<table>
<thead>
<tr>
<th>Agenda and Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Public Hearing Agenda</td>
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</tbody>
</table>
| 2 **Staff Report** - January 3, 2017  
This report provides an overview of the project and the land use issues related to the review of this Rezoning Bylaw and Housing Agreement Bylaw. |
| 3 **Bylaw 8197** which rezones the subject site from Single Family (RS) to Comprehensive Development 98 (CD98) to enable the development of a 23 unit townhouse project. |
| 4 **Bylaw 8198** which authorizes a Housing Agreement to prevent future rental restrictions on the proposed townhouse project. |
| 5 Notice |
| **Additional Information** |
| 6 Land Use  
- Excerpt from the Official Community Plan showing the land use designation.  
- Excerpt from the Lynnmour / Inter-River Local Plan, Policy 9.2 which designates the subject properties for ground orientated multiplex development. |
| 7 Traffic and Parking  
| 9 Design  
The design is reviewed against two sets of design guidelines:  
- Official Community Plan, Schedule B, Part 5, Section C – Guidelines for Ground-Orientated Housing; and  
- Lynnmour / Inter-River Area One Design Guidelines for Multiplexes and Townhouses. |
| 10 Design  
- Architectural and Landscape Plans for the project |
| 11 Design  
- Excerpt from the Advisory Design Panel’s minutes for February 11, 2016 |
| 12 **Arborist Report** - Arborist report for the trees and hedge on site and immediately adjacent to the site |
| 13 **Green Building and Energy Conservation** - Green Building Commitment and Checklist  
This checklist illustrates how the applicant’s team intends to meet or exceed the District’s Green Building Policy and address the Development Permit for Energy and Water Conservation and Greenhouse Gas Emission Reduction |
| 14 **Flood Hazard Assessment** report prepared by Northwest Hydraulic Consultants Ltd., dated February 2, 2016 |
| 15 **Past Public Input**  
- Public Information Meeting - Facilitator’s Report (reporting on the public information meeting) |
| **Public Input** |
| 16 **Public Input** - since First Reading January 16, 2017. |
The District of North Vancouver  
REPORT TO COUNCIL

January 3, 2017  
File: 3060-20-50.15

AUTHOR: Tamsin Guppy, Community Planning

SUBJECT: 854 AND 858 ORWELL STREET AND 855 PREMIER STREET  
REZONING – TOWNHOUSE PROJECT

RECOMMENDATION:

It is recommended that:

1. The "District of North Vancouver Rezoning Bylaw 1346 (Bylaw 8197)" to rezone the subject site from Single Family (RS) to Comprehensive Zone 98 (CD98) to enable the development of a 23 unit townhouse project, be given FIRST Reading;

2. The "Housing Agreement Bylaw 8198, 2016 (854, 858 and Lot 5 Orwell Street and 855 Premier Street)," to prevent future rental restrictions on the subject property, be given FIRST Reading;

3. Bylaw 8197 be referred to a Public Hearing; and

4. The Mayor and Clerk be authorized to execute all necessary documentation to implement the Housing Agreement.

SUMMARY:

The applicant, Brody Developments, is proposing to redevelop 4 single family lots located between Orwell and Premier Street in Lynnmour/Inter-River with a 23 unit townhouse development.

The proposal is in keeping with the Official Community Plan and the Lynnmour Inter-River reference plan and design guidelines.
THE PROPOSAL

1. The Site and Surrounding Area

The site is located in Lynnmour Inter-River and includes three lots facing Orwell Street and a 4th lot facing Premier Street. The site is located next to three existing town house complexes of similar densities but does not include the two remaining adjacent single family homes, as those owners are not interested in redevelopment at this time.

The two remaining single family homes may successfully redevelop in the future in keeping with the Lynnmour Inter-River Plan which provided for single lot redevelopment into duplexes and triplexes. To facilitate their future redevelopment should the owners ever wish to do so, the applicant will be providing a joint access agreement that will allow these lots to use the proposed project’s driveway.

The site is across from Lynnmour Elementary School and a few steps away from “Digger” Park playground in Inter River Park.

With the proximity of Capilano University, bus service on Lillooet Road (approximately 400m walk from the site) is good with buses every 10 minutes for most of the day and running more frequently during rush hour. Bus routes serving the area include the 255, 239, 28 and 130.
There is also a closer bus stop on Old Lillooet served by the local 239 which takes riders up to Capilano University, and the transit exchange located there.

2. The Proposal

The applicant is proposing a 23 unit, three storey townhouse project. The proposed density is 24 units per acre and 0.7 FSR and is similar to the neighbouring developments. The unit mix is in keeping with the Lynnmour Inter River Plan (the reference plan for this area) and is entirely family oriented with:
- 3 two bedroom units (13%);
- 19 three bedroom units (83%); and
- 1 four bedroom unit (4%).

3. Parking and Access

Access to the site is provided from Orwell Street, and the site is serviced by an internal driveway. Parking is located at grade and each unit has two side by side parking spaces. There are no tandem parking spaces proposed.

<table>
<thead>
<tr>
<th></th>
<th>Number of Units</th>
<th>Proposed Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Parking</td>
<td>23 units</td>
<td>46 spaces</td>
</tr>
<tr>
<td>Visitor Parking</td>
<td></td>
<td>2 spaces</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23 units</td>
<td><strong>48 spaces</strong></td>
</tr>
<tr>
<td>Bike storage</td>
<td>Available in each garage</td>
<td></td>
</tr>
</tbody>
</table>
At the public information meeting a local resident requested that the applicant also consider providing visitor parking. The original intent for this area was that instead of meeting the Zoning Bylaw requirement for 1.75 spaces per unit and then 0.25 spaces for visitor parking, the full 2 spaces be provided for each unit, but visitor parking be accommodated on the street. This decision was based on the fact that there was little demand for on street parking at the time because there are no businesses in the area, and that it was felt more useful for each unit to have a full 2 car garage, and where possible to have the remaining ground level space be available for landscaping and patio space. CTS traffic engineers looked at the availability of on street parking and determined that there are 17 public parking spaces available on Orwell Street. Despite this past direction, and the availability of on street visitor parking, the applicant has responded to the resident’s suggestion, by amending their site plan to provide two additional visitor parking spaces to supplement the supply of parking for the site and the area.

The site includes 2 parking spaces for each unit and 2 visitor spaces.

The internal driveway has been designed in such a manner that should the two remaining single family lots to the north wish to redevelop in the future, they will have the ability to work with this strata to share the driveway, thereby freeing up more space for landscaping and reducing the number of driveway crossings. To this end, the applicant will register a joint access agreement for the neighbouring parcels on the subject site as a condition of rezoning.
4. Rezoning Bylaw 8197

Bylaw 8197 presents Comprehensive Development Zone 98 (CD98), a zone that is tailored to this site and in keeping with the Official Community Plan which designates this site for townhouse development with an FSR of up to 0.8 (the Bylaw proposes an FSR below this of 0.7.)

The proposed zoned includes provisions for:
- A maximum floor space and maximum number of units, in keeping with the Lynnmour / Inter-River reference plan which designates the area for 24 units per acre and an FSR of up to 0.7. This ensures that the average unit size is large enough to accommodate multiple bedrooms in keeping with the objective that the area be geared to family housing;
- Floor space exemptions for storage areas in keeping with the Lynnmour/ Inter River reference plan;
- Setbacks in keeping with the requirements for neighbourly development;
- Parking including additional visitor spaces; and
- Site and building coverage to allow for on-site landscaping.

5. Community Amenity Contribution

In accordance with the Community Amenity Policy, the total CAC amount is $125,020 to go towards amenity projects in the area including:
- Affordable housing;
- Improvements to public parks, trails and greenways;
- Public plazas and other public realm projects;
- Environmental restoration and enhancement projects;
- Improvements to public service facilities including recreation centres, the Lynnmour Boys and Girls Club and the Lynnmour Elementary School; and
- Public art.

The Lynnmour Inter-River Boys and Girls Club was itself constructed using a community amenity contribution from a nearby townhouse project. After 6 years of intensive use, it is now time to consider some minor upgrades and improvements which could be funded in part by a community amenity contribution.

6. Housing Affordability and Diversity

In accordance with the recently adopted Rental and Affordable Housing Strategy, this application is meeting goal number one of expanding the supply and diversity of housing through the provision of family oriented townhouse units which are in high demand and short supply in the District. These town homes offer more affordable ground oriented alternatives than single detached home ownership, and as has been observed in adjacent townhouse
occupancies, will attract young couples who are part of the District’s “missing generation.” The Strata Rental Protection Policy will be applied through a Housing Agreement to ensure that no restrictions are placed on strata rentals. Community amenity contributions from the site can be used toward the District’s affordable housing goals.

7. Development Permit Areas

a) Form and Character of Commercial, Industrial and Multi-Family Development

The proposal is generally in keeping with the Official Community Design Guidelines for Ground Oriented housing and the Lynnmour / Inter-River Area One Design Guidelines for Multiplexes and Townhouses.

The project proposes a design that is complementary to the neighbouring projects and matches the scale and form of the existing developments. In accordance with the Design Guidelines the modern character and use of muted colours gives it a distinct identity from the neighbouring projects, while still having an harmonious and complementary scale and choice of materials.

The site layout has been carefully thought through to ensure sufficient setbacks, landscape and buffer areas next to adjacent developments, while still maximizing opportunities for on-site parking and landscaping.

This project is also the first in the neighbourhood to propose additional outdoor space for the units through the addition of private roof decks. The roof top access stairs exceed the traditional height limit for townhouses in this area of 35 feet bringing the total height to 42 feet. Knowing that this issue met the guidelines requirement for providing private outdoor space to increase the liveability of the units, but was odds with the original height provisions of the Lynnmour Design Guidelines, staff posed the question to the Advisory Design Panel who supported the addition of roof top decks.

b) Advisory Design Panel

The Advisory Design Panel considered the application on February 11, 2016, and recommended:
THAT the Panel considers the project to have fulfilled the objective of a distinct project identity, supports the proposal for a height variance for roof deck access, and recommends APPROVAL of the project SUBJECT to addressing the items noted in the Panel's consideration of the project.

Prior to bringing the project back for issuance of the Development Permit, the issues raised by ADP will be addressed, and include: improvements to the roof deck layout, the proposed east-west pedestrian pathway, and on site landscaping next to the driveway.

c) Protection of Development From Hazardous Conditions – Creek Hazard

This site falls within the Development Permit area for Protection from Creek Hazard and as such is required to build to flood construction levels to ensure the habitable areas are above the flood level. Northwest Hydraulic Consultants have reviewed the project and provided flood construction levels for the safe development of this site.

Given the change in grade across the site, portions of the site will need to be re-graded to address the flood protection measures, as well as ensuring that each unit steps up to the front door. The requirements outlined in the flood protection report will be secured by covenant prior to Zoning Bylaw adoption.

d) Energy and Water Conservation and Greenhouse Gas Emission Reduction

The site falls within the Development Permit Area for Energy and Water Conservation and Greenhouse Gas Emission Reduction and must also address the District's Green Building Policy. The applicant is working with E3 Eco Group energy consultants and will be achieving an equivalency to a Gold rating to address municipal objectives. At this time, highlights of the planned sustainability measure include:

- Using high performance Energy Star doors and windows;
- Using Energy Star appliances; and
- Using efficient heating and cooling systems, including hot water on demand systems and heat recovery systems.

8. Inter-River Sub-Area Transportation Study

This application was put on hold in 2016, while the District's Transportation team undertook a review of vehicle circulation within the Lynnmour / Inter-River area. Their work was summarized in the Inter-River Sub-Area Transportation Study, provided to Council in September, 2016. This study, which involved local stakeholders and residents, determined locations for future road circulation improvements, and demonstrated that no changes were required to this application to improve connectivity in the area.
9. **Project Specific Street Improvements**

The project will be upgrading both street frontages to provide new sidewalks, boulevard landscaping, and standard road improvements on both Premier Street and Orwell Street, in accordance with the Development Services Bylaw and the Lynnmour/Inter-River Area One Design Guidelines.

In addition to these public realm improvements, local residents have requested further traffic calming measures on Premier Street. After studying this question, CTS Engineers have recommended the installation of an additional traffic hump to slow traffic as it approaches the raised pedestrian crossing to the north of the site.

Also in response to a request from local residents, the applicant has offered to extend the sidewalk not only in front of their application site, but also in front of the neighbouring site, as that will then finish the sidewalk on the southern half of Premier Street and facilitate safe pedestrian access to the park and school.

10. **Construction Management Plan**

This neighbourhood includes three townhouse applications, two of which are new and therefore approximately 6-12 months behind this application.
The applicant has submitted a draft construction management plan and will be required to provide a finalized construction management plan prior to issuance of a building permit and this plan must:

1. Coordinate the construction activities with other developments in the area in order to minimize disruption;
2. Provide safe passage for pedestrians, cyclists, and vehicle traffic;
3. Outline roadway efficiencies (i.e. location of traffic management signs and flaggers);
4. Provide a point of contact for all calls and concerns;
5. Provide a sequence and schedule of construction activities;
6. Ascertain a location for truck marshalling;
7. Develop a plan for trade vehicle parking which is acceptable to the District and minimizes impacts to neighbourhoods;
8. Address silt/dust control and clean-up;
9. Provide a plan for litter clean-up and street sweeping adjacent to the site; and
10. Include a communication plan to notify surrounding businesses and residents.

11. Public Input

In accordance with District policy the applicant held a facilitated public information meeting on March 29, 2016. The meeting was well attended by approximately 30 local residents. Generally the project was well received and recognized as being in keeping with the existing projects in the neighbourhood. Discussion topics included:

- Location of the vehicle access;
- Number and style of parking spaces;
- On street parking supply;
- Privacy and landscaping;
- Traffic calming on Premier Street;
- Construction of sidewalks; and
- Roof top decks.

The applicant has responded to the local residents' input and suggestions by:

- Including a traffic calming speed bump on Premier Street;
- Extending the public sidewalk along Premier Street;
- Providing additional on-site parking spaces for visitors;
- Refining the designs for the roof decks at the Development Permit stage to maximize privacy for the neighbours.

12. Implementation

Implementation of this project requires consideration of Rezoning Bylaw 8197, and Housing Agreement Bylaw 8198, as well as issuance of a development permit and registration of the following legal agreements:
• A green building covenant;
• A storm water management covenant;
• A flood hazard covenant;
• A joint access agreement;
• A public right of way for pedestrian passage; and
• A release of the existing right of way for an old utility.

CONCLUSION:

This project is consistent with the direction established in the Official Community Plan and the Lynnmour/Inter-River Local Plan. It addresses the OCP housing policies related to providing a greater diversity of family oriented housing. This project is now ready for Council’s consideration.

Options:

The following options are available for Council’s consideration:
1. Introduce Bylaws 8197 and 8198 and refer Bylaw 8197 to a Public Hearing (staff recommendation); or
2. Defeat Bylaws 8197 and 8198 at First Reading.

Respectfully submitted,

Tamsin Guppy
Community Planning

REVIEWED WITH:

☐ Sustainable Community Dev. ☐ Clerk’s Office ☐ External Agencies:
☐ Development Services ☐ Communications ☐ ☐ Library Board
☐ Utilities ☐ Finance ☐ ☐ NS Health
☐ Engineering Operations ☐ Fire Services ☐ ☐ RCM
☐ Parks ☐ ITS ☐ ☐ NVRC
☐ Environment ☐ Solicitor ☐ ☐ Museum & Arch.
☐ Facilities ☐ GIS ☐ ☐ Other:
☐ Human Resources ☐ Real Estate

Attachments:

Attachment A - Drawing Package
Attachment B – Bylaw 8197
Attachment C – Bylaw 8198
NORTH VANCOUVER, BC
HOMEFIELD INVESTMENTS LTD.
858 ORWELL STREET

LEGACY TOWNHOUSES - VIEW FROM THE PARK
LEGACY TOWNHOUSES - VIEW NORTH ALONG PREMIER ST.
LEGACY TOWNHOUSES - PATH AT SOUTH PROPERTY LINE

ORWELL STREET - PROPOSED SITE
ORWELL ST. - WEDGEWOOD TWHS - EXISTING HEDGE AT PL
ORWELL ST. - WEDGEWOOD TWHS
PREMIER STREET - EXISTING TOWNHOUSES
675 PREMIER STREET - EXISTING SINGLE FAMILY

PREMIER STREET - EXISTING SITE MULTI-FAMILY
873 PREMIER STREET - EXISTING SINGLE FAMILY
PREMIER STREET VIEW NORTH - PROPOSED SITE SOUTH PROPERTY CORNER

CONTINUUM TOWNHOMES
855 ORWELL STREET
NORTH VANCOUVER, BC

SITE PHOTOS
DEC 04, 2015
15359

A-0.020
The Lynnmour / Inter-River Local Plan recommends the area to be redeveloped with low-density, ground orientated multiple units integrated with the established neighbourhood. The surrounding area is still largely single family, but successfully townhouse projects have been completed nearby, including the adjacent Wedgewood and Legacy townhomes.

**PROJECT DESCRIPTION**

The development proposes twenty-three, family-oriented townhouse units based on consolidation of four existing lots, between Orwell Street and Premier Street. The units, in seven residential blocks, range from 2-bedrooms to 4-bedrooms.

The current site layout reflects an incremental design approach taking into account a potential relationship to future townhouses following site expansion. The site will be developed in phases with two additional lots (G and 22) to the north. The ultimate layout with the loop driveway would be a stronger and more functional urban design. At the same time creating clearly distinct character, with the different architectural style and finishes.

The design responds to adjacent residential context. As per the early Public Input session comments, the buildings' form ties into the existing townhouse projects, at the same time creating clearly distinct character, with the different architectural style and finishes.

**FORM AND CHARACTER**

The blocks of different unit types have individual expression due to different module dimensions, design and material application. Individual unit entries have been proposed roof decks as main outdoor private spaces. The roof top decks are set back from the site periphery; shadow and outlook are not a concern. Proposals for additional visitor spaces to address concerns of the neighbours regarding street parking in the area. As part of the proposal, new boulevard streets.

The proposed vehicle parking spaces meet the requirements of the parking By-law, with 46 residential spaces; however, three units will have tandem parking. The space-to-unit ratios are appropriate based on the site constraints.

Provision for additional visitor spaces is critical to mitigate the impact of the current proposal on two existing single-family dwellings to the north. A submitted diagram illustrates future additional lots (G and 22) to the north. The ultimate layout with the loop driveway would be a stronger and more functional urban design. At the same time, opportunities for tree retention on the site.

The current site layout reflects an incremental design approach taking into account a potential relationship to future townhouses following site expansion. A submitted diagram illustrates future additional lots (G and 22) to the north. The ultimate layout with the loop driveway would be a stronger and more functional urban design. At the same time creating clearly distinct character, with the different architectural style and finishes.

**SITE PLANNING**

A large community garden is proposed at the south-west corner, with lush landscape and new, large specimen trees replacing the existing trees. The landscaped area will complement the local Lynnmour Park and provide space for outdoor playing and socializing.

The proposed development site accommodates the required 80 visitor spaces to address concerns of the neighbours regarding street parking in the area. As part of the proposal, new boulevard streets. The proposed vehicle parking spaces meet the requirements of the parking By-law, with 46 residential spaces; however, three units will have tandem parking. The space-to-unit ratios are appropriate based on the site constraints.

**APPLICABLE GUIDELINES**

The proposed visitor spaces to address concerns of the neighbours regarding street parking in the area. As part of the proposal, new boulevard streets. The proposed vehicle parking spaces meet the requirements of the parking By-law, with 46 residential spaces; however, three units will have tandem parking. The space-to-unit ratios are appropriate based on the site constraints.

SCALE: 16 FEET TO 1 INCH

NORTH VANCOUVER, BC HOMEFIELD INVESTMENTS LTD. 858 ORWELL STREET

A-0.070
General Site Notes:
1. All materials and execution of landscape works shall conform to the BCSLA/BCNTA Landscape standard. The standard of finish and quality are to be maintained throughout.
2. All mowed areas shall be maintained at a height of 4 inches max. No weeds are permitted. Utilize herbicides as required.
3. Drawn positive drainage on all sides and throughout site. All landscaped areas and pathways must maintain min. 2% positive drainage away from buildings.
4. Where all landscape areas meeting foundation wall, min. 10'-0" wide power strip to be installed at landscape grade.
5. Do not contract from these drawings unless marked "Issued for construction".
6. All landscape works to be performed under the contract to meet the applicable province and recommendations set forth in the Master Municipal Specifications & Standards (B.C. Landscape Standards and Respect of Municipal Districts).
7. The existing conditions were compiled from base plans of this site prepared by others. Although every effort has been made to accurately reflect all conditions, this information is only for these plans. The contractor shall assume all responsibility for the accuracy of these plans and the contractor shall not be responsible for any errors.
8. The landscape contractor shall be responsible for mimic the site on the drawings as provided.
9. The landscape contractor shall verify dimensions shown on the drawings and notify the landscape architect of any discrepancies prior to the final as-built plans.
10. Contractor to repair any damage resulting from work on site.
11. The landscape contractor shall refer any questions on materials, finishes, labour and/or products specified herein to the landscape architect before starting work.
12. Ensure positive drainage behind all walls and throughout site. All landscaped areas and pathways must maintain min. 2% positive drainage away from buildings.

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www.formadesign.ca
Tel 604-986-9193
Fax 604-986-9216
www.formadesign.ca
Planning Notes

1. All materials and execution of landscape works shall conform to the BCBCA/BCNTA landscape standards. Refer to written specifications for complete landscape documentation, if applicable.

2. The Landscape Contractor shall ensure that the on-site plantings minimally re-creates the specification and recommendation of the A and S designs and is free from any contamination or contamination of the site. The site analysis shall be executed prior to the approval of the construction plan.

3. Minimum planting media depth:
   - Berm: 450 mm
   - Slope: 0 mm
   - Street: 500 mm (curb) and beneath surface 100 mm on slab

4. All construction shall meet minimum security requirements as indicated on plan. Quality of plant material and grading of site to comply with BCNTA standards for container grown stock.

5. Discrepancies between plant numbers on the plant list and on the plan should be reported to the landscape architect prior to selecting plant material. In the case where there is a discrepancy, plant number on the plant list shall supersede the plan.
Arizona Civic Plaza - Phoenix, AZ

In a shade protected and submerged court yard setting greenscreen® wall mounted panels are used to surround cafe patrons with vertical landscape elements connecting the view to the skyline.

Installed 2009
Hardiness Zone 9b

Crowne Plaza Hotel - Burlingame, CA

Standard greenscreen® Columns 12' tall are used as dramatic freestanding entry elements.

Installed 2002
Hardiness Zone 10a

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Contractors shall verify and be responsible for all dimensions on the job and this office shall be informed of any changes made on site.
The Corporation of the District of North Vancouver

Bylaw 8197

A bylaw to amend District of North Vancouver Zoning Bylaw 3210, 1965

The Council for The Corporation of the District of North Vancouver enacts as follows:

1. Citation

This bylaw may be cited as "The District of North Vancouver Rezoning Bylaw 1346 (Bylaw 8197)".

2. Amendments

2.1 District of North Vancouver Zoning Bylaw 3210, 1965 is amended as follows:

a) Part 2A, definitions is amended by adding CD98 to the list of zones that Part 2A applies to.

b) Section 301 (2) is amended by inserting the following zoning designation: "Comprehensive Development Zone 98 (CD 98)"

c) Part 4B Comprehensive Development Zone Regulations is amended by inserting the following, inclusive of Schedule A:

"4B98 Comprehensive Development Zone 98 CD98"

The CD98 Zone is applied to:

a) Vacant lot: Lot 5, Block 3, District Lot 612, Group 1, New Westminster District Plan 2377 (PID: 025-885-545);

b) 854 Orwell Street: Lot 4, Block 3, District Lot 612 Plan 2377 (PID: 013-832-565);

c) 858 Orwell Street: Lot H, Block 3, District Lot 612, Plan 15643 (PID: 007-637-713);


4B98-1 Intent:

The purpose of the CD98 Zone is to establish specific land use and development regulations for a 23 unit townhouse project.

4B98-2 Uses:

The following principal uses shall be permitted in the Comprehensive Development 98 Zone:
(a) Uses Permitted Without Conditions:

(i) residential use.

(b) Conditional Uses:

Not Applicable

4B98-3 Conditions of Use:

Not Applicable

4B98-4 Accessory Uses:

(a) Accessory uses are permitted and may include:

(i) Accessory uses customarily ancillary to the principal uses are permitted.

(ii) Home occupations are permitted in residential dwelling units.

4B98-5 Density:

(a) The maximum permitted density in the CD 98 Zone is limited to a maximum permitted floor space of 1,797 m² (19,344 square feet), inclusive of any density bonus for energy performance and a maximum of 4 residential dwelling units;

(b) For the purposes of calculating floor space ratio, the following areas are exempted from floor space:

(i) Areas within the parking garages;

(ii) Storage areas of up to 9.29 m² (100 sq ft) per unit;

(iii) Crawlspace where the crawlspace is less than 1.2 m (4 ft) in height to a total of 1.85 m² (20 sq ft) per unit; and

(iv) Roof deck access landings of up to 1.40 m² (15 sq ft) per unit.

4B98-6 Amenities:

(i) Despite subsection 4B98-5, density in the CD98 Zone is increased to a maximum floor space of 2,795 m² (30,085 square feet), inclusive of any density bonus for energy performance and a maximum of 23 residential dwelling units, if $125,020 is contributed to the municipality to be used for any of the following amenities (with allocation to be determined by the municipality in its sole discretion): Affordable housing; Improvements to public parks, trails and greenways; Public plazas and other public realm projects; Environmental restoration and enhancement projects; Improvements to public service facilities including recreation centres, the Lynnmour Boys and Girls Club and the Lynnmour Elementary School; and Public art.
4B98-7 Maximum Principal Building Size:

Not applicable

4B98-8 Setbacks:

Buildings shall be set back from property lines to the closest building face as established by development permit and in accordance with the following regulations:

<table>
<thead>
<tr>
<th>Setback From</th>
<th>Buildings (Min Setback)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orwell Street</td>
<td>3.05m (10 ft)</td>
</tr>
<tr>
<td>Premier Street</td>
<td>3.66m (12 ft)</td>
</tr>
<tr>
<td>Rear (internal) property lines</td>
<td>4.88m (16 ft)</td>
</tr>
<tr>
<td>Side (north and south) property lines</td>
<td>1.83m (6 ft)</td>
</tr>
<tr>
<td>In the first 15.24m (50 ft) from the front property line</td>
<td></td>
</tr>
<tr>
<td>Side (north and south) property lines after the first 15.24m (50 ft) from the front property line</td>
<td>3.05m (10 ft)</td>
</tr>
</tbody>
</table>

4B98-9 Building Orientation:

Not applicable

4B98-10 Building Depth and Width:

Not applicable

4B98-11 Coverage:

(a) Building Coverage shall not exceed 40%.

(b) Site Coverage shall not exceed 85%.

4B98-12 Height:

The maximum permitted height for each building, inclusive of a 15% bonus for sloping roofs, is 12.85 m (42 ft).
4B98-13 Landscaping:

a) All land areas not occupied by buildings, and patios shall be landscaped in accordance with a landscape plan approved by the District of North Vancouver.

b) A 2m (6.6 ft) high screen consisting of a solid wood fence, or landscaping or a combination thereof, with 90% opacity, is required to screen from view:
   (i) any utility boxes, vents or pumps that are not located underground and/or within a building; and
   (ii) any solid waste (garbage, recycling, compost) or loading areas or facilities that are not located underground and/or within a building.

4B98-14 Subdivision Requirements:

Not applicable

4B98-15 Additional Accessory Structure Regulations:

Not applicable.

4B98-18 Parking and Loading Regulations:

a) Parking and Loading are required as follows:

<table>
<thead>
<tr>
<th>Use</th>
<th>Parking Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Residential dwelling unit</td>
<td>2 spaces/ unit</td>
</tr>
<tr>
<td>Visitor Parking</td>
<td>2 spaces</td>
</tr>
</tbody>
</table>

b) Except as specifically provided in 4B98 – 18 (a) parking shall be provided in accordance with Part 10 of this Bylaw.

2.2 The Zoning Map is amended in the case of the lands illustrated on the attached map (Schedule A) by rezoning the land from the Residential Single Family 7200 Zone (RS3) to Comprehensive Development Zone 98 (CD 98).
Schedule A to Bylaw 8197

BYLAW 8197

The District of North Vancouver Rezoning Bylaw 1346 (Bylaw 8197)

SINGLE FAMILY RESIDENTIAL (RS3) TO COMPREHENSIVE DEVELOPMENT ZONE 98 (CD98)
READ a first time

PUBLIC HEARING held

READ a second time

READ a third time

Certified a true copy of "Rezoning Bylaw 1346 (Bylaw 8197)" as at Third Reading

__________________________________________
Municipal Clerk

APPROVED by the Ministry of Transportation and Infrastructure on

ADOPTED

__________________________________________   _______________________________________
Mayor                                                  Municipal Clerk

Certified a true copy

__________________________________________
Municipal Clerk
The Corporation of the District of North Vancouver

Bylaw 8198

A bylaw to enter into a Housing Agreement (858, 854 + Lot 5 Orwell St. and 855 Premier St.)

The Council for The Corporation of the District of North Vancouver enacts as follows:

1. Citation

This bylaw may be cited as "Housing Agreement Bylaw 8198, 2016 (858, 854 + Lot 5 Orwell St. and 855 Premier St.)."

2. Authorization to Enter into Agreement

2.1 The Council hereby authorizes a housing agreement between The Corporation of the District of North Vancouver and Brody Development (Continuum) GP Ltd. (Inc. No. BC1053465) substantially in the form attached to this Bylaw as Schedule "A" with respect to the following lands:

   a) 007-637-713 Lot H Bl 3 DL 612 Plan 15643
   b) 013-832-565 Lot 4 Bl 3 DL 612 Plan 2377
   c) 025-885-545 Lot 5 Bl 3 DL 612 Gp 1 NWD Plan 2377
   d) 013-832-654 Lot 21 Bl 3 DL 612 Plan 2377

3. Execution of Documents

The Mayor and Municipal Clerk are authorized to execute any documents required to give effect to the Housing Agreement.

READ a first time

READ a second time

READ a third time

ADOPTED

___________________________  ________________________________
Mayor                                                   Municipal Clerk
Certified a true copy

Municipal Clerk
Schedule A to Bylaw 8198

SECTION 219 COVENANT – HOUSING AGREEMENT

This agreement is dated for reference the ___ day of ___________, 20___

BETWEEN:

BRODY DEVELOPMENT (CONTINUUM) GP LTD. (Inc. No. BC1053465), 1060 West 14th Street, North Vancouver, BC V7P 3P3

(the “Developer”)  

AND:

THE CORPORATION OF THE DISTRICT OF NORTH VANCOUVER, a municipality incorporated under the Local Government Act, RSBC 2015, c.1 and having its office at 355 West Queens Road, North Vancouver, BC V7N 4N5

(the “District”)

WHEREAS:

1. The Developer is the registered owner of the Lands (as hereinafter defined);

2. The Developer wishes to obtain development permissions with respect to the Lands and wishes to create a condominium development which will contain residential strata units on the Lands;

3. Section 483 of the Local Government Act authorises the District, by bylaw, to enter into a housing agreement to provide for the prevention of rental restrictions on housing, and provides for the contents of the agreement; and

4. Section 219 of the Land Title Act (British Columbia) permits the registration in favour of the District of a covenant of a negative or positive nature relating to the use of land or a building thereon, or providing that land is to be built on in accordance with the covenant, or providing that land is not to be built on except in accordance with the covenant, or providing that land is not to be subdivided except in accordance with the covenant;

NOW THEREFORE in consideration of the mutual promises contained in it, and in consideration of the payment of $1.00 by the District to the Developer (the receipt and sufficiency of which are hereby acknowledged by the Developer), the parties covenant and agree with each other as follows, as a housing agreement under Section 483 of the Local Government Act, as a contract and a deed under seal between the parties, and as a covenant under Section 219 of the Land Title Act, and the Developer hereby further covenants and agrees that neither the Lands nor any building constructed thereon shall be used or built on except in accordance with this Agreement:
1. DEFINITIONS

1.01 Definitions

In this agreement:

(a) "Lands" means land described in Item 2 of the Land Title Act Form C to which this agreement is attached;

(b) "Owner" means the Developer and any other person or persons registered in the Lower Mainland Land Title Office as owner of the Land from time to time, or of any parcel into which the Land is consolidated or subdivided, whether in that person's own right or in a representative capacity or otherwise;

(c) "Proposed Development" means the proposed development on the Lands;

(d) "Short Term Rentals" means any rental of a Unit for any period less than 30 days;

(e) "Strata Corporation" means the strata corporation formed upon the deposit of a plan to strata subdivide the Proposed Development pursuant to the Strata Property Act;

(f) "Unit" means a residential dwelling strata unit in the Proposed Development; and

(g) "Unit Owner" means the registered owner of a Dwelling Unit in the Proposed Development.

2. TERM

This Agreement will commence upon adoption by District Council of Bylaw 8198 and remain in effect until terminated by the District as set out in this Agreement.

3. RENTAL ACCOMODATION

3.01 Rental Disclosure Statement

No Unit in the Proposed Development may be occupied unless the Owner has:

(a) before the first Unit is offered for sale, or conveyed to a purchaser without being offered for sale, filed with the Superintendent of Real Estate a rental disclosure statement in the prescribed form (the "Rental Disclosure Statement") designating all of the Units as rental strata lots and imposing at least a 99 year rental period in relation to all of the Units pursuant to the Strata Property Act (or any successor or replacement legislation), except in relation to Short Term Rentals and, for greater certainty, stipulating specifically that the 99 year rental restriction does not apply to a Strata Corporation bylaw prohibiting or restricting Short Term Rentals; and

(b) given a copy of the Rental Disclosure Statement to each prospective purchaser of any Unit before the prospective purchaser enters into an agreement to purchase in respect of the Unit. For the purposes of this paragraph 3.01(b), the Owner is deemed to have
given a copy of the Rental Disclosure Statement to each prospective purchaser of any Unit in the building if the Owner has included the Rental Disclosure Statement as an exhibit to the disclosure statement for the Proposed Development prepared by the Owner pursuant to the Real Estate Development Marketing Act.

3.02 **Rental Accommodation**

The Units constructed on the Lands from time to time may always be used to provide rental accommodation as the Owner or a Unit Owner may choose from time to time, except that this section 3.02 does not apply to Short Term Rentals which may be restricted by the Strata Corporation to the full extent permitted by law.

3.03 **Binding on Strata Corporation**

This agreement shall be binding upon all Strata Corporations created by the subdivision of the Lands or any part thereof (including the Units) pursuant to the Strata Property Act, and upon all Unit Owners.

3.04 **Strata Bylaw Invalid**

Any Strata Corporation bylaw which prevents, restricts or abridges the right to use any of the Units as rental accommodations (other than Short Term Rentals) shall have no force or effect.

3.05 **No Bylaw**

The Strata Corporation shall not pass any bylaws preventing, restricting or abridging the use of the Lands, the Proposed Development or the Units contained therein from time to time as rental accommodation (other than Short Term Rentals).

3.06 **Vote**

No Unit Owner, nor any tenant or mortgagee thereof, shall vote for any Strata Corporation bylaw purporting to prevent, restrict or abridge the use of the Lands, the Proposed Development or the Units contained therein from time to time as rental accommodation (other than Short Term Rentals).

3.07 **Notice**

The Owner will provide notice of this Agreement to any person or persons intending to purchase a Unit prior to any such person entering into an agreement of purchase and sale, agreement for sale, or option or similar right to purchase as part of the disclosure statement for any part of the Proposed Development prepared by the Owner pursuant to the Real Estate Development Marketing Act.

3.08 **Release of Covenant** [optional clause]

The District agrees that if the District of North Vancouver Rezoning Bylaw 3210 (Bylaw 8179), is not adopted by the District's Council before (date), the Owner is entitled to require the District to execute and deliver to the Owner a discharge, in registrable form, of this Agreement from

Document: 2982970
title to the Land. The Owner is responsible for the preparation of the discharge under this section and for the cost of registration at the Land Title Office.

4. DEFAULT AND REMEDIES

4.01 Notice of Default

The District may, acting reasonably, give to the Owner written notice to cure a default under this Agreement within 30 days of delivery of the notice. The notice must specify the nature of the default. The Owner must act with diligence to correct the default within the time specified.

4.02 Costs

The Owner will pay to the District upon demand all the District's costs of exercising its rights or remedies under this Agreement, on a full indemnity basis.

4.03 Damages an Inadequate Remedy

The Owner acknowledges and agrees that in the case of a breach of this Agreement which is not fully remediable by the mere payment of money and promptly so remedied, the harm sustained by the District and to the public interest will be irreparable and not susceptible of adequate monetary compensation.

4.04 Equitable Remedies

Each party to this Agreement, in addition to its rights under this Agreement or at law, will be entitled to all equitable remedies including specific performance, injunction and declaratory relief, or any of them, to enforce its rights under this Agreement.

4.05 No Penalty or Forfeiture

The Owner acknowledges and agrees that it is entering into this Agreement to benefit the public interest in providing rental accommodation, and that the District's rights and remedies under this Agreement are necessary to ensure that this purpose is carried out, and the District's rights and remedies under this Agreement are fair and reasonable and ought not to be construed as a penalty or forfeiture.

4.06 Cumulative Remedies

No reference to nor exercise of any specific right or remedy under this Agreement or at law or at equity by any party will prejudice, limit or preclude that party from exercising any other right or remedy. No right or remedy will be exclusive or dependent upon any other right to remedy, but any party, from time to time, may exercise any one or more of such rights or remedies independently, successively, or in combination. The Owner acknowledges that specific performance, injunctive relief (mandatory or otherwise) or other equitable relief may be the only adequate remedy for a default by the Owner under this Agreement.
5. LIABILITY

5.01 Indemnity

Except if arising directly from the negligence of the District or its employees, agents or contractors, the Owner will indemnify and save harmless each of the District and its board members, officers, directors, employees, agents, and elected or appointed officials, and their heirs, executors, administrators, personal representatives, successors and assigns, from and against all claims, demands, actions, loss, damage, costs and liabilities that all or any of them will or may be liable for or suffer or incur or be put to any act or omission by the Owner or its officers, directors, employees, agents, contractors, or other persons for whom the Owner is at law responsible, or by reason of or arising out of the Owner’s ownership, operation, management or financing of the Proposed Development or any part thereof.

5.02 Release

The Owner hereby releases and forever discharges the District, its elected officials, board members, officers, directors, employees and agents, and its and their heirs, executors, administrators, personal representatives, successors and assigns from and against all claims, demands, damages, actions or causes of action by reason of or arising out of advice or direction respecting the ownership, operation or management of the Proposed Development or any part thereof which has been or hereafter may be given to the Owner by all or any of them.

5.03 Survival

The covenants of the Owner set out in Sections 5.01 and 5.02 will survive termination of this Agreement and continue to apply to any breach of the Agreement or claim arising under this Agreement during the ownership by the Owner of the Lands or any Unit therein, as applicable.

6. GENERAL PROVISIONS

6.01 District’s Power Unaffected

Nothing in this Agreement:

(a) affects or limits any discretion, rights, powers, duties or obligations of the District under any enactment or at common law, including in relation to the use or subdivision of land;

(b) affects or limits any enactment relating to the use of the Lands or any condition contained in any approval including any development permit concerning the development of the Lands; or

(c) relieves the Owner from complying with any enactment, including the District’s bylaws in relation to the use of the Lands.
6.02 Agreement for Benefit of District Only

The Owner and District agree that:

(a) this Agreement is entered into only for the benefit of the District;

(b) this Agreement is not intended to protect the interests of the Owner, any Unit Owner, any occupant of any Unit or any future owner, occupier or user of any part of the Proposed Development, including any Unit, or the interests of any third party, and the District has no obligation to anyone to enforce the terms of this Agreement; and

(c) The District may at any time terminate this Agreement, in whole or in part, and execute a release and discharge of this Agreement in respect of the Proposed Development or any Unit therein, without liability to anyone for doing so.

6.03 Agreement Runs With the Lands

This Agreement burdens and runs with the Lands and any part into which any of them may be subdivided or consolidated, by strata plan or otherwise. All of the covenants and agreements contained in this Agreement are made by the Owner for itself, its successors and assigns, and all persons who acquire an interest in the Lands or in any Unit after the date of this Agreement.

6.04 Release

The covenants and agreements on the part of the Owner and any Unit Owner and herein set forth in this Agreement have been made by the Owner and any Unit Owner as contractual obligations as well as being made pursuant to Section 483 of the Local Government Act (British Columbia) and as such will be binding on the Owner and any Unit Owner, except that neither the Owner nor any Unit Owner shall be liable for any default in the performance or observance of this Agreement occurring after such party ceases to own the Lands or a Unit as the case may be.

6.05 Priority of This Agreement

The Owner will, at its expense, do or cause to be done all acts reasonably necessary to ensure this Agreement is registered against the title to each Unit in the Proposed Development, including any amendments to this Agreement as may be required by the Land Title Office or the District to effect such registration.

6.06 Agreement to Have Effect as Deed

The District and the Owner each intend by execution and delivery of this Agreement to create both a contract and a deed under seal.

6.07 Waiver

An alleged waiver by a party of any breach by another party of its obligations under this Agreement will be effective only if it is an express waiver of the breach in writing. No waiver of a
breach of this Agreement is deemed or construed to be a consent or waiver of any other breach of this Agreement.

6.08 Time

Time is of the essence in this Agreement. If any party waives this requirement, that party may reinstate it by delivering notice to another party.

6.09 Validity of Provisions

If a Court of competent jurisdiction finds that any part of this Agreement is invalid, illegal, or unenforceable, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.

6.10 Extent of Obligations and Costs

Every obligation of a party which is set out in this Agreement will extend throughout the Term and, to the extent that any obligation ought to have been observed or performed prior to or upon the expiry or earlier termination of the Term, such obligation will survive the expiry or earlier termination of the Term until it has been observed or performed.

6.11 Notices

All notices, demands, or requests of any kind, which a party may be required or permitted to serve on another in connection with this Agreement, must be in writing and may be served on the other parties by registered mail or by personal service, to the following address for each party:

If to the District:

District Municipal Hall
355 West Queens Road
North Vancouver, BC V7N 4N5

Attention: Planning Department

If to the Owner:

If to the Unit Owner:

The address of the registered owner which appears on title to the Unit at the time of notice.

Service of any such notice, demand, or request will be deemed complete, if made by registered mail, 72 hours after the date and hour of mailing, except where there is a postal service disruption during such period, in which case service will be deemed to be complete only upon
actual delivery of the notice, demand or request and if made by personal service, upon personal service being effected. Any party, from time to time, by notice in writing served upon the other parties, may designate a different address or different or additional persons to which all notices, demands, or requests are to be addressed.

6.12 Further Assurances

Upon request by the District, the Owner will promptly do such acts and execute such documents as may be reasonably necessary, in the opinion of the District, to give effect to this Agreement.

6.13 Enuring Effect

This Agreement will enure to the benefit of and be binding upon each of the parties and their successors and permitted assigns.

7. INTERPRETATION

7.01 References

Gender specific terms include both genders and include corporations. Words in the singular include the plural, and words in the plural include the singular.

7.02 Construction

The division of this Agreement into sections and the use of headings are for convenience of reference only and are not intended to govern, limit or aid in the construction of any provision. In all cases, the language in this Agreement is to be construed simply according to its fair meaning, and not strictly for or against either party.

7.03 No Limitation

The word “including” when following any general statement or term is not to be construed to limit the general statement or term to the specific items which immediately follow the general statement or term similar items whether or not words such as “without limitation” or “but not limited to” are used, but rather the general statement or term is to be construed to refer to all other items that could reasonably fall within the broadest possible scope of the general statement or term.

7.04 Terms Mandatory

The words “must” and “will” and “shall” are to be construed as imperative.

7.05 Statutes

Any reference in this Agreement to any statute or bylaw includes any subsequent amendment, re-enactment, or replacement of that statute or bylaw.
7.06 **Entire Agreement**

(d) This is the entire agreement between the District and the Owner concerning its subject, and there are no warranties, representations, conditions or collateral agreements relating to this Agreement, except as included in this Agreement.

(e) This Agreement may be amended only by a document executed by the parties to this Agreement and by bylaw, such amendment to be effective only upon adoption by District Council of a bylaw to amend Bylaw 8198.

7.07 **Governing Law**

This Agreement is to be governed by and construed and enforced in accordance with the laws of British Columbia.

As evidence of their agreement to be bound by the terms of this instrument, the parties hereto have executed the *Land Title Act Form C* that is attached hereto and forms part of this Agreement.
GRANT OF PRIORITY

WHEREAS ________________________ (the "Chargeholder") is the holder of the following charge which is registered in the Land Title Office:

(a) ________________________ (the "Charge");

AND WHEREAS the Chargeholder agrees to allow the Section 219 Covenant herein to have priority over the Charge;

THIS PRIORITY AGREEMENT is evidence that in consideration of the sum of $1.00 paid by THE CORPORATION OF THE DISTRICT OF NORTH VANCOUVER (the "District") to the Chargeholder, the receipt and sufficiency of which are hereby acknowledged, the Chargeholder covenants and agrees to subordinate and postpone all its rights, title and interest in and to the lands described in the Form C to which this Agreement is attached (the "Lands") with the intent and with the effect that the interests of the District rank ahead of the Charge as though the Section 219 Covenant herein had been executed, delivered and registered against title to the Lands before registration of the Charge.

As evidence of its Agreement to be bound by the above terms, as a contract and as a deed executed and delivered under seal, the Chargeholder has executed the Form C to which this Agreement is attached and which forms part of this Agreement.
The Corporation of the District of North Vancouver

Bylaw 8197

A bylaw to amend District of North Vancouver Zoning Bylaw 3210, 1965

The Council for The Corporation of the District of North Vancouver enacts as follows:

1. Citation

This bylaw may be cited as "The District of North Vancouver Rezoning Bylaw 1346 (Bylaw 8197)".

2. Amendments

2.1 District of North Vancouver Zoning Bylaw 3210, 1965 is amended as follows:

a) Part 2A, definitions is amended by adding CD98 to the list of zones that Part 2A applies to.

b) Section 301 (2) is amended by inserting the following zoning designation: "Comprehensive Development Zone 98 (CD 98)"

c) Part 4B Comprehensive Development Zone Regulations is amended by inserting the following, inclusive of Schedule A:

"4B98 Comprehensive Development Zone 98 CD98

The CD98 Zone is applied to:
a) Vacant lot: Lot 5, Block 3, District Lot 612, Group 1, New Westminster District Plan 2377 (PID: 025-885-545);
b) 854 Orwell Street: Lot 4, Block 3, District Lot 612 Plan 2377 (PID: 013-832-565);
c) 858 Orwell Street: Lot H, Block 3, District Lot 612, Plan 15643 (PID: 007-637-713);

4B98-1 Intent:

The purpose of the CD98 Zone is to establish specific land use and development regulations for a 23 unit townhouse project.

4B98-2 Uses:

The following principal uses shall be permitted in the Comprehensive Development 98 Zone:
(a) Uses Permitted Without Conditions:

   (i) *residential use.*

(b) Conditional Uses:
Not Applicable

4B98-3 Conditions of Use:
Not Applicable

4B98-4 Accessory Uses:

(a) *Accessory uses* are permitted and may include:

   (i) *Accessory uses* customarily ancillary to the principal uses are permitted.
   (ii) *Home occupations* are permitted in *residential* dwelling units.

4B98-5 Density:

(a) The maximum permitted density in the CD 98 Zone is limited to a maximum permitted floor space of 1,797 m² (19,344 square feet), inclusive of any density bonus for energy performance and a maximum of 4 residential dwelling units;

   (b) For the purposes of calculating floor space ratio, the following areas are exempted from floor space:

   (i) Areas within the parking garages;
   (ii) Storage areas of up to 9.29m² (100 sq ft) per unit;
   (iii) Crawlspace where the crawlspace is less than 1.2m (4 ft) in height to a total of 1.85m² (20 sq ft) per unit; and
   (iv) Roof deck access landings of up to 1.40m² (15 sq ft) per unit.

4B98-6 Amenities:

   (i) Despite subsection 4B98-5, density in the CD98 Zone is increased to a maximum floor space of 2,795 m² (30,085 square feet), inclusive of any density bonus for energy performance and a maximum of 23 residential dwelling units, if $125,020 is contributed to the municipality to be used for any of the following amenities (with allocation to be determined by the municipality in its sole discretion): Affordable housing; Improvements to public parks, trails and greenways; Public plazas and other public realm projects; Environmental restoration and enhancement projects; Improvements to public service facilities including recreation centres, the Lynnmour Boys and Girls Club and the Lynnmour Elementary School; and Public art.
4B98-7 Maximum Principal Building Size:

Not applicable

4B98-8 Setbacks:

Buildings shall be set back from property lines to the closest building face as established by development permit and in accordance with the following regulations:

<table>
<thead>
<tr>
<th>Setback From</th>
<th>Buildings (Min Setback)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orwell Street</td>
<td>3.05m (10 ft)</td>
</tr>
<tr>
<td>Premier Street</td>
<td>3.66m (12 ft)</td>
</tr>
<tr>
<td>Rear (internal) property lines</td>
<td>4.88m (16 ft)</td>
</tr>
<tr>
<td>Side (north and south ) property lines In the first 15.24m (50 ft) from the front property line</td>
<td>1.83m (6 ft)</td>
</tr>
<tr>
<td>Side (north and south ) property lines after the first 15.24m (50 ft) from the front property line</td>
<td>3.05m (10 ft)</td>
</tr>
</tbody>
</table>

4B98-9 Building Orientation:

Not applicable

4B98-10 Building Depth and Width:

Not applicable

4B98-11 Coverage:

(a) Building Coverage shall not exceed 40%.

(b) Site Coverage shall not exceed 85%.

4B98-12 Height:

The maximum permitted height for each building, inclusive of a 15% bonus for sloping roofs, is 12.85 m (42 ft).
4B98-13 Landscaping:

a) All land areas not occupied by buildings, and patios shall be landscaped in accordance with a landscape plan approved by the District of North Vancouver.

b) A 2m (6.6 ft) high screen consisting of a solid wood fence, or landscaping or a combination thereof, with 90% opacity, is required to screen from view:

   (i) any utility boxes, vents or pumps that are not located underground and/or within a building; and

   (ii) any solid waste (garbage, recycling, compost) or loading areas or facilities that are not located underground and/or within a building.

4B98-14 Subdivision Requirements:

Not applicable

4B98-15 Additional Accessory Structure Regulations:

Not applicable.

4B98-18 Parking and Loading Regulations:

a) Parking and Loading are required as follows:

<table>
<thead>
<tr>
<th>Use</th>
<th>Parking Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Residential dwelling unit</td>
<td>2 spaces/ unit</td>
</tr>
<tr>
<td>Visitor Parking</td>
<td>2 spaces</td>
</tr>
</tbody>
</table>

b) Except as specifically provided in 4B98 – 18 (a) parking shall be provided in accordance with Part 10 of this Bylaw.

2.2 The Zoning Map is amended in the case of the lands illustrated on the attached map (Schedule A) by rezoning the land from the Residential Single Family 7200 Zone (RS3) to Comprehensive Development Zone 98 (CD 98).
BYLAW 8197

The District of North Vancouver Rezoning Bylaw 1346 (Bylaw 8197)

SINGLE FAMILY RESIDENTIAL (RS3) TO COMPREHENSIVE DEVELOPMENT ZONE 98 (CD98)
READ a first time
PUBLIC HEARING held
READ a second time
READ a third time
Certified a true copy of "Rezoning Bylaw 1346 (Bylaw 8197)" as at Third Reading

______________________________________________
Municipal Clerk

APPROVED by the Ministry of Transportation and Infrastructure on
ADOPTED

______________________________________________  _______________________________________
Mayor                                           Municipal Clerk

Certified a true copy

______________________________________________
Municipal Clerk
The Corporation of the District of North Vancouver

Bylaw 8198

A bylaw to enter into a Housing Agreement (858, 854 + Lot 5 Orwell St. and 855 Premier St.)

The Council for The Corporation of the District of North Vancouver enacts as follows:

1. Citation

This bylaw may be cited as “Housing Agreement Bylaw 8198, 2016 (858, 854 + Lot 5 Orwell St. and 855 Premier St.).”

2. Authorization to Enter into Agreement

2.1 The Council hereby authorizes a housing agreement between The Corporation of the District of North Vancouver and Brody Development (Continuum) GP Ltd. (Inc. No. BC1053465) substantially in the form attached to this Bylaw as Schedule “A” with respect to the following lands:

a) 007-637-713 Lot H Bl 3 DL 612 Plan 15643
b) 013-832-565 Lot 4 Bl 3 DL 612 Plan 2377
c) 025-885-545 Lot 5 Bl 3 DL 612 Gp 1 NWD Plan 2377
d) 013-832-654 Lot 21 Bl 3 DL 612 Plan 2377

3. Execution of Documents

The Mayor and Municipal Clerk are authorized to execute any documents required to give effect to the Housing Agreement.

READ a first time

READ a second time

READ a third time

ADOPTED

Mayor

Municipal Clerk
Certified a true copy

Municipal Clerk
Schedule A to Bylaw 8198

SECTION 219 COVENANT - HOUSING AGREEMENT

This agreement is dated for reference the __ day of ___________ , 20____

BETWEEN:

BRODY DEVELOPMENT (CONTINUUM) GP LTD. (Inc. No. BC1053465), 1060 West 14th Street, North Vancouver, BC V7P 3P3

(the "Developer")

AND:

THE CORPORATION OF THE DISTRICT OF NORTH VANCOUVER, a municipality incorporated under the Local Government Act, RSBC 2015, c.1 and having its office at 355 West Queens Road, North Vancouver, BC V7N 4N5

(the "District")

WHEREAS:

1. The Developer is the registered owner of the Lands (as hereinafter defined);

2. The Developer wishes to obtain development permissions with respect to the Lands and wishes to create a condominium development which will contain residential strata units on the Lands;

3. Section 483 of the Local Government Act authorises the District, by bylaw, to enter into a housing agreement to provide for the prevention of rental restrictions on housing, and provides for the contents of the agreement; and

4. Section 219 of the Land Title Act (British Columbia) permits the registration in favour of the District of a covenant of a negative or positive nature relating to the use of land or a building thereon, or providing that land is to be built on in accordance with the covenant, or providing that land is not to be built on except in accordance with the covenant, or providing that land is not to be subdivided except in accordance with the covenant;

NOW THEREFORE in consideration of the mutual promises contained in it, and in consideration of the payment of $1.00 by the District to the Developer (the receipt and sufficiency of which are hereby acknowledged by the Developer), the parties covenant and agree with each other as follows, as a housing agreement under Section 483 of the Local Government Act, as a contract and a deed under seal between the parties, and as a covenant under Section 219 of the Land Title Act, and the Developer hereby further covenants and agrees that neither the Lands nor any building constructed thereon shall be used or built on except in accordance with this Agreement:
1. DEFINITIONS

1.01 Definitions

In this agreement:

(a) "Lands" means land described in Item 2 of the Land Title Act Form C to which this agreement is attached;

(b) "Owner" means the Developer and any other person or persons registered in the Lower Mainland Land Title Office as owner of the land from time to time, or of any parcel into which the land is consolidated or subdivided, whether in that person's own right or in a representative capacity or otherwise;

(c) "Proposed Development" means the proposed development on the Lands;

(d) "Short Term Rentals" means any rental of a Unit for any period less than 30 days;

(e) "Strata Corporation" means the strata corporation formed upon the deposit of a plan to strata subdivide the Proposed Development pursuant to the Strata Property Act;

(f) "Unit" means a residential dwelling strata unit in the Proposed Development; and

(g) "Unit Owner" means the registered owner of a Dwelling Unit in the Proposed Development.

2. TERM

This Agreement will commence upon adoption by District Council of Bylaw 8198 and remain in effect until terminated by the District as set out in this Agreement.

3. RENTAL ACCOMODATION

3.01 Rental Disclosure Statement

No Unit in the Proposed Development may be occupied unless the Owner has:

(a) before the first Unit is offered for sale, or conveyed to a purchaser without being offered for sale, filed with the Superintendent of Real Estate a rental disclosure statement in the prescribed form (the "Rental Disclosure Statement") designating all of the Units as rental strata lots and imposing at least a 99 year rental period in relation to all of the Units pursuant to the Strata Property Act (or any successor or replacement legislation), except in relation to Short Term Rentals and, for greater certainty, stipulating specifically that the 99 year rental restriction does not apply to a Strata Corporation bylaw prohibiting or restricting Short Term Rentals; and

(b) given a copy of the Rental Disclosure Statement to each prospective purchaser of any Unit before the prospective purchaser enters into an agreement to purchase in respect of the Unit. For the purposes of this paragraph 3.01(b), the Owner is deemed to have
given a copy of the Rental Disclosure Statement to each prospective purchaser of any Unit in the building if the Owner has included the Rental Disclosure Statement as an exhibit to the disclosure statement for the Proposed Development prepared by the Owner pursuant to the Real Estate Development Marketing Act.

3.02 Rental Accommodation

The Units constructed on the Lands from time to time may always be used to provide rental accommodation as the Owner or a Unit Owner may choose from time to time, except that this section 3.02 does not apply to Short Term Rentals which may be restricted by the Strata Corporation to the full extent permitted by law.

3.03 Binding on Strata Corporation

This agreement shall be binding upon all Strata Corporations created by the subdivision of the Lands or any part thereof (including the Units) pursuant to the Strata Property Act, and upon all Unit Owners.

3.04 Strata Bylaw Invalid

Any Strata Corporation bylaw which prevents, restricts or abridges the right to use any of the Units as rental accommodations (other than Short Term Rentals) shall have no force or effect.

3.05 No Bylaw

The Strata Corporation shall not pass any bylaws preventing, restricting or abridging the use of the Lands, the Proposed Development or the Units contained therein from time to time as rental accommodation (other than Short Term Rentals).

3.06 Vote

No Unit Owner, nor any tenant or mortgagee thereof, shall vote for any Strata Corporation bylaw purporting to prevent, restrict or abridge the use of the Lands, the Proposed Development or the Units contained therein from time to time as rental accommodation (other than Short Term Rentals).

3.07 Notice

The Owner will provide notice of this Agreement to any person or persons intending to purchase a Unit prior to any such person entering into an agreement of purchase and sale, agreement for sale, or option or similar right to purchase as part of the disclosure statement for any part of the Proposed Development prepared by the Owner pursuant to the Real Estate Development Marketing Act.

3.08 Release of Covenant [optional clause]

The District agrees that if the District of North Vancouver Rezoning Bylaw 3210 (Bylaw 8179), is not adopted by the District’s Council before (date), the Owner is entitled to require the District to execute and deliver to the Owner a discharge, in registrable form, of this Agreement from
title to the Land. The Owner is responsible for the preparation of the discharge under this section and for the cost of registration at the Land Title Office.

4. **DEFAULT AND REMEDIES**

4.01 **Notice of Default**

The District may, acting reasonably, give to the Owner written notice to cure a default under this Agreement within 30 days of delivery of the notice. The notice must specify the nature of the default. The Owner must act with diligence to correct the default within the time specified.

4.02 **Costs**

The Owner will pay to the District upon demand all the District’s costs of exercising its rights or remedies under this Agreement, on a full indemnity basis.

4.03 **Damages an Inadequate Remedy**

The Owner acknowledges and agrees that in the case of a breach of this Agreement which is not fully remediable by the mere payment of money and promptly so remedied, the harm sustained by the District and to the public interest will be irreparable and not susceptible of adequate monetary compensation.

4.04 **Equitable Remedies**

Each party to this Agreement, in addition to its rights under this Agreement or at law, will be entitled to all equitable remedies including specific performance, injunction and declaratory relief, or any of them, to enforce its rights under this Agreement.

4.05 **No Penalty or Forfeiture**

The Owner acknowledges and agrees that it is entering into this Agreement to benefit the public interest in providing rental accommodation, and that the District’s rights and remedies under this Agreement are necessary to ensure that this purpose is carried out, and the District’s rights and remedies under this Agreement are fair and reasonable and ought not to be construed as a penalty or forfeiture.

4.06 **Cumulative Remedies**

No reference to nor exercise of any specific right or remedy under this Agreement or at law or at equity by any party will prejudice, limit or preclude that party from exercising any other right or remedy. No right or remedy will be exclusive or dependent upon any other right to remedy, but any party, from time to time, may exercise any one or more of such rights or remedies independently, successively, or in combination. The Owner acknowledges that specific performance, injunctive relief (mandatory or otherwise) or other equitable relief may be the only adequate remedy for a default by the Owner under this Agreement.
5. LIABILITY

5.01 Indemnity

Except if arising directly from the negligence of the District or its employees, agents or contractors, the Owner will indemnify and save harmless each of the District and its board members, officers, directors, employees, agents, and elected or appointed officials, and their heirs, executors, administrators, personal representatives, successors and assigns, from and against all claims, demands, actions, loss, damage, costs and liabilities that all or any of them will or may be liable for or suffer or incur or be put to any act or omission by the Owner or its officers, directors, employees, agents, contractors, or other persons for whom the Owner is at law responsible, or by reason of or arising out of the Owner's ownership, operation, management or financing of the Proposed Development or any part thereof.

5.02 Release

The Owner hereby releases and forever discharges the District, its elected officials, board members, officers, directors, employees and agents, and its and their heirs, executors, administrators, personal representatives, successors and assigns from and against all claims, demands, damages, actions or causes of action by reason of or arising out of advice or direction respecting the ownership, operation or management of the Proposed Development or any part thereof which has been or hereafter may be given to the Owner by all or any of them.

5.03 Survival

The covenants of the Owner set out in Sections 5.01 and 5.02 will survive termination of this Agreement and continue to apply to any breach of the Agreement or claim arising under this Agreement during the ownership by the Owner of the Lands or any Unit therein, as applicable.

6. GENERAL PROVISIONS

6.01 District's Power Unaffected

Nothing in this Agreement:

(a) affects or limits any discretion, rights, powers, duties or obligations of the District under any enactment or at common law, including in relation to the use or subdivision of land;

(b) affects or limits any enactment relating to the use of the Lands or any condition contained in any approval including any development permit concerning the development of the Lands; or

(c) relieves the Owner from complying with any enactment, including the District's bylaws in relation to the use of the Lands.
6.02 Agreement for Benefit of District Only

The Owner and District agree that:

(a) this Agreement is entered into only for the benefit of the District;
(b) this Agreement is not intended to protect the interests of the Owner, any Unit Owner, any occupant of any Unit or any future owner, occupier or user of any part of the Proposed Development, including any Unit, or the interests of any third party, and the District has no obligation to anyone to enforce the terms of this Agreement; and
(c) The District may at any time terminate this Agreement, in whole or in part, and execute a release and discharge of this Agreement in respect of the Proposed Development or any Unit therein, without liability to anyone for doing so.

6.03 Agreement Runs With the Lands

This Agreement burdens and runs with the Lands and any part into which any of them may be subdivided or consolidated, by strata plan or otherwise. All of the covenants and agreements contained in this Agreement are made by the Owner for itself, its successors and assigns, and all persons who acquire an interest in the Lands or in any Unit after the date of this Agreement.

6.04 Release

The covenants and agreements on the part of the Owner and any Unit Owner and herein set forth in this Agreement have been made by the Owner and any Unit Owner as contractual obligations as well as being made pursuant to Section 483 of the Local Government Act (British Columbia) and as such will be binding on the Owner and any Unit Owner, except that neither the Owner nor any Unit Owner shall be liable for any default in the performance or observance of this Agreement occurring after such party ceases to own the Lands or a Unit as the case may be.

6.05 Priority of This Agreement

The Owner will, at its expense, do or cause to be done all acts reasonably necessary to ensure this Agreement is registered against the title to each Unit in the Proposed Development, including any amendments to this Agreement as may be required by the Land Title Office or the District to effect such registration.

6.06 Agreement to Have Effect as Deed

The District and the Owner each intend by execution and delivery of this Agreement to create both a contract and a deed under seal.

6.07 Waiver

An alleged waiver by a party of any breach by another party of its obligations under this Agreement will be effective only if it is an express waiver of the breach in writing. No waiver of a
breach of this Agreement is deemed or construed to be a consent or waiver of any other breach of this Agreement.

6.08 Time

Time is of the essence in this Agreement. If any party waives this requirement, that party may reinstate it by delivering notice to another party.

6.09 Validity of Provisions

If a Court of competent jurisdiction finds that any part of this Agreement is invalid, illegal, or unenforceable, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.

6.10 Extent of Obligations and Costs

Every obligation of a party which is set out in this Agreement will extend throughout the Term and, to the extent that any obligation ought to have been observed or performed prior to or upon the expiry or earlier termination of the Term, such obligation will survive the expiry or earlier termination of the Term until it has been observed or performed.

6.11 Notices

All notices, demands, or requests of any kind, which a party may be required or permitted to serve on another in connection with this Agreement, must be in writing and may be served on the other parties by registered mail or by personal service, to the following address for each party:

If to the District:

District Municipal Hall
355 West Queens Road
North Vancouver, BC V7N 4N5

Attention: Planning Department

If to the Owner:

If to the Unit Owner:

The address of the registered owner which appears on title to the Unit at the time of notice.

Service of any such notice, demand, or request will be deemed complete, if made by registered mail, 72 hours after the date and hour of mailing, except where there is a postal service disruption during such period, in which case service will be deemed to be complete only upon
actual delivery of the notice, demand or request and if made by personal service, upon personal service being effected. Any party, from time to time, by notice in writing served upon the other parties, may designate a different address or different or additional persons to which all notices, demands, or requests are to be addressed.

6.12 Further Assurances

Upon request by the District, the Owner will promptly do such acts and execute such documents as may be reasonably necessary, in the opinion of the District, to give effect to this Agreement.

6.13 Enuring Effect

This Agreement will enure to the benefit of and be binding upon each of the parties and their successors and permitted assigns.

7. INTERPRETATION

7.01 References

Gender specific terms include both genders and include corporations. Words in the singular include the plural, and words in the plural include the singular.

7.02 Construction

The division of this Agreement into sections and the use of headings are for convenience of reference only and are not intended to govern, limit or aid in the construction of any provision. In all cases, the language in this Agreement is to be construed simply according to its fair meaning, and not strictly for or against either party.

7.03 No Limitation

The word “including” when following any general statement or term is not to be construed to limit the general statement or term to the specific items which immediately follow the general statement or term similar items whether or not words such as “without limitation” or “but not limited to” are used, but rather the general statement or term is to be construed to refer to all other items that could reasonably fall within the broadest possible scope of the general statement or term.

7.04 Terms Mandatory

The words “must” and “will” and “shall” are to be construed as imperative.

7.05 Statutes

Any reference in this Agreement to any statute or bylaw includes any subsequent amendment, re-enactment, or replacement of that statute or bylaw.
7.06 **Entire Agreement**

(d) This is the entire agreement between the District and the Owner concerning its subject, and there are no warranties, representations, conditions or collateral agreements relating to this Agreement, except as included in this Agreement.

(e) This Agreement may be amended only by a document executed by the parties to this Agreement and by bylaw, such amendment to be effective only upon adoption by District Council of a bylaw to amend Bylaw 8198.

7.07 **Governing Law**

This Agreement is to be governed by and construed and enforced in accordance with the laws of British Columbia.

As evidence of their agreement to be bound by the terms of this instrument, the parties hereto have executed the *Land Title Act Form C* that is attached hereto and forms part of this Agreement.
GRANT OF PRIORITY

WHEREAS __________________ (the "Chargeholder") is the holder of the following charge which is registered in the Land Title Office:

(a) __________________ (the "Charge");

AND WHEREAS the Chargeholder agrees to allow the Section 219 Covenant herein to have priority over the Charge;

THIS PRIORITY AGREEMENT is evidence that in consideration of the sum of $1.00 paid by THE CORPORATION OF THE DISTRICT OF NORTH VANCOUVER (the "District") to the Chargeholder, the receipt and sufficiency of which are hereby acknowledged, the Chargeholder covenants and agrees to subordinate and postpone all its rights, title and interest in and to the lands described in the Form C to which this Agreement is attached (the "Lands") with the intent and with the effect that the interests of the District rank ahead of the Charge as though the Section 219 Covenant herein had been executed, delivered and registered against title to the Lands before registration of the Charge.

As evidence of its Agreement to be bound by the above terms, as a contract and as a deed executed and delivered under seal, the Chargeholder has executed the Form C to which this Agreement is attached and which forms part of this Agreement.
The Corporation of the District of North Vancouver

Bylaw 8197

A bylaw to amend District of North Vancouver Zoning Bylaw 3210, 1965

The Council for The Corporation of the District of North Vancouver enacts as follows:

1. Citation

This bylaw may be cited as “The District of North Vancouver Rezoning Bylaw 1346 (Bylaw 8197)”. 

2. Amendments

2.1 District of North Vancouver Zoning Bylaw 3210, 1965 is amended as follows:

a) Part 2A, definitions is amended by adding CD98 to the list of zones that Part 2A applies to.

b) Section 301 (2) is amended by inserting the following zoning designation: “Comprehensive Development Zone 98 (CD 98)”

c) Part 4B Comprehensive Development Zone Regulations is amended by inserting the following, inclusive of Schedule A:

“4B98 Comprehensive Development Zone 98 CD98

The CD98 Zone is applied to:

a) Vacant lot: Lot 5, Block 3, District Lot 612, Group 1, New Westminster District Plan 2377 (PID: 025-885-545);

b) 854 Orwell Street: Lot 4, Block 3, District Lot 612 Plan 2377 (PID: 013-832-565);

c) 858 Orwell Street: Lot H, Block 3, District Lot 612, Plan 15643 (PID: 007-637-713);


4B98-1 Intent:

The purpose of the CD98 Zone is to establish specific land use and development regulations for a 23 unit townhouse project.

4B98-2 Uses:

The following principal uses shall be permitted in the Comprehensive Development 98 Zone:
(a) **Uses Permitted Without Conditions:**

(i) *residential use.*

(b) **Conditional Uses:**

Not Applicable

**4B98-3 Conditions of Use:**

Not Applicable

**4B98-4 Accessory Uses:**

(a) *Accessory uses* are permitted and may include:

(i) *Accessory uses* customarily ancillary to the principal uses are permitted.

(ii) *Home occupations* are permitted in *residential* dwelling units.

**4B98-5 Density:**

(a) The maximum permitted density in the CD 98 Zone is limited to a maximum permitted floor space of 1,797 m\(^2\) (19,344 square feet), inclusive of any density bonus for energy performance and a maximum of 4 residential dwelling units;

(b) For the purposes of calculating floor space ratio, the following areas are exempted from floor space:

(i) Areas within the parking garages;

(ii) Storage areas of up to 9.29 m\(^2\) (100 sq ft) per unit;

(iii) Crawlspace where the crawlspace is less than 1.2 m (4 ft) in height to a total of 1.85 m\(^2\) (20 sq ft) per unit; and

(iv) Roof deck access landings of up to 1.40 m\(^2\) (15 sq ft) per unit.

**4B98-6 Amenities:**

(i) Despite subsection 4B98-5, density in the CD98 Zone is increased to a maximum floor space of 2,795 m\(^2\) (30,085 square feet), inclusive of any density bonus for energy performance and a maximum of 23 residential dwelling units, if $125,020 is contributed to the municipality to be used for any of the following amenities (with allocation to be determined by the municipality in its sole discretion): Affordable housing; Improvements to public parks, trails and greenways; Public plazas and other public realm projects; Environmental restoration and enhancement projects; Improvements to public service facilities including recreation centres, the Lynnmour Boys and Girls Club and the Lynnmour Elementary School; and Public art.
4B98-7 Maximum Principal Building Size:
Not applicable

4B98-8 Setbacks:
Buildings shall be set back from property lines to the closest building face as established by development permit and in accordance with the following regulations:

<table>
<thead>
<tr>
<th>Setback From</th>
<th>Buildings (Min Setback)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orwell Street</td>
<td>3.05m (10 ft)</td>
</tr>
<tr>
<td>Premier Street</td>
<td>3.66m (12 ft)</td>
</tr>
<tr>
<td>Rear (internal) property lines</td>
<td>4.88m (16 ft)</td>
</tr>
<tr>
<td>Side (north and south ) property lines</td>
<td></td>
</tr>
<tr>
<td>In the first 15.24m (50 ft) from the front property line</td>
<td>1.83m (6 ft)</td>
</tr>
<tr>
<td>Side (north and south ) property lines</td>
<td></td>
</tr>
<tr>
<td>after the first 15.24m (50 ft) from the front property line</td>
<td>3.05m (10 ft)</td>
</tr>
</tbody>
</table>

4B98-9 Building Orientation:
Not applicable

4B98-10 Building Depth and Width:
Not applicable

4B98-11 Coverage:
(a) Building Coverage shall not exceed 40%.

(b) Site Coverage shall not exceed 85%.

4B98-12 Height:
The maximum permitted height for each building, inclusive of a 15% bonus for sloping roofs, is 12.85 m (42 ft).

4B98-13 Landscaping:
a) All land areas not occupied by buildings, and patios shall be landscaped in accordance with a landscape plan approved by the District of North Vancouver.

b) A 2m (6.6 ft) high screen consisting of a solid wood fence, or landscaping or a combination thereof, with 90% opacity, is required to screen from view:
   (i) any utility boxes, vents or pumps that are not located underground and/or within a building; and
   (ii) any solid waste (garbage, recycling, compost) or loading areas or facilities that are not located underground and/or within a building.

4B98-14 Subdivision Requirements:

Not applicable

4B98-15 Additional Accessory Structure Regulations:

Not applicable.

4B98-18 Parking and Loading Regulations:

a) Parking and Loading are required as follows:

<table>
<thead>
<tr>
<th>Use</th>
<th>Parking Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
</tr>
<tr>
<td>Residential dwelling unit</td>
<td>2 spaces/ unit</td>
</tr>
<tr>
<td>Visitor Parking</td>
<td>2 spaces</td>
</tr>
</tbody>
</table>

b) Except as specifically provided in 4B98 – 18 (a) parking shall be provided in accordance with Part 10 of this Bylaw."

2.2 The Zoning Map is amended in the case of the lands illustrated on the attached map (Schedule A) by rezoning the land from the Residential Single Family 7200 Zone (RS3) to Comprehensive Development Zone 98 (CD 98).
READ a first time January 16th, 2017

PUBLIC HEARING held

READ a second time

READ a third time

Certified a true copy of “Rezoning Bylaw 1346 (Bylaw 8197)” as at Third Reading

_________________________________________
Municipal Clerk

APPROVED by the Ministry of Transportation and Infrastructure on

ADOPTED

_________________________________________  _______________________________________
Mayor                                    Municipal Clerk

Certified a true copy

_________________________________________
Municipal Clerk
The Corporation of the District of North Vancouver

Bylaw 8198

A bylaw to enter into a Housing Agreement (858, 854 + Lot 5 Orwell St. and 855 Premier St.)

The Council for The Corporation of the District of North Vancouver enacts as follows:

1. Citation

   This bylaw may be cited as “Housing Agreement Bylaw 8198, 2016 (858, 854 + Lot 5 Orwell St. and 855 Premier St.).”

2. Authorization to Enter into Agreement

   2.1 The Council hereby authorizes a housing agreement between The Corporation of the District of North Vancouver and Brody Development (Continuum) GP Ltd. (Inc. No. BC1053465) substantially in the form attached to this Bylaw as Schedule “A” with respect to the following lands:

   a) 007-637-713 Lot H Bl 3 DL 612 Plan 15643
   b) 013-832-565 Lot 4 Bl 3 DL 612 Plan 2377
   c) 025-885-545 Lot 5 Bl 3 DL 612 Gp 1 NWD Plan 2377
   d) 013-832-654 Lot 21 Bl 3 DL 612 Plan 2377

3. Execution of Documents

   The Mayor and Municipal Clerk are authorized to execute any documents required to give effect to the Housing Agreement.

READ a first time January 16th, 2017

READ a second time

READ a third time

ADOPTED

Mayor

Municipal Clerk
Certified a true copy

Municipal Clerk
Schedule A to Bylaw 8198

SECTION 219 COVENANT – HOUSING AGREEMENT

This agreement is dated for reference the ____ day of ____________, 20____

BETWEEN:

BRODY DEVELOPMENT (CONTINUUM) GP LTD. (Inc. No. BC1053465), 1060 West 14th Street, North Vancouver, BC V7P 3P3

(the “Developer”)

AND:

THE CORPORATION OF THE DISTRICT OF NORTH VANCOUVER, a municipality incorporated under the Local Government Act, RSBC 2015, c.1 and having its office at 355 West Queens Road, North Vancouver, BC V7N 4N5

(the “District”)

WHEREAS:

1. The Developer is the registered owner of the Lands (as hereinafter defined);

2. The Developer wishes to obtain development permissions with respect to the Lands and wishes to create a condominium development which will contain residential strata units on the Lands;

3. Section 483 of the Local Government Act authorises the District, by bylaw, to enter into a housing agreement to provide for the prevention of rental restrictions on housing, and provides for the contents of the agreement; and

4. Section 219 of the Land Title Act (British Columbia) permits the registration in favour of the District of a covenant of a negative or positive nature relating to the use of land or a building thereon, or providing that land is to be built on in accordance with the covenant, or providing that land is not to be built on except in accordance with the covenant, or providing that land is not to be subdivided except in accordance with the covenant;

NOW THEREFORE in consideration of the mutual promises contained in it, and in consideration of the payment of $1.00 by the District to the Developer (the receipt and sufficiency of which are hereby acknowledged by the Developer), the parties covenant and agree with each other as follows, as a housing agreement under Section 483 of the Local Government Act, as a contract and a deed under seal between the parties, and as a covenant under Section 219 of the Land Title Act, and the Developer hereby further covenants and agrees that neither the Lands nor any building constructed thereon shall be used or built on except in accordance with this Agreement:
1. **DEFINITIONS**

1.01 Definitions

In this agreement:

(a) “Lands” means land described in Item 2 of the Land Title Act Form C to which this agreement is attached;

(b) "Owner" means the Developer and any other person or persons registered in the Lower Mainland Land Title Office as owner of the Land from time to time, or of any parcel into which the Land is consolidated or subdivided, whether in that person’s own right or in a representative capacity or otherwise;

(c) “Proposed Development” means the proposed development on the Lands;

(d) “Short Term Rentals” means any rental of a Unit for any period less than 30 days;

(e) “Strata Corporation” means the strata corporation formed upon the deposit of a plan to strata subdivide the Proposed Development pursuant to the Strata Property Act;

(f) “Unit” means a residential dwelling strata unit in the Proposed Development; and

(g) “Unit Owner” means the registered owner of a Dwelling Unit in the Proposed Development.

2. **TERM**

This Agreement will commence upon adoption by District Council of Bylaw 8198 and remain in effect until terminated by the District as set out in this Agreement.

3. **RENTAL ACCOMODATION**

3.01 Rental Disclosure Statement

No Unit in the Proposed Development may be occupied unless the Owner has:

(a) before the first Unit is offered for sale, or conveyed to a purchaser without being offered for sale, filed with the Superintendent of Real Estate a rental disclosure statement in the prescribed form (the “Rental Disclosure Statement”) designating all of the Units as rental strata lots and imposing at least a 99 year rental period in relation to all of the Units pursuant to the Strata Property Act (or any successor or replacement legislation), except in relation to Short Term Rentals and, for greater certainty, stipulating specifically that the 99 year rental restriction does not apply to a Strata Corporation bylaw prohibiting or restricting Short Term Rentals; and

(b) given a copy of the Rental Disclosure Statement to each prospective purchaser of any Unit before the prospective purchaser enters into an agreement to purchase in respect of the Unit. For the purposes of this paragraph 3.01(b), the Owner is deemed to have
given a copy of the Rental Disclosure Statement to each prospective purchaser of any
Unit in the building if the Owner has included the Rental Disclosure Statement as an
exhibit to the disclosure statement for the Proposed Development prepared by the
Owner pursuant to the Real Estate Development Marketing Act.

3.02 Rental Accommodation

The Units constructed on the Lands from time to time may always be used to provide rental
accommodation as the Owner or a Unit Owner may choose from time to time, except that this
section 3.02 does not apply to Short Term Rentals which may be restricted by the Strata
Corporation to the full extent permitted by law.

3.03 Binding on Strata Corporation

This agreement shall be binding upon all Strata Corporations created by the subdivision of the
Lands or any part thereof (including the Units) pursuant to the Strata Property Act, and upon all
Unit Owners.

3.04 Strata Bylaw Invalid

Any Strata Corporation bylaw which prevents, restricts or abridges the right to use any of the
Units as rental accommodations (other than Short Term Rentals) shall have no force or effect.

3.05 No Bylaw

The Strata Corporation shall not pass any bylaws preventing, restricting or abridging the use of
the Lands, the Proposed Development or the Units contained therein from time to time as
rental accommodation (other than Short Term Rentals).

3.06 Vote

No Unit Owner, nor any tenant or mortgagee thereof, shall vote for any Strata Corporation
bylaw purporting to prevent, restrict or abridge the use of the Lands, the Proposed
Development or the Units contained therein from time to time as rental accommodation (other
than Short Term Rentals).

3.07 Notice

The Owner will provide notice of this Agreement to any person or persons intending to purchase
a Unit prior to any such person entering into an agreement of purchase and sale, agreement for
sale, or option or similar right to purchase as part of the disclosure statement for any part of the
Proposed Development prepared by the Owner pursuant to the Real Estate Development
Marketing Act.

3.08 Release of Covenant [optional clause]

The District agrees that if the District of North Vancouver Rezoning Bylaw 3210 (Bylaw 8197), is
not adopted by the District’s Council before [date], the Owner is entitled to require the District
to execute and deliver to the Owner a discharge, in registrable form, of this Agreement from
title to the Land. The Owner is responsible for the preparation of the discharge under this section and for the cost of registration at the Land Title Office.

4. **DEFAULT AND REMEDIES**

4.01 **Notice of Default**

The District may, acting reasonably, give to the Owner written notice to cure a default under this Agreement within 30 days of delivery of the notice. The notice must specify the nature of the default. The Owner must act with diligence to correct the default within the time specified.

4.02 **Costs**

The Owner will pay to the District upon demand all the District’s costs of exercising its rights or remedies under this Agreement, on a full indemnity basis.

4.03 **Damages an Inadequate Remedy**

The Owner acknowledges and agrees that in the case of a breach of this Agreement which is not fully remediable by the mere payment of money and promptly so remedied, the harm sustained by the District and to the public interest will be irreparable and not susceptible of adequate monetary compensation.

4.04 **Equitable Remedies**

Each party to this Agreement, in addition to its rights under this Agreement or at law, will be entitled to all equitable remedies including specific performance, injunction and declaratory relief, or any of them, to enforce its rights under this Agreement.

4.05 **No Penalty or Forfeiture**

The Owner acknowledges and agrees that it is entering into this Agreement to benefit the public interest in providing rental accommodation, and that the District’s rights and remedies under this Agreement are necessary to ensure that this purpose is carried out, and the District’s rights and remedies under this Agreement are fair and reasonable and ought not to be construed as a penalty or forfeiture.

4.06 **Cumulative Remedies**

No reference to nor exercise of any specific right or remedy under this Agreement or at law or at equity by any party will prejudice, limit or preclude that party from exercising any other right or remedy. No right or remedy will be exclusive or dependent upon any other right to remedy, but any party, from time to time, may exercise any one or more of such rights or remedies independently, successively, or in combination. The Owner acknowledges that specific performance, injunctive relief (mandatory or otherwise) or other equitable relief may be the only adequate remedy for a default by the Owner under this Agreement.
5. **LIABILITY**

5.01 **Indemnity**

Except if arising directly from the negligence of the District or its employees, agents or contractors, the Owner will indemnify and save harmless each of the District and its board members, officers, directors, employees, agents, and elected or appointed officials, and their heirs, executors, administrators, personal representatives, successors and assigns, from and against all claims, demands, actions, loss, damage, costs and liabilities that all or any of them will or may be liable for or suffer or incur or be put to any act or omission by the Owner or its officers, directors, employees, agents, contractors, or other persons for whom the Owner is at law responsible, or by reason of or arising out of the Owner’s ownership, operation, management or financing of the Proposed Development or any part thereof.

5.02 **Release**

The Owner hereby releases and forever discharges the District, its elected officials, board members, officers, directors, employees and agents, and its and their heirs, executors, administrators, personal representatives, successors and assigns from and against all claims, demands, damages, actions or causes of action by reason of or arising out of advice or direction respecting the ownership, operation or management of the Proposed Development or any part thereof which has been or hereafter may be given to the Owner by all or any of them.

5.03 **Survival**

The covenants of the Owner set out in Sections 5.01 and 5.02 will survive termination of this Agreement and continue to apply to any breach of the Agreement or claim arising under this Agreement during the ownership by the Owner of the Lands or any Unit therein, as applicable.

6. **GENERAL PROVISIONS**

6.01 **District’s Power Unaffected**

Nothing in this Agreement:

(a) affects or limits any discretion, rights, powers, duties or obligations of the District under any enactment or at common law, including in relation to the use or subdivision of land;

(b) affects or limits any enactment relating to the use of the Lands or any condition contained in any approval including any development permit concerning the development of the Lands; or

(c) relieves the Owner from complying with any enactment, including the District’s bylaws in relation to the use of the Lands.
6.02 Agreement for Benefit of District Only

The Owner and District agree that:

(a) this Agreement is entered into only for the benefit of the District:

(b) this Agreement is not intended to protect the interests of the Owner, any Unit Owner, any occupant of any Unit or any future owner, occupier or user of any part of the Proposed Development, including any Unit, or the interests of any third party, and the District has no obligation to anyone to enforce the terms of this Agreement; and

(c) The District may at any time terminate this Agreement, in whole or in part, and execute a release and discharge of this Agreement in respect of the Proposed Development or any Unit therein, without liability to anyone for doing so.

6.03 Agreement Runs With the Lands

This Agreement burdens and runs with the Lands and any part into which any of them may be subdivided or consolidated, by strata plan or otherwise. All of the covenants and agreements contained in this Agreement are made by the Owner for itself, its successors and assigns, and all persons who acquire an interest in the Lands or in any Unit after the date of this Agreement.

6.04 Release

The covenants and agreements on the part of the Owner and any Unit Owner and herein set forth in this Agreement have been made by the Owner and any Unit Owner as contractual obligations as well as being made pursuant to Section 483 of the Local Government Act (British Columbia) and as such will be binding on the Owner and any Unit Owner, except that neither the Owner nor any Unit Owner shall be liable for any default in the performance or observance of this Agreement occurring after such party ceases to own the Lands or a Unit as the case may be.

6.05 Priority of This Agreement

The Owner will, at its expense, do or cause to be done all acts reasonably necessary to ensure this Agreement is registered against the title to each Unit in the Proposed Development, including any amendments to this Agreement as may be required by the Land Title Office or the District to effect such registration.

6.06 Agreement to Have Effect as Deed

The District and the Owner each intend by execution and delivery of this Agreement to create both a contract and a deed under seal.

6.07 Waiver

An alleged waiver by a party of any breach by another party of its obligations under this Agreement will be effective only if it is an express waiver of the breach in writing. No waiver of a
breach of this Agreement is deemed or construed to be a consent or waiver of any other breach of this Agreement.

6.08 **Time**

Time is of the essence in this Agreement. If any party waives this requirement, that party may reinstate it by delivering notice to another party.

6.09 **Validity of Provisions**

If a Court of competent jurisdiction finds that any part of this Agreement is invalid, illegal, or unenforceable, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.

6.10 **Extent of Obligations and Costs**

Every obligation of a party which is set out in this Agreement will extend throughout the Term and, to the extent that any obligation ought to have been observed or performed prior to or upon the expiry or earlier termination of the Term, such obligation will survive the expiry or earlier termination of the Term until it has been observed or performed.

6.11 **Notices**

All notices, demands, or requests of any kind, which a party may be required or permitted to serve on another in connection with this Agreement, must be in writing and may be served on the other parties by registered mail or by personal service, to the following address for each party:

If to the District:

District Municipal Hall  
355 West Queens Road  
North Vancouver, BC V7N 4N5  
Attention: Planning Department

If to the Owner:

If to the Unit Owner:

The address of the registered owner which appears on title to the Unit at the time of notice.

Service of any such notice, demand, or request will be deemed complete, if made by registered mail, 72 hours after the date and hour of mailing, except where there is a postal service disruption during such period, in which case service will be deemed to be complete only upon
actual delivery of the notice, demand or request and if made by personal service, upon personal service being effected. Any party, from time to time, by notice in writing served upon the other parties, may designate a different address or different or additional persons to which all notices, demands, or requests are to be addressed.

6.12 Further Assurances

Upon request by the District, the Owner will promptly do such acts and execute such documents as may be reasonably necessary, in the opinion of the District, to give effect to this Agreement.

6.13 Enuring Effect

This Agreement will enure to the benefit of and be binding upon each of the parties and their successors and permitted assigns.

7. INTERPRETATION

7.01 References

Gender specific terms include both genders and include corporations. Words in the singular include the plural, and words in the plural include the singular.

7.02 Construction

The division of this Agreement into sections and the use of headings are for convenience of reference only and are not intended to govern, limit or aid in the construction of any provision. In all cases, the language in this Agreement is to be construed simply according to its fair meaning, and not strictly for or against either party.

7.03 No Limitation

The word “including” when following any general statement or term is not to be construed to limit the general statement or term to the specific items which immediately follow the general statement or term similar items whether or not words such as “without limitation” or “but not limited to” are used, but rather the general statement or term is to be construed to refer to all other items that could reasonably fall within the broadest possible scope of the general statement or term.

7.04 Terms Mandatory

The words “must” and “will” and “shall” are to be construed as imperative.

7.05 Statutes

Any reference in this Agreement to any statute or bylaw includes any subsequent amendment, re-enactment, or replacement of that statute or bylaw.
7.06 **Entire Agreement**

(d) This is the entire agreement between the District and the Owner concerning its subject, and there are no warranties, representations, conditions or collateral agreements relating to this Agreement, except as included in this Agreement.

(e) This Agreement may be amended only by a document executed by the parties to this Agreement and by bylaw, such amendment to be effective only upon adoption by District Council of a bylaw to amend Bylaw 8198.

7.07 **Governing Law**

This Agreement is to be governed by and construed and enforced in accordance with the laws of British Columbia.

As evidence of their agreement to be bound by the terms of this instrument, the parties hereto have executed the *Land Title Act Form C* that is attached hereto and forms part of this Agreement.
GRANT OF PRIORITY

WHEREAS ________________ (the “Chargeholder”) is the holder of the following charge which is registered in the Land Title Office:

(a) ____________________(the “Charge”);

AND WHEREAS the Chargeholder agrees to allow the Section 219 Covenant herein to have priority over the Charge;

THIS PRIORITY AGREEMENT is evidence that in consideration of the sum of $1.00 paid by THE CORPORATION OF THE DISTRICT OF NORTH VANCOUVER (the “District”) to the Chargeholder, the receipt and sufficiency of which are hereby acknowledged, the Chargeholder covenants and agrees to subordinate and postpone all its rights, title and interest in and to the lands described in the Form C to which this Agreement is attached (the “Lands”) with the intent and with the effect that the interests of the District rank ahead of the Charge as though the Section 219 Covenant herein had been executed, delivered and registered against title to the Lands before registration of the Charge.

As evidence of its Agreement to be bound by the above terms, as a contract and as a deed executed and delivered under seal, the Chargeholder has executed the Form C to which this Agreement is attached and which forms part of this Agreement.
PUBLIC HEARING
854, 858 & Lot 5 Orwell Street and 855 Premier Street
23 Unit Townhouse Development

What: A Public Hearing for Bylaw 8197, a proposed amendment to the Zoning Bylaw to permit the development of a three storey, twenty-three unit townhouse at 854, 858 & Lot 5 Orwell Street and 855 Premier Street.

When: 7 pm, Tuesday, January 31, 2017

Where: Council Chambers, District of North Vancouver Municipal Hall, 355 West Queens Road, North Vancouver, BC

What changes?
Bylaw 8197 proposes to amend the District’s Zoning Bylaw by creating a new Comprehensive Development Zone 98 (CD98) and rezone the subject site from Residential Single Family 7200 Zone (RS3) to CD98 to allow the development of a three storey, twenty-three unit townhouse. The CD98 Zone addresses use, density, amenities, setbacks, site coverage, building height, landscaping and parking.

When can I speak?
We welcome your input Tuesday, January 31, 2017, at 7 pm. You can speak in person by signing up at the hearing, or you can provide a written submission to the Municipal Clerk at input@dnv.org or by mail to Municipal Clerk, District of North Vancouver, 355 West Queens Road, North Vancouver, BC, V7N 4N5, before the conclusion of the hearing.

Please note that Council may not receive further submissions from the public concerning this application after the conclusion of the public hearing.

Need more info?
Relevant background material and copies of the bylaw are available for review at the Municipal Clerk’s Office or online at dnv.org/public_hearing from January 16 to January 31. Office hours are Monday to Friday 8 am to 4:30 pm, except statutory holidays.

Who can I speak to?
Tamsin Guppy, Community Planner, at 604-990-2391 or guppyt@dnv.org.

Proposed*

*Provided by applicant for illustrative purposes only. The actual development, if approved, may differ.
**Residential Level 3:** Attached Residential. Areas designated for attached residential are intended predominantly for ground-oriented multifamily housing within neighbourhoods, or as a transition between higher density sites and adjacent detached residential areas. Typical housing forms in this designation include duplex, triplex and attached row houses up to approximately 0.8 FSR.
Lynnmour / Inter-River Local Plan

Adopted November, 2006
LYNNMOUR / INTER-RIVER REVISED DRAFT PLAN

Legend:

- **EXISTING PARK OR OPEN SPACE**
- **RETAIN ROAD ALLOWANCES**
- **APPLY DESIGN GUIDELINES TO NEW DEVELOPMENT IN THIS AREA**
- **ENCOURAGE HIGH STANDARD OF MAINTENANCE OF PRIVATE PROPERTY**
- **ENCOURAGE HIGH STANDARD OF MAINTENANCE ON PUBLIC PROPERTY**
- **ENCOURAGE DISTRICT TO MAINTAIN STREET TREES**
- **REZONE THIS PROPERTY FOR LIMITED PUBLIC ASSEMBLY OR INSTITUTIONAL USES**
- **RETAIN THE LARGE LOTS NORTH OF GRANTHAM BRIDGE**
- **ENSURE DEVELOPMENT MEETS NEW GUIDELINES FOR BUILDING ON FLOOD PLAINS**
- **DESIGNATE OR ADD AREA TO EXISTING PARK OR OPEN SPACE INVENTORY**
- **DEVELOP COMMUNITY GATEWAYS**
- **CONVERT J.C. HOUSE TO COMMUNITY CENTRE (DONE)**
- **EXPAND COMMUNITY USE OF EXISTING FACILITY**
- **EXPAND YOUTH ACTIVITIES**

- **DEVELOP MINI-BUS SERVICE TO SEYMOUR YOUTH CENTRE**
- **SUPPORT EXPANSION OF FACILITIES**
- **SUPPORT DEVELOPMENT OF NEW ROAD**
- **SQUAMISH NATION RESERVE**
- **PLAN AREA BOUNDARY**

Development Directions:

- **DEVELOP COMMUNITY SERVICE STRATEGIES TO COMPLEMENT NEW USES**
- **DESIGNATE LARGE LOTS FOR SINGLE FAMILY USE ONLY**
- **SUBJECT TO ENVIRONMENTAL AND GEO-TECHNICAL STUDIES, CONSIDER PART OF THIS DISTRICT LAND FOR USES AUXILIARY TO ADJACENT COMMERCIAL USES OR FOR LIMITED INSTITUTIONAL USES**

Provided that:

(i) Measures to address local traffic impacts are provided.
(ii) Residential lands are added to flood plain park and
(iii) Significant landscaping is retained on the corner.

Provided that:

(i) The proposed use is compatible with existing residential developments.
(ii) The proposed use does not generate significant traffic demand.
(iii) Significant landscape buffers are retained or provided; and
(iv) A public viewpoint is provided.

Map 4 - HOUSING, DEVELOPMENT & COMMUNITY SERVICE STRATEGIES
• To manage new development to protect it from natural hazards such as flooding and landslides
• To beautify and make local streets safer
• To ensure any new development contributes to the overall improvement of the community

POLICY

9.1 Protect and enhance the character of all residential neighbourhoods while accommodating residents’ changing housing needs.

IMPLEMENTATION

9.1.1 Except under conditions or locations specified in this Plan, no changes in uses, densities or zoning will be supported unless the new built form and type of housing proposed is compatible with the existing community, and a substantial local community benefit can be demonstrated.

9.1.2 Height, bulk and lot coverage characteristics of replacement single family homes must be compatible with the general neighbourhood context.

9.1.3 Maintain the character of the existing neighbourhood when considering subdivision approval of any new residential lots.

9.1.4 Consolidation of lots with road allowances or portions thereof for the purposes of subdivision will not be permitted unless there is a public benefit to be obtained.

9.1.5 Owners of small lots or lots with less than 40 foot frontages are encouraged to follow the “Design Principles for Small Lot Developments” (Appendix B to the Small Lot Infill Report) in re-development of their property. These provide guidance in the massing, height, window locations and facades for new dwellings.

9.1.6 The District, in consultation with seniors groups, developers, and the North Shore Advisory Committee on Disability Issues and other disability groups, will develop and promote use of voluntary Adaptable Building Design and Universal Access Guidelines to enable new construction to more easily meet a broader range of needs of persons with disabilities or by seniors.
9.1.7 Encourage local strata councils and other property owners to continue maintaining their properties to a high standard (e.g. participate in "Communities in Bloom").

9.1.8 Direct District staff to develop regulations to prevent the conversion of shared living spaces (i.e. living or dining rooms) into additional bedrooms within individual units in existing multi-family developments.

9.1.8 Encourage the Ministry of Transportation, District of North Vancouver, and other owners of undeveloped lands to maintain them to community standards.

9.1.9 Utilize Development Cost Charge funding to design the drainage and flood control measures and to provide the Inter-River Park floodway recommended in the "Lynnmoor/Inter-River Local Plan Flood Protection Assessment" report by Kerr Wood Leidal.

9.1.10 Include in future District capital budgeting funding to construct protective flood control measures (berm) for the Fire Training Centre.

9.1.11 Establish a Lynnmoor/Inter-River Flood Protection Levy to be funded as a condition of redevelopment of properties in Area 1 in order to provide the other flood mitigation and drainage measures recommended in the "Lynnmoor/Inter-River Local Plan Flood Protection Assessment" report by Kerr Wood Leidal.

9.1.12 Retain the development at 1055 Premier for income assisted housing indefinitely.

POLICY

9.2 Encourage new residential development to occur primarily through infill and small-scale redevelopment in identified areas.

IMPLEMENTATION

9.2.1 Designate the single family zoned lots on Premier and Orwell Streets, East Keith Road, Forsman and St. Denis Avenues shown as Area 1 on LI Map 4 as suitable for ground oriented multiple unit built forms having a range of permitted densities such that on single lots of record:

- of less than 5000 square feet single family houses are permitted;
between 5001 and 7000 square feet duplexes to a maximum density of 0.4 floor space ratio are permitted;

- between 7001 and 8000 square feet duplexes to a maximum density of 0.5 floor space ratio are permitted; and

- greater than 8001 square feet triplexes to a maximum density of 0.5 floor space ratio are permitted, provided that:

  - all multiple unit projects are designed to provide vehicle access for future development on an adjacent single lot;
  - all multiple unit projects consider accessible design principles and provide for improved pedestrian circulation where appropriate;
  - all multiple unit projects comply with the Lynnmour/ Inter-River Area One Design Guidelines for Multiplexes and Townhouses;
  - all multiple unit projects meet environmental standards and individual units meet acoustic standards;
  - all multiple unit projects contribute to the achievement of the Community Development Objectives, and.

- all individual development meets prescribed standards for drainage and flood protection and contributes to the shared flood protection measures as described in the Kerr Wood Leidal study titled Lynnmour/ Inter-River Local Plan, Flood Protection Assessment – Final, completed in March 2006.

New family housing will help support the local school.

9.2.2 Designate the single family zoned lots on Premier and Orwell Streets, East Keith Road, Forsman and St. Denis Avenues shown as Area 1 on LI Map 4 as suitable for ground oriented Townhouse development to a maximum density of 0.7 floor space ratio where lots of record are consolidated to provide development sites greater than 15,000 square feet and provided that:

LYNNMOUR / INTER-RIVER LOCAL PLAN
• The number of units per project does not exceed 24 units per acre;
• all multiple unit projects consider accessible design principles and provide for improved pedestrian circulation where appropriate;
• all multiple unit projects comply with the Lynnmour/Inter-River Area One Design Guidelines for Multiplexes and Townhouses;
• all multiple unit projects minimize vehicle access points to the site;
• all multiple unit projects meet environmental standards and individual units in the vicinity of Highway #1 meet CMHC acoustic standards;
• all multiple unit projects contribute to the achievement of the Community Development Objectives; and
• all individual development meets prescribed standards for drainage and flood protection and contributes to the shared flood protection measures as described in the Kerr Wood Leidal study titled Lynnmour/Inter-River Local Plan, Flood Protection Assessment – Final, March 6, 2006.

9.2.3 Support in principle a replot of Ministry of Transportation lands to low density multi-family development in this area where an improved pedestrian and vehicle circulation pattern is achieved and the new development is better integrated into the existing community.

9.2.4 Apply Local Plan Development Guidelines as appropriate to ensure all new development achieves the goals and objectives set out in this community plan (see Schedule A, Section 4.3: Local Plan Guidelines).

9.2.5 Amend Development Permit Map 1 as necessary to incorporate new, or amend existing, Development Permit Areas as a result of this Local Plan.

POLICY

9.3 Improve streetscapes and provide safer streets.

IMPLEMENTATION

9.3.1 Include in the design and upgrading of collector and arterial streets provision for sidewalks and pedestrian lighting wherever possible.

9.3.2 Encourage provision of a Street Tree Maintenance Program and fund it in the annual Municipal Budget.

9.3.3 Include the provision of street trees where feasible in the future road works in Lynnmour/Inter-River.
Keith & Orwell Traffic Impact Study

Prepared for

Prepared by

CTS
CREATIVE TRANSPORTATION SOLUTIONS

APRIL 2014
Mr. Mike Brody
1060 – 14th Street W
North Vancouver, B.C.
V7P 3P3

Dear Mr. Brody:

Re: Keith & Orwell Traffic Impact Study,
North Vancouver, BC

Creative Transportation Solutions (CTS) is pleased to submit this FINAL report summarizing our work on the above study. CTS was retained by Brody Development (2008) Ltd. on 12 December 2013 to undertake the traffic impact study of a proposed mixed use development in the District of North Vancouver, B.C. The primary objectives of this study were as follows:

1) To conduct a traffic impact assessment of the proposed development; and
2) To document the findings and analysis of the study in a report that meets the requirements of the District of North Vancouver.

This report documents the analysis and findings of the study.

1.0 BACKGROUND

1.1 The Site

The proposed development site is located on the north side of Keith Road and immediately west of Orwell Street in a rectangular shaped property. FIGURE 1 illustrates the study area and the road network adjacent to the site.

The proposed development consists of up to 32 multi-family dwelling units with one site access from Orwell Street. The construction of the development is anticipated to commence in mid-2014 and to be fully completed and fully occupied by 2015. This development replaces six (6) existing single-family lots. A copy of the site plan used for this traffic assessment is included in APPENDIX A.
1.2 The Road Network

East Keith Road adjacent to the site is a local road with the western end connected to St. Denis Avenue and the eastern section is constructed to an urban cross section (curb and gutter, sidewalk and streetlights) and the remaining portion constructed to a semi-rural cross section (shoulders ditch or swale, no streetlights, no sidewalk). The posted speed is 50 km/h with a 30 km/hr school zone speed limit due to the presence of Lynnmour Elementary School.

Orwell Street is a local cul-de-sac with a section constructed to an urban cross section (curb and gutter, sidewalk and streetlights) at the south end with the remaining portion constructed to a semi-rural cross section (shoulders ditch or swale, no streetlights, no sidewalk).

Primary access into the neighbourhood is via Old Lillooet Road and Lillooet Road. There is a one-way inbound access from westbound Mt. Seymour Parkway (Hwy 1 on-ramp).

There is a traffic signal at the intersection of Old Lillooet Road & Lillooet Road and at the intersection of Lillooet Road and Mt. Seymour Parkway. Mt. Seymour Parkway in the vicinity of the project is under the jurisdiction of the Ministry of Transportation &

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Infrastructure. The District of North Vancouver has plans to extend East Keith Road to the west as part of any widening or replacement of bridges on Highway 1.

1.3 Scope Development

A meeting was held with District of North Vancouver officials on Wednesday, 18 December 2013 to discuss the project, discuss local site issues and the draft terms of reference for the study. A copy of the approved scope of work has been included in APPENDIX B. The weekday afternoon peak hour was selected for the design hour of the traffic impact assessment.

The following horizon years were selected for the traffic impact assessment:

- 2014 Existing Base
- 2019 Future Base + Site Traffic (full build-out)

1.4 Future Road Network

The District of North Vancouver and the Ministry of Transportation & Infrastructure have undertaken high level planning studies to determine what major road network improvements would be required in the future. None of these plans have been finalized, and significant changes to the road network may not be made within the time horizons used in this study.

The only network change of significance included in the analysis period is the construction of the east leg of the Old Lillooet Road & Lillooet Road intersection. This leg of the intersection will provide the sole access to Capilano University. Traffic volumes through the intersection were estimated using 75% of the northbound and southbound volume being re-assigned to the east leg of the Old Lillooet Road & Lillooet Road intersection.

The ITE Trip Generation Manual recommends caution when using the trip rates as transit service levels were not documented. Given the high level of transit service to Capilano University and the fact that 5,000 students take non-credit courses (7,500 full-time equivalent students taking credit courses), it was felt that using the existing traffic volumes would be more relevant. Using the ITE rates, the volume would be 2,125 vehicles (assuming 12,500 students) or 1,275 vehicles using the 7,500 vehicles of the full-time equivalent students. Even using the lower figures, the estimated quantity of trips is 50% higher than what is observed. For this reason, the existing trips were re-assigned to the network as outlined above.

2.0 EXISTING CONDITIONS

2.1 Study Area

The study area is bounded by St. Denis Avenue to the west, Lillooet Road to the east, and Mt. Seymour Parkway to the south. The following intersections were included in the traffic impact assessment as agreed to by the District of North Vancouver:
1. Old Lillooet Rd & Lillooet Road;
2. Lillooet Road & Mt. Seymour Parkway;

3.0 BASE TRAFFIC VOLUMES

2014 Base Traffic Volumes

In order to obtain current traffic data for the study area, CTS conducted intersection traffic movement counts on Tuesday, 14 January 2014 from 0700-0900, 1100-1300 and 1500 - 1800. The traffic count data was tabulated and reviewed to ensure data integrity and validity. The tabulated traffic movement count data sheets are included in APPENDIX C. FIGURE 2 illustrates the weekday morning peak hour vehicle volumes and FIGURE 3 illustrates the weekday afternoon peak hour volumes, respectively.

2019 Future Base Traffic Volumes

Year 2015 is anticipated to be the year of full buildout for the proposed development. Therefore, in order to access the traffic impacts of the proposed development on the base future traffic volumes, the 2014 base traffic volumes were factored up by an approved traffic volume growth rate of 2.5% per annum (simple straight line) obtained from the District of North Vancouver Road Network Study, to represent initial base year 2019 volumes. FIGURE 4 illustrates the projected 2019 weekday afternoon peak hour volumes for future base conditions. Traffic volumes on the east leg (from Capilano University) were assumed to be 75% of the through traffic volume prior to reconfiguring the intersection.

4.0 SITE TRAFFIC VOLUMES

4.1 Traffic Generation

TABLE 1 summarizes the forecast site generated traffic for the proposed development using the Institute of Transportation Engineer’s (ITE) Trip Generation Information Report (9th edition). Of note, the existing traffic generated by the six (6) single family dwellings was not discounted, so that the projected volumes would represent the worst case scenario in that all the traffic would be “new” traffic to the adjacent road network.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Peak Hour</th>
<th>Trip Generation Variable</th>
<th>Horizon Year</th>
<th>Scope of Development</th>
<th>Vehicle Trip Generation Rate</th>
<th>Trip Rate Source</th>
<th>Directional Split</th>
<th>Peak Hour Volumes (vph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Townhouse</td>
<td>Weekday Morning</td>
<td>Dwelling Units</td>
<td>2019</td>
<td>32</td>
<td>0.44</td>
<td>ITE 9th Edition - Code 230</td>
<td>17%   83%</td>
<td>3          12         15</td>
</tr>
<tr>
<td></td>
<td>Weekday Afternoon</td>
<td></td>
<td></td>
<td></td>
<td>0.52</td>
<td></td>
<td>67%   33%</td>
<td>11         6          17</td>
</tr>
</tbody>
</table>

From TABLE 1, the site is forecast to generate a total of 15 vehicle trips (3 inbound and 12 outbound) during the weekday morning peak hour and during the weekday afternoon...
peak hour, 17 vehicle trips (11 inbound and 6 outbound). The weekday afternoon peak hour was selected for analysis as this time period had the highest site trip generation.

There are currently six (6) single family residential dwelling units on the proposed development site. These dwellings generate 6 vehicle trips during the PM peak hour so the net increase in vehicle traffic is only 11 vehicle trips (approximately one vehicle every 9 minutes). To obtain the most conservative analysis of impacts, the full 17 vehicle trips were added to the network, assuming 100% mode share by cars.

It should be noted that the volume of trips generated by the proposed development during the peak hours is within the expected daily variation of traffic volumes through each of the adjacent signalized intersections.
FIGURE 2
2014 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES

LEGEND

- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- 100 Traffic Volume
- Site Access
- Elementary School

NOTE: NETWORK IS NOT TO SCALE

FIGURE 3
2014 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES

LEGEND
- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- Traffic Volume
- Site Access
- Elementary School

NOTE: NETWORK IS NOT TO SCALE
FIGURE 4
2019 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES

LEGEND

- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- Traffic Volume
- Site Access
- Elementary School

NOTE: NETWORK IS NOT TO SCALE

Study Site

Note: 2019 Base Traffic = 2014 Base Traffic x 1.125 (i.e. 2.5% annual growth rate)
4.2 Trip Distribution

Trip distribution parameters to distribute the site generated vehicle trips to/from the site were developed from existing traffic patterns entering and exiting the study area for the morning and afternoon peak hour. The trip distribution parameters used in this study are summarized in TABLE 2. The traffic volume assignment is summarized in TABLE 3.

**TABLE 2**

<table>
<thead>
<tr>
<th>FROM / TO</th>
<th>WEEKDAY MORNING PEAK HOUR</th>
<th>WEEKDAY AFTERNOON PEAK HOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INBOUND</td>
<td>INBOUND</td>
</tr>
<tr>
<td>North Lillooet Rd</td>
<td>394</td>
<td>10.5%</td>
</tr>
<tr>
<td>East Mt. Seymour Pkwy</td>
<td>1701</td>
<td>45.4%</td>
</tr>
<tr>
<td>South Lillooet Rd</td>
<td>1336</td>
<td>35.6%</td>
</tr>
<tr>
<td>West Mt. Seymour Pkwy</td>
<td>319</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

**TABLE 3**

<table>
<thead>
<tr>
<th>FROM / TO</th>
<th>Weekday AM Peak Hour</th>
<th>Weekday PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INBOUND</td>
<td>OUTBOUND</td>
</tr>
<tr>
<td>North Lillooet Rd</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>East Mt. Seymour Pkwy</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>South Lillooet Rd</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>West Mt. Seymour Pkwy</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

**FIGURE 5** illustrates the projected site generated volumes on the road network for Buildout (Year 2015) weekday afternoon peak hour.
FIGURE 5
SITE TRAFFIC VOLUMES FOR THE WEEKDAY AFTERNOON PEAK HOUR

LEGEND
- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- Traffic Volume
- Site Access
- Elementary School

NOTE: NETWORK IS NOT TO SCALE
5.0 TOTAL PROJECTED TRAFFIC VOLUMES

FIGURE 6 illustrates the total projected traffic for the year 2019 Weekday afternoon peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing FIGURE 5 onto FIGURE 4.

FIGURE 6
2019 WEEKDAY AFTERNOON PEAK HOUR BASE + SITE TRAFFIC VOLUMES

Note: 2019 Base + Site Traffic = 2014 Base Traffic x 1.125 (i.e. 2.5% annual growth rate) + Site Traffic
6.0 TRAFFIC ENGINEERING ANALYSIS

6.1 Intersection Capacity Analysis

Capacity analysis was performed at each of the locations in order to determine the intersection levels of service (LOS) that is provided to motorists. LOS for intersections is defined in terms of delay (seconds per vehicle), which is a measure of driver discomfort and frustration, fuel consumption and lost travel time.

An intersection or movement LOS can range from "A" (which is excellent) to "E" (which is capacity). A LOS of "F" indicates that an intersection or movement capacity is failing because vehicle delays are excessive. A LOS of "D" during the critical peak hours is considered acceptable by many public agencies in large urban areas for overall intersection operation and a LOS of "E" or better is considered acceptable for left turn movements as it recognizes that the intersections normally perform much better the remaining 90% of the day.

Volume to capacity (v/c) ratios typically ranges from 0.25 to 1.20 with a v/c ratio of 1.0 indicating the movement, approach or intersection is at capacity.

Highway Capacity Software (HCS) was used for the unsignalized intersection analysis. The following assumptions were made with respect to the intersection capacity analysis:

- Saturation flow rate = 1,900 passenger cars/hour of green time/lane (pcphgpl)
- Heavy vehicle percentage for roads = 2%
- Peak hour factor (PHF) = 0.91 for weekday afternoon which are the average PHF measured from the surveyed intersections.

**TABLE 4** summarizes and compares the main performance parameters of the intersection capacity analysis for signalized intersections. Also, delay time in seconds for each lane group was summarized. Wherever necessary, attempts at improvements have been made to maintain intersection and approach movement level of service standards for each of the post-development scenarios. The capacity analysis worksheets are included in **APPENDIX D**.

As illustrated in **TABLE 4**, the signalized intersection of Old Lillooet Road & Lillooet Road is currently operating at LOS B (Good) and with the proposed development traffic and anticipated growth in background traffic added, the intersection will operate a LOS C (Fair) in 2019. This intersection was assumed to be reconfigured with the east leg into Capilano University being constructed (and all Capilano University traffic diverted to this link) prior to 2019.

The intersection of Mt. Seymour Parkway & Lillooet Road is currently operating a LOS C (Fair) and will continue to operate at LOS C (Fair) at the 2019 Horizon with the signal timings optimized for the traffic volumes anticipated at that time.

The increase in traffic generated by the development site through each of the signalized intersections is less than the daily variation in traffic volume. In other words, if the turning movement volumes were counted on two or more days, the differences in the counts for specific movements between Day 1 and Day 2 would be greater than the volume of traffic generated by the development site.
### TABLE 4
VEHICLE DELAY BY INDIVIDUAL MOVEMENTS FOR SIGNALIZED INTERSECTIONS

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>TIME OF DAY</th>
<th>SCENARIO</th>
<th>PERFORMANCE MEASURE</th>
<th>EASTBOUND</th>
<th>WESTBOUND</th>
<th>NORTHBOUND</th>
<th>SOUTHBOUND</th>
<th>LOS</th>
<th>NOTES</th>
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<td></td>
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<td></td>
<td>Left</td>
<td>Thru</td>
<td>Right</td>
<td>Left</td>
<td>Thru</td>
<td>Right</td>
</tr>
<tr>
<td>Mountain Seymour Parkway (EB/WB) and Lillooet Rd (NB/SB)</td>
<td></td>
<td>2014 Base</td>
<td>Volumes</td>
<td>131</td>
<td>6</td>
<td>5</td>
<td>487</td>
<td>654</td>
<td>81</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>V/C</td>
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<td>0.55</td>
<td>0.16</td>
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<tr>
<td></td>
<td></td>
<td>Weekday Afternoon Peak Hour</td>
<td>2019 Base + Site</td>
<td>Volumes</td>
<td>148</td>
<td>7</td>
<td>6</td>
<td>548</td>
<td>739</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>V/C</td>
<td>0.52</td>
<td>0.51</td>
<td>0.51</td>
<td>0.62</td>
<td>0.63</td>
<td>0.14</td>
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<td></td>
</tr>
<tr>
<td>Old Lillooet Rd (EB/WB) and Lillooet Rd (NB/SB)</td>
<td></td>
<td>2014 Base</td>
<td>Volumes</td>
<td>24</td>
<td>221</td>
<td>179</td>
<td>359</td>
<td>640</td>
<td>13</td>
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<tr>
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<td></td>
<td></td>
<td>V/C</td>
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<td>0.72</td>
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<td>540</td>
<td>10</td>
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<td></td>
<td></td>
<td>V/C</td>
<td><strong>0.32</strong></td>
<td></td>
<td>0.92</td>
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<td><strong>0.80</strong></td>
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</tbody>
</table>

V/C = Volume to Capacity Ratio.

- Intersection approaching capacity (LOS 'D' or 'E'); or approach demand near capacity (V/C 0.85 to 0.99)
- Intersection equals or exceeds capacity (LOS 'F'); or approach demand exceeds capacity (V/C ≥ 1.00)
It is acknowledged that there are occasions when the road network is congested but these are due to operational problems that occur on Highway 1, nearby. While most of these problems on Highway 1 cannot be mitigated by the applicant, the pedestrian path at Lynn Creek may help mitigate the problems to some effect by encouraging people to walk/cycle rather than use the automobile.

6.3 Pedestrian Plan

In order to promote alternative modes of transport and to reduce future vehicle demand, CTS reviewed the existing pedestrian network in the study area in order to identify opportunities for the proposed development to encourage walking. FIGURE 7 illustrates both the existing pedestrian facilities adjacent to the site and proposed improvements. The key improvements include the following:

1. Provision of a sidewalk on the frontage of the development on Keith Road and Orwell Street.
2. Provision of a bulge on the North-West corner of Keith Road and Orwell St to aid in pedestrian crossing.

FIGURE 7
EXISTING AND PROPOSED PEDESTRIAN PATHS ADJACENT TO SITE
6.4 Public Transit Plan

The study area is serviced by Translink Buses 28, 130, 239, 255 and 880. The 28, 130, and 239 all connect through to the Phibbs Exchange, the 255 connects through to Dundarave (Marine at 25 Street), and the 880 a school special route. The closest existing bus stops for these routes are located on Lillooet Road between Mt Seymour Parkway and Old Lillooet Road. These routes are illustrated in FIGURE 8.

**FIGURE 8**
EXISTING TRANSIT ROUTES ADJACENT TO SITE

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Normal planning guidelines have bus stops placed no more than 400 metres walking distance from a development in order to make public transit a viable transport option. As the entire site is within 400 metres of an existing bus stop, the site is well serviced by public transit and no additional bus stops are recommended. Both bus stops have benches.

6.5 Bicycle Plan

Currently, Lillooet Road, Fern Street and Mt. Seymour Parkway are all designated municipal bicycle routes. There are extensive bicycle path markings on Old Lillooet Rd at the intersection with Lillooet Road. Bicycle access in and/out of the neighbourhood is very well defined with no additional measures proposed. East Keith Road is also marked for cyclist use. The local cycling network connects to the Spirit Trail network.

7.0 CONCLUSIONS & RECOMMENDATIONS

7.1 Conclusions

1) CTS was retained by Brody Development (2008) Ltd. on 12 December 2013 to undertake the traffic impact study of a proposed multi-family development in the District of North Vancouver, B.C. The site is proposed to consist of 32 multi-family housing units. The site access for will be from Orwell Street. The proposed development is anticipated to be constructed and fully occupied by the end of 2015.

2) The scope of work for the traffic impact assessment was confirmed with municipal officials both at a meeting on Wednesday, 18 December 2013 and subsequent communication.

3) CTS staff conducted a detailed site visit and collected traffic volume data on Wednesday, 15 January 2014 to document existing peak conditions.

4) The proposed development is forecast to generate a total of 15 vehicle trips (3 inbound and 12 outbound) during the weekday morning peak hour and 17 vehicle trips (11 inbound and 6 outbound) during the weekday afternoon peak.

5) Intersection capacity analysis was conducted for key intersections in order to determine what operational and/or geometrical improvements were required for the road network to be able to accommodate the projected site traffic volumes. All intersections examined were found to be operating below capacity when the signal timings have been optimized and no operational and/or geometrical improvements were warranted to mitigate the site generated traffic for the 2019 horizon year.

6) A review of the transit network and bus stop locations determined that the entire development would be within the comfortable walking distance of 400 metres to a bus stop and thus will provide good access to public transit for future residents.
7) A review of the pedestrian network determined that with the provision of sidewalks along the road frontages (Keith Road and Orwell Street), the pedestrian network to and from the site and to/from the elementary school will be served.

8) A review of the bicycle network determined that the existing cycling network and pavement markings are sufficient.

7.2 Recommendations

Based on the findings of this study, the following is recommended:

1) The applicant to provide sidewalks along the site road frontages of Keith Road and Orwell Street.

We would like to take this opportunity to thank you for this unique project and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments.

Yours truly,

CREATIVE TRANSPORTATION SOLUTIONS, LTD.

Gary Vlieg, M.Sc., P.Eng.,
Sr. Traffic Engineer

Attachments
APPENDIX A

Site Plan
APPENDIX B

Scope Development Meeting
A  **Study area limits and list of intersections to analyse**

- Site Access & Orwell Road;
- Old Lillooet Rd & Lillooet Rd
- Lillooet Rd & Mt. Seymour Parkway.

B  **Existing and future base road network in study area**

DNV advised that they have no scheduled geometrical and/or operational improvements to the intersection of Old Lillooet Rd & Lillooet Rd anticipated to occur within the next five (5) years.

CTS to contact MoTI to confirm that there no scheduled geometrical and/or operational changes to Mt Seymour Parkway at Lillooet Road.

C  **Relevant background material**

DNV to forward to CTS a copy of the existing signal timing sheet for the intersection of Lillooet Rd & Old Lillooet Rd.

CTS to contact MoTI to obtain current signal timing sheets for the signals at Lillooet Rd & Mt. Seymour Parkway.

D  **Anticipated future developments within study horizon that are above and beyond what can be assumed to be built into an annual traffic volume growth rate.**

MOTI and DNV to advise CTS if there are any likely projects nearby that will significantly impact future background volumes for the horizon years examined.

The DNV has planned to construct the fourth leg of the Lillooet Rd/Old Lillooet Rd intersection as a new access to Capilano University. At the five year horizon the study is to assume that this leg is complete and all CU traffic will use it. CU traffic to be estimated based on student population.

E  **Design Peak Hour of Analysis**

CTS to examine the weekday morning and afternoon peak hours.

F  **Horizon Years of Analysis**

CTS to examine the following years:

1. 2014 (i.e. existing base)
2. 2019 (future base)
3. 2019 (future base + site generated traffic)
G **Traffic Volume Growth Rate**

The growth rate is 2.5% annually (straight-line), based on the growth rate used in the Road Network Study (on DNV website) for Mt. Seymour Parkway at Lilooet Road.

H **Traffic Projection Methodology**

CTS to use current accepted traffic engineering practices for traffic projections and to document any assumptions in the report.

I **Trip Generation Methodology**

CTS proposes to use the vehicle trip generation rates from the Institute of Transportation Engineers (ITE) 9th edition.

J **Trip Distribution and Traffic Assignment Parameters**

CTS to use the measured travel patterns in the study area to develop trip distribution and traffic assignment parameters.

K **Traffic Engineering Methodology for Analysis**

CTS to use 2010 Highway Capacity Manual methodologies for all intersection capacity analysis. (HCS software for unsignalized intersections and Synchro for signalized intersections if applicable).

L **Engineering Standards**

CTS to propose to use MOTI standards (e.g. BC supplement to TAC) for Provincial roads and DNV standards for municipal roadways. The DNV standards are included as Appendices to the Development Services Bylaw. In addition the MMCD Platinum edition is also used.

M **Report Format**

CTS to submit the final report in a bound letter report format with appendices.

N **Number of Final Report Copies**

- District of North Vancouver (2 copies + pdf)
- Brody Development Group (1 copy + pdf)
- MOTI (2 copies + pdf)

O **Other Issues**

1. CTS to circulate draft report prior to issuance of the final report.
Project: #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment
Municipality: District of North Vancouver
Weather: 
Vehicle Class: All Motorized Vehicles

**Afternoon Peak Period**

**Peak Hour Traffic by Movement**

<table>
<thead>
<tr>
<th>Time</th>
<th>NORTH Approach</th>
<th>SOUTH Approach</th>
<th>WEST Approach</th>
<th>EAST Approach</th>
<th>PEDESTRIANS</th>
<th>Total Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>left</td>
<td>thru</td>
<td>right</td>
<td>left</td>
<td>thru</td>
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</tr>
<tr>
<td>PH Hour</td>
<td>0.90</td>
<td>0.91</td>
<td>0.75</td>
<td>0.93</td>
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<td>PH Factor</td>
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<td>Average Hour</td>
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<td>161</td>
<td>342</td>
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<td>Survey Total</td>
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<td>50</td>
<td>483</td>
<td>1,025</td>
<td>69</td>
<td>587</td>
</tr>
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</table>
### Peak Hour Traffic by Movement

**Lillooet Rd & Old Lillooet Rd**

**Project:** #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment

**Municipality:** North Vancouver

**Weather:**

**Vehicle Class:** Passenger Cars

**Afternoon Peak Period**

**Time** | **NORTH Approach** | **SOUTH Approach** | **WEST Approach** | **EAST Approach** | **PEDESTRIANS** | Total Volumes (Vehicles/PH Factor)**
---|---|---|---|---|---|---
**PH Hour** | left | thru | right | left | thru | right | left | thru | right | N | S | W | E | Total Volumes
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
**PH 15 X 4** | 0.84 | 0.81 | 0.75 | 0.93 | 0.75 | 0.85 | | | | 0.84 | 0.81 | 0.75 | 0.93 | 0.75 | 0.85 | 0.68 | 1,640
**Average Hour** | 543 | 161 | 341 | 23 | 196 | | | | | | | | | | | 1,280
**Survey Total** | 1,629 | 49 | 483 | 1,023 | 69 | 587 | | | | | | | | | | 3,840

**Time**

15:00 | 91 | 2 | 38 | 69 | 7 | 49 | | | | | | | | | | 256
15:15 | 64 | 2 | 40 | 79 | 9 | 41 | | | | | | | | | | 235
15:30 | 90 | 10 | 36 | 104 | 3 | 33 | | | | | | | | | | 276
15:45 | 164 | 4 | 29 | 114 | 9 | 40 | | | | | | | | | | 360
16:00 | 230 | 8 | 34 | 81 | 5 | 57 | | | | | | | | | | 415
16:15 | 126 | 2 | 35 | 70 | 3 | 32 | | | | | | | | | | 268
16:30 | 151 | 6 | 35 | 74 | 3 | 52 | | | | | | | | | | 321
16:45 | 139 | 4 | 38 | 83 | 4 | 58 | | | | | | | | | | 326
17:00 | 122 | 3 | 42 | 92 | 8 | 50 | | | | | | | | | | 317
17:15 | 188 | 4 | 39 | 97 | 7 | 48 | | | | | | | | | | 383
17:30 | 191 | 2 | 60 | 87 | 5 | 65 | | | | | | | | | | 410
17:45 | 73 | 2 | 57 | 73 | 6 | 62 | | | | | | | | | | 273
Project: #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment
Municipality: North Vancouver
Vehicle Class: Heavy Vehicles (3 or more axles)

Afternoon Peak Period

Peak Hour Traffic by Movement

<table>
<thead>
<tr>
<th>Time</th>
<th>NORTH Approach</th>
<th>SOUTH Approach</th>
<th>WEST Approach</th>
<th>EAST Approach</th>
<th>PEDESTRIANS</th>
<th>Total Volumes</th>
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</table>
Project: #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment
Municipality: North Vancouver
Vehicle Class: Bicycles

Note: Crosswalk bike volumes shown are cyclists who walked their bike and are not included in the pedestrian volume totals

### Peak Hour Traffic by Movement

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<th>BIKES in X-WALKS</th>
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Project: #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment
Municipality: District of North Vancouver
Weather: 
Vehicle Class: All Motorized Vehicles

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**Lilooet Rd & Mt Seymour Pkwy**  
*Tuesday, January 14, 2014*

**Project:** #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment  
**Municipality:** North Vancouver  
**Weather:**  
**Vehicle Class:** Bicycles  
**Note:** Crosswalk bike volumes shown are cyclists who walked their bike and are not included in the pedestrian volume totals

### Afternoon Peak Period

**Peak Hour Traffic by Movement**  
4:00 PM to 5:00 PM

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APPENDIX D

Intersection Capacity Analysis Worksheets
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### Volume (vph)

- **Lane Configurations:**

### Initial Split (s)

- **Minimum Split:**

### Detector Phase

- **Detector 1:**
  - Delay (s): 0.0, Extend (s): 0.0, Queue (s): 0.0, Type: Cl+Ex, Channel: 0.0, Position (m): 15.2, Size (m): 15.2

### Intersection Summary

- **Intersection Type:** Other
- **Cycle Length:** 154.1
- **Actuated Cycle Length:** 154.1
- **Offset:** 16.0
- **Natural Cycle:** 85
- **Control Type:** Actuated-Coordinated

### Analysis Period (min)

- **Intersection Signal Delay:** 27.2
- **Intersection LOS:** C
- **Headway Factor:** 0.99
- **Turning Speed (k/h):**

### Lanes, Volumes, Timings

- **3: Lilooet Rd & Mt Seymour Pkwy**

- **Timing Plan:** PM Peak Hour
- **Lanes, Volumes, Timings:** 2014 Base

### Splits and Phases

- **Splits:**
- **Phases:**
  - Minimum Initial (s): 10.0, Minimum Split (s): 10.0, Switch Phase: 8.0, Minimum Initial (s): 10.0, Minimum Split (s): 10.0, Switch Phase: 8.0

### Vehicle Traffic Impact Study

- **Synchro 8 Report:**
  - Page 1

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2014 Base: 12:00 pm 13/02/2014 5185 - Keith & Orwell Traffic Impact Study Synchro 8 Report Page 1

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2014 Base: 12:00 pm 13/02/2014 5185 - Keith & Orwell Traffic Impact Study Synchro 8 Report Page 2
### Lanes, Volumes, Timings

#### 3: Lillooet Rd & Mt Seymour Pkwy

#### 2019 Base + Site

**Timing Plan: PM Peak Hour**

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**2019 Base + Site 5185 - Keith & Orwell Traffic Impact Study**

**Synchro 8 Report**

**Page 1**
### Lanes, Volumes, Timings

#### 3: Lilooet Rd & Mt Seymour Pkwy

**Timing Plan: PM Peak Hour**

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### Lanes, Volumes, Timings 2014 Base

#### 6: Lilooet Rd & Old Lilooet Rd

**Timing Plan: PM Peak Hour**

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#### Area Type: Other

| Cycle Length | 99.6 |
| Actuated Cycle Length | 64.6 |
| Natural Cycle | 70 |

| Maximum v/c Ratio | 0.71 |
| Intersection Signal Delay | 14.1 |
| Intersection LOS | B |

### Intersection Summary

- **Actuation:** Actuated-Uncoordinated
- **Vehicle Extension (s):** None
- **Minimum Initial (s):** 7.0
- **Minimum Split (s):** 28.1
- **Recall Mode:** None
- **LOS:** C
- **Analysis Period (min):** 15

**Splits and Phases:**

- **6: Lilooet Rd & Old Lilooet Rd**

**Number of Detectors:** 1

**Detector Template:**

- **Leading:** 15.2
- **Trailing:** 0.0
- **Detector 1 Position:** 0.0
- **Detector 2 Sidewalk:** 15.2
- **Detector 1 Type:** CHEX
- **Detector 1 Channel:** CHEX
- **Detector 1 Rollout:** 0.0
- **Detector 2 Queue:** 0.0
- **Detector 2 Delay:** 0.0
- **Detector 3:** Prol
- **Protected:** 2
- **Protected Phases:**
- **Detector:** 4
- **Switch Phase:**

2014 Base 12:00 pm 13/03/2014 5185 - Keith & Orwell Traffic Impact Study

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**2014 Base 12:00 pm 13/02/2014 5185 - Keith & Orwell Traffic Impact Study**

Page 1

**Synchro 8 Report**

Page 2
### Lanes, Volumes, Timings 2019 Base + Site

#### 6: Lilooet Rd & Old Lilooet Rd

**Timing Plan: PM Peak Hour**

#### 2019 Base + Site

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#### Summary

- **Total Split (%)**: 38.3%
- **Maximum Green (s)**: 33.0
- **Yellow Time (s)**: 3.4
- **All-Red Time (s)**: 1.7
- **Lost Time Adjust (s)**: -1.1
- **Total Lost Time (s)**: 4.0
- **Lead/Lag Optimized?**: Yes
- **Intersection Summary**
  - Area Type: Other
  - Cycle Length: 99.6
  - Actuated Cycle Length: 64.9
  - Natural Cycle: 65
  - Control Type: Actuated-Uncoordinated
  - Minimum v/c Ratio: 0.71
  - Intersection Signal Delay: 14.4
  - Intersection LOS: B
  - Intersection Capacity Utilization: 64.7%
  - ICU Level of Service: C

#### Analysis Period (min) 15
Date: January 28, 2016
Our File No: 5453-01

BY EMAIL

Brody Development Group
1060 West 14th Street
North Vancouver, BC
V7P 3P3

Dear Ms. Brody:

Re: 858 Orwell Street Multi-Family Development – Traffic Assessment
District of North Vancouver, BC

CTS is pleased to submit this brief letter assessing the following:

1. That the findings for the approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street are applicable to the proposed twenty-three (23) unit multi-family development at 858 Orwell Street; and
2. That traffic calming measures proposed for Premier Street are appropriate.

1. TRAFFIC ASSESSMENT

858 Orwell Street – Traffic Impact

CTS staff conducted a review of the Traffic Impact Study for the approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street as well as made an assessment of the vehicle trips generated by the proposed twenty-three (23) unit multi-family development at 858 Orwell Street.

- Twenty-three (23) multi-family units are proposed for this location generating an additional 12 vehicle trips (8 inbound and 4 outbound) in the PM peak period. The approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street is expected to generate 17 vehicle trips (11 inbound and 6 outbound) in the PM peak period – the worst case scenario.

- Based on a site visit performed on Wednesday January 19, 2016 it was observed that there currently are no new vehicle trip generators in the area other than the proposed twenty-three (23) unit multi-family development at 858 Orwell Street.
Vehicle trips generated by both development sites, when added to the vehicle volumes at the two study intersections, Lillooet Road and Mount Seymour Parkway; and Lillooet Road and Old Lillooet Road, make up just 0.5% and 1.8% of the total intersection volumes respectively. These percentages are well within the expected day to day variance in intersection traffic volume.

A capacity analysis was performed and included the trips generated by the twenty-three (23) unit multi-family development at 858 Orwell Street. That analysis produced no change to the Level of Service at either study intersection.

Residential parking is available along both sides of Orwell Street. There is over 120 meters (17 cars) of public on-street parking in addition to the on-site parking proposed in the new development.

Premier Street – Traffic Calming

CTS staff reviewed and assessed the traffic calming measures proposed for Premier Street.

- Premier Street - to the east of Orwell Street - is a predominantly multi-family residential street with a park (Inter River Park) at its northern terminus. The street is posted at 40 km/h.
- There currently is a raised, signed and marked school crossing adjacent to 905 Premier Street. A second speed hump is proposed for Premier Street adjacent to 855 Premier Street approximately 100 meters to the south of the school crossing.
- As per the Transportation Association of Canada Guide to Neighbourhood Traffic Calming, speed humps should be spaced at an approximate 60 meter interval beginning 10 to 15 meters in from the intersecting street.
- Based on the Guide, three (3) speed humps would be required between Old Lillooet Road and the school crossing on Premier Street:
  - On the property line between 689 and 691 Premier Street adjacent to the lamp standard/power pole.
  - Just north of the access to 785-833 Premier Street.
  - On the property line between 855 and 873 Premier Street.
- Speed humps to be installed as per the District of North Vancouver standard.
2. CONCLUSIONS AND RECOMMENDATIONS

- The traffic impact by the proposed twenty-three (23) unit multi-family development at 858 Orwell Street is negligible.
- As of January 19, 2016 there is no other development ongoing in the area.
- The analysis within the Traffic Impact Study for the approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street is applicable to the proposed twenty-three (23) unit multi-family development at 858 Orwell Street.
- The traffic calming proposed by Brody Development Group on Premier Street should be located at the north property line of 873 Premier Street.
- Based on the Transportation Association of Canada Guide to Neighbourhood Traffic Calming, to maximize the effectiveness of the proposed traffic calming on Premier Street, two additional speed humps are required.

We would like to take this opportunity to thank you for this unique project and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments.

Yours truly,

CREATIVE TRANSPORTATION SOLUTIONS LTD.

Gary Vlieg, M.Sc., P.Eng.
Engineering Group Manager
The District of North Vancouver
INFORMATION REPORT TO COUNCIL

September 19, 2016
File: 16.8620.20/056.000

AUTHOR: Erica Geddes, Transportation Section Manager
Shazeen Tejani, Transportation Planning Technologist

SUBJECT: Inter-River Sub-area Transportation Study

REASON FOR REPORT:
This report is to inform Mayor and Council that the Inter-River sub-area Transportation Study is now available on the District's website.

BACKGROUND:
The transportation study is an administrative tool based on existing Council policy that will provide guidance to ongoing development in the Inter-River neighbourhood, between Lynn Creek and Premier Street, north of Highway 1. The study area is illustrated in the APPENDIX.

This process provided staff with an opportunity to plan for network improvements through development that improve redundancy, circulation, and permeability for people walking, bicycling, driving, and/or taking transit in this neighbourhood.

EXISTING POLICY:
This study was guided by key principles contained within Council-approved policies and documents as listed below:

- Official Community Plan (2011);
- Transportation Plan (2012);
- Pedestrian Master Plan (2009);
- Bicycle Master Plan (2012);
- Road Network Study (2011); and
- Parks and Open Space Strategic Plan (2012).

ANALYSIS:

Timing/Approval Process:
The timing of this study allows for key recommendations and improvements to be implemented with development.

Document Number: 2994266
Public Input:
As part of the planning process, external stakeholders including neighbourhood representatives were engaged to provide input on goals, assumptions, criteria and key recommendations.

Staff intend to review the work to date with representatives of the Inter-River Community Association on September 29th, 2016. Staff would discuss the study findings and recommendations, answer questions, and collect community feedback.

Conclusion:
The Inter-River Sub-area Transportation Study engaged a range of stakeholders to inform key recommendations for improved connectivity in the Inter-River neighbourhood.

The study is available on the District's website on the 'Transportation Plan' web page under 'Related Documents'.

Respectfully submitted,

Erica Geddes
Transportation Section Manager

Shazeen Tejani
Transportation Planning Technologist
APPENDIX – STUDY AREA
(outlined in blue dashed line)
Inter-River Sub-Area Transportation Study

August, 2016
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EXECUTIVE SUMMARY

STUDY PURPOSE

Recent development interest and design work on the Ministry of Transportation and Infrastructure (MOTI)’s nearby Highway 1 Lillooet Interchange Improvement Project has prompted District staff to reconsider the transportation network in the Inter-River neighbourhood. These recent initiatives have provided the District of North Vancouver (District) with an opportunity to develop a plan that provides a network that addresses redundancy, circulation, and permeability for people walking, bicycling, driving, or taking transit in this neighbourhood.

The study provides an overview of the range of options considered and provides recommendations that address the study’s goals.

METHODS

Using feedback obtained from stakeholder groups consulted, District staff developed a range of potential options to serve the collective goals and needs for the area. Each option was evaluated as a segment using a set of refined criteria designed to help achieve the study’s objectives. Options were formulated to improve the network with key study goals in mind, as found in the green box to the right.

RECOMMENDATIONS

New connections identified through the planning process include facilities for people walking, biking and driving and will be local streets that will carry relatively low volumes of vehicular traffic (less than 1,500 vehicles per day).

The following new connections are recommended:

- St. Denis Avenue to Forsman Avenue (south of Lynnmour Elementary School);
- Forsman Avenue to Orwell Street (proximate to the south of Lynnmour Elementary School); and
- St. Denis Avenue to Orwell Street (proximate to the north of Lynnmour Elementary School).

ADDITIONAL RECOMMENDATIONS

- Continue to meet the needs of people who walk and cycle to and through the sub area by enhancing and/or formalizing informal trails throughout the site;
• Enhance the existing pathway from Premier Street to Orwell Street, south of ‘Digger Park’ and dedicate space for a utility corridor;
• Support a Drive-to-Five program to encourage physical activity to and from school; and
• Improve circulation for pick-up and drop-off at Lynnmour Elementary.

**FIGURE I:** Summary map of proposed connections.

**NOTE:** Proposed connections are consolidated for convenience purposes only. Each connection may be implemented individually or collectively. Exact alignment is subject to further study.

**LIMITATIONS OF THE STUDY**

The study recognizes that due to adjacent unknowns, the timing of each individual segment will vary. While some segments may be realized through development, other segments may be completed in conjunction with District initiatives. Although new connections have been identified, further study is required to determine the exact alignment of each connection. Lastly, each segment is contingent upon successful partnerships with the stakeholders in this community.
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I. STUDY PURPOSE

In recent months, the District of North Vancouver (District) has received notice of further development interest in the Inter-River neighbourhood. It is timely to consider opportunities to improve the transportation network in the neighbourhood since options for providing additional connection(s) may become limited as redevelopment proceeds. Occurring simultaneously, recent design work being undertaken by the Ministry of Transportation and Infrastructure (MOTI) on the nearby Highway 1 Lillooet Interchange is expected to have an impact on the existing road network.

II. CONTEXT

a. LOCAL CONTEXT

The Inter-River sub-area is defined as being north of Highway 1, east of Lynn Creek, south of Inter-River Park and west of Premier Street, as shown in Figure 1 below. This sub-area has been undergoing re-development characterized primarily from low-density single family to newer low density multi-family housing. Ongoing guidance for change in the area has been in accordance with the 2011 Official Community Plan and the 2006 Lynnmour/Inter-River Local Plan.
b. **KEY DESTINATIONS**

The Inter-River sub-area is within close proximity to a range of destinations and amenities, as shown above in Figure 1. Lynnmour Elementary is at the heart of the sub-area, with the fire training centre and Inter-River Park located just north of the school. The southern portion of the park, known locally as ‘Digger Park’, is characterized by play structures and picnic tables. The northern and western portions of Inter-River Park consist of a series of recreational trails, an off-leash dog park, a bike skills park, and sports fields, which often host sports tournaments. Traffic generated by tournaments in the park are encouraged to enter and leave from the park’s main access on Lillooet Road. People driving to the lower fields can either enter from the park’s main entrance on Lillooet Road or from Premier Street.

One of the key destinations within this sub-area is Lynnmour Elementary School, serving a catchment area of families generally residing between Lynn Creek and Seymour River, as far north as Lynnmour North and as far south as Lynnmour South. It also serves families east of Seymour River toward the Maplewood Conservation Area and south of Mount Seymour Parkway. The school’s primary pick-up and drop-off is located at the end of Forsman Avenue, with people walking, cycling, driving, and taking transit to access the school. Circulation is poor for parents who drive to this primary entrance on Forsman Avenue, with minimal space to turn around at the end of the street for travel back to E Keith Road.

Outside of the sub-area boundaries, residents have access to Real Canadian Superstore, Capilano University and the Lynn Creek Town Centre. Phibbs Exchange, the key transit hub in North Vancouver, is located approximately 1.5 kilometres south, or a 15 minute walk from Lynnmour Elementary School. Residents maintain access to these amenities by either by foot, bicycle, transit or vehicle.

c. **EXISTING PEDESTRIAN, CYCLING, TRANSIT & VEHICULAR NETWORK**

Passage to and through the Inter-River sub-area from the south can be accessed by foot or bicycle using a highway underpass south of East Keith Road and St. Denis Avenue (see Figure 1). People cycling and walking often travel up St. Denis Avenue through the park and further north, or east along East Keith Road to other destinations.

Several informal east-west pathways exist for people walking and cycling from St. Denis Avenue to Premier Street and from Premier Street to internal street networks off of Lillooet Road (see Figure 2 below). Students of Lynnmour Elementary often access ‘Digger Park’ using an informal path behind the school’s gravel field, while all other users access ‘Digger Park’ either from Orwell Street or along the informal powerline trail that runs between St. Denis Avenue and Premier Street. Dog walkers often access the off-leash dog park from St. Denis Avenue or through the park’s internal network.

In 2009, Council endorsed the Spirit Trail Route Planning Report. The Spirit Trail is envisioned as a 35-kilometre long, accessible, lowing trail that will link Horseshoe Bay and Deep Cove. In June of 2016, Council indicated general agreement with a route that would travel north through Seylynn Park and along E Keith Road before moving onto Mount Seymour Parkway, as shown in Figure 2 below.
There are currently two bus stops within walking distance on the eastern side of the site (see Figure 2 above). The stop located on Old Lillooet Road services route 239 to Capilano University, while the stop located on Lillooet Road at Mount Seymour Parkway (west side) services routes 239 and 255 to Park Royal and Dundarave via Capilano University respectively. The stop on the east side of Lillooet Road services the 255 route to Dundarave. Access to the bus stop on Lillooet Road is taken from south of the site along the road to the Highway 1 Westbound off-ramp or through the Holiday Inn parking lot.

The existing street network in the sub-area is comprised of mostly north-south public roads, with the exception of East Keith Road and Old Lillooet Road. This street configuration does not provide any redundancy\(^1\) for vehicles trying to access key destinations and residences on St Denis Avenue, Forsman Avenue, Orwell Street, and Premier Street, providing only one access in and out within the sub-area. Minimal connectivity with the surrounding street network limits access into the sub-area from Old Lillooet Road and the E Keith Road ramp.

c. **EXISTING GUIDING POLICY**

Key goals and recommendations from this study received general direction from Council-approved documents that outline overarching District priorities. The following policies and documents were used to inform the parameters of this study:

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\(^1\) ‘Redundancy’ – refers to the provision of alternative access in and out of a street (i.e. two ways in and out of a street)
• **Official Community Plan (OCP) (2011)** aims to increase the mode share of walking and cycling by 2020.

• **Zoning Bylaws** provide information on existing and intended land uses for the Inter-River sub-area and District as a whole.

• **Form & Character Development Permit Area (DPA) Guidelines** are contained within Schedule B of the 2011 OCP and address the need for improved pedestrian connectivity through and around developments.

• **Transportation Plan (2012)** outlines the need to manage the existing road network to optimize safety and efficiency, while ensuring the integration of sustainable travel modes into the system.

• **Pedestrian Master Plan (2009)** emphasizes a need to provide a well-connected network of pedestrian facilities to encourage active modes of travel throughout the District.

• **Bicycle Master Plan (2012)** identifies one of its key goals as establishing a bicycle network that strengthens community connections and improves safety. Additional supporting goals and objectives include: promoting cycling as a key part of a sustainable transportation system and making all municipal streets more appealing to cyclists in addition to accommodating pedestrians and vehicles.

• **Road Network Study (2011)** addresses the need to identify opportunities for roadway reconfiguration to accommodate other modes and points to the benefits in circulation when improvements to road networks are effective.
III. ASSUMPTIONS

The following assumptions provide parameters for this study. These assumptions are guided by Council approved documents like the Official Community Plan and Zoning Bylaw, where applicable. Due to adjacent uncertainties with regard to existing land uses and ongoing development, these assumptions allow District staff to plan for network improvements under the following conditions:

- **St. Denis**
  Due to ongoing MOTI work on the Lillooet Highway Interchange, it is assumed that access to St. Denis Avenue would no longer be provided from E. Keith Road, as per preliminary highway improvement designs.

- **Lynnmour Elementary School**
  It is assumed that Lynnmour Elementary School would remain open and on this site.

- **Fire Training Centre**
  It is assumed that access to the fire training centre site would continue to be provided.

- **Park Access**
  It is assumed that primary access to Inter-River Park would continue to be from Lillooet Road.

- **Property Access**
  It is assumed that access to all properties must be maintained.

- **Existing Pedestrian and Cycling Commuter Routes**
  It is assumed that existing commuter and recreational routes that go through and to the Inter-River neighbourhood would be maintained and/or enhanced where appropriate.

- **Additional Connections**
  It is assumed that staff will continue to look for viable proximate connection options as opportunities arise and where such connections provide increased benefit to the community.
IV. STUDY GOALS

The following goals have been developed to guide the study. These goals have been reviewed and refined using feedback and input from internal and external stakeholders:

- Provide safe and efficient access to all key destinations within and outside of the neighbourhood;
- Minimize neighbourhood traffic impacts and improve livability;
- Provide secondary access where feasible to provide the following: redundancy, better circulation, better emergency access and ability to disperse vehicle traffic;
- Further develop formal and informal walking and cycling networks;
- Provide improved safety and connectivity of commuter and recreational routes as well as trail networks;
- Preserve and enhance existing natural areas;
- Provide alternative access to St. Denis Avenue; and
- Provide flexibility with ongoing development and highway interchange design work.
V.  RECOMMENDATIONS

The following recommendations were based on discussions with stakeholders and meet the goals of the study.

NOTE: The alignments shown are schematic. Exact alignments for the proposed connections below are subject to additional detailed review. Each option has been evaluated individually due to timing and phasing, but can be implemented in isolation or together.

a.  ROAD CONNECTIONS

Connections identified in this section include facilities for people walking, biking and driving. The road connections are classified as a local street and generally carry lower volumes of vehicular traffic. The form of the road connection should be designed to reflect the classification and volume. Conceptual road configurations as shown in Figures 3 and 4 may be considered.

FIGURE 3: Olympic Village, Vancouver

FIGURE 4: Henry Hudson Elementary School, Kitsilano
Connection A: St. Denis Avenue – Forsman Avenue

- **Purpose**: Provides direct access to St. Denis Avenue from E. Keith Road.
- **Benefit**
  - Provides users with options for accessing St. Denis Avenue; and
  - Can occur independently or in conjunction with other proposed segments.
- **Impact**
  - Depending on final alignment, school and assembled properties would need to accommodate the new connection.
- **Timing**: Would coincide with development of residential housing south of the proposed connection and/or renewal of the school.
- **Collaboration**: School District 44, residents and developers.

---

**FIGURE 5:** St. Denis Avenue to Forsman Avenue Segment
Connection B: Forsman Avenue – Orwell Street

- **Purpose:** Provides redundancy to the road network, specifically to Forsman Avenue.
- **Benefit:**
  - Provides users with options for accessing the school (and to St. Denis Avenue if connected).
- **Impact:**
  - Requires coordination between the school and DNV to develop the segment.
- **Timing:** Would occur when the school renews.
- **Collaboration:** School District 44 and residents.

**FIGURE 6:** Forsman Avenue to Orwell Street
Connection C: St. Denis Avenue – Orwell Street

- **Purpose:** Provides access and/or redundancy to St. Denis Avenue users and fire training site.
- **Benefit**
  - Provides users with options for accessing St. Denis Avenue and Orwell Street;
  - In conjunction with the southern connection, enables ease of traffic flow through the site for parents picking up/dropping off their child(ren) at school while minimizing impact on residents along Forsman Avenue;
  - If the fire training site is redeveloped per the land-use zoning designation, this connection may provide a more direct access to the site; and
  - Can occur independently or in conjunction with other proposed segments.
- **Impact**
  - Would intersect the existing informal pathway that exists between Lynnmour Elementary School and ‘Digger Park’; and
  - Would require DNV to purchase property located at the northern end of Orwell Street or from the school district.
- **Timing:** Would occur when the DNV is able to acquire property.
- **Collaboration:** School District 44, Fire Training Centre site operators and residents.

**FIGURE 7:** St. Denis Avenue to Orwell Street
b. WALKING & BICYCLING CONNECTIONS

Connection D: Maintain and Improve Existing Walking and Cycling Connections

- **Purpose:** To continue to meet the needs of people who walk and cycle to and through the sub-area.
- **Benefit:**
  - Allows users to use existing routes for recreational and commuter purposes; and
  - Encourages continued active travel through the site;
  - Encourages linkages with the proposed Spirit Trail route, which provides an important East-West connection through the District of North Vancouver and other North Shore Municipalities
- **Impact:** Minimal/none.
- **Timing:** As opportunities arise.
- **Collaboration:** Residents.

![Figure 8: Pathway on Cardero Street, West End](image)

![Figure 9: Pathway on Guildford Street, West End](image)

![Figure 10: Trails and Pathways](image)
c. ADDITIONAL RECOMMENDATIONS: OTHER ELEMENTS

Enhanced Pathway & Utility Corridor

- Purpose: To ensure space is available for pathway enhancements and to reserve additional land required for a utility corridor.
- Benefit:
  - Provides an improved walking space for pedestrians and users of ‘Digger Park’;
  - Provides additional space for those who walk, cycle and require mobility aids with minimal competition for space; and
  - Provides the required space for maintaining and storing underground utilities.
- Impact: Minimal/none.
- Timing: Space to be reserved immediately, with enhancement occurring when opportunities arise.
- Collaboration: Residents.

FIGURE 11: Enhanced Pathway & Utility Corridor
Support Drive-to-Five Program

- **Purpose:** This program is aimed at encouraging students to use more active modes of travel to school. Parents are encouraged to drop their children off a five-minute walk away from school, allowing students to get physical exercise and to learn how to become more safe and aware as pedestrians.

- **Benefit:**
  - Encourages parents and students to incorporate limited physical activity to and from school; and
  - Reduces traffic in and around the school drop-off/pick-up zone.

- **Impact:** Minimal/none.

- **Timing:** Would be contingent upon interest of the Parent Advisory Committee (PAC) to work on this issue.

- **Collaboration:** PAC possibly in collaboration with local businesses.

*FIGURE 12: Drive-to-Five Walking Distances*
**Lynnmour Elementary Internal Circulation**

- **Purpose:** Improve circulation of parents dropping off and picking up students during peak times.
- **Benefit:**
  - Improves neighbourhood livability for nearby residents; and
  - Allows for efficient and safe circulation near the school.
- **Impact:** May impact site design for the school’s future development.
- **Timing:** When the school renews.
- **Collaboration:** School District 44, PAC, students, residents.

![Figure 13: Example of Internal Circulation: Highlands Elementary School](image)

**Figure 13:** Example of Internal Circulation: Highlands Elementary School

![Figure 14: Example of Internal Circulation: Highlands Elementary School](image)

**Figure 14:** Example of Internal Circulation: Highlands Elementary School
d. **ADDITIONAL RECOMMENDATIONS: OUTSIDE STUDY AREA**

**Formalize Walking and Pedestrian Connections between Lillooet Road and Premier Street**

- **Purpose:** Provides formal indication of a trail from Lillooet Road to Premier Street.
- **Benefit**
  - Provides improved access from Premier Street to Lillooet Road for users trying to access the transit stop on Lillooet Road;
  - Provides improved access for students walking to Lynnmour Elementary School from the east; and
  - Formalizes an already existing informal route through a residential complex to serve the greater neighbourhood, as well as the complex’s residents, using wayfinding signage.
- **Impact**
  - Some residents may not support users from neighbouring areas using a path through private development.
- **Timing:** As opportunities arise.
- **Collaboration:** School District 44, Edgewater Estate residents and property managers, and Lynnmour West residents and property managers.

**Vehicle Connection from Lillooet Road to Premier Street**

- **Purpose:** Provides access and redundancy for Premier Street and the neighbourhood.
- **Benefit**
  - Currently, there are two ways into the neighbourhood and one way out. This segment provides improved redundancy and egress from the site.
- **Impact**
  - Would be designed with redevelopment to have a minimal impact to future residents.
  - Further studies need to be completed to determine alignment with grade and development.
- **Timing:** Would occur if and when the existing developments between Lillooet Road and Premier Street redevelop. (possible 10-20 year timeframe)
- **Collaboration:** Edgewater Estate residents and property managers, Lynnmour West Estate residents and property managers, future developers.
V. LIMITATIONS

The study recognizes that due to adjacent unknowns, the timing of each individual segment will vary. While some segments may be recognized through development, others can be completed in conjunction with District initiatives (i.e. property acquisition). Although specific segments have been identified, further study is required to determine the exact alignment of each connection. The proposed connections outlined in this Study are intended solely to show through connections in a general area. Lastly, each segment is contingent upon successful partnerships with stakeholