishing supply of vacant land available for new residential development and the need for intensification of residential uses in established single family areas. For example, New Westminster's OCP notes that "most of the land in New Westminster is occupied, [so] further population growth will be accommodated primarily through redevelopment and intensification of under-utilized land"¹ and Coquitlam's City-Wide OCP notes that the serviced parts of the City are developed and there will be a need to accommodate single family and multi-family infill in established areas.²
2. In their OCPs, several municipalities outline general goals and directions that encourage intensification in established single family neighbourhoods. For example, Burnaby's OCP advocates establishing "increased opportunities for ground-oriented housing", "continuing to provide for increased housing opportunities in the City with particular encouragement for ground-oriented housing forms", and broadening "housing options within the City and its neighbourhoods to allow more residents to stay in familiar neighbourhoods as they age and their housing needs change".³
3. The concerns most commonly raised about intensification in planning policy documents include compatibility and fit with the character of the established single family neighbourhood, ensuring inclusive community consultation processes, dealing with access and parking, and encouraging ground-oriented housing forms.
4. In their Zoning Bylaws, most municipalities have existing zoning districts that allow small lot single family or low density forms of multi-family residential that would fit

¹ New Westminster, "Official Community Plan Bylaw No. 6476, 1998." Adopted 15 June 1998. Section 2.1 Population and Growth Management.

² City of Coquitlam, "City of Coquitlam Citywide Official Community Plan Bylaw No. 3479, 2001." Adopted 4 March 2002, consolidated to 7 September 2004. Page 1-2.

³ City of Burnaby, Official Community Plan, Section 4.0 Residential.

well within established single family areas. However, few municipalities have pre-zoned many sites for these kinds of projects, preferring to rezone on a site-by-site basis.

5. The municipalities with the most intensification activity in established single family areas (e.g. Burnaby, North Vancouver City, North Vancouver District, Richmond, Vancouver) all have proactive planning policies or processes in place to encourage intensification:
 - Burnaby's OCP and planning policy outlines a process whereby residents of a block or area can collectively seek rezoning of their single family properties to Burnaby's R12 zoning district (which permits single family and two family dwellings on small lots). This process requires the property owners to demonstrate to the City that most area residents are in favour of the rezoning. Once the block or area has been rezoned, developers of individual properties can seek approvals for intensification projects without having to individually bear the cost of a rezoning. It is noteworthy, though, that the onus is on existing residents and property owners to seek rezoning because Burnaby has elected to not initiate area-wide rezoning.
 - North Vancouver City's OCP designates some established single family areas for different "levels" of residential density and outlines specific zoning districts/densities that are suitable for these areas. In most cases, a rezoning is still required from the existing single family or two family dwelling zone.
 - North Vancouver District's OCP designates specific established single family blocks for small lot infill, duplex, or multiplex infill development. In some cases, the zoning has been aligned with the OCP designation (e.g. a block that is designated for small lot infill has also been zoned for small lot infill), but in other cases site-by-site rezonings are required.
 - Richmond has adopted an Arterial Road Policy that encourages residential intensification projects along arterial roads, focusing on replacing existing residential dwellings (usually single family homes) with new housing (generally in a more dense form such as smaller single family homes, coach housing, two family dwellings, or townhouses). Richmond also has a Lane Policy which requires that a rear lane to specific standards be dedicated and paid for by the applicant when a lot is redeveloped along an arterial road. These rear lanes are necessary to accommodate more units without creating more driveway accesses onto arterial roads. In most cases, intensification projects along arterial roads require a rezoning and OCP re-designation.
 - After an extensive community consultation process, the City of Vancouver initiated an area-wide rezoning of the Kingsway and Knight area to facilitate the

intensification of this predominantly single family neighbourhood. The area was rezoned from a mix of single family zones that allow a density up to FSR 0.6 to a mix of small house/duplex zones and rowhouse zones that allow a density up to FSR 1.2. After that project was completed, the city began work on its comprehensive, city-wide Eco-Density initiative which will aim to find a wide variety of densification opportunities including the creation of high density, mixed use neighbourhood centres, densification along major road corridors, and densification within single detached neighbourhoods.

The idea of densifying single family neighbourhoods is not new, as many municipalities have incorporated policies supportive of densification in their OCPs. Implementation has to date been limited and scattered for various reasons. The aim of this study is to suggest ways in which the pace of intensification can be increased.

3.0 Profiles of Examples of Intensification

One way to encourage densification is to publicize successful examples, demonstrating to municipalities, developers, and community groups that this type of development can be viable and attractive.

We selected 20 completed projects that illustrate successful intensification in a variety of neighbourhoods with different physical and market characteristics.

3.1 Selection Process

We selected the 20 projects using these steps:

1. Review background materials provided by Metro Vancouver, including information about intensification projects in several municipalities in the region.
2. Review zoning and OCP maps and bylaws for the municipalities in Metropolitan Vancouver to:
 - understand different approaches to accommodating higher densities in established low density residential areas.
 - identify specific areas or blocks that are zoned single family but designated in a plan for some form of intensification.
 - identify specific properties that are zoned for low density multi-family uses within a block or area that is zoned mainly for single family uses.
3. Contact municipal planning departments to determine specific examples, blocks, or neighbourhoods that could be explored as potential examples of good infill and intensification.
4. Conduct internet research, looking for examples of infill and intensification in Metropolitan Vancouver.
5. Obtain input from Metro Vancouver and Project Steering Committee about candidate projects for inclusion in the profiles and criteria for helping to select the final list of projects to be profiled.
6. Conduct fieldwork to gauge the success of the examples identified so far and to look for other examples in specific blocks or areas identified in the process.
7. Select the 20 projects to be profiled, using these criteria:
 - Not already documented by Metro Vancouver in its Ground-Oriented Medium Density Housing (GOMDH) Series completed in 2000 and 2003.
 - Already completed or under construction (i.e. not still in the approvals process).
 - Representing several municipalities in Metropolitan Vancouver.
 - Illustrating a range of different housing forms.

3.2 List

As shown in Exhibits 1 and 2, the 20 projects that are profiled include examples from 10 municipalities in the region.

EXHIBIT 1: LOCATION OF PROJECTS THAT ARE PROFILED

Municipality	Number of Profiles
Burnaby	4
Coquitlam	2
Delta	1
Langley	1
New Westminster	2
North Vancouver City	3
North Vancouver District	1
Richmond	1
Vancouver	4
White Rock	1
Total	20

EXHIBIT 2: MAP SHOWING GENERAL LOCATION OF PROJECTS THAT ARE PROFILED

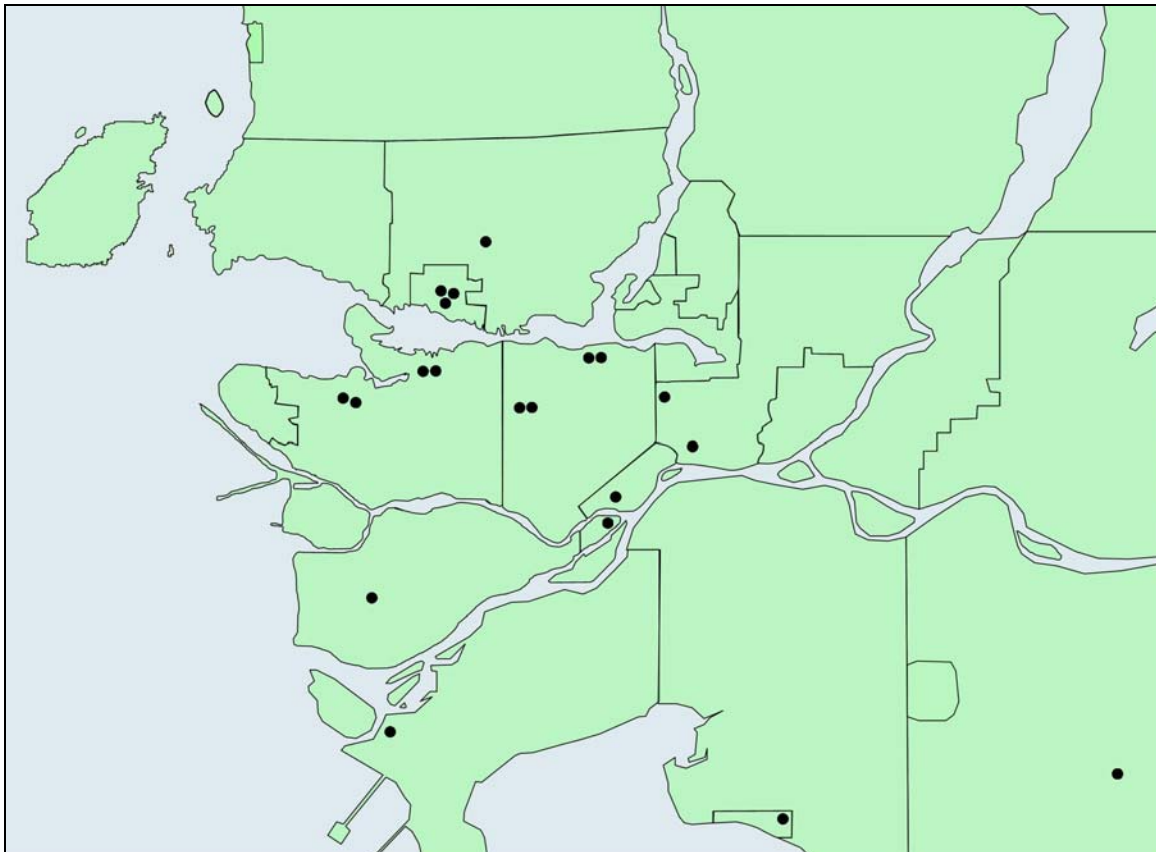


Exhibit 3 lists the 20 projects (with civic address and a brief description) that are profiled. The profiles are listed alphabetically by municipality and, within each municipality, from west to east.

The project profiles are contained in Attachment A. Each profile is a stand-alone piece about the individual project that includes (as available):

- project details (including civic address, description of project, unit count and size, site size, floor area ratio or floor space ratio, number of parking stalls, year completed, developer, and architect/designer).
- site plan and photographs. In some cases, a site plan showing the building footprint and unit layout was available and, in other cases, only an aerial photograph of the project was available.
- a description of the project, including information about the previous use of the property and the design and character of the intensification project.
- information about the regulatory approach that permitted the intensification project.

EXHIBIT 3: LIST OF 20 PROJECTS THAT ARE PROFILED

#	Address	Municipality	Description
1	3109 Gilmore Avenue and 4086 Dominion Street	Burnaby	Two semi-detached units on a large corner lot that was previously developed with a single family house.
2	3158 Gilmore Avenue	Burnaby	Four townhouse-style units on one corner lot that was previously developed with a single family house.
3	4006-4008 and 4018 Albert Street	Burnaby	Six stratified units (a side-by-side duplex and a fourplex) on two adjacent lots that were previously each developed with a single family house.
4	4327 to 4333 Albert Street	Burnaby	Two adjacent 2-unit, front-to-back dwellings on one lot that was previously developed with a single family house.
5	728A & 728B Dogwood Street	Coquitlam	Side-by-side duplex with front garages on one lot that was previously developed with a single family house.
6	1125 to 1127 Thomas Avenue	Coquitlam	Side-by-side duplex with garages in the lane on one lot that was previously developed with a single family house.
7	4931 to 4947 Central Avenue	Delta (Ladner)	Two large single family lots were subdivided into four lots and each developed with a single family house and coach house with no lane.
8	27283 30 th Avenue	Langley	Fourplex in a single family neighbourhood.
9	1404 and 1406 Hamilton Street	New Westminster	One large single family lot that was subdivided into two small lots, each of which was developed with a single family dwelling with a secondary suite in the rear.
10	109 to 189 Fairweather Lane, Port Royal	New Westminster	Fee simple small lot single family houses.
11	223/225 West 17 th Street	North Vancouver City	Four detached houses on one large lot that was previously developed with a single family house.
12	333 West 14 th Street	North Vancouver City	Side-by-side duplex with a third unit over the garage on one lot that was previously developed with a single family house.
13	522 East 12 th Street	North Vancouver City	Older, renovated single family dwelling with a detached coach house.
14	3150, 3156, 3158 Fromme Road	North Vancouver District	Triplex infill project.
15	9251 to 9311 No. 3 Road	Richmond	Two adjacent lots that were subdivided into six lots and each developed with a single detached house and a coach house over the garage off a rear lane.
16	1803 MacDonald Street ("Tatlow Court")	Vancouver	A two storey, 9 unit multi-family project in a neighbourhood with single family, single family with suites, and duplex units.
17	2398 West 7 th Avenue	Vancouver	Triplex with a coach house over the rear garage.
18	877 to 889 Prior Street and 886 to 898 Union Street	Vancouver	Front-to-back duplex units.
19	1614 and 1620 Grant Street	Vancouver	Triplex with a coach house above an open carport.
20	15383 to 15399 Russell Avenue	White Rock	Subdivision of one single family lot into five fee simple lots, each with one single family dwelling.

3.3 Lessons Learned

These 20 completed projects show that:

1. Intensification projects can fit well in their neighbourhoods if they:
 - Reflect the design character of the existing houses in the area.
 - Have high quality landscaping.
 - Use careful design to create privacy from the street and adjacent properties (e.g. location of entrances, windows).
 - Pay attention to daylight angles.
 - Manage off-street parking well.
 - Use a variety of colours and materials.
2. Corner sites offer great potential for infill to be done in a low impact way, because of the opportunity for units to be addressed to different streets.
3. Early acceptance of the idea of intensification in an established single family neighbourhood depends on the pioneer projects being well done (e.g. project design, landscaping, attention to details).
4. There are good examples in Metropolitan Vancouver of projects that:
 - Are multi-unit projects designed in a way that does not look like cloning, by using different materials and paying attention to location and design of entryways.
 - Include a coach house over a garage, even in locations without a lane.
5. Many projects are creating units that are owned, not rental. In the very long term, this may make a future wave of intensification more difficult, because these properties will require two or more strata title owners to agree on redevelopment. Assemblies of strata units will in general be more challenging than assemblies of single detached lots because strata lot assembly is an “all or nothing” proposition whereas single family lot assembly inherently allows the flexibility to assemble different numbers of adjacent lots.
6. Single family houses with one rental suite, duplexes, and small strata developments (two to four units) appear to account for most of the gains in housing capacity. So far, there have not been many projects that incorporate new rental coach houses or a basement suite and a coach house.

4.0 Case Studies

4.1 Selection Process

The 5 case studies were selected based on input from Metro Vancouver and Project Steering Committee, a review of zoning and OCP maps and bylaws for the municipalities in the region, contact with municipal planning departments, internet research, and fieldwork.

The intent was to select case studies in different municipalities in the region that illustrate the following types of situations:

1. The site or area is a good illustration of successful intensification, in which case the review shows how economic, regulatory, and other factors combined to support the project.
2. The site or area underwent intensification at a lower density than could have been achieved based on existing land use policy, or there was an expectation that a site or area would experience intensification based on existing land use policy but it has not been occurring or has just started to occur. In these cases, the review shows how economic, regulatory, or other factors have limited intensification.
3. There is new or emerging policy for a site or area that supports intensification. In these cases, the review evaluates whether the area is likely to be successful.

4.2 List

As shown in Exhibits 4 and 5, the case studies include examples from four municipalities in the region.

EXHIBIT 4: LOCATION OF CASE STUDIES

Municipality	Number of Case Studies
Burnaby	1
Delta	1
North Vancouver City	1
Vancouver	2
Total	5

EXHIBIT 5: MAP OF LOCATION OF CASE STUDIES

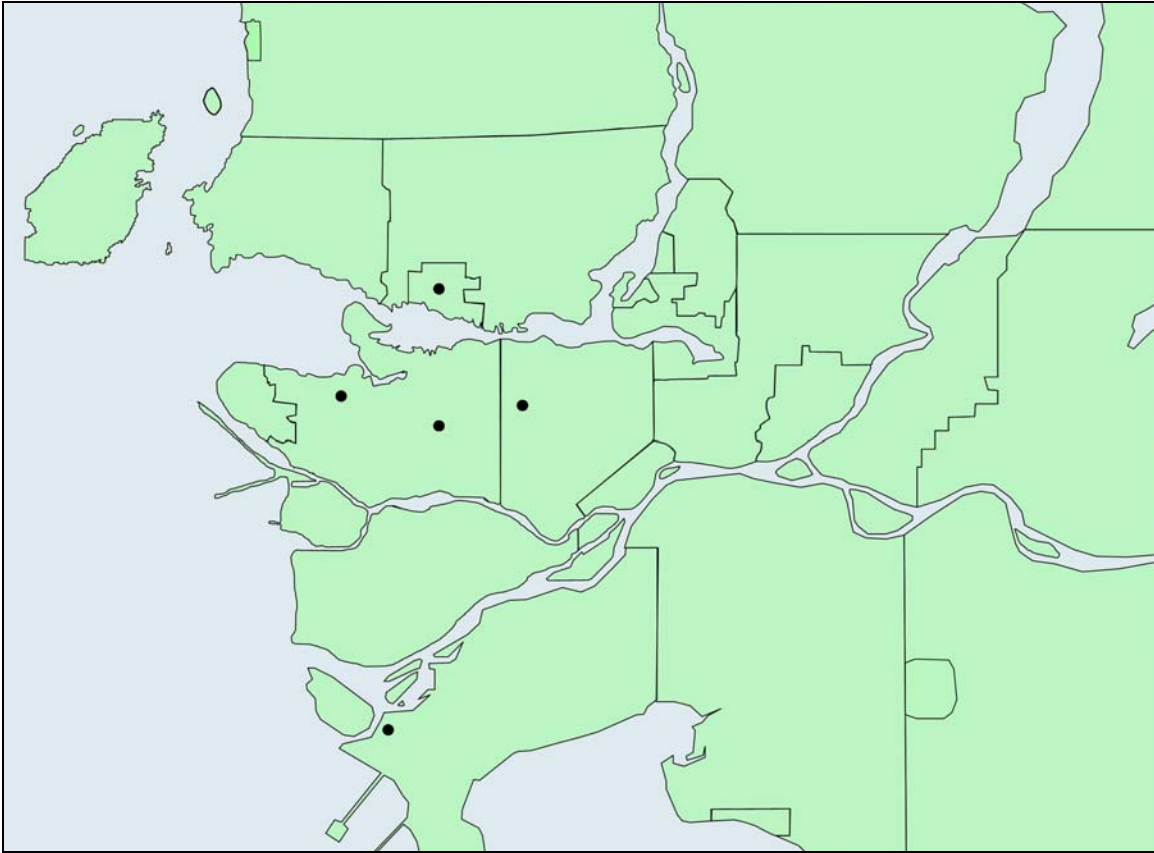


Exhibit 6 lists the case studies alphabetically by municipality.

The case studies are contained in Attachment B. Each case study is a stand-alone piece about the individual project or area that includes:

- Identification of the site or area.
- Description (before and after).
- Reasons for selection as case study.
- Planning/regulatory approach to intensification.
- Form and character.
- Analysis of financial performance.
- Comments on lessons learned, implications for other projects, and replicability of the case study.

EXHIBIT 6: LIST OF CASE STUDIES

#	Address	Municipality	Description
1	Broadview area	Burnaby	Area designated for multi-family development but saw redevelopment to duplex and single family dwellings for many years, although recently there has been interest in multi-family development including one small completed project.
2	4885 to 4957 Central Avenue	Delta	Single family block that is zoned for single family or duplex development and designated for townhouse, but has not seen any redevelopment to townhouses.
3	223/225 West 17 th Street	North Vancouver City	Four detached houses on one large lot that was previously developed with a single family house.
4	1803 MacDonald Street ("Tatlow Court")	Vancouver	A two storey, 9 unit multi-family project in a neighbourhood with single family, single family with suites, and duplex units.
5	Kingsway & Knight Area	Vancouver	Area that was rezoned from a mix of single family and two family zones to new small house/duplex and courtyard rowhouse zones, with some applications being submitted for intensification projects.

4.3 Summaries of the Case Studies

4.3.1 Broadview Area in Burnaby

This established neighbourhood is zoned for single detached and two family (semi-detached and duplex) uses and has an OCP designation that allows townhouses and apartments. Single detached and duplex construction does not require site assembly or rezoning; townhouse projects require both. The rezoning process can also trigger requirements to upgrade the public realm, including road widening, sidewalks, boulevard landscaping, street trees, and sometimes underground wiring.

Until recently, only new single detached and two family units were being built. One townhouse project has recently been completed.

Financial analysis indicates that duplex development supports a similar land value to single detached, so duplex builders should be able to outbid house builders. Townhouse development supports even higher land values and significantly greater developer profits, but assembly and rezoning are required.

For townhouses to be attractive for developers it must be possible to find two or three adjacent lots with "knock-down" houses and rezoning must be seen as relatively quick,

low-cost, and low risk. The barriers of site assembly and rezoning have limited the take-up of the potential townhouse density. Builders have generally preferred the comparatively easier development of two family projects.

4.3.2 4885 to 4957 Central Avenue in Delta

This single detached neighbourhood can accommodate new single family units on existing lots, duplexes, townhouses, or small lots with single detached units with coach houses. However, there has been no interest in townhouse development. All recent projects have been small lots with new single detached homes and coach homes.

All of the intensification options are more financially attractive than single family on the existing lots. Townhouses are on paper more financially attractive than small lots or duplexes, but townhouse projects involve more cost, more risk, and rezoning. Small builders have been more comfortable with the small lot projects, creating single detached homes with rear-yard coach houses.

4.3.3 223/225 West 17th Street in North Vancouver City

This project involved creating four strata title detached units on one former single detached lot.

The financial performance of the project was attractive, supporting a higher land value and higher developer's profit than a new single detached house would have.

The project was developed just before the city changed a development regulation. Allowable FAR has been increased, but below grade areas are now included in the calculation. When the project was developed, below grade space (which turned out to be very marketable for storage, home theatre, or recreation use) was excluded, so the developer actually achieved more floor space than would now be possible.

The developer noted that one reason for the project's success was the relatively large size of the lot, which permitted four detached units rather than townhouses.

4.3.4 1803 MacDonald Street in Vancouver

This project involved the development of nine multi family units on one large single family lot.

The lot was very deep, allowing enough floorspace at the allowable density to create nine units instead of one new single family house.

The financial analysis shows that this project was much more profitable than constructing one new house, but also shows that the project would not have been viable if it had required the assembly of adjacent, typical-sized lots in this neighbourhood.

This project took advantage of an unusually large lot and supportive zoning to create a very successful infill that is not readily replicable on normal lots in the neighbourhood.

4.3.5 *Kingsway and Knight Area in Vancouver*

The City of Vancouver has put in place the zoning and design guidelines to encourage redevelopment of this older single family neighbourhood to duplexes, rowhouses, and houses with suites.

Financial analysis shows that all of the intensification projects allowed under the new zoning are attractive to developers and support high enough land value to enable developers to acquire lots with older single family houses.

4.4 **Lessons Learned**

Looked at collectively, these case studies demonstrate some interesting points about intensification:

- Intensification can be financially attractive to developers in a wide range of locations and market circumstances.
- Intensification that involves only one lot (e.g. replacement of one single family unit with a new unit and coach house, duplex, or several strata units) can be more appealing than projects that require assembly of two or more lots. While larger townhouse projects may have the potential to yield higher profits, the cost and difficulty of assembly may be prohibitive, especially in neighbourhoods with a mix of older, low-value and newer high-value improvements.
- Developers will not necessarily use all of the allowable density. While it seems logical that developers would want to maximize density, small builders may be more inclined to do projects that do not require rezoning, that minimize risk, and that they are comfortable with. Creating detached units with coach houses, for example, may be more attractive than townhouse projects for builders who are mainly active in the single detached market.
- Successful projects sometimes take advantage of unique circumstances, such as unusually large lots. These projects do not necessarily mean that intensification will work on all properties in a neighbourhood.
- The optimal density is not necessarily the highest density. The “right” density provides enough floorspace to support site acquisition, results in a project size and unit type that developers are comfortable with, and results in a project character that fits in the neighbourhood.

5.0 Interviews with Developers

We interviewed several developers who have recently been involved with completed intensification projects. We asked them about their experiences (positive and negative) and about their suggestions for how to encourage more of this type of redevelopment in single detached neighbourhoods.

By reviewing a wide range of infill projects across the region, we found that infill developers tend to be smaller firms. Many are builders/developers of single detached or duplex projects who decide to pursue an opportunity for a slightly larger project, rather than larger developers looking for a scaled-down project. The prevalence of small developers has implications for municipalities who want to increase the take-up of opportunities for infill, because it is important to create the circumstances that will appeal to smaller firms.

The comments from developers were highly consistent even though their projects were in a variety of municipalities and neighbourhoods.

The main comments were:

1. The developers were generally positive about their experiences and in most cases are likely to continue to look for opportunities for intensification projects.
2. This kind of project is a niche opportunity for small builders and developers, because the projects involve too few units to be of interest to larger companies. Because the developers tend to be small, they are interested in projects that do not require large site assemblies, rezoning, complex approvals processes involving lengthy neighbourhood consultations, or high risk. Most of these developers are more comfortable with projects that use variations on single detached units (e.g. single unit plus coach house, duplex, or perhaps two to four detached strata units) rather than townhouse projects involving higher total cost.
3. The developers note that it is essential that allowable densities are high enough to make it financially viable to acquire/demolish an existing single detached home. But they also acknowledge that densities must result in projects that are a good fit in the neighbourhood.
4. Developers observe that there is almost always some neighbourhood opposition to densification projects. Consequently, their main suggestion for encouraging more projects is for municipalities to put the necessary zoning in place in advance. OCP policies are not sufficient, as developers still must go through rezoning which adds to the time, costs, and risk of the approvals process. This is why some developers have opted to under-utilize potential density, building lower density projects allowed under existing zoning rather than pursuing rezoning to take advantage of higher density

contemplated in an OCP policy. Developers suggest that they would be more likely to fully use available density if sites are pre-zoned for this density.

5. Small developers are interested in intensification projects that involve new rental units (e.g. single detached units with suites and/or coach houses) because there is a market for these units (e.g. extended families, purchasers wanting mortgage-helpers) and because they avoid the need to create and administer small strata corporations.

6.0 Housing Form and Design

Successfully integrating new higher density housing projects into communities that have previously been developed at a comparatively lower density requires attention to building form, site layout and design details. Projects that manage to add density while not seeming out of place with adjacent lower density development tend to include some or all of these design features:

- the building form matches the scale and design of surrounding development.
- site layout and building design preserve privacy for individual units within the project and existing adjacent properties.
- there is good attention to design detail in pedestrian access and entries.
- colour is either kept simple or used judiciously to add visual interest and variety.
- building materials are of high quality.
- the visual impact of off-street parking and access is minimized by placing garages at the rear or through the use of elevation changes and landscaping.
- the quality of landscaping design and installation is high.

This section uses photographs of a wide range of existing projects to show how building form, site layout, entry design, colour, detailing, exterior materials, parking, and landscaping can all contribute to the successful integration of a densification project into an existing, low density neighbourhood.

6.1 Building Form

Where the existing residential inventory includes interesting design character, a densification project should incorporate similar design details.

The Infill unit on right successfully reflects the character and height of adjacent heritage home.



It is generally easier to seamlessly add a densification project to a neighbourhood if the form and height of the new project are similar to adjacent housing.

The new building form seems much denser than the adjacent single storey house.



Designs that avoid creating side-by-side “twin” attached units blend in more effectively in a community that has a single detached character.

“Twin” look duplex that would not blend in well in a neighbourhood with a single detached character.



In established communities where the existing housing stock is older but well maintained, the least disruptive way to add density may be to allow coach house units over garages.

View of older, renovated house.



New garage and carriage house unit off lane at rear of renovated older house.



6.2 Site Layout

Slopes and corner sites can be used to advantage. A corner lot allows for units to front on different streets, enabling design that creates a single family dwelling look on each frontage.



The photos opposite and above show two frontages of a corner lot duplex structure that has achieved a single detached look on each frontage.

Corner lots also allow interesting design opportunities for coach house units over garages.

Corner lot allows coach house unit to have ground level entry from the side street. Entry to garage is from rear lane.



Sloped sites allow the mass of a structure to be visually softened and can add design interest.

Sloped site creates visual interest in stepped roof line. This project has not used colour or varied design detailing to differentiate the two units.



6.3 Entry Design

Entry design can have a significant impact on how well a densification project blends in with nearby lower density housing.



Careful placement of entry doors to three units contributes to single detached look.

Three unit project with entries to individual units indicated by trellis arches. The design achieves a single detached look and entrances are spread out for improved privacy.



Photo of entrance detail for two front units in above project. Entry to the rear unit is shown at far right in above photo.



Main unit has single detached type entry at right of photo and secondary unit has private entry inset at front left.



Project includes three units in main structure and one coach unit over the garage. The single detached look and privacy for individual units are achieved by placing entrances to units on different sides of the structure.



6.4 Colour and Design Details

Careful use of colour and design details can help minimize the multifamily look of a design.

Units share the same basic design but each achieves a unique look through use of colour and design details.



Here, a basic design shared by two units is varied through use of different design details such as windows and colour.



Although design details have been varied for each unit, the flat side-by-side layout and lack of variety in colour gives the units a “twin” look.



Here, there is no attempt to vary the look of these mirror image units. Colour and design details are identical.



6.5 Building Materials

Successful projects tend to use finishing materials that reflect the character of the surrounding neighbourhood. Trendy materials are used sparingly and appropriately.

Varied use of cedar shake siding creates unique look.



Use of rock facia at foundation wall of sunken garage is appropriate.



Simple wood siding and rock work is appropriate for this project located in a heritage district.



6.6 Parking and Access

One of the main challenges in successful densification is to find ways to hide off-street parking. Sites with rear lane access have an obvious advantage in this regard, so where lanes do not exist municipalities should consider ways to encourage the provision of lanes. Sites without rear lane access must find creative ways to minimize the impact of the driveway and garage on overall design.

Visual impact of entrance to underground parking is minimized by veranda-type detailing.



Garages at the front can be softened by articulated setbacks, the use of designs that mimic residential structures, and varied use of colour.

Garage design achieves a “residential” look.



Here a sensitively designed garage at front is used to create a private courtyard between garage and residence, which is set back deeper on the lot.



Instead of placing the garage at the front on sites without rear lane access, garages can be placed at the rear and accessed by side-yard driveways. The visual impact of the driveway can be softened with landscaping treatment.

Garage with carriage unit above is set at rear of lot with access by driveway at side. Visual look of driveway has been softened with grassy centre strip. This approach requires a shallow front yard with main residential structure set closer to the street.



On narrower lots, one driveway can be shared by two properties.



Here, the visual impact of the driveway has been softened by use of different paving material for adjacent walk way and high quality landscaping.



On narrow lots without rear lane access, the visual impact of the garage can be minimized through landscaping and design details.

Impact of front yard garage is reduced by sinking it partially below grade. Porch detailing and landscaping also help reduce the visual impact of the garage.



Poor handling of the garage and driveway can result in an un-neighbourly design that can lead to neighbourhood resistance to densification projects.

This is the front of this duplex project, which has a look that is more typical of a lane elevation. The garage and driveway dominate the street frontage and create an unfriendly image.



This duplex project has attempted to minimize the impact of its garages, but the “twin” design and overall lack of variety in colour and finishing details result in a massive looking structure that may not be well received in a traditional single family neighbourhood.



6.7 Landscaping

Quality landscaping design and installation can improve a project's ability to set a positive tone in its neighbourhood.

Simple planting material and fencing are effective here.



Fencing creates a privacy screen for a carriage unit adjacent to a lane and the gateway adds interest to the entrance.



Example of uninspired landscaping design and installation.



Features such as the arched gates that are used here in an attempt to make entries “special” can become monotonous if over-used.



If continuous fencing is used across several properties, a simple treatment like the black iron fence in this photo can be more effective and less monotonous than the fencing treatment in the photo above.



7.0 Conclusions and Recommendations

7.1 Conclusions

1. There has been a wide variety of completed intensification projects in low density neighbourhoods throughout Metropolitan Vancouver. Most of these projects have involved replacing one or more single detached units with new single detached units on smaller lots, single detached units with coach houses, a few detached strata units, or a few attached multifamily units. There have not been many projects with more than about six units.
2. Most projects have been completed by small builders who are generally more familiar with the single detached or duplex market than with larger multifamily projects. The size, experience, and financial resources of these firms tend to make them more comfortable with projects that are small. Consequently, these developers tend to look for projects that will not require multiple lot site assemblies, rezoning, extensive community consultation processes, or large development cost.
3. While most intensification projects appear to involve some degree of neighbourhood opposition, it appears that projects that pay close attention to neighbourhood character (in terms of massing, design details, colour, exterior materials, landscaping, and treatment of parking) have been the most readily accepted. Essentially, the more a project looks like its context, the more acceptable it is. This suggests that intensification projects should pay close attention to detail, strive for a relatively high level of quality, and put a priority on fitting in rather than on innovative design.
4. Many intensification projects have under-utilized the potentially available density, especially when rezoning is required to achieve additional density that might be anticipated in an OCP designation. Small developers appear to generally favour a predictable, low-risk process (even it is on paper less profitable) than having to engage in a lengthy approval process that necessarily carries some political risk if neighbours oppose rezonings.
5. Most projects have occurred on a single lot or two adjacent lots. There are few examples in which three or more lots have been assembled. This is not surprising, considering that most projects are developed by small firms and considering that most single detached areas in Metropolitan Vancouver contain a mix of older houses (that can be acquired for redevelopment) and newer houses that are too valuable to be candidates for redevelopment.
6. Most projects have achieved a density gain in the range of two to four housing units per single detached lot. For this type of intensification to have a material impact on total regional housing capacity, many lots will have to redevelop.

7. Given the potential for community opposition, the first intensification projects in a neighbourhood must be excellent examples in order to avoid a backlash against future projects. Careful attention to form, character, and neighbourliness is very important.
8. While municipalities and small developers are both interested in densification projects, their different perspectives on approvals processes can result in a situation in which there are fewer projects being developed than desired. Municipalities may prefer to not pre-zone, as the rezoning process allows them to control design, impose obligations for off-site works, make developers (rather than the municipality) take the heat in a rezoning process, and negotiate voluntary amenity contributions. However, smaller developers are often not interested in rezoning, so they will opt for lower density, already-zoned uses. If municipalities want more take-up of the intensification contemplated in their plans, they should use approaches that avoid the uncertainty and complexity of rezoning. Assuming that the key municipal concerns are ensuring community acceptability, controlling design, and securing amenity/infrastructure contributions, municipalities can pre-zone land and address their concerns using a regulatory approach with these components:

Design	Municipalities can use Development Permit Areas, pursuant to Section 919.1 of the Local Government Act, which contemplates using development permits to manage the form and character of intensive residential development. Design guidelines can be adopted as part of the Development Permit Area designation.
Neighbourhood acceptance	The municipality can undertake public consultation in advance of an area-wide rezoning and involve the community in identifying appropriate infill areas, creating design guidelines, and identifying and addressing neighbourhood concerns.
Adjacent public realm improvements	Section 938 of the Local Government Act allows municipalities to require upgrading of adjacent roads and infrastructure as a condition of issuing a building permit, even when no rezoning is involved.
Community amenity contributions	Section 904 of the Local Government Act allows amenity density bonusing, in which municipalities can establish a schedule of amenity contributions to be provided in exchange for density above a defined base. Municipalities can use amenity density bonusing in infill areas, rather than individually negotiating each rezoning, to obtain contributions for amenities not eligible for Development Cost Charges.

Using these tools, it should be possible to create a regulatory environment for intensification that addresses neighbourhood concerns, meets the needs of local government, and encourages developers to make full use of the additional density that the municipality wants to achieve.

7.2 Recommendations to Municipalities

1. Recognizing that most intensification projects will be done by small developers or small builders, municipalities should try to do as much work as possible to prepare the neighbourhood and provide for a straightforward approvals process for intensification projects. The need for rezoning can discourage small developers from trying to achieve the maximum density contemplated in infill areas. However, sensitive design, contribution to community amenities, a high quality public realm, and community involvement are likely to help gain neighbourhood acceptance of infill. Municipalities should consider:

- community consultation in advance of designating areas for intensification, so that developers do not have to convince the neighbourhood on a site-by-site basis. Municipalities should use this process to involve residents in identifying appropriate sites and creating design guidelines.
- pre-zoning sites on which intensification is encouraged, rather than making developers do site-by-site rezonings. Zoning in advance will create certainty for residents and for developers, will eliminate some developer risk, and is likely to make developers more interested in tapping the maximum achievable density. Pre-zoning, of course, means that municipalities will have to use development permits, amenity density zoning, and other means under the Local Government Act to achieve the leverage that they now gain in the rezoning process.
- providing detailed design guidelines, applied in Development Permit Areas, to help developers create projects that fit well in the context. If design guidelines are developed in consultation with the community in advance, developers and residents will benefit.
- planning in advance for the kinds of neighbourhood amenities that will be needed to meet the needs of more residents in established communities, as an input to the design of density bonus schedules in amenity zones. Demonstrating an understanding of the need to address increased load on community amenities is probably an important element in achieving community support for densification.

In our view, a system that combines pre-zoning (to reduce uncertainty and decrease the complexity of approvals), development permits (to enshrine appropriate design guidelines), municipally-driven area-wide community consultation, and a well-thought

out community amenity strategy implemented in part with amenity bonus zoning will produce more successful intensification projects than a system that requires developers to rezone on a site-by-site basis.

2. Careful attention should be paid to detailed zoning parameters to ensure that they are supportive of the design guidelines and avoid creating inadvertent obstacles to infill projects on small sites. Parameters such as minimum site size, maximum density, off-street resident and visitor parking requirements, areas excluded/included from floor space calculations, special requirements such as recycling areas or car wash parking stalls, and minimum setback requirements should be checked carefully to ensure that intensification is physically achievable and financially viable on relatively small sites. Goals for intensification will be hard to achieve if they depend entirely on the assembly of several lots into large development sites, as most single detached neighbourhoods include a significant portion of sites that are too valuable (because the houses are too new) to be candidates for redevelopment. Intensification will tend to occur on one or two lots at a time (which is not a bad thing in terms of impact on neighbourhood character), so zoning regulations should reflect this.
3. Zoning and development permit area regulations for infill areas should be clear, unambiguous, easy to interpret and adhere to, and suitable for small sites. The aim is to make it as easy as possible for developers to understand the regulatory process and to achieve the kinds of projects that are desired. Municipalities should also ensure that developers know the circumstances in which development variance permits are typically granted for small infill projects.
4. The target for density should be chosen based on neighbourhood fit, financial viability, and whether the implied housing form is of interest to small developers active in the local marketplace. It is better to have many completed intensification projects that achieve an FAR of 0.75 than to have a large inventory of unused potential for FAR 0.9 projects.
5. Municipalities should try to encourage densities and building forms that are conducive to the provision of new rental units on freehold sites (e.g. a basement suite plus a coach house along with a new single detached unit). These rental units have several advantages over small strata projects:
 - they are more straightforward for small builders, who may not be interested in creating and administering small strata corporations.
 - they provide rental housing which is inherently more affordable for some people than new strata units and which is more flexible for a variety of household types.
 - they can help make home ownership more affordable for people, by providing mortgage helpers.

- while admittedly a very long term concern, if the ownership is not fractured into strata units eventual redevelopment and further densification will be easier than would be the case if the first round of densification involves the creation of many small strata corporations.
6. Municipalities should focus on intensification that can be achieved on one or two lots. Density that can only be achieved on assembled sites of three or more lots is likely to be under-used.

7.3 Recommendations to Developers

1. Developers should pay close attention to details of design, siting, landscaping, parking, and access. It is possible to create intensification projects that enhance neighbourhood character rather than detract from it. One weak project, especially if it is a pioneer, can make it difficult for subsequent projects to gain approval. Developers who want to be active in this market niche should invest in good quality design and earn a reputation for creating neighbourly projects.
2. There is a growing willingness on the part of municipal Councils and planners to advocate increased density. Developers should challenge municipalities to stand behind their OCP policies regarding densification and should be more willing to pursue small site rezonings for higher density if they are satisfied that Councils are on side.

8.0 Attachments

Attachment A: 20 Project Profiles

Disclaimer: These 20 Project Profiles were created by Coriolis Consulting Corp., but Coriolis did not obtain any approval from the developers or property owners to publish information about the projects. Coriolis' scope of work was to document the examples. Coriolis assumes that Metro Vancouver will obtain any approval required to publish these materials.

Profiles of Densification Projects in Single Detached Housing Areas

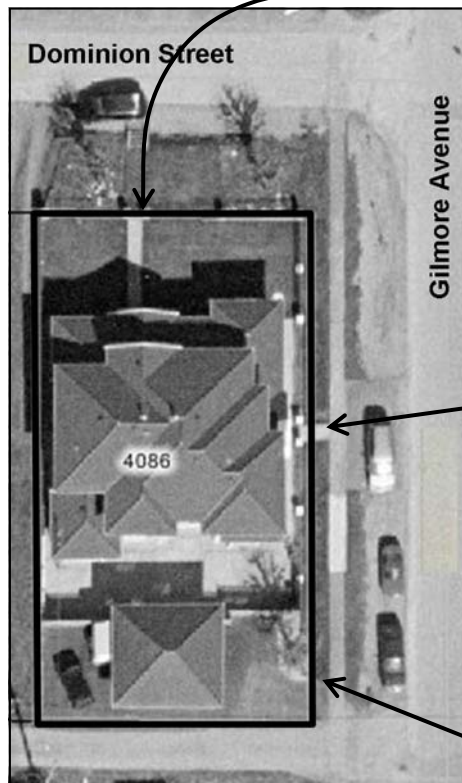


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#1 of 20: Duplex on a large corner lot in the City of Burnaby

Project Details

Civic address: 3109 Gilmore Avenue & 4086 Dominion Street, City of Burnaby
Densification: Stratified duplex on a large corner lot that was previously developed with a single family house
Unit count and size: 2 units (one unit is 1,950 square feet; one unit is 1,953 square feet)
Site size: 8,066 square feet (66 x 122 feet)
Floor area ratio: 0.48 FAR
of parking spaces: 2 spaces (1 per unit as per bylaw requirements)
Year completed: 2002
Developer: Charan Singh
Architect/Designer: Toora Home Plans Ltd.

Site Plan and Photographs of Project



Street view of the unit facing Dominion Street
(4086 Dominion)



Street view of the unit facing Gilmore Avenue
(3109 Gilmore)

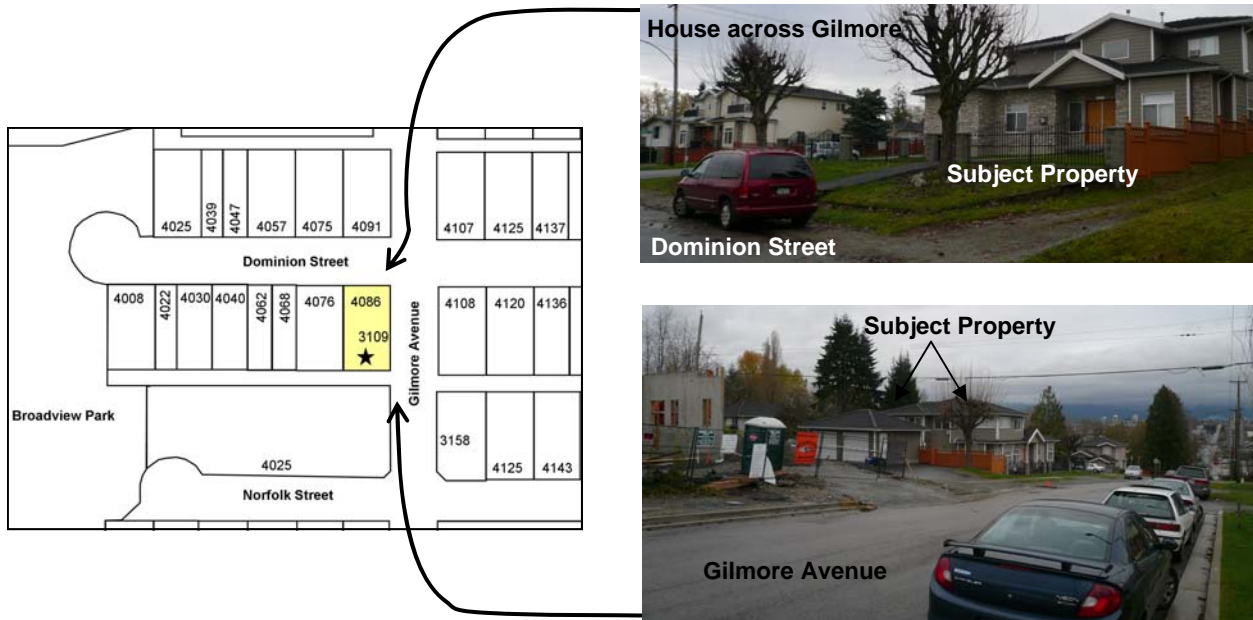


View of the shared garage from Gilmore Avenue

Project Description

This property is one large corner lot that was previously developed with a single family dwelling in a predominantly single family and duplex neighbourhood. It was redeveloped with a duplex unit. Recent development nearby has included new duplexes, a four unit townhouse-type project, and new single family dwellings.

The design of this duplex structure utilizes a corner location to create two units that each look like a large single detached home. One unit fronts onto Gilmore and the other fronts onto Dominion. This is a very good example of a duplex that would blend into a neighbourhood of larger single detached homes. The two units share an attached garage structure that is accessed from a driveway off the Gilmore frontage.



Regulatory Approach to Densification

This property is part of several blocks that are zoned R5, which permits single family dwellings and two-family dwellings on larger lots in medium density residential areas. The area is designated in Burnaby's Official Community Plan for "Urban Village, Community Plan Eight - RM3 Medium Density Apartment". The RM3 Medium Density Apartment zone would allow multifamily development at an FAR of 0.9 (or up to FAR 1.1 providing certain parking requirements are met).

The property was developed under its existing R5 zoning. A Siting Approval Report about the project was provided to Council for information. In Burnaby, Siting Approval Reports are completed when a two family dwelling is built on a lot with zoning that permits the two family dwelling but where the Area Plan OCP designation allows multifamily use. The project did not require any relaxations or variances. Only a Building Permit was needed.

Profiles of Densification Projects in Single Detached Housing Areas

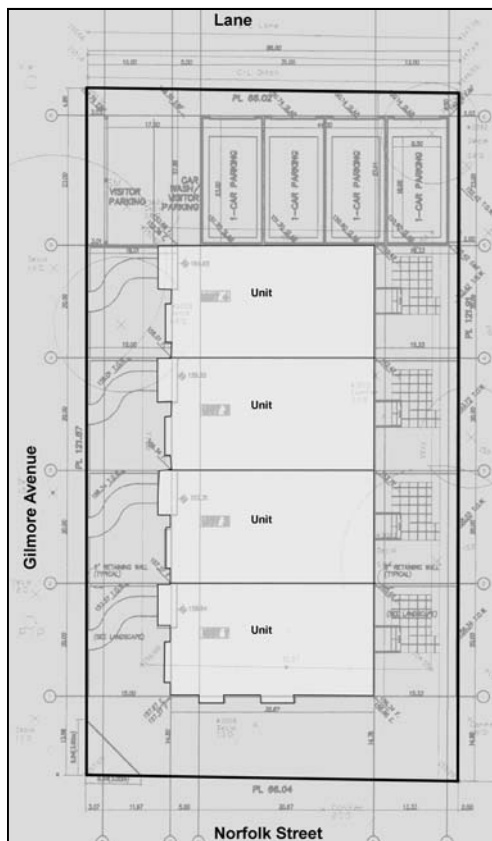


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
 #2 of 20: Four townhouse-style units on a corner lot in the City of Burnaby

Project Details

Civic address: 3158 Gilmore Avenue, City of Burnaby
 Densification: Four stratified townhouse-style row units on one corner lot that was previously developed with one single family house
 Unit count and size: 4 units that are about 1,400 square feet each
 Site size: 8,054 square feet (about 66 x 122 feet)
 Floor area ratio: 0.7 FAR
 # of parking spaces: 6 spaces, including a combined car wash/visitor space (requirement reduced through CD zoning from 1.75 spaces per unit to 1.5 spaces per unit)
 Year completed: 2005
 Developer: Charan Singh
 Architect/Designer: Matthew Cheng

Site Plan and Photographs of Project



Street view of the units from Gilmore Avenue



Side view of the units and the garage

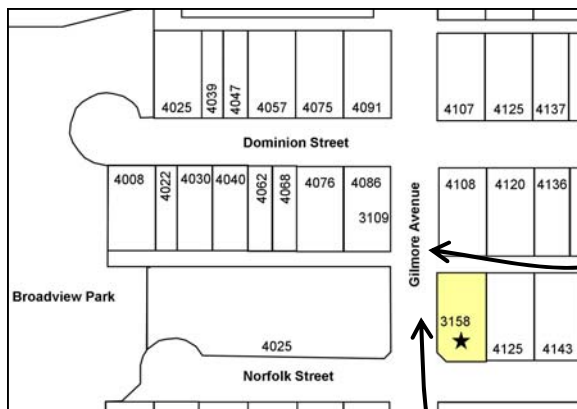


Garage for units off lane

Project Description

This property is one large corner lot that was previously developed with a single family dwelling in a predominantly single family and duplex neighbourhood. It was redeveloped with a four unit townhouse-type project. Recent development nearby has included new duplexes and new single family dwellings.

This 2 storey project is on a rectangular site. The four units are attached in a row format along the longer side of the site. A shared four bay garage structure with an additional open double carport area spans the narrow lane frontage. Although the project's scale is compatible with single detached density, the uniform exterior treatment gives this project a townhouse-type look.



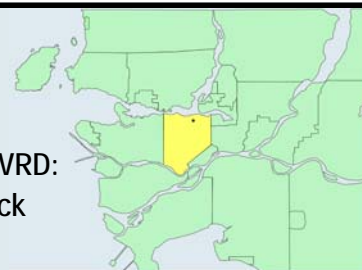
Context on Gilmore Avenue

Regulatory Approach to Densification

This property was part of several blocks that are zoned R5, which permits single family dwellings and two-family dwellings on larger lots in medium density residential areas. The area is designated in Burnaby's Official Community Plan (OCP) for "Urban Village - Community Plan Eight - RM3 Medium Density Apartment". The RM3 Medium Density Apartment zone would allow multifamily development at an FAR of 0.9 (or up to FAR 1.1 if certain parking requirements are met).

The property was rezoned to a Comprehensive Development district based on the RM2 zone, even though it allowed a lower FAR than the zoning (RM3) designated in the OCP. The CD zone includes the same provisions as the RM2 zone. The RM2 zone permits medium density multifamily, primarily designed for small families or couples, at an FAR of 0.7, although this can be increased to an FAR of 0.9 if certain parking requirements are met. In this case, the project achieved an FAR of 0.7. The City relaxed the parking requirement for this project, from the standard requirement of 1.75 spaces per unit to 1.5 spaces per unit, so a total of 6 spaces including a combined car wash/visitor space were provided (instead of 7 spaces)

Profiles of Densification Projects in Single Detached Housing Areas



This series of 20 profiles includes examples from 10 municipalities in the GVRD:

#3 of 20: Two side-by-side attached units and four side-by-side front-back attached units in the City of Burnaby

Project Details

Civic address: 4006-4008 and 4018 Albert Street, City of Burnaby
Densification: Six stratified units (a side-by-side duplex and a fourplex) on two adjacent lots that were previously each developed with a single family dwelling
Unit count and size: 6 units (4006 Albert is 2,727 square feet; 4008 Albert is 2,720 square feet, and each of the four units in 4018 Albert is 1,361 square feet)
Site size: 16,327 square feet combined
Floor area ratio: 0.66 FAR for 4006-4008 Albert and 0.68 FAR for 4018 Albert
of parking spaces: 10 in total: 4 spaces for 4006-4008 Albert (2 spaces per unit) and 6 spaces for 4018 Albert (1 space per unit plus 2 visitor spaces), even though only 1 space per unit required by bylaw
Year completed: 1998
Developer: Clearview Holdings Ltd.
Architect/Designer: Pheonix Structural Designs Inc.

Site Plan and Photographs of Project



Street view of the duplex units
(4006 and 4008 Albert)

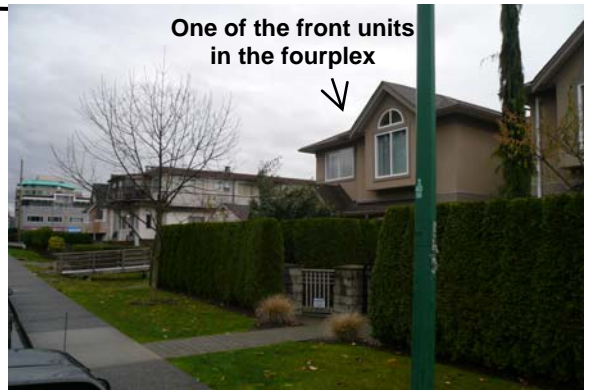


Street view of the fourplex units
(4018 Albert)

Project Description

This property includes two adjacent lots that were previously each developed with a single family house. The properties were redeveloped as one project with a duplex on one lot and a fourplex on the other lot. Surrounding uses include older low-rise apartments, older single family dwellings, and some commercial uses.

The scale of this 2 storey project fits in well with adjacent single detached properties. The units are accessed via a ground floor breezeway between the side-by-side structures, and are attached on the second level. The front-back units are attached on all levels. Each side-by-side structure shares a semi-private gate, which leads to the breezeway. The design details of the gates and the substantial landscaping along the front elevation contribute to a strong sense of privacy for the project. While the design of the structures is compatible with a single detached scale, the uniform finishing treatment for all structures gives the project a townhouse-type look.



Regulatory Approach to Densification

These properties are part of an interior portion of a block that was pre-zoned RM6 (Hastings Village Multiple Family Residential district) in 1994 as part of the Hastings Street Area Plan. The RM6 zone permits single family dwellings, two-family dwellings, and 2¹/₂ storey townhouses. The area is designated in the City of Burnaby’s Official Community Plan (OCP) for “Urban Village - Hastings Street Area Plan - RM6/RM7”. The RM7 zone allows 3¹/₂ storey townhouses.

The project was developed under the existing RM6 zoning district. Only a Preliminary Plan Approval and a Building Permit were required.

Profiles of Densification Projects in Single Detached Housing Areas



This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#4 of 20: Four units on one former single family lot in the City of Burnaby

Project Details

Civic address: 4327-4333 Albert Street, City of Burnaby
Densification: Two adjacent 2 unit front-to-back dwellings (stratified) on one lot that was previously developed with a single family dwelling
Unit count and size: 4 units ranging from 1,194 to 1,217 square feet
Site size: 8,075 square feet (68 x 122 feet)
Floor area ratio: 0.6 FAR
of parking spaces: 4 spaces as per bylaw requirement of 1 space per unit
Year completed: 2004
Developer: J.S. Jensen Construction Ltd.
Architect/Designer: Raffaele & Associates

Site Plan and Photographs of Project



Lane view of the garages



Street view of the front of the units

Project Description

This is an example of one former single family lot in a predominantly single family area that was subdivided into two smaller lots, each of which was developed with a front-to-back two family unit project. This example is on a block that includes older single family houses and other recently completed front-to-back two family projects.

These front-to-back style duplexes have resulted in a streetscape with a single detached look. The newer units blend in very well with the scale of the existing, older single family structures in the area. Each set of two units shares an attached two bay garage in the lane.



Regulatory Approach to Densification

The City of Burnaby's Official Community Plan identifies a process for mature R4 and R5 zoned blocks or areas to initiate an area rezoning to allow smaller lot development. The R4 and R5 zoning districts allow single and two family dwellings. A block-wide rezoning of the entire odd side of the 4300 block of Albert Street was initiated by property owners. This block was rezoned from R5 to R12 in 2001 to permit single family, semi-detached, and front-to-back two family units on smaller lots.

The rezoning has resulted in fairly rapid redevelopment of much of this block, with several properties now redeveloped with front-to-back two family units on smaller lots. It has not proceeded as spot infill.

This property was subdivided after the block-wide rezoning. The development only required a building permit at the time it was initiated.

Profiles of Densification Projects in Single Detached Housing Areas

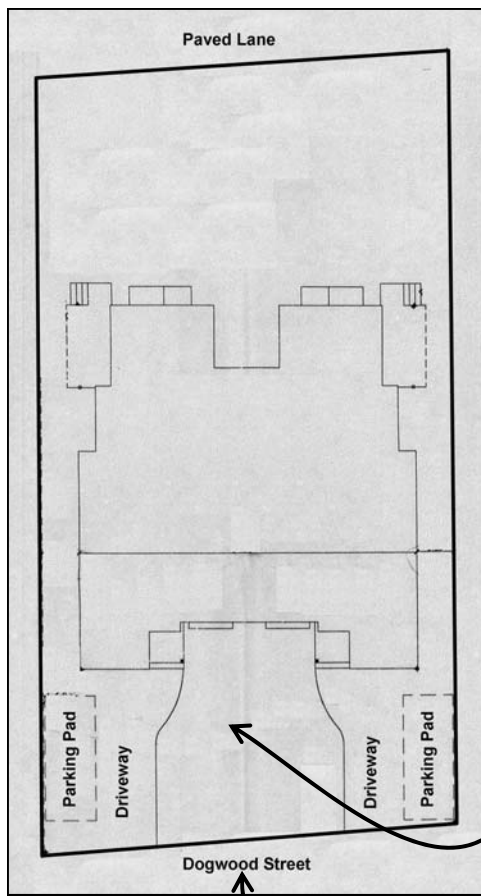


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#5 of 20: Side-by-side duplex with front garages in the City of Coquitlam

Project Details

Civic address: 728A & 728B Dogwood Street, City of Coquitlam
Densification: Side-by-side stratified duplex on a lot that was previously developed with one single family house
Unit count and size: 2 units (each unit is 1,645 square feet, garage is 428 square feet)
Site size: 8,224 square feet
Floor area ratio: 0.4 FAR
of parking spaces: 4 spaces (2 spaces per unit as per bylaw requirement)
Year completed: 2004
Developer: Cobblestone Homes

Site Plan and Photographs of Project



Street view of one of the two units, showing fencing that separates the two front yards



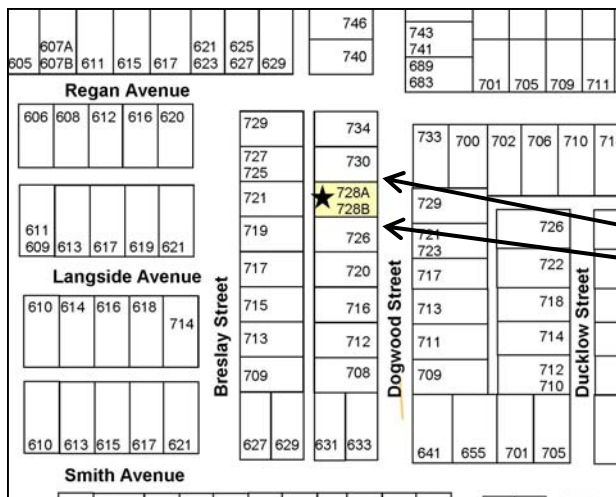
Street view from Dogwood of the duplex

Project Description

This duplex is located in a predominantly single family neighbourhood that has seen some redevelopment to duplexes.

While there is a rear lane, the site has a steep grade such that the use of the lane to access parking in the rear was not practical. Instead, the project includes garages in the front that are accessed from Dogwood. The design attempts to minimize the visual impact of the garages by placing them at each end of the structure rather than grouping them in the centre. The landscaping includes attention to details such as a fence that separates the two front yards.

The 2 storey structure is taller than the adjacent 1 storey single family bungalows, but the design is not massive or imposing. Overall, this project blends in quite well with the surrounding neighbourhood.



Regulatory Approach to Densification

This project is in a large area zoned RT-1, which permits single family and two-family dwellings in a semi-detached form provided that each unit has an exclusive entrance. The zoning notes that each unit may have separate title.

The property is designated “Medium Density Apartment” in the Southwest Coquitlam-Town Centre Area Plan, although properties immediately west across Dogwood are designated for one and two family residential. The “Medium Density Apartment” designation is intended for the RM-2 (three storey, medium density apartments), RM-3 (multi-storey, medium density apartments), and RT-2 (townhouse apartment residential, in areas adjacent to or facing properties designated as One-Family Residential) zones.

The property was developed under the existing RT-1 zoning. No relaxations or modifications were required. The project only required a Building Permit.

Profiles of Densification Projects in Single Detached Housing Areas

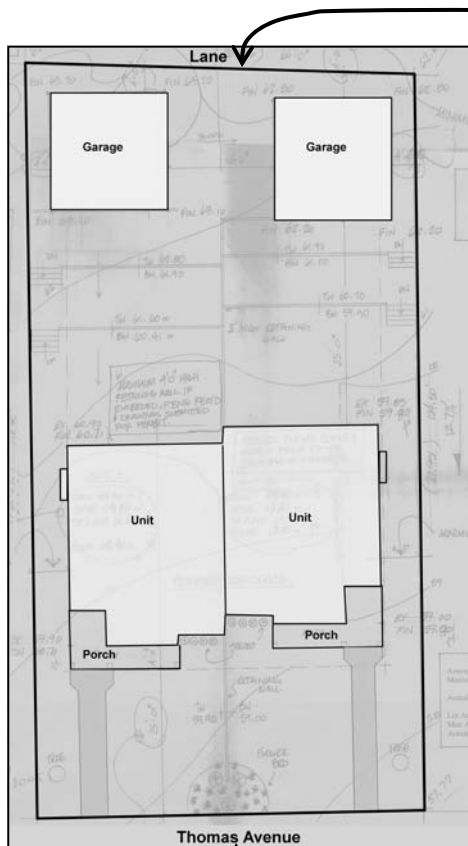


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#6 of 20: Side-by-side duplex with garages in the lane in the City of Coquitlam

Project Details

Civic address: 1125-1127 Thomas Avenue (at Begin Street), City of Coquitlam
Densification: Side-by-side stratified duplex on a lot that was previously developed with a single family dwelling
Unit count and size: 2 units (one unit is 2,813 square feet with a 676 square foot garage and the other unit is 2,774 square feet with a 675 square foot garage)
Site size: 8,374 square feet
Floor area ratio: 0.4 FAR
of parking spaces: 4 spaces (2 spaces per unit as per bylaw requirement)
Year completed: 2006
Developer: JJJ Homes
Architect/Designer: Romona Campbell

Site Plan and Photographs of Project



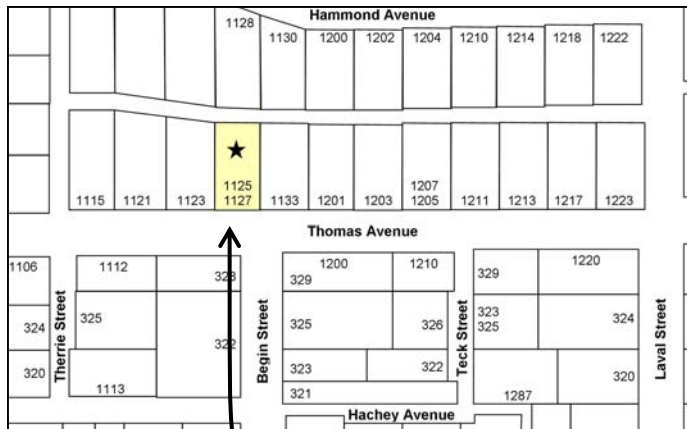
View of the project's garages, which are accessed off the rear lane



Street view of the duplex from Thomas Avenue

Project Description

This duplex is surrounded by older single family dwellings. It is an example of how topography can be used to reduce the “twin” look of side-by-side duplexes. In this case, the site slopes slightly across its width so one unit sits lower than the other. The design has also attempted to articulate the frontage by setting one unit slightly further back than the other. This attempt to create individuality for each unit could be reinforced with carefully designed landscaping. Each unit has its own detached garage off the rear lane. Overall, the project blends in well with adjacent older, single detached development.



Regulatory Approach to Densification

This project is in a block fronting Thomas Avenue that is zoned RS-1, which permits single family lots and single family lots with secondary suites. Other nearby properties (including the lots across the lane that front on Hammond Avenue) are zoned RT-1, which permits single family and two-family dwellings in a semi-detached form provided that each unit has an exclusive entrance. The property and surrounding area are mainly designated “One and Two Family Residential” in the City’s Southwest Coquitlam-Town Centre Area Plan.

This property was rezoned from RS-1 to RT-1 to allow the duplex project. No relaxations were required.

Profiles of Densification Projects in Single Detached Housing Areas

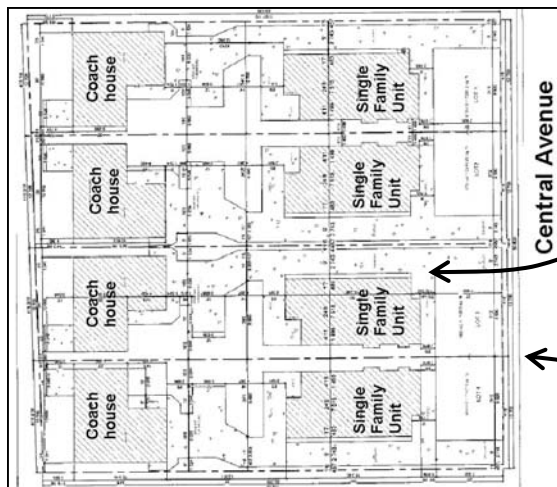


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
7 of 20: Four single family lots with coach houses and no lane in Ladner area of Delta

Project Details

Civic address: 4931-4947 Central Avenue, Ladner (Delta)
Densification: 2 large lots, each subdivided into 2 lots with a single family dwelling and coach house developed on each of the 4 lots
Unit count and size: 8 units: single family units approx 2,200 square feet, and coach houses approximately 800 square feet plus garage (430 square feet)
Site size: 4 sites (7,147-7,298 sq ft) for a total of about 28,860 square feet
Floor area ratio: 0.42 FSR
of parking spaces: 3 per lot (2 in garage and 1 between the house and garage)
Year completed: 2006
Developer: Veldelta Enterprises

Site Plan and Photographs of Project



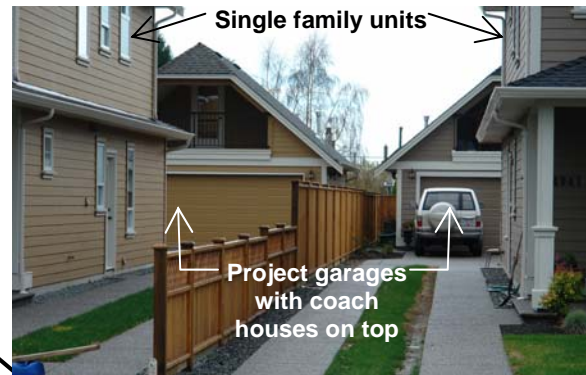
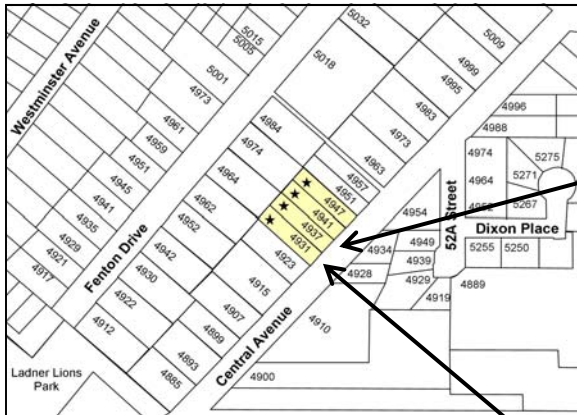
Street view of one of the single family units with a view through to the garage/coach house in the background



Central Avenue frontage showing three of the single family units

Project Description

This project is very successful in achieving an attractive streetscape that has the look and feel of a single detached density development. Although this site is not serviced by a rear lane, garages and coach house units are placed at the rear of each lot and the main units have relatively shallow front yards. The garages and coach houses are accessed via private driveways that run along the side of each of the main units. In a situation with narrower lots, where it wouldn't be possible to construct private driveways for each unit, a developer could consider using a design where two units share a driveway. In this project, the visual impact of the driveways has been reduced through the use of an environmentally-friendly approach to paving that leaves a centre grassy strip.



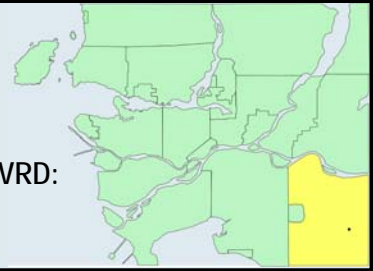
Regulatory Approach to Densification

Prior to redevelopment, this site consisted of two single family lots, each developed with a single family dwelling. The site was designated in the Delta's Official Community Plan (OCP) for Townhouse Residential (TH) and zoned RM-1, which allowed ground-oriented townhouses and cluster housing to a maximum density of 16 units per acre.

Delta's policy is to encourage a gradual decreasing in density from the historic village outwards. The proposal for this project achieved a density of 12.1 units per acre, which complied with the density range permitted in the TH designation, but the concept of creating 4 lots, each developed with a single family unit and a secondary coach house did not. This project required an OCP amendment to Residential Ground-Oriented (RG) which allows a density range of 7 to 25 units per acre. It also required a rezoning to RS9 to allow the subdivision to 4 separate parcels and a Development Variance Permit to vary the zoning bylaw with respect to floor area, elevations, and setbacks.

Overall, this project resulted in an increase in densification relative to the previously existing development (2 single family dwellings on larger lots), but in a slightly lower density development than the maximum initially envisioned in the OCP.

Profiles of Densification Projects in Single Detached Housing Areas

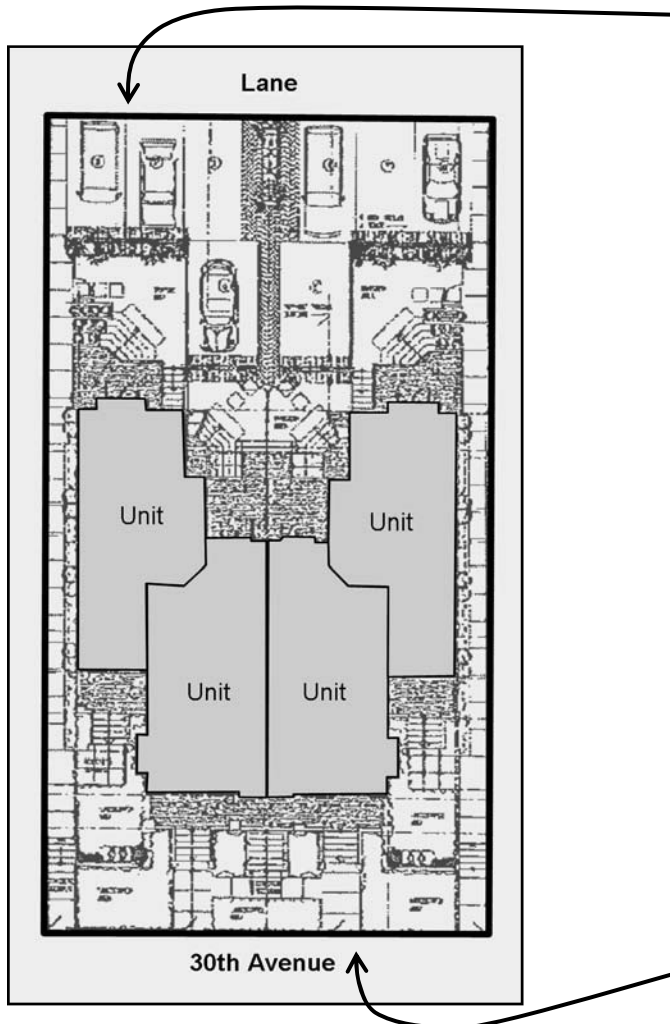


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
8 of 20: A fourplex in a single family neighbourhood in Langley

Project Details

Civic address: 27283 30th Avenue, Township of Langley (Aldergrove)
Densification: Stratified fourplex in a single family neighbourhood
Unit count and size: 4 units ranging from 1,629 to 1,924 square feet
Site size: 7,920 square feet
Floor area ratio: 0.9 FAR (including the main, upper, and basement floor areas)
of parking stalls: 8 (in accordance with parking regulations of zoning bylaw)
Year completed: 2004
Developer: HR Pacific Construction Management Ltd.

Site Plan and Photographs of Project



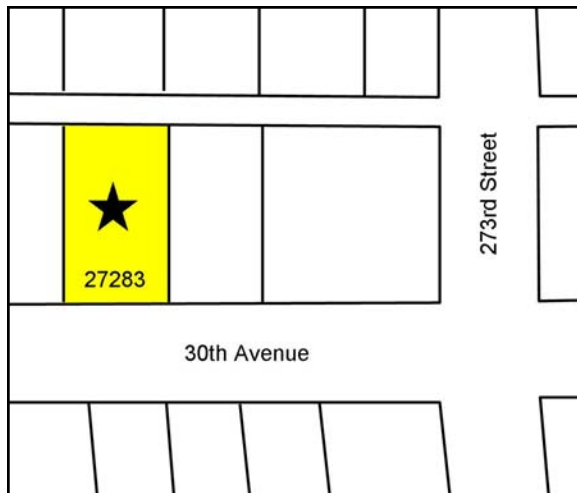
Parking area at back of property



Street view of the fourplex from 30th Avenue

Project Description

This project has a denser look than is typical of single detached development but it can serve as an example of an appropriate transition density from single detached to a higher density residential or commercial area (as is the case here). While the project is bulkier than its older single family neighbours, there has been some attempt to soften the mass of the structure by incorporating Craftsman style heritage design detail. In order to preserve some rear yard, the project relies on surface parking (which requires less space) at the rear. The parking area is screened from rear yards with landscaping and trellis work. The site immediately to the east has been developed to a similar density.



Street view from 30th Avenue



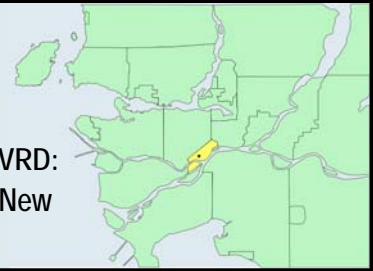
Street view of development and adjacent fourplex

Regulatory Approach to Densification

This property was zoned from C-2 "Community Commercial", which allows multi-family residential uses but only when accessory to a commercial use on the first floor. The property was designated for High Density Residential and Commercial in the Aldergrove Community Plan.

The property was rezoned from C-2 to a Comprehensive Development district (CD-59), re-designated to High Density Residential (maximum density of 23 units per acre) to allow this fourplex project. The site is in a designated mandatory development permit area to allow Council the opportunity to review the form, character, and siting of development, so the project also required a development permit.

Profiles of Densification Projects in Single Detached Housing Areas

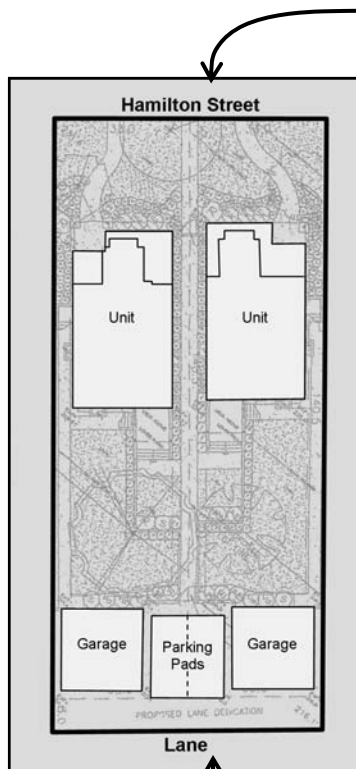


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#9 of 20: Small lot dwellings with secondary suites at rear in the City of New Westminster

Project Details

Civic address: 1404 and 1406 Hamilton Street, City of New Westminster
Densification: One large single family lot that was subdivided into two small lots, each of which were developed with a single family dwelling and a secondary suite in the rear
Unit count and size: 4 units in total (each lot has a 2,309 square foot main dwelling unit and a 500 square foot secondary suite)
Site size: Former 9,801 square foot (66 x 148.5 feet) single family lot; subdivided into two 4,637 square foot lots (33 x 140.5 feet) after lane dedication
Floor area ratio: 0.61 FAR (overall for both lots)
of parking spaces: Each new lot includes a double garage and one surface spaces for a total of 6 spaces
Year completed: 2002
Developer: Noort Homes

Site Plan and Photographs of Project



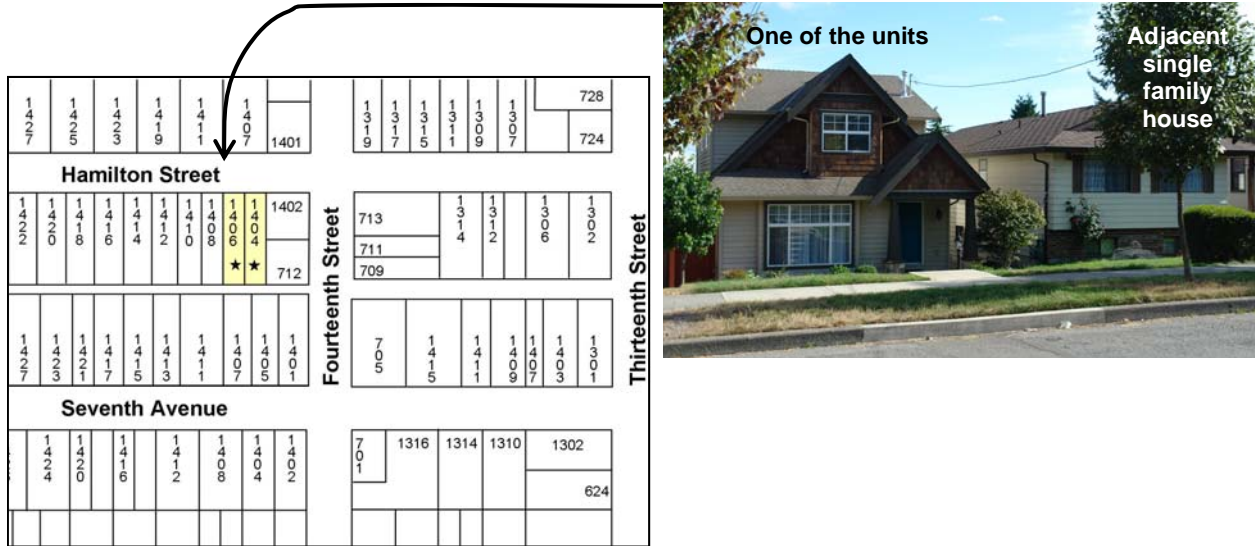
Hamilton Street frontage



View of the project garages, parking pad, and rear of the units

Project Description

This project is a good example of two units being accommodated on small lots in a form that has the look of a single detached unit. In this example, one unit is dominant and the other unit is a secondary suite. There is no significant attempt in this case to show an address or obvious pathway leading to the secondary unit. The project includes an enclosed double garage and an open concrete parking pad at the rear.



Regulatory Approach to Densification

This property was zoned NR-1 (“Neighbourhood Residential Dwelling District”) in the City of New Westminster’s Zoning Bylaw and designated for “Residential - Low Density” in the City’s OCP. The property was rezoned to NR-5 (“Neighbourhood Residential Dwelling District, Small Lots”). The NR-1 and NR-5 zoning districts have the same floor space ratio, height, site coverage, and setback regulations, but the NR-5 district allows smaller lots.

The property was subdivided into two small lots. Lots created through subdivision are required to have a minimum frontage of at least 10% of the perimeter measurement of the lot. In this case, a variance was required because the frontage of each lot (33 feet) is only 9.5% of the perimeter measurement of each lot (347 feet).

City of New Westminster staff reports about the approvals for this project note that the unit design incorporates wood siding and asphalt shingles, which fit in with the existing character of the block. The project was viewed as an alternative to replacing the existing, older single family house with one large house.

Profiles of Densification Projects in Single Detached Housing Areas

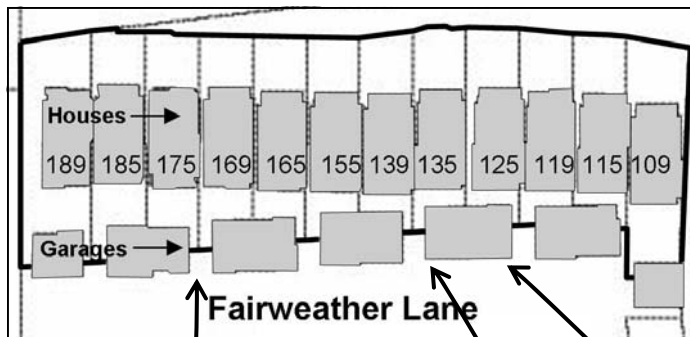


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
 #10 of 20: Fee simple small lot single family houses in the City of New Westminster

Project Details

Civic address: 109 to 189 Fairweather Lane, Port Royal, City of New Westminster
 Densification: Fee simple small lot single family houses
 Unit count and size: One unit per lot with an average unit size of 1,648 square feet
 Site size: Lots in this block range from 2,971 to 4,564 square feet
 Floor area ratio: 0.36 to 0.55 FAR per lot
 # of parking spaces: 1 space per house as per bylaw requirements
 Year completed: 1997
 Developer: The Aragon Group
 Architect: Ramsay Worden Architects

Site Plan and Photographs of Project



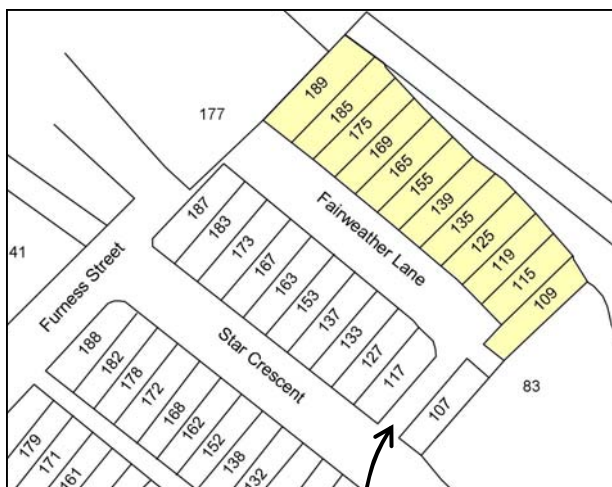
Street view from Fairweather Lane

Street view from Fairweather Lane

Project Description

Port Royal is a new residential neighbourhood being developed on former industrial land. While most of the new development in Port Royal involves small lots serviced with rear lanes, the development on Fairweather Lane provides a very good example of creative design for locations that do not have rear lanes. With small lots and no rear lane, the units on Fairweather Lane could have looked like a wall of garage doors. Through careful design, and interesting use of finishing details and exterior colours, the overall look is charming.

The garages for neighbouring lots are attached, but are often slightly offset from one another so the appearance is not a flat wall of garages. The houses are set further back onto the lot in a way that has created a small courtyard between the garage and the unit. Trellised gates, paths, and careful landscaping direct you through the courtyard to the front door of the unit.



View to Fairweather Lane from Star Crescent

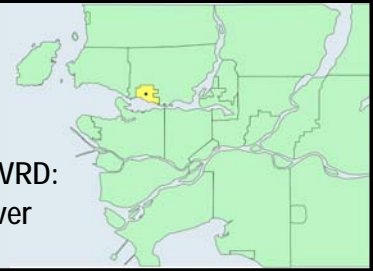
Regulatory Approach to Densification

The lots are designated in the City of New Westminster's OCP for Medium Density Residential and a new compact lot zoning district was created for some of the projects in Port Royal, including this project. The new zoning district is RT-2D ("Single Detached Dwelling Districts - Compact Lots"), which allows single detached dwellings, duplex dwellings, and home based businesses.

The RT-2D zoning district requires a minimum site size of 3,000 square feet, except that up to 25% of the lots in a subdivision may be reduced in area to a minimum site size of 2,700 square feet and a further 25% of the lots may be reduced in area to a minimum site size of 2,300 square feet, provided that the lots have a frontage of at least 10% of the site's perimeter.

The City gave a variance to allow the placement of the garages in the front (at the street) and to situate the garages for adjacent lots together, but each lot was still required to have 1 parking space per house as per the bylaw requirements.

Profiles of Densification Projects in Single Detached Housing Areas

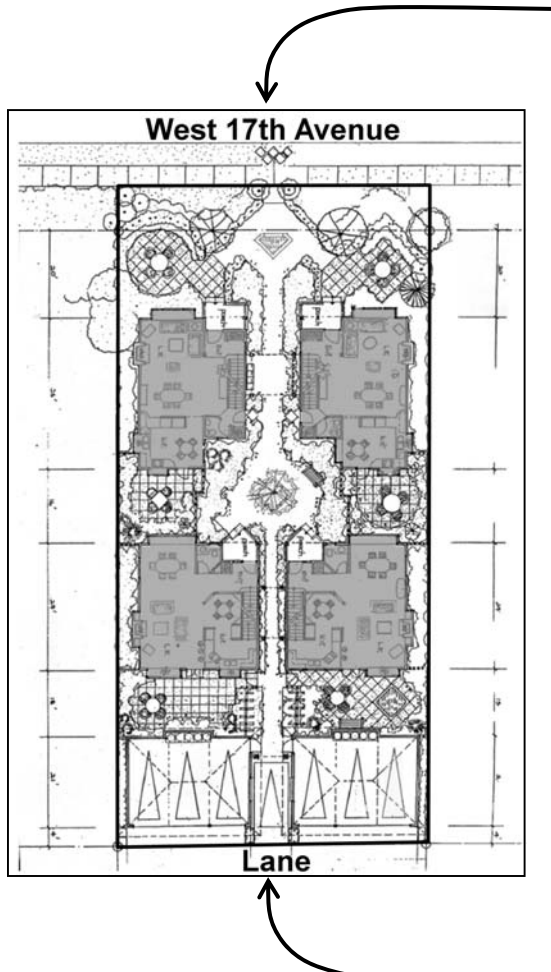


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#11 of 20: Four detached houses on one lot in the City of North Vancouver

Project Details

Civic address: 223/225 West 17th Street in the City of North Vancouver
Densification: Four stratified detached units on one lot that was previously developed with a single family dwelling
Unit count and size: 4 two bedroom units ranging from 1,460 to 1,471 square feet
Site size: 9,800 square feet (70 x 140 feet)
Floor area ratio: 0.6 FAR
of parking spaces: 4 enclosed and 2 carport for a total of 6 spaces
Year completed: 2000
Developer: Brody Development Corporation

Site Plan and Photographs of Project



Street view of the two front units

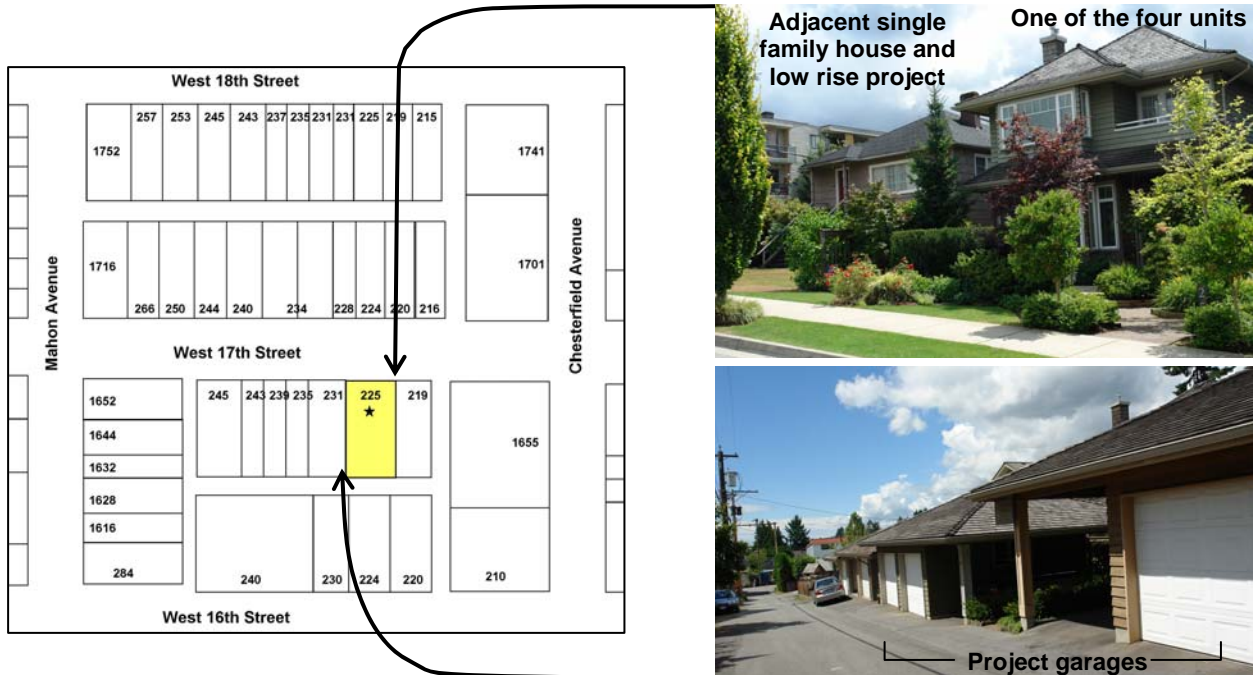


Lane view of the garages and rear units

Project Description

Prior to redevelopment, this property was one large lot developed with a single family house in a predominantly single family and duplex neighbourhood. Surrounding uses now include a mix of residential densities (older single family dwellings, duplexes, low density townhouses, stacked townhouses, and low rise multi-family).

This project is a good example of densification mid-block, where a lane allows the garage units to be situated at the rear of the property. It has a single family look and feel from the street and blends well with the adjacent, older properties. The adjacent property to the east was subsequently rezoned to a CD zoning and developed with three units.



Regulatory Approach to Densification

The property was part of a block that was zoned RT-1, which permits one residential unit, or one residential unit with an accessory secondary suite in the principal building, or two residential units with both units in the principal building. The block is designated in the City of North Vancouver's Official Community Plan (OCP) for "Level Three: Low Density - Attached Form" housing. At the time of this project, the "Level Three" housing designation permitted residential uses up to a maximum density of 0.6 FSR. Subsequently this was increased to 0.75 FSR. The OCP notes that *"while new single family development will still occur on smaller lots in this designation, most redevelopment will be...two or three family or townhouse development."* (OCP, 2002, page 19)

This property was rezoned from RT-1 to a CD zoning (CD 395) based on the RT-1 zone with several modifications, including:

- changes to the allowable use to permit four principal buildings used for residential dwelling units instead of one principal building used for a single family or two unit residential use.
- a decrease in the permitted lot coverage from 35% to 33%.
- reduced setback requirements.
- an increase in the allowable gross floor area from a maximum of 4,400 square feet under the RT-1 zone (i.e. 0.35 FAR plus 1,000 square feet, up to a maximum of 4,400 square feet) to a maximum of 8,875 square feet under the CD zone (i.e. 0.6 FAR plus up to 2,995 square feet of storage area).

The CD zoning for the property required that all open spaces be landscaped and maintained, and that exterior finishes and landscaping be approved by the Advisory Design Panel.

Profiles of Densification Projects in Single Detached Housing Areas

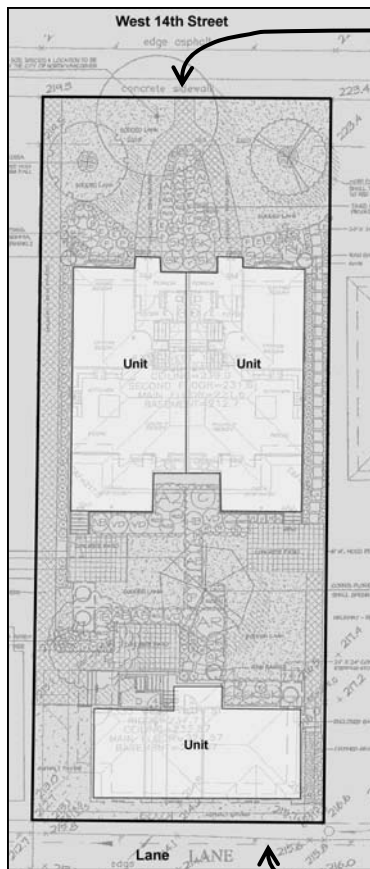


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#12 of 20: Duplex with a dwelling unit over the garage in the City of North Vancouver

Project Details

Civic address: 333 West 14th Street, City of North Vancouver
Densification: Stratified duplex with a dwelling unit over the garage
Unit count and size: 3 units: 2 units in a duplex (1,620 square feet each) and 1 unit in the rear over the garage (945 square feet)
Site size: 8,397 square feet
Floor space ratio: 0.5 FSR (excluding 0.1 FSR in the cellar levels for storage)
of parking spaces: 5
Year completed: 2006
Developer: Noort Holdings Ltd.
Architect: Kenneth E. King Architecture & Planning

Site Plan and Photographs of Project



Street view of the duplex



Lane view showing garage with unit above

Project Description

Surrounding uses include a mix of older single family dwellings and newer duplexes. The neighbourhood transitions to higher density uses to the east, moving towards Lonsdale Avenue.

Although most side-by-side duplexes tend to look less single family like than front to back layouts can, this project has been sensitive to not overwhelming the height of adjacent older single family units. The rich standard of landscaping employed helps give this project a higher end look. The carriage unit is inset slightly over the three bay garages and its scale does not overwhelm the lane.

According to the City Staff report about the project, the applicant sought to address overlook and privacy issues by minimizing the number of windows on the north side of the single unit that faces the duplex and by carefully locating windows that look towards adjacent homes.



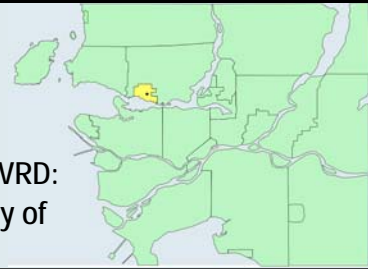
Regulatory Approach to Densification

Surrounding properties are mainly zoned RS-1, although there are a few isolated RT-1 (one unit, accessory secondary suite, or two unit) properties.

The property was zoned RS-1 and designated in the City's Official Community Plan (OCP) for "Level Two: Low Density - Attached Form" housing. The RS-1 zone permits one unit residential and an accessory secondary suite, provided that the suite is contained within the principal building. The "Level Two" housing designation permits residential uses up to a maximum floorspace of 0.5 and notes that this designation "permits development in the single family form, but also provides for attached forms of housing like side-by-side or up-and-down two family residences, or low density row or townhouses." (OCP, 2002, page 19)

The property was rezoned from RS-1 to a CD zoning, based on the RT-1 zone and the City's Low Density Attached Form Housing Guidelines. Some minor relaxations to the setback requirements of the RT-1 zone were required.

Profiles of Densification Projects in Single Detached Housing Areas

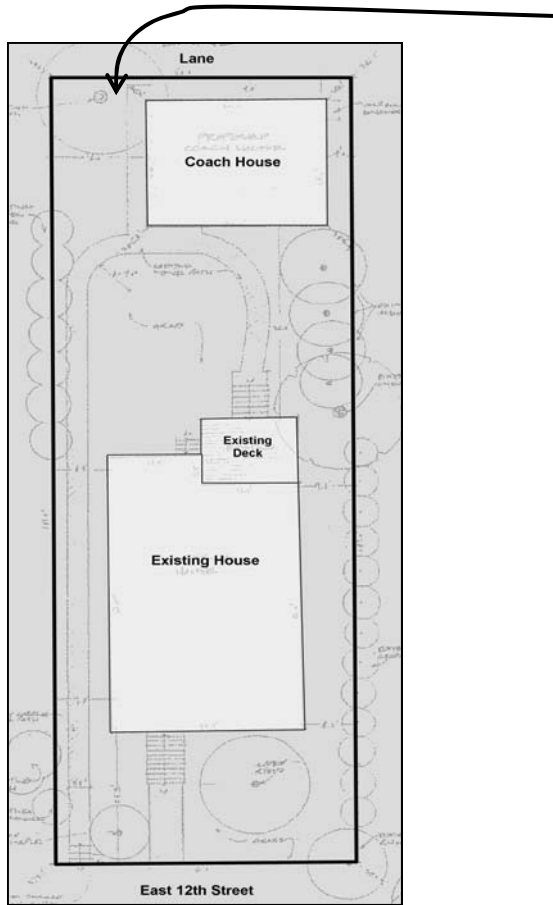


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#13 of 20: Single family dwelling with a detached coach house in the City of North Vancouver

Project Details

Civic address: 522 East 12th Street, City of North Vancouver
Densification: Single family dwelling with a detached coach house
Unit count and size: 2 units: 1,662 square foot single family dwelling and 535 square foot coach house
Site size: 7,350 square feet (50 x 147 feet)
Floor area ratio: 0.425 FAR
of parking spaces: 3
Year completed: 2004 (approx)
Developer/Designer: N.J. Keate Home Design Inc.

Site Plan and Photographs of Project



Lane view showing garage/coach house and single family dwelling at subject property



Street view of front unit (on right side of photo) and adjacent single family dwellings

Project Description

This project is in a neighbourhood of mainly older, well maintained single detached homes and is a good example of how densification can occur without redeveloping the existing single family unit. The design of the new coach house and garage is fairly low key and fits in well with the existing character of the neighbourhood.



View across lane showing nearby single family dwellings with typical garages

Regulatory Approach to Densification

North Vancouver's Zoning Bylaw allows secondary suites in all zones and the OCP contemplates that these may be in the form of a coach house, although the zoning does not explicitly permit coach houses.

The property was zoned RS-1 and designated in the City's Official Community Plan (OCP) for "Level One: Low Density - Single Family Form" housing. The RS-1 zone permits one unit residential and an accessory secondary suite, provided that the suite is contained within the principal building. The "Level One" housing designation permits single family uses and secondary suites, and notes that "detached secondary suites in a coach house style may be permitted. Coach house units shall be subordinate in size to the principal building and are subject to Council approval through a rezoning process...coach house units may not be stratified..."¹OCP, 2002, page 19.

The owners were restoring the existing house, which is a listed heritage property, and wanted to replace the existing garage with a garage/coach house unit. The property was rezoned from RS-1 to a CD zoning (CD 475) based on the RS-1 zone but with modifications to the allowable use of the property (i.e. the suite is permitted in the accessory building rather than in the principal building) and the development parameters (i.e. siting, size, height, and form) of the accessory building.

Profiles of Densification Projects in Single Detached Housing Areas

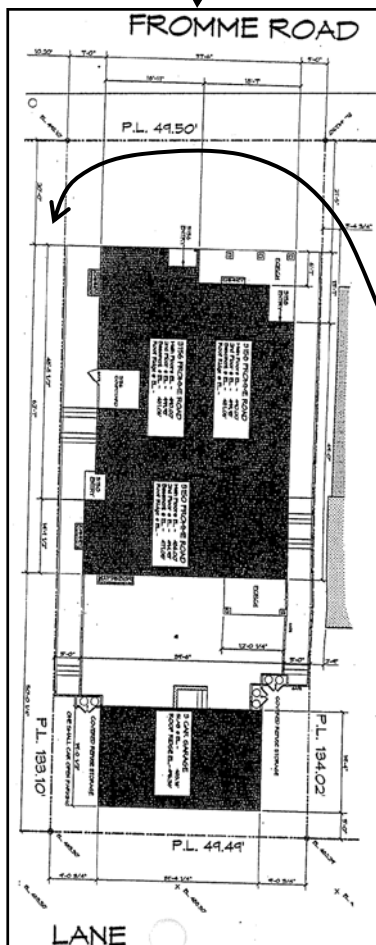


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#14 of 20: Triplex infill project in the District of North Vancouver

Project Details

Civic address: 3150/3156/3158 Fromme Road, District of North Vancouver
Densification: Triplex infill project
Unit count and size: 3 units ranging from 1,300 to 1,500 square feet
Site size: 6,700 square feet (50 x 134 feet)
Floor area ratio: 0.65
of parking spaces: 5 (as per the bylaw requirement of 1.5 stalls per unit)
Year completed: 2005 (approved in 2004)
Developer: AMK Construction Ltd.
Architect/Designer: RLS Homes Ltd.

Site Plan and Photographs of Project



View from Fromme Road. Note three trellis gates marking entry paths to the individual units

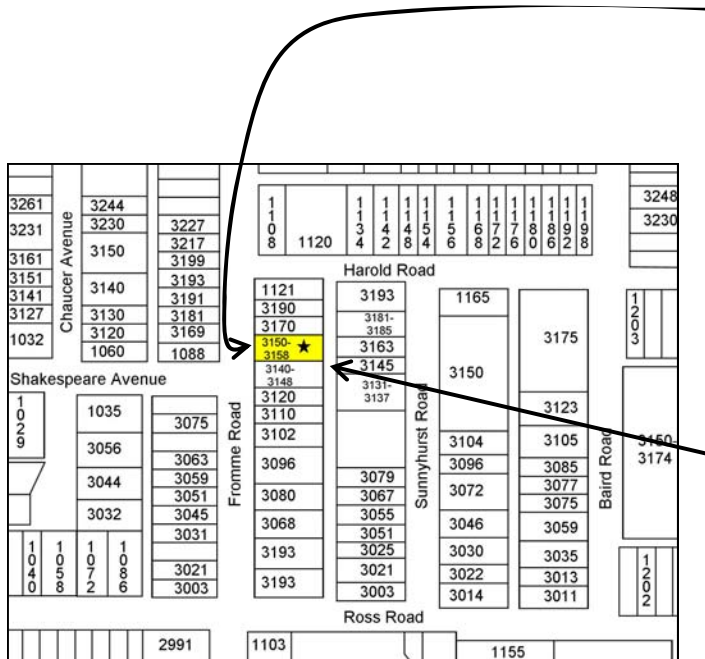


View of side yard paths to rear units in adjacent triplex projects

Project Description

This is an excellent example of a three unit project that, at first glance, appears to be a traditional single family home. It would be suitable for development in mainly single family neighbourhoods or in transition areas between single family and higher density development.

The exterior design of this triplex (and others in the area) is a good example of a multiplex that avoids a “twin” or “triplet” look. The 3-bay covered garage sits between two open parking stalls so the lane has a very low density profile. This project successfully uses landscaping and gate details to indicate addresses and entry paths for each unit.



View of Fromme Road frontage



View of rear lane

Regulatory Approach to Densification

This site is in an area* that is primarily zoned RS-4 (single family) but is designated in the Lynn Valley Plan for multiplex infill development at FSR 0.65 and 3 units per 50 foot lot or 4 units per 66 foot lot. It is a transition area between single family to the west and multifamily development to the north, east, and south. As sites are redeveloped to multiplex use, they are rezoned to CD-28 (residential multiplex). Proposals must comply with design guidelines that are generally intended to ensure that new multiplexes blend in with nearby single family uses. Designs are encouraged to achieve a single family look and be sensitive to privacy and rear yard shading of neighbouring properties. Since this project was approved in 2004, the District of North Vancouver has increased the allowed FSR exemption for garages from 200 square feet to 242 square feet to improve the functionality of garages.

* bounded by Fromme, Harold, Ross and Sunnyhurst Roads

Profiles of Densification Projects in Single Detached Housing Areas

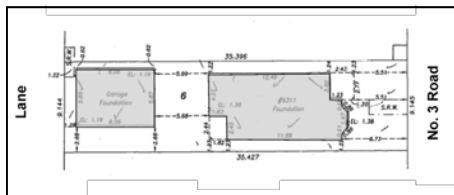


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
 #15 of 20: Six small lot single detached houses each with a coach house in
 the City of Richmond

Project Details

Civic address: 9251 and 9311 No. 3 Road, City of Richmond
 Densification: Two adjacent lots were subdivided into six lots and each developed with a single detached house and a coach house over the garage off a rear lane
 Unit count and size: 12 units - 6 single detached houses (approximately 1,725 square feet each) and 6 coach houses (approximately 360 square feet each)
 Site size: 21,324 square feet combined
 Floor area ratio: 0.6 FAR
 # of parking spaces: 3 per lot as per the zoning bylaw (2 spaces in the garage for the house and 1 space outside for the coach house)
 Year completed: All of the units were completed between October 2005 and April 2006
 Developer: Rocky Sethi

Site Plan and Photographs of Project



Example site plan (9311 No. 3 Road)



Street view of the units from No. 3 Road



Street view of the units from No. 3 Road

Project Description

The single detached units in this project all borrow from Craftsman type design elements, but the design details and exterior finishing treatments are varied enough that each unit has a unique look. The landscaping along the No. 3 frontage varies from unit to unit and some treatments have been more successful than others. The design of the coach house units over the rear garages does not vary significantly from property to property but the scale of the units works well with nearby single detached development. This project has taken advantage of the fact that there was an existing lane behind this site so it avoids having to provide direct access to No. 3 Road. More frequently, developers wanting to increase the density of properties fronting onto major arterials in Richmond have had to deal with the challenge of creating shared access points.



Coach homes on top of project garages



Regulatory Approach to Densification

The City of Richmond has an Arterial Road Policy that encourages residential redevelopment along arterial roads, focusing on replacing existing residential dwellings (usually an older single family dwelling) with new housing (generally in a more dense form such as smaller single family homes, coach housing, two family dwellings, or townhouses). The City's Lane Policy requires that a rear 6m or 20 foot wide lane be dedicated and paid for by the applicant when a lot is redeveloped along an arterial road.

This property consisted of one single family lot that was zoned R1/E (single family) and one duplex lot that was zoned R5 (two-family). The two lots were designated Neighbourhood Residential in the City's OCP and Small Lot Single Family in the Broadmoor Central West Sub-Area Plan. The lots were rezoned to R9 (coach house district) and re-designated to Low Density Residential in the Broadmoor Area Plan to allow the project.

Profiles of Densification Projects in Single Detached Housing Areas



This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#16 of 20: 9 unit low-rise multifamily in the City of Vancouver

Project Details

Civic address: 1803 MacDonald Street (“Tatlow Court”), City of Vancouver
Densification: Low-rise multifamily development
Unit count and size: 9 units: eight 3 bedroom units ranging from 1,320 to 1,656 square feet and one 3 bedroom plus den unit at 1,709 square feet
Site size: 15,572 square feet (78 x 200 feet)
Floor space ratio: 0.75 (11,671 square feet)
of parking spaces: 9 spaces required but 16 spaces provided in underground parking
Year completed: 2006
Developer: Dalt Holdings Ltd.
Architect: Tomizo Yamamoto Architects Inc.

Site Plan and Photographs of Project



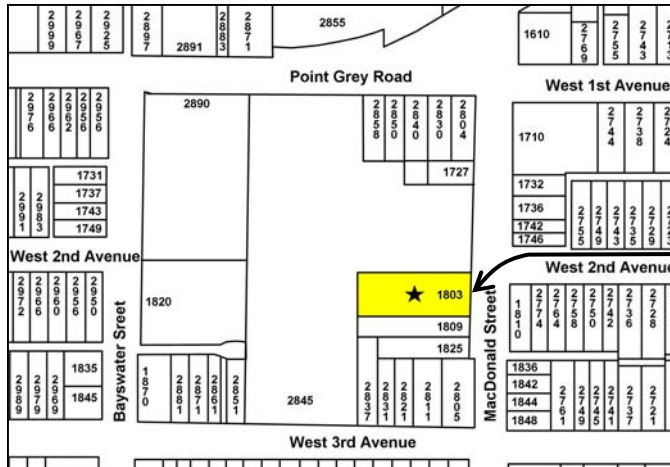
MacDonald frontage (note recessed entry to u/g garage)



View from southeast corner of project

Project Description

This project is on a rectangular lot that is significantly deeper than it is wide. The project design does a very good job of achieving a street frontage that is compatible with adjacent older structures, even though it also had to accommodate an entry to its underground garage on this frontage. The impact of the entry to the underground garage was minimized by partially sinking it below grade. The site plan for this project made use of the site's location adjacent to a small park to create pleasant individual ground level entries for each unit. This approach could also be used on a corner lot.



View of north side of project from path between the development and the adjacent park

Regulatory Approach to Densification

This property was already zoned RT-8, which is intended *“to encourage the retention and renovation of existing buildings which maintain an architectural style and building form consistent with the historical character of the area. Redevelopment will be encouraged on sites where existing buildings are smaller or do not contribute to this character...”* (Zoning Bylaw No. 3575, May 1997, RT-8, page 1)

The RT-8 zone conditionally allows multi-family residential up to 2 storeys, so the project did not need rezoning, just a development permit and a building permit. The project achieved the maximum conditional FSR of 0.75.

Profiles of Densification Projects in Single Detached Housing Areas



This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#17 of 20: Triplex with a coach house over the rear garage in the City of Vancouver

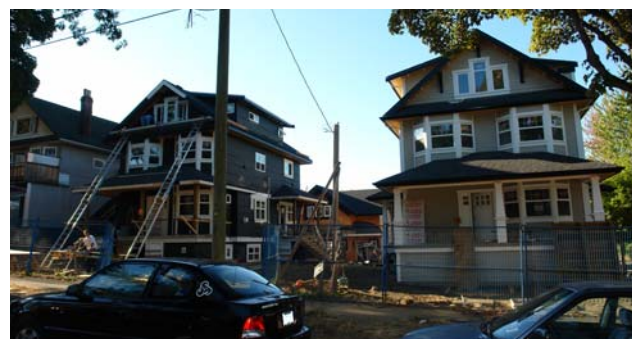
Project Details

Civic address: 2398 West 7th Avenue, City of Vancouver
Densification: Triplex with a coach house over the rear garage
Unit count and size: 4 units: 3 units in main structure that average 1,076 square feet each and 1 coach house unit at 1,266 square feet
Site size: 5,500 square feet (50 x 110 feet)
Floor area ratio: 0.75 FAR (4,495 square feet)
of parking spaces: 4 spaces (as per bylaw requirement)
Year completed: 2006
Developer: Rio Land Holdings Ltd.
Architect/Designer: Terra Firma Design Ltd.

Site Plan and Photographs of Project



View showing entrances on north and east sides



View from West 7th Avenue showing adjacent new and existing development to the east

Project Description

This 2 ½ storey project blends in very well with surrounding older structures, most of which were originally single family structures that have been converted to multifamily. The design is a good example of how the careful attention to entrance locations can preserve privacy and help keep the project from looking dense. In the main structure there is an entrance to one unit on the east side, one on the north, and one on the west. The entry to the coach house unit, which is attached to the garage, is on the west side, well away from the entrance to the unit in the main structure. Because of this approach to locating entrances, this project has the appearance of being a large single detached unit.



View from southwest corner of site: coach house unit attached to garage off lane



View of separation between main structure and coach house/garage structure

Regulatory Approach to Densification

The project was developed under the site's existing RT-8 zone and achieved the maximum conditional FSR of 0.75. The intent of the City of Vancouver's RT-8 zone is *"to encourage the retention and renovation of existing buildings which maintain an architectural style and building form that is consistent with the historical character of the area. Redevelopment is encouraged on sites where existing buildings are smaller or do not contribute to this character..."* (Zoning Bylaw No. 3575, May 1997, RT-8, page 1)

RT zones do not have specific restrictions against using side yards for entry paths. Design consideration to minimize impact on adjacent properties is expected.

Profiles of Densification Projects in Single Detached Housing Areas

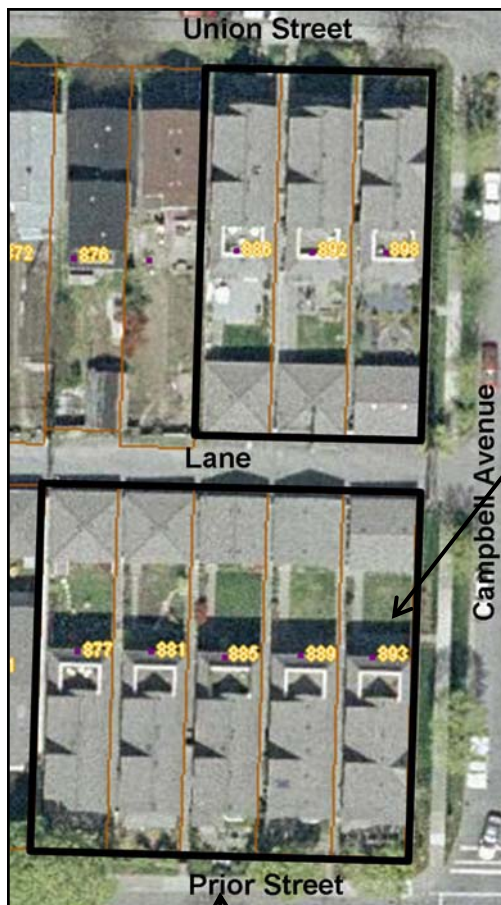


This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#18 of 20: Front-to-back duplex units in the City of Vancouver

Project Details

Civic address: 877 to 889 Prior Street and 886 to 898 Union Street, City of Vancouver
Densification: Front-to-back duplex units in a single family neighbourhood
Unit count and size: 16 units (2 units per lot, 8 lots) approximately 1,183 square feet each
Site size: 24,400 square feet (8 lots at 25 x 122 feet or 3,050 square feet each)
Floor space ratio: 0.75 (2,366 square feet per lot)
of parking spaces: 2 spaces per lot (as per bylaw requirement)
Year completed: 2002
Developer: Amacon Development Corp.
Architect: Tomizo Yamamoto Architects Inc.

Site Plan and Photographs of Project



View from Campbell Avenue showing rear units



View of front units on Prior Street frontage

Project Description

This project is a good example of densification that has achieved a single family look on small lots with lane access. The units are arranged front to back with side-by-side, attached single garages off the lane. The unit designs reflect the style and character of the older heritage structures in the area. There has also been good attention to landscaping, fencing, and gate details. The overall result is charming, not cluttered.



View from Campbell Avenue showing fencing, landscaping detail, and yard between rear unit and garage



Lane view of the project garages

Regulatory Approach to Densification

This project involved the redevelopment of 8 lots with two units each.

It was granted the maximum conditional FSR of 0.75 under the site's pre-existing RT-3 zoning. The intent of the City of Vancouver's RT-3 zone is to *"encourage the retention of neighbourhood and streetscape character, particularly through the retention, renovation and restoration of existing character buildings. Redevelopment is encouraged on sites with existing buildings of style and form which are inconsistent with the area's pre-1920 architecture..."* (Zoning Bylaw No. 3575, October 1996, RT-3, page 1)

Profiles of Densification Projects in Single Detached Housing Areas



This series of 20 profiles includes examples from 10 municipalities in the GVRD:
#19 of 20: Triplex with a coach house over the carport in the City of Vancouver

Project Details

Civic address: 1614 and 1620 Grant Street, City of Vancouver
Densification: Triplex with a coach house above an open carport
Unit count and size: 4 units with an average size of 1,410 square feet per unit
Site size: 4,026 square feet (33 x 122 feet)
Floor space ratio: 1.4 (5,643 square feet)
of parking spaces: 4 spaces per unit as per bylaw requirements
Year completed: 1997 (approx)
Developer: Don P. Van Vliet
Architect/Designer: John Dow Medland

Site Plan and Photographs of Project



View from Grant Street. Note that the entrances to the units (burgundy doors) are handled in a way that helps the project achieve the look of one large single family dwelling

Project Description

This 2 ½ storey project seems tall next to adjacent 1-1 ½ storey structures but it serves as a good transition to nearby low and mid-rise multifamily. This is a good example of how three unit entrances can be handled on a narrow lot in a way that preserves the single detached look of the project. The design of the coach house unit located off the lane is substantial in its massing and is probably best suited to lanes that back onto higher density residential or commercial development. The parking is open carport style under the coach house. The individuality of the coach house unit is emphasized by being a different but complementary exterior colour relative to the main structure.



Context on Grant Street frontage



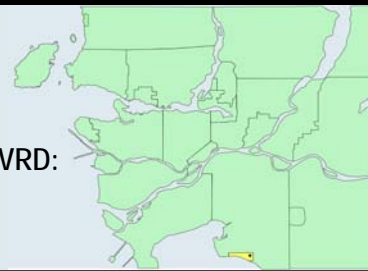
View from lane: coach house over open carport. Note different, but complementary colours for main structure and coach house.

Regulatory Approach to Densification

This project was developed under the site's existing RM-4 zoning. It achieved a conditional FSR of 1.4 (maximum possible = FSR 1.45). The intent of the City of Vancouver's RM-4 zone is *"to permit medium density residential development, including a variety of multiple dwelling types, to encourage the retention of existing buildings and good design..."* (Zoning Bylaw No. 3575, May 1997, RM-4 and RM-4N, page 1)

The City relaxed the landscape setback and/or small car ratio to permit the required 4 parking spaces to fit along the rear of the property. Typically, only 3 spaces would fit across a 33' lot.

Profiles of Densification Projects in Single Detached Housing Areas



This series of 20 profiles includes examples from 10 municipalities in the GVRD:

#20 of 20: Five fee simple single family units in White Rock on a site previously occupied by one dwelling unit

Project Details

Civic address: 15383-15399 Russell Avenue, City of White Rock
Densification: Subdivision and redevelopment of one single family lot into five fee simple lots, each with one detached unit
Unit count and size: 5 two storey units of approximately 2,600 square feet including an 800 square foot basement
Site size: 5 lots, each approximately 2,844 square feet (32 feet x 89 feet)
Floor area ratio: 0.9
of parking spaces: Not available
Year completed: Approved 2001, completed 2002
Developer: Baywest Development

Site Plan and Photographs of Project



Russell Avenue frontage

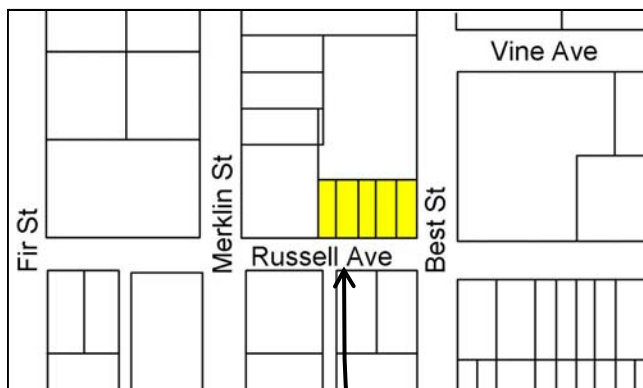


Note shared driveway access to parking at rear and use of landscaping to create privacy

Project Description

This project has a single family look that utilizes Craftsman-style design details. It looks low density in its location adjacent to low-rise multifamily development, but actually achieves a relatively high FSR of 0.9.

Parking is at the rear, with access for most units via paved side yards between units. The end unit accesses its parking from Best Street. Most units have one covered carport stall and one open surface stall. Because of the site's shallow depth, the units sit quite close to the sidewalk for an "urban" feel. Landscaping has been used to increase the illusion of separation from the street. Each unit has a daylight basement that could be used to accommodate a home based business. Recent MLS listings indicate that some of the basements are used for unauthorized suites.



Regulatory Approach to Densification

The site was originally zoned RS-1 but was designated in the OCP for medium density multifamily. Adjacent properties are zoned RM-2, which permits development to a maximum FSR of 1.1 and site coverage to a maximum of 45%.

For this project, the site was rezoned to CD-9, which was specifically intended to allow the development of five one-unit residential units to a density of approximately 15 units per acre at an FSR of 0.9 and maximum site coverage of 50%.

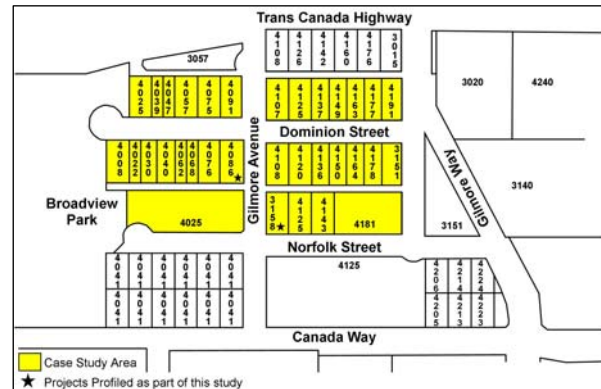
Attachment B: 5 Case Studies

Disclaimer: These 5 Case Studies were created by Coriolis Consulting Corp., but Coriolis did not obtain any approval from the developers or property owners to publish information about the projects. Coriolis' scope of work was to document the case studies. Coriolis assumes that Metro Vancouver will obtain any approval required to publish these materials.

Case Study #1 of 5: Broadview Area in Burnaby

Description

The 4000 and 4100 blocks of Dominion Street and Norfolk Street in the Broadview area in Burnaby (at Gilmore Avenue) are predominantly developed with single family houses. The area is designated in Burnaby's Official Community Plan for multi-family development, but has only experienced redevelopment to duplex and single family dwellings for several years. There has been recent interest in multi-family development and one small multi-family project has been completed.



Reasons for Selection as Case Study

This area was selected as a case study because, until recently, new development was not achieving the density that was envisioned under the existing land use policy.

Two of the 20 project profiles are in this area and they illustrate the types of intensification that have occurred. Profile #1 of 20 is 2 semi-detached units (permitted under existing zoning), which is typical of the form of intensification that the area has been seeing. Profile #2 of 20 is a four unit, townhouse-style row house project, which is the form of intensification that the City wants to encourage. This form of development requires rezoning.

Planning/Regulatory Approach to Intensification

This area is predominantly zoned R5, which permits single family dwellings and two-family dwellings on larger lots, except for a few properties that have been rezoned to a Comprehensive Development (CD) zoning.

The area is designated in Burnaby's Official Community Plan (OCP) for "Urban Village - Community Plan Eight - RM3 Medium Density Apartment". The RM3 Medium Density Apartment zone allows multifamily development up to an FAR of 0.9 (or up to FAR 1.1 if

certain parking requirements are met). Lower density zones are also permitted but are not preferred (e.g. the RM2 zone, which allows medium density multifamily uses up to an FAR of 0.7, which can be increased to FAR 0.9 if certain parking requirements are met).

Several properties (such as 3109 Gilmore & 4086 Dominion Street -- see Profile #1 and adjacent image) have been redeveloped under the existing R5 zoning district with semi-detached units. In these cases, the City requires a Siting Approval Report to be provided to Council for information (in Burnaby, Siting Approval Reports are completed when a two family dwelling is built on a lot with zoning that permits the two family dwelling but where the Area Plan OCP designation allows multifamily use). Typically, the Siting Approval Report and a Building Permit are the only requirements. The approvals process for a semi-detached project under the existing R5 zoning could be completed within about a month or so.



One property (3158 Gilmore Avenue -- see Profile #2 and adjacent image) has been recently redeveloped under a rezoning from R5 to a CD zoning based on the RM2 zone, even though it allowed a lower FAR than the zoning (RM3) designated in the OCP. The CD zone for this property includes the same provisions as the RM2



zone, which permits medium density multifamily, primarily designed for small families or couples, at an FAR of 0.7, although this can be increased to an FAR of 0.9 if parking is provided underground. In this case, the project achieved an FAR of 0.7. The City relaxed the parking requirement for this project, from the standard requirement of 1.75 spaces per unit to 1.5 spaces per unit. The approvals process for a multifamily project under rezoning to a CD zone could take on the order of 6 to 12 months.

Form and Character

Redevelopment in the area is ground oriented and includes a range of housing forms from semi-detached units to row houses. The semi-detached project in Profile #1 used a corner site to advantage to create two units, each addressed to a different street and each with the look of a large single detached house. The row house project in Profile #2 tucked its parking off a side lane to allow the residential units to have a friendly, neighbourly connection to the street. Each unit has a separate “front door” and finishing

detailing alternates from unit to unit to suggest the idea of side-by-side-houses on very small lots.

Analysis of Financial Performance

Three scenarios were analyzed for this area:

1. Redevelopment with a new single detached house under the existing R5 zoning.
2. Redevelopment with 2 new semi-detached units under the existing R5 zoning.
3. Redevelopment with a new 12 unit row house project on three assembled lots under a rezoning from R5 to CD (based on the RM3 zoning district), assuming parking at grade (i.e. in garages) and an FAR of 0.9 (i.e. the maximum density envisioned by the OCP designation, holding aside any increases in density related to meeting certain parking requirements).

We did not analyze a scenario that assumes redevelopment with a new row house project under a rezoning from R5 to CD (based on the RM3 zoning district), assuming underground parking (which would increase the maximum permitted density to FSR 1.1), because the cost of completing underground parking is generally not viable for a small project.

The pro formas at the end of this case study show the financial analysis of these scenarios. The results are summarized in the following table.

Scenario	FAR	Zoning	Supportable Land Value per 51 Foot Lot
1 detached house on 51 foot lot	0.6	R5	\$512,000
2 semi-detached units on 51 foot lot	0.54	R5	\$511,000
12 units on three 51 foot lots	0.9	CD(RM3)	\$604,000

The financial analysis of scenarios shows that:

- Single family and semi-detached development support about the same land value and same profit in this location. However, small builders would probably prefer to develop semi-detached units in this location because their size and resulting price is better suited to the target market.
- Intensification to townhouse development (as envisioned in the OCP) in this area works for properties that are currently developed with older, low quality single family houses with property values less than about \$604,000, assuming the costs associated with rezoning are not high.

- Developers/builders of townhouse projects can make a profit and should be able to outbid new single family and semi-detached developments for lots. However, townhouse projects may need to assemble properties to create larger lots so a townhouse developer may have difficulty acquiring or assembling a large enough site in this location.
- Townhouse development generates a much higher developer's profit than semi-detached and single detached development, although the risks are higher and development costs are much higher. If rezoning costs (holding costs, fees, processing, amenity contributions) or site assembly costs are high, this larger profit will be eroded.

Lessons Learned

1. There is market interest in semi-detached and townhouse units in this neighbourhood.
2. Intensification in the form of the new semi-detached development works from a financial perspective on properties with low value improvements in this neighbourhood. Semi-detached development does not require property assembly.
3. Intensification in the form of the new townhouse development works from a financial perspective on properties with low value improvements in this neighbourhood. However, the constraint on townhouse development is that the developer needs to acquire a large lot or be able to assemble neighbouring properties at a price that makes financial sense. In addition, if rezoning invokes expensive upgrading to services or adjacent streets, or significantly lengthens the approvals process, developers will not be interested.
4. Semi-detached and townhouse development is taking place in this area as both are financially viable and marketable forms of development that support similar or higher land value than single family development. The preferred form of housing from the developer's perspective will likely vary depending on the potential site size, the cost of site assembly, and the anticipated risk and cost of rezoning.

Pro Formas

*Broadview Area in Burnaby - Scenario 1
Financial Analysis of Redevelopment with a New Single Detached House under the
Existing R5 Zoning*

Major Assumptions	
Number of Houses	1 house on 1 lot
Permitted Density	0.6 FAR
Total Floorspace (excluding garages)	3,733 sq.ft.
Maximum Above Ground Floorspace	2,489 sq.ft.
Basement	1,244 sq.ft.
Average House Size (2 car garage; mid quality finishing)	3,733 sq.ft. (plus 452 sq.ft. garage)
Assumed Site Size	51 foot frontage 122 foot depth 6,222 total area
Average Lot Size	6,222 sq.ft. per lot
Cost Per House	
Hard Construction Costs	\$150 per sq.ft. including landscaping
Design Costs	2% of hard costs (from standard design)
Allowance for Permits	\$5,000
Development Cost Charges	\$0.00
Total Estimated Cost Per House	\$576,180
Cost per sq.ft. of House	\$154
Value of Each House Upon Completion	\$1,232,000 per house
Analysis	
Value upon Completion	\$1,232,000
Less commissions (3%)	\$36,960
Builder's Profit (5%)	\$61,600
Total Construction Costs	\$576,180
Less Construction Financing for 6 months (6%)	\$17,285
Residual to Land and Carry	\$539,975
Less interim financing on land for 6 months (6%)	\$15,282
Less property purchase tax	\$9,800
Less property taxes for 6 months (assuming \$1 psf of site annually)	\$3,111
Residual Land Value	\$511,782
Residual Value per sq.ft. of site	\$82.25
Residual Value per Existing Lot	\$511,782
	<i>rounded to:</i> \$512,000

Broadview Area in Burnaby - Scenario 2

Financial Analysis of Redevelopment with a New Semi-detached Project under the Existing R5 Zoning

Major Assumptions	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$345.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	51 by 122 6,222 sq.ft.
Number of Lots	1
Assumed Density	0.54 FSR
Total Space	3,367 sq.ft.
Net Saleable Space	3,367 sq.ft. or 100% of gross area
Average Gross Unit Size	1,683 sq.ft. (plus parking)
Maximum Above Grade Floorspace Per Unit	1,683 sq.ft. (plus parking)
Basement Space Per Unit	0 sq.ft.
Number of Units	2.0 units
Construction Costs	
Hard Costs	\$140.00 per gross sq.ft. assuming at grade parking and no basement
Soft Costs	5% of hard costs (permits, standard design)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$0.00 per unit (not charged on 3 units or less)
DCC	\$0.00 per unit (not charged on 4 units or less)
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	3% of gross revenue
Builder's Profit	5% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$1,161,477
Less Marketing and Commissions	\$34,844
Net Sales Revenue	\$1,126,633
Construction Costs	
Hard Construction Costs	\$471,324
Soft Costs	\$23,566
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$0
DCCs	\$0
Interim Financing	\$14,847
Total Construction Costs	\$509,737
Total Costs per sq.ft. of floorspace	\$151
Builder's Profit	\$58,074
Residual to Land and Land Carry	\$558,822
Less interim financing on land for one year (6%)	\$31,631
Less property purchase tax	\$10,176
Less property taxes for one year (assuming \$1 psf of site)	\$6,222
Residual Land Value	\$510,792
Residual Value per sq.ft. of site	\$82.09
Residual Value per sq.ft. buildable	\$151.72
Residual Value per existing lot	\$510,792
<i>rounded to:</i>	\$511,000

Broadview Area in Burnaby - Scenario 3

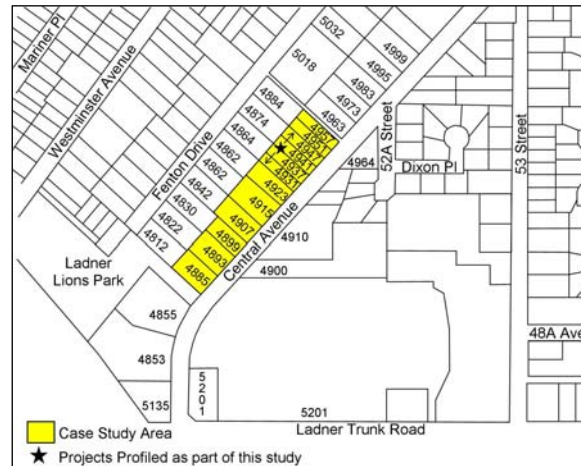
Financial Analysis of Redevelopment with a New Row House Project under a Rezoning from R5 to CD (based on the RM3 district), Assuming Parking at Grade (i.e. in garages) and FAR 0.9

Major Assumptions	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$360.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	153 by 122 18,666 sq.ft.
Assumed Density	0.90 FAR (CD RM3)
Gross Floorspace	16,799
Number of Units	12.0 units
Average Gross Unit Size	1,400 sq.ft.
Total Space	16,799 sq.ft.
Net Saleable Space	16,799 sq.ft. or 100% of gross area
Construction Costs	
Upgrade to Adjacent street and services	\$2,500.00 per lineal metre of frontage (to centre line)
Hard Costs	\$140.00 per gross sq.ft. assuming at grade detached parking
Soft Costs	10% of hard costs (permits, design, engineering, professional fees)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$826.00 per unit (in Vancouver District)
DCCs	\$3.62 per sq.ft. of floorspace
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	5% of gross revenue
Developer's Profit	15% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$6,047,784
Less Marketing and Commissions	\$302,389
Net Sales Revenue	\$5,745,395
Construction Costs	
Upgrade to Adjacent Street and services	\$116,616
Hard Construction Costs	\$2,351,916
Soft Costs	\$235,192
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$9,912
DCCs	\$60,814
Interim Financing	\$83,233
Total Construction Costs	\$2,857,683
Total Costs per sq.ft. of floorspace	\$170
Developer's Profit	\$907,168
Residual to Land and Land Carry	\$1,980,544
Less interim financing on land for one year (6%)	\$112,106
Less property purchase tax	\$38,611
Less property taxes for one year (assuming \$1 psf of site)	\$18,666
Residual Land Value	\$1,811,161
Residual Value per sq.ft. of site	\$97.03
Residual Value per sq.ft. buildable	\$107.81
Total Residual Value	\$1,811,161
	<i>rounded to:</i> \$1,811,000
	<i>value per existing lot:</i> \$604,000

Case Study #2 of 5: 4885 to 4957 Central Avenue in Delta

Description

4885 to 4957 Central Avenue is a block in the Ladner area of Delta that is developed with single family houses, zoned for duplexes, and designated for townhouses. It has not seen any redevelopment to duplexes or townhouses; instead, three single family properties in the block have been subdivided, rezoned, and re-designated to allow small lot single family development with coach houses (i.e. the lots now addressed as 4831 to 4857



Central Avenue). The remainder of the block (from 4885 to 4923 Central Avenue) is still single family.

Reasons for Selection as Case Study

This block was selected as a case study because it is an area in which there was an expectation that intensification would occur under existing land use policy, but the only redevelopment that has occurred has not been in the form envisioned by the OCP.

One of the project profiles was in this area -- see Profile #7 of 20 which is a small lot single family with coach house project at 4931 to 4947 Central Avenue. The adjacent image shows one of these small lots with the single family house and coach house at the rear above the garage.



Planning/Regulatory Approach to Intensification

Before any intensification occurred, this block was zoned RM-1, which allows single family dwellings, side-by-side duplexes, and vertical duplexes. The maximum floor space ratio under the RM-1 zone is FSR 0.25 plus 93 square metres for single family dwellings and FSR 0.30 plus 93 square metres for duplex dwellings.

Before any intensification occurred, this block was designated Townhouse in Delta's Official Community Plan (OCP). The Townhouse designation is intended for ground-oriented townhouses and cluster houses. The maximum height is 2½ storeys and the maximum residential density is 40 units per hectare or 16 units per acre.

About two thirds of the block remains in single family use. However, two intensification projects have occurred in the block (one in 2001 and one in 2005), both of which involved typical single family lots being rezoned from RM-1 to RS9, re-designated from Townhouse to RG Ground-Oriented Residential, subdivided into smaller lots, and each smaller lot being redeveloped with a single family dwelling and coach house unit. The RS9 zoning district is Delta's Coach House Infill Residential zone, which allows a single family dwelling plus a second dwelling unit in an accessory building on the lot. The RG Ground-Oriented Residential designation allows single family, duplex, and multifamily uses, as long as the majority of dwelling units in the structure have a direct connection between the front entry and the ground. The RG designation permits a maximum height of 3 storeys and a density in the range of 17 to 62 units per hectare or 7 to 25 units per acre.

The Corporation of Delta has recently completed an in-house review of the OCP for Ladner and has re-designated all of the remaining Townhouse-designated properties to RG Ground Oriented Housing. The RG designation allows a higher maximum density and more flexibility in housing types.

Form and Character

This is a good example of how densification with single detached character can occur on individual lots that are narrow and without rear lane access. In this case, the main structure sits quite far forward on the lot (i.e. shallow front yard) and the garage with a coach house unit over is situated at the rear of the lot. Access to the garage and coach house is via a side yard drive way. The visual impact of the driveway is softened with a centre grassy strip. In situations where the lot is narrower, a side yard drive way can be shared by adjacent properties with each contributing half of the required width of the driveway.

Analysis of Financial Performance

Four scenarios were analyzed for this block:

1. Redevelopment with a new single detached house under the existing RM1 zoning (FSR 0.25 plus 93 square metres).

2. Redevelopment with a new duplex under the existing RM1 zoning (FSR 0.30 plus 93 square metres).
3. Rezoning to RM4 and development of townhouses (maximum density of 16 units per acre).
4. Rezoning to RS9, subdivision into smaller single family lots, and development of each lot with a single family dwelling and coach house (FSR 0.65). This scenario assumes assembly of two larger lots allowing subdivision into 5 small lots. Without assembly, the larger lots could only be subdivided in 2 small lots each, for a total of 4 lots.

The pro formas at the end of this case study show the financial analysis of these scenarios. The results are summarized in the following table.

Scenario	FAR	Zoning	Supportable Land Value per Lot
1 detached house on a 13,250 sq.ft. lot	0.33	RM1	\$393,000
2 units (duplex) on a 13,250 sq.ft. lot	0.38	RM1	\$430,000
9 townhouse units on two 13,250 sq.ft. lots	0.48	RM4	\$534,000
5 detached houses with coach houses on small lots (2 original lots of 13,250 sq.ft. each)	0.65	RS9	\$542,000

The financial analysis of scenarios shows that:

- Duplex development supports a higher land value in this location than single family detached development so duplex developers should be able to outbid single family builders in this location.
- Intensification to townhouse development (as envisioned in the OCP) in this area works for properties that are currently developed with older, low quality single family houses with property values less than about \$534,000, assuming the costs associated with rezoning are not high.
- Small lot single family development (with coach houses) works for properties that are currently developed with older, low quality single family houses with property values less than about \$542,000, assuming the costs associated with rezoning are not high.
- Small lot single family development and townhouse development support similar land values. This indicates that both forms of development are financially viable in this location. However, a developer who completed a small lot single family project in this area indicates that small lot single family is more attractive than townhouse development because approval for single family development is more straightforward and less expensive. Therefore, small lot single family is popular among builders and smaller development companies.

Lessons Learned

1. There is market interest in small lot single family houses with coach houses and market interest in townhouse units in this neighbourhood.
2. Intensification in the form of detached dwellings (with coach houses) on small lots works from a financial perspective on properties with low value improvements in this neighbourhood.
3. Intensification in the form of the new townhouse development works from a financial perspective on properties with low value improvements in this neighbourhood. One of the developers we interviewed indicated that townhouse development and small lot single family are comparable from a financial perspective (which is consistent with our analysis), in terms of the amount that can be paid for a development site. Townhouse development has the potential to generate higher developer profits, but the developer indicated that smaller developers and builders are more interested in the small lot housing as the approvals process is more straightforward and the smaller builders/developers are very familiar with the single family market. The opportunity for higher profits in a townhouse project requires more invested capital, more borrowing, rezoning, site assembly, and more risk, which tend to discourage smaller builder/developers.
4. Assembly can create an opportunity to increase the number of small lots per acre.
5. In this location, small lot housing with coach houses can achieve a slightly higher density (in terms of units per acre) than townhouse.

Pro Formas

*4885 to 4957 Central Avenue in Delta - Scenario 1
 Financial Analysis of Redevelopment with a New Single Detached House under the
 Existing RM1 zoning (FSR 0.25 plus 93 square metres)*

Major Assumptions	
Number of Houses	1 house on 1 lot
Total Floorspace (excluding garages)	4,314 sq.ft.
Average House Size (plus 2 car garage; mid quality finishing)	4,314 sq.ft.
Assumed Site Size	92 foot frontage 144 foot depth 13,250 total area
Average Lot Size	13,250 sq.ft. per lot
Cost Per House	
Hard Construction Costs	\$150 per sq.ft. including landscaping
Design Costs	2% of hard costs (from standard design)
Allowance for Permits	\$5,000
Development Cost Charges	\$0.00
Total Estimated Cost Per House	\$664,977
Cost per sq.ft. of House	\$154
Value of House Upon Completion	\$1,200,000 per house
Analysis	
Value upon Completion	\$1,200,000
Less commissions (3%)	\$36,000
Builder's Profit (5%)	\$60,000
Total Construction Costs	\$664,977
Less Construction Financing for 6 months (6%)	\$19,949
Residual to Land and Carry	\$419,073
Less interim financing on land for 6 months (6%)	\$11,861
Less property purchase tax	\$7,381
Less property taxes for 6 months (assuming \$1 psf of site annually)	\$6,625
Residual Land Value	\$393,206
Residual Value per sq.ft. of site	\$29.68
Residual Value per Existing Lot	\$393,206
	<i>rounded to: \$393,000</i>

4885 to 4957 Central Avenue in Delta - Scenario 2
Financial Analysis of Redevelopment with a New Duplex under the Existing RM1 Zoning
(FSR 0.30 plus 93 square metres)

Major Assumptions	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$275.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	92 by 144 13,250 sq.ft.
Number of Lots	1
Assumed Density	0.30 FSR plus 93 sq. metres per lot
Total Space	4,976 sq.ft.
Net Saleable Space	4,976 sq.ft. or 100% of gross area
Average Gross Unit Size	2,488 sq.ft.
Number of Units	2.0 units
Construction Costs	
Hard Costs	\$145.00 per gross sq.ft. assuming at grade covered parking (includes landscaping)
Soft Costs	5% of hard costs (permits, standard design)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$0.00 per unit (not charged on 4 units or less)
DCC	\$0.00 per unit (not charged on 4 units or less)
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	3% of gross revenue
Builder's Profit	5% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$1,368,421
Less Marketing and Commissions	\$41,053
Net Sales Revenue	\$1,327,368
Construction Costs	
Hard Construction Costs	\$721,531
Soft Costs	\$36,077
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$0
DCCs	\$0
Interim Financing	\$22,728
Total Construction Costs	\$780,336
Total Costs per sq.ft. of floorspace	\$157
Builder's Profit	\$68,421
Residual to Land and Land Carry	\$478,611
Less interim financing on land for one year (6%)	\$27,091
Less property purchase tax	\$8,572
Less property taxes for one year (assuming \$1 psf of site)	\$13,250
Residual Land Value	\$429,698
Residual Value per sq.ft. of site	\$32.43
Residual Value per sq.ft. buildable	\$108.10
Residual Value per existing lot	\$429,698
	<i>rounded to:</i> \$430,000

4885 to 4957 Central Avenue in Delta - Scenario 3

Financial Analysis of Rezoning to RM4 and Development of Townhouses (maximum density of 16 units per acre)

Major Assumptions	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$310.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	184 by 144 26,500 sq.ft.
Assumed Density	16.00 units per acre
Number of Units	9.0 units (rounded down)
Average Gross Unit Size	1,400 sq.ft.
Total Space	12,600 sq.ft.
Net Saleable Space	12,600 sq.ft. or 100% of gross area
Construction Costs	
Hard Costs	\$130.00 per gross sq.ft. assuming at grade parking
Soft Costs	10% of hard costs (permits, design, engineering, professional fees)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$1,515.00 per unit
DCCs	\$7,627.00 per unit
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	5% of gross revenue
Developer's Profit	15% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$3,906,000
Less Marketing and Commissions	\$195,300
Net Sales Revenue	\$3,710,700
Construction Costs	
Hard Construction Costs	\$1,638,000
Soft Costs	\$163,800
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$13,635
DCCs	\$68,643
Interim Financing	\$56,522
Total Construction Costs	\$1,940,600
Total Costs per sq.ft. of floorspace	\$154
Developer's Profit	\$585,900
Residual to Land and Land Carry	\$1,184,200
Less interim financing on land for one year (6%)	\$67,030
Less property purchase tax	\$22,684
Less property taxes for one year (assuming \$1 psf of site)	\$26,500
Residual Land Value	\$1,067,985
Residual Value per sq.ft. of site	\$40.30
Residual Value per sq.ft. buildable	\$84.76
Total Residual Value	\$1,067,985
	<i>rounded to:</i> \$1,068,000
	<i>value per existing lot:</i> \$534,000

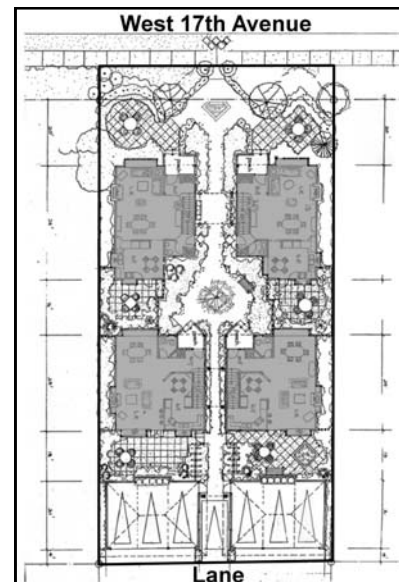
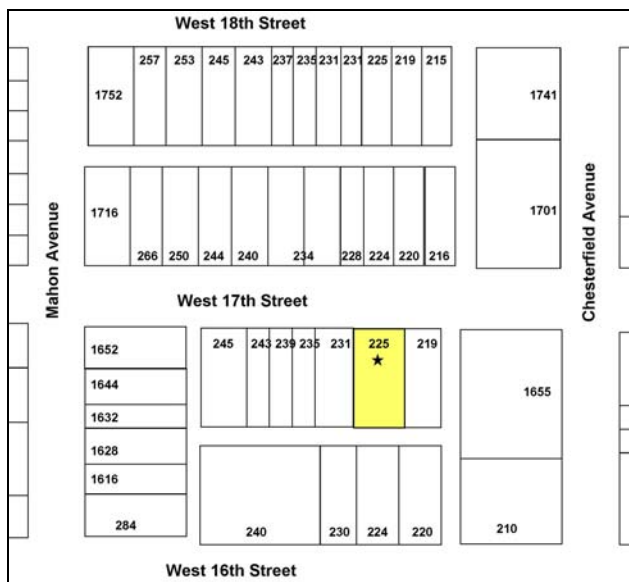
*4885 to 4957 Central Avenue in Delta - Scenario 4
Financial Analysis of Rezoning to RS9, Subdivision into Two Smaller Single Family Lots,
and Development of Each Lot with a Single Family Dwelling and Coach House (FSR
0.65)*

Major Assumptions	
Number of Houses	5 houses with coach houses on 5 lots (maximum due to fontage requirements)
Total Floorspace (excluding garages)	17,225 sq.ft. (at 0.65 FSR)
Average House Size (2 car garage; mid quality finishing)	2,645 sq.ft. main house 800 sq.ft. coach house 3,445 sq.ft. total house
Assumed Site Size	184 foot frontage 144 foot depth 26,500 total area
Average Lot Size	5,300 sq.ft. per lot
Cost Per House	
Hard Construction Costs	\$160 per sq.ft. including landscaping
Design Costs	2% of hard costs
Allowance for Permits	\$5,000
GVRD Sewer DCC	\$1,731.00 per unit (applied to main house only)
Development Cost Charges	\$11,229.00 per unit (applied to main house only)
Total Estimated Cost Per House	\$580,184
Cost per sq.ft. of House	\$168
Value of Each House Upon Completion	\$750,000 for the main house \$150,000 for the coach house \$900,000 in total
Analysis	
Value upon Completion	\$4,500,000
Less commissions (3%)	\$135,000
Builder's Profit (5%)	\$225,000
Total Construction Costs	\$2,900,920
Less Construction Financing for 6 months (6%)	\$87,028
Residual to Land and Carry	\$1,152,052
Less interim financing on land for 6 months (6%)	\$32,605
Less property purchase tax	\$22,041
Less property taxes for 6 months (assuming \$1 psf of site annually)	\$13,250
Residual Land Value	\$1,084,156
Residual Value per sq.ft. of site	\$40.91
Residual Value per Existing Lot	\$542,078
	<i>rounded to:</i> \$542,000

Case Study #3 of 5: 223/225 West 17th Street in the City of North Vancouver

Description

This project involved the development of four stratified detached units on one lot that was previously developed with a single family dwelling. The adjacent image shows the two front units and the images below show the location of the project and site plan.



This project is in a neighbourhood that, at the time, was predominantly developed with single family dwellings and duplexes, although surrounding uses now include a mix of residential densities (older single family dwellings, duplexes, low density townhouses, stacked townhouses, and low rise multi-family).

Reasons for Selection as Case Study

This project was selected as a case study because it represents successful intensification and involved replacing 1 single family unit with 4 units on one lot. The project was part of Metro Vancouver's GOMDH Series, but the Series did not examine the economics or regulatory approach that supported the intensification.

This project was also profiled as part of this study (see Profile #11 of 20), but is included as a case study to examine how the economics of redevelopment worked.

Planning/Regulatory Approach to Intensification

The property was part of a block that was zoned RT-1, which permits one residential unit, or one residential unit with an accessory secondary suite in the principal building, or two residential units with both units in the principal building. The block is designated in the City of North Vancouver's Official Community Plan (OCP) for "Level Three: Low Density - Attached Form" housing. The "Level Three" housing designation permits residential uses up to a maximum density of 0.75 floorspace ratio and notes that "while new single family development will still occur on smaller lots in this designation, most redevelopment will be...two or three family or townhouse development." (OCP, 2002, page 19)

This property was rezoned from RT-1 to a CD zoning (CD 395) based on the RT-1 zone with several modifications, including:

- changes to the allowable use to permit four principal buildings used for residential dwelling units instead of one principal building used for a single family or two unit residential use.
- a decrease in the permitted lot coverage from 35% to 33%.
- reduced setback requirements.
- an increase in the allowable gross floor area from a maximum of 4,400 square feet under the RT-1 zone (i.e. 0.35 FAR plus 1,000 square feet, up to a maximum of 4,400 square feet) to a maximum of 8,875 square feet under the CD zone (i.e. 0.6 FAR plus up to 2,995 square feet of storage area).

The CD zoning for the property required that all open spaces be landscaped and maintained, and that exterior finishes and landscaping be approved by the Advisory Design Panel.

Form and Character

This project is a good example of densification mid-block, where the presence of a rear lane allows the garages to be located at, and accessed from, the rear of the property. It has a single family look and feel from the street and blends well with the adjacent, older properties.

Analysis of Financial Performance

Three scenarios were analyzed for this project:

1. Redevelopment with a new single detached house under the existing RT-1 zoning.
2. Rezoning to CD for four units and an FAR of 0.6 (as actually occurred).
3. Rezoning to CD at an FAR of 0.75 (i.e. the maximum envisioned by the current OCP designation).

Each of the financial scenarios are based on sales prices and construction prices in 2001, when the project was actually completed.

The pro formas at the end of this case study show the financial analysis of these scenarios. The results are summarized in the following table.

Scenario	FAR	Zoning	Supportable Land Value per 70 Foot Lot (\$2001)
1 detached house on 70 foot lot	0.45	RT-1	\$285,000
4 detached strata units on 70 foot lot	0.60	CD	\$308,000
4 townhouse units on 70 foot lot	0.75	CD	\$288,000

The financial analysis of scenarios shows that:

- Redevelopment to 4 detached strata units supported a higher land value than redevelopment to one large single detached dwelling (existing zoning). Therefore, the developer had a financial incentive to rezone and proceed with the detached strata project.
- Under existing OCP policies, the maximum density achievable at rezoning is now 0.75 FAR. Townhouse development at this density would have been more attractive than building one large single family dwelling, but less attractive than the 4 detached strata units which were actually constructed.
- One of the reasons that this detached strata project was financially attractive is the large amount of basement area that was excluded from the density calculations (on the condition that it was fully below grade and did not have windows). This basement space was attractive and marketable to purchasers, but was excluded from FAR. If the basement areas were included, the FAR was about 0.9.
- The developer of this project indicated that this lot was unusually wide for the neighbourhood, allowing a detached form of strata housing. If the lot had been narrower, the developer would have needed to consider an attached form of housing on the site. Attached housing would not have been financially attractive.

Lessons Learned

1. There was market interest in detached and attached forms of ground oriented housing in this location at the time of this project (2001).
2. Intensification in the form of the detached strata units worked well because the lot was wide enough.
3. Construction of the detached strata units was financially attractive in comparison to building one large detached dwelling or a series of attached units.
4. Under the current OCP designation, the achievable density at this site is actually lower than the density that was achieved because the basement areas were excluded from the FAR calculations in the actual CD zoning district adopted for this site. Under the existing OCP designation, the project would have been less attractive from a financial perspective.
5. Intensification in the form of detached strata units or attached units is attractive from a financial perspective on properties with low value improvements in this neighbourhood.

Pro Formas

223/225 West 17th Street - Scenario 1

Financial Analysis of Redevelopment with a New Single Detached House under the Existing RT-1 Zone

Major Assumptions <i>(based on 2001 market conditions)</i>	
Number of Houses	1 house on 1 lot
Total Floorspace (excluding garages)	4,400 sq.ft.
Assumed Above Ground Floorspace	3,000 sq.ft.
Basement	1,400 sq.ft.
House Size (plus detached garage)	4,400 sq.ft.
Assumed Site Size	70 foot frontage 140 foot depth 9,800 total area
Average Lot Size	9,800 sq.ft. per lot
Cost Per House	
Hard Construction Costs	\$90 per sq.ft. including landscaping
Design Costs	3% of hard costs (from standard design)
Allowance for Permits	\$5,000
Development Cost Charges	\$0.00
Total Estimated Cost Per House	\$412,880
Cost per sq.ft. of House	\$94
Value of Each House Upon Completion	\$792,000 per house
Analysis	
Value upon Completion	\$792,000
Less commissions (3%)	\$23,760
Builder's Profit (5%)	\$39,600
Total Construction Costs	\$412,880
Less Construction Financing for 6 months (6%)	\$12,386
Residual to Land and Carry	\$303,374
Less interim financing on land for 6 months (6%)	\$8,586
Less property purchase tax	\$5,067
Less property taxes for 6 months (assuming \$1 psf of site annually)	\$4,900
Residual Land Value	\$284,820
Residual Value per sq.ft. of site	\$29.06
Residual Value per Existing Lot	\$284,820
	<i>rounded to: \$285,000</i>

223/225 West 17th Street - Scenario 4

Financial Analysis of Rezoning from RT-1 to CD and Development at FAR 0.6

Major Assumptions <i>(based on 2001 market conditions)</i>	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$250.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	70 by 140 9,800 sq.ft.
Assumed Density	0.60 FAR
Gross Floorspace	5,880 plus basement area
Number of Units	4.0 units
Average Gross Unit Size	1,470 sq.ft. plus basement area
Total Space	5,880 sq.ft. plus basement area
Net Saleable Space	5,880 sq.ft. or 100% of gross area
Construction Costs	
Hard Costs	\$110.00 per above grade gross sq.ft. assuming at grade detached parking
Soft Costs	20% of hard costs (permits, design, engineering, professional fees)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$1,291 per unit
DCCs	\$4.58 per sq.ft. of floorspace
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	5% of gross revenue
Developer's Profit	15% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$1,470,000
Less Marketing and Commissions	\$73,500
Net Sales Revenue	\$1,396,500
Construction Costs	
Hard Construction Costs	\$646,800
Soft Costs	\$129,360
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$5,164
DCCs	\$26,930
Interim Financing	\$24,248
Total Construction Costs	\$832,502
Total Costs per sq.ft. of floorspace	\$142
Developer's Profit	\$220,500
Residual to Land and Land Carry	\$343,498
Less interim financing on land for one year (6%)	\$19,443
Less property purchase tax	\$5,870
Less property taxes for one year (assuming \$1 psf of site)	\$9,800
Residual Land Value	\$308,385
Residual Value per sq.ft. of site	\$31.47
Residual Value per sq.ft. buildable	\$52.45
Total Residual Value	\$308,385
	<i>rounded to:</i> \$308,000
	<i>value per existing lot:</i> \$308,000
Notes:	
Costs assume a \$20 construction premium to allow for finished basement.	

223/225 West 17th Street - Scenario 5

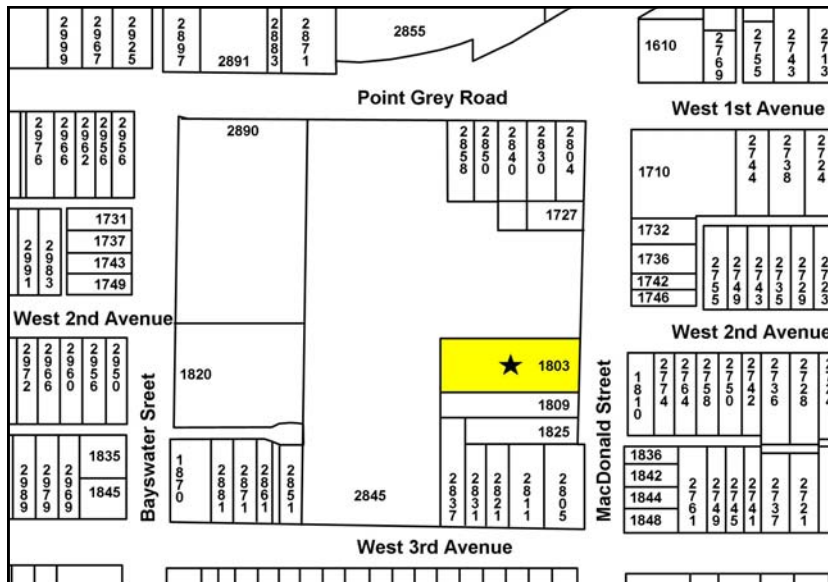
Financial Analysis of Rezoning from RT-1 to CD and Development at FAR 0.75

Major Assumptions (based on 2001 market conditions)	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$185.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	70 by 140 9,800 sq.ft.
Assumed Density	0.75 FAR
Gross Floorspace	7,350
Number of Units	4.0 units
Average Gross Unit Size	1,838 sq.ft.
Total Space	7,350 sq.ft.
Net Saleable Space	7,350 sq.ft. or 100% of gross area
Construction Costs	
Hard Costs	\$80.00 per gross sq.ft. assuming at grade detached parking
Soft Costs	20% of hard costs (permits, design, engineering, professional fees)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$1,129 per unit
DCCs	\$4.58 per sq.ft. of floorspace
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	5% of gross revenue
Developer's Profit	15% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$1,359,750
Less Marketing and Commissions	\$67,988
Net Sales Revenue	\$1,291,763
Construction Costs	
Hard Construction Costs	\$588,000
Soft Costs	\$117,600
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$4,516
DCCs	\$33,663
Interim Financing	\$22,313
Total Construction Costs	\$766,092
Total Costs per sq.ft. of floorspace	\$104
Developer's Profit	\$203,963
Residual to Land and Land Carry	\$321,708
Less interim financing on land for one year (6%)	\$18,210
Less property purchase tax	\$5,434
Less property taxes for one year (assuming \$1 psf of site)	\$9,800
Residual Land Value	\$288,264
Residual Value per sq.ft. of site	\$29.41
Residual Value per sq.ft. buildable	\$39.22
Total Residual Value	\$288,264
	<i>rounded to:</i> \$288,000
	<i>value per existing lot:</i> \$288,000

Case Study #4 of 5: 1803 MacDonald Street (“Tatlow Court”) in Vancouver

Description

This project is on a large site that was previously developed with a single family house. It is located in a neighbourhood with single family units, single family units with suites, and duplex units. The site was redeveloped with a two storey, 9 unit multi-family project that fits well within the existing low density character of the neighbourhood. The adjacent image shows the project from MacDonald Street and the images below show the location and an aerial photo of the project.



Reasons for Selection as Case Study

This project was selected as a case study because it demonstrates successful intensification and involved replacing 1 single family unit with 9 units on one lot.

This project was also profiled as part of this study (see Profile #16 of 20), but is included as a case study to examine how the economics of redevelopment worked in this case.

Planning/Regulatory Approach to Intensification

This property was already zoned RT-8, which is intended “to encourage the retention and renovation of existing buildings which maintain an architectural style and building form consistent with the historical character of the area. Redevelopment will be encouraged on sites where existing buildings are smaller or do not contribute to this character...”⁴

The RT-8 zone conditionally allows single family, single family with basement suite, two family, and multi-family residential uses up to 2 storeys and an FSR of 0.75. This project did not need rezoning, but did require a development permit. The project achieved the maximum conditional FSR of 0.75.

Form and Character

This project is on a rectangular lot that is significantly deeper than it is wide. The project design does a very good job of achieving a street frontage that is compatible with adjacent older structures, even though it also had to accommodate an entry to its underground garage on this frontage. The impact of the entry to the underground garage was minimized by porch detailing that mimicked porches on nearby heritage structures. The site plan for this project made use of the site’s location adjacent to a small park to create pleasant individual ground level entries for each unit. This approach could also be used on a corner lot.

Analysis of Financial Performance

Because of the large site size and the site’s dimensions (i.e. narrow and deep), this property was not an attractive candidate for redevelopment to a single family, single family with basement suite, or a two family dwelling even though these forms of housing would have been allowed under the existing RT-8 zoning. Therefore, the financial performance of maximum density of development permitted under the RT-8 zoning district (which is the form of development that was actually achieved by the project) is analyzed. The value of this site under this form and density of development is then compared to the likely cost of having to assemble typical single family lots in the neighbourhood to create the same sized development parcel, to determine whether the project is likely replicable within the neighbourhood.

⁴ City of Vancouver, Zoning Bylaw No. 3575, May 1997. RT-8 zoning district, page 1.

The pro forma at the end of this case study shows the financial analysis of the redevelopment of the site in 2005 to a wood frame townhouse project with underground parking at an FSR of 0.75 as well as the likely cost at that time to assemble single family lots to create the same sized development parcel. The financial analysis can be summarized as shown in the following table.

Scenario	FSR	Zoning	Supportable Land Value per square foot of site
Woodframe townhouse development with underground parking	0.75	RT-8	\$161
Likely cost to assemble a similar-sized development parcel in this neighbourhood (i.e. 4 single family lots with low value improvements)	n/a	RT-8	\$202

The financial analysis shows that, as of 2005 when this project occurred, typical single family properties in this neighbourhood were too expensive (even for properties with older, low value improvements) to make assembly and development with townhouses at an FSR 0.75 and underground parking worthwhile.

Lessons Learned

1. From a financial perspective, this project worked because it was already one large site that was under-developed with an older, single family house. The project did not require assembly of several lots.
2. Based on the analysis as of 2005 (when the project occurred), this form of development was not likely to be replicated in this neighbourhood because of the high up-front cost of assembling single family lots to create a large enough development site to accommodate this number of multifamily units.

Pro Forma

1803 MacDonald Street

Financial Analysis of a Woodframe Townhouse Project with Underground Parking (FSR 0.75) and Comparison to the Likely Cost of Assembling a Similar-Sized Development Site in the Same Neighbourhood

Major Assumptions		
Revenue and Value		
Average Sales Price Per Sq. Ft.		\$575.00 per sq.ft. of net saleable residential space
Site and Building Size		
Site Size	15,572 sq.ft.	
Density	0.75 FSR	
Total Space	11,679 sq.ft.	
Net Saleable Space	11,679 sq.ft. or	100% of gross area
Average Gross Unit Size	1,298 sq.ft.	
Number of Units	9.0 units	
Construction Costs		
Site Servicing	\$100,000	
Hard Costs	\$170.00 per gross sq.ft. assuming high end spec and underground parking	
Soft Costs	10% hard costs (permits, design, engineering, professional fees, misc)	
Contingency on Hard and Soft Costs	5%	
GVRD Sewer Levy	\$826.00 per townhouse unit	
DCL	\$6.00 per sq.ft. of building area	
CAC	\$0.00 per sq.ft. of building area	
Interim Financing on construction costs	6% on 50% of hard and soft costs for a 12 month construction period)	
Other Costs and Allowances		
Marketing and Commissions	5.0% of gross revenue	
Developer's Profit	15% of gross revenue	
Analysis		
Revenue		
Gross Sales Revenue	\$6,715,425	
Less Marketing and Commissions	\$335,771	
Net Sales Revenue	\$6,379,654	
Construction Costs		
Site Servicing	\$100,000	
Hard Construction Costs	\$1,985,430	
Soft Costs	\$198,543	
Contingency on Hard and Soft Costs	\$109,199	
GVRD Sewer Levy	\$7,434	
DCL's	\$70,074	
CAC	\$0	
Interim Financing	\$74,120	
Total Construction Costs	\$2,544,800	
Total Construction Costs per sq.ft.	\$218	
Developer's Profit	\$1,007,314	
Residual to Land and Land Carry	\$2,827,540	
Less financing on land during approvals and presales	\$80,025	
Less interim financing on land during construction (6%)	\$160,049	
Less property purchase tax	\$54,551	
Less property taxes for one year	\$16,965	
Residual Land Value	\$2,515,950	
Residual Value per sq.ft. of site	\$161.57	
Comparison to Likely Cost for Site Assembly in Same Neighbourhood:		
Cost for a 33 Lot with Low Value Improvements	\$800,000	
Estimated Cost for a 4 Lot Assembly	\$3,200,000	
Assembly Cost Per sq.ft. of Site Area	\$202.02	

Case Study #5 of 5: Kingsway & Knight Area in Vancouver

Description

The Kingsway and Knight Area in Vancouver is a predominantly single family neighbourhood centred surrounding the Kingsway commercial strip near Knight Street. The area was recently rezoned by the City from a mix of single family and two family zones to new small house/duplex and courtyard rowhouse zones. Some applications for intensification projects are now coming forward.

Reasons for Selection as Case Study

This project was selected as a case study because it is a good example of new policy that supports intensification.

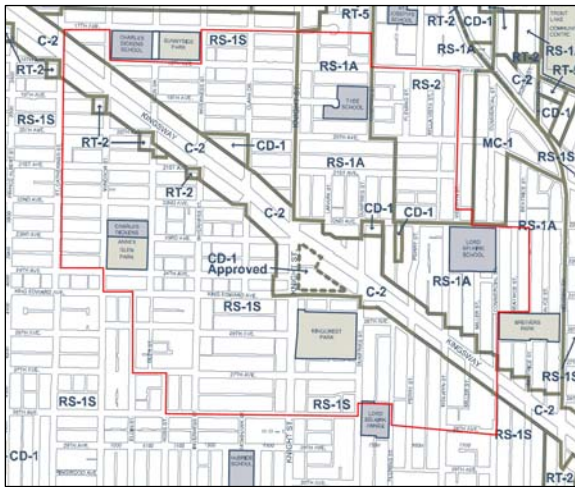
Planning/Regulatory Approach to Intensification

The following points summarize key steps in the planning approach to intensification for this area:

- The City of Vancouver conducted a CityPlan visioning process⁵ for the Kingsway and Knight area, partly initiated by a development proposal for a prominent vacant site in the area. The Vision document called for new ground-oriented, low-scale housing types with design controls that require the housing to fit into neighbourhood.
- The City of Vancouver initiated an area-wide rezoning.
- Single family lots rezoned from a mix of single family zones that allow an FSR up to 0.6 (RS-1, RS-1A, and RS-2) to a mix of small house/duplex zones (RT-10/RT-10N) that allow an FSR of 0.6 to 0.8 and rowhouse zones (RM-1/RM-1N) that allow an FSR of 0.6 to 1.2, depending on site size, treatment of parking, and whether or not the project involves character retention. The maps on the following page show the previous zoning and new zoning for the area.

⁵ In June 1995, Vancouver City Council approved *CityPlan: Directions for Vancouver*, which is a city-wide plan that provides a framework for decisions on City funding, programs, and actions over the next twenty years. In 1997, the City of Vancouver launched its *Community Visions Program* to bring CityPlan to the neighbourhood level. This program involves communities working with City staff over a two year period to create their visions for the future of their neighbourhood, based on CityPlan directions and community needs and aspirations.

MAP OF EXISTING ZONING



MAP OF NEW ZONING



Source: City of Vancouver, “Kingsway and Knight Neighbourhood Centre Housing Area Plan.” Adopted by City Council 8 July 2004, pages 6 and 25.

Form and Character

The new zoning for this area envisions small house/duplex and courtyard rowhouse development that fits within the character of the existing single family uses.

Analysis of Financial Performance

Intensification under the new zoning must meet two financial targets under current market conditions in order for projects to occur:

1. Intensification must be profitable for the builder or developer.
2. The builder or developer of the intensification project must be able to “out-bid” traditional single family uses for the land.

The financial performance and supportable land value of four scenarios was analyzed for the Kingsway and Knight Area:

1. A single detached house on a 33 foot lot (i.e. the existing situation). This project is assumed to achieve an FSR of 0.6.
2. Two duplex units on a 33 foot lot under the new RT-10 and RM-1 zones (FSR 0.6).
3. Four units on two 33 foot lots under the RT-10 zone (FSR 0.75).
4. Five row units on two 33 foot lots under the RM-1 zone (FSR 0.9).

The pro formas at the end of this case study show the financial analysis of these scenarios. The results are summarized in the following table.

Scenario	FSR	Zoning	Supportable Land Value per 33 Foot Lot
1 detached house on 33 foot lot	0.6	Existing situation	\$413,000
2 units (duplex) on 33 foot lot	0.6	RT-10 and RM-1	\$548,000
4 units on two 33 foot lots	0.75	RT-10	\$629,500
5 units (row housing) on two 33 foot lots	0.9	RM-1	\$672,000

The financial analysis of scenarios shows that intensification to the housing forms permitted in the new zoning districts in this area works for properties that are currently developed with older, low quality single family houses with property values less than about \$548,000. Developers/builders of duplex or multiplex projects can make a profit and outbid new single family development.

Lessons Learned

1. The zoning that allows intensification grew out of an extensive neighbourhood planning and consultation process.
2. A significant amount of time and effort was put into determining the appropriate building form and design guidelines.
3. There is market interest in duplex and townhouse units in this neighbourhood.
4. Intensification in the form of the new housing types works from a financial perspective on properties with low value improvements in this neighbourhood.

Pro Formas

Kingsway & Knight Scenario 1

Financial Analysis of a Single Detached House on a 33 Foot Lot (FSR 0.6)

Major Assumptions	
House Size (2 car garage; mid quality finishing)	2,350 sq.ft.
Assumed Lot Size	33 foot frontage 120 foot depth 3,960 total area
Hard Construction Costs	\$120 per sq.ft. including landscaping
Design Costs	2% of hard costs (from standard design)
Allowance for Building and Development Permits	\$5,000
DCL	\$1.75
Total Estimated Cost	\$292,642
Cost per sq.ft. of House	\$125
Analysis	
Value upon Completion	\$800,000
Less commissions (3%)	\$24,000
Builder's Profit (5%)	\$40,000
Total Construction Costs	\$292,642
Less Construction Financing for 6 months (6%)	\$8,779
Residual to Land and Carry	\$434,579
Less interim financing on land for 6 months (6%)	\$12,299
Less property purchase tax	\$7,692
Less property taxes for 6 months (assuming \$1 psf of site annually)	\$1,980
Residual Land Value	\$412,608
Residual Value per sq.ft. of site	\$104.19
Residual Value per lot	\$412,608
	<i>rounded to:</i> \$413,000

Kingsway & Knight Scenario 2
Financial Analysis of Two Duplex Units on a 33 Foot Lot under the RT-10 and RM-1 Zone (FSR 0.6)

Major Assumptions	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$410.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	33 by 120 3,960 sq.ft.
Assumed Density	0.60 FSR
Total Space	2,376 sq.ft.
Net Saleable Space	2,376 sq.ft. or 100% of gross area
Average Gross Unit Size	1,188 sq.ft.
Number of Units	2.0 units
Construction Costs	
Hard Costs	\$115.00 per gross sq.ft. assuming at grade covered parking (includes landscaping)
Soft Costs	5% of hard costs (permits, standard design)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$0.00 per unit (not charged on 4 units or less)
DCL	\$1.50 per sq.ft. of building area
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	3% of gross revenue
Builder's Profit	5% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$974,160
Less Marketing and Commissions	\$29,225
Net Sales Revenue	\$944,935
Construction Costs	
Hard Construction Costs	\$273,240
Soft Costs	\$13,662
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$0
DCL's	\$3,564
Interim Financing	\$8,714
Total Construction Costs	\$299,180
Total Costs per sq.ft. of floorspace	\$126
Builder's Profit	\$48,708
Residual to Land and Land Carry	\$597,047
Less interim financing on land for one year (6%)	\$33,795
Less property purchase tax	\$10,941
Less property taxes for one year (assuming \$1 psf of site)	\$3,960
Residual Land Value	\$548,351
Residual Value per sq.ft. of site	\$138.47
Residual Value per sq.ft. buildable	\$230.79
Residual Value per lot	\$548,351
	<i>rounded to:</i> \$548,000

Kingsway & Knight Scenario 3

**Financial Analysis of Four Units on Two 33 foot lots under the RT-10 zone
(FSR 0.75)**

Major Assumptions	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$410.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	66 by 120 7,920 sq.ft.
Assumed Density	0.75 FSR
Total Space	5,940 sq.ft.
Net Saleable Space	5,940 sq.ft. or 100% of gross area
Average Gross Unit Size	1,485 sq.ft.
Number of Units	4.0 units
Construction Costs	
Hard Costs	\$115.00 per gross sq.ft. assuming at grade covered parking
Soft Costs	5% of hard costs
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$0.00 per unit (not charged on 4 units or less)
DCL	\$1.50 per sq.ft. of building area
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	3% of gross revenue
Developer's Profit	10% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$2,435,400
Less Marketing and Commissions	\$73,062
Net Sales Revenue	\$2,362,338
Construction Costs	
Hard Construction Costs	\$683,100
Soft Costs	\$34,155
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$0
DCL's	\$8,910
Interim Financing	\$21,785
Total Construction Costs	\$747,950
Total Costs per sq.ft. of floorspace	\$126
Developer's Profit	\$243,540
Residual to Land and Land Carry	\$1,370,848
Less interim financing on land for one year (6%)	\$77,595
Less property purchase tax	\$26,417
Less property taxes for one year (assuming \$1 psf of site)	\$7,920
Residual Land Value	\$1,258,916
Residual Value per sq.ft. of site	\$158.95
Residual Value per sq.ft. buildable	\$211.94
Total Residual Value	\$1,258,916
	<i>rounded to:</i> \$1,259,000
	<i>value per lot:</i> \$629,500

Kingsway & Knight Scenario 4

Financial Analysis of Five Row Units on Two 33 foot lots under the RM-1 zone (FSR 0.9)

Major Assumptions	
Revenue and Value	
Average Sales Price Per Sq. Ft.	\$395.00 per sq.ft. of net saleable residential space
Site and Building Size	
Site Size	66 by 120 7,920 sq.ft.
Assumed Density	0.90 FSR
Total Space	7,128 sq.ft.
Net Saleable Space	7,128 sq.ft. or 100% of gross area
Average Gross Unit Size	1,188 sq.ft.
Number of Units	6.0 units
Construction Costs	
Hard Costs	\$120.00 per gross sq.ft. assuming at grade covered parking
Soft Costs	10% of hard costs (permits, design, engineering, professional fees)
Contingency on Hard and Soft Costs	0%
GVRD Sewer Levy	\$826.00 per unit
DCL	\$1.75 per sq.ft. of building area
Interim Financing on construction costs	6% on 50% of hard and soft costs.
Other Costs and Allowances	
Marketing and Commissions	3% of gross revenue
Developer's Profit	10% of gross revenue
Analysis	
Revenue	
Gross Sales Revenue	\$2,815,560
Less Marketing and Commissions	\$84,467
Net Sales Revenue	\$2,731,093
Construction Costs	
Hard Construction Costs	\$855,360
Soft Costs	\$85,536
Contingency on Hard and Soft Costs	\$0
GVRD Sewer Levy	\$4,956
DCL's	\$12,474
Interim Financing	\$28,750
Total Construction Costs	\$987,076
Total Costs per sq.ft. of floorspace	\$138
Developer's Profit	\$281,556
Residual to Land and Land Carry	\$1,462,461
Less interim financing on land for one year (6%)	\$82,781
Less property purchase tax	\$28,249
Less property taxes for one year (assuming \$1 psf of site)	\$7,920
Residual Land Value	\$1,343,511
Residual Value per sq.ft. of site	\$169.64
Residual Value per sq.ft. buildable	\$188.48
Total Residual Value	\$1,343,511
	<i>rounded to: \$1,344,000</i>
	<i>value per lot: \$672,000</i>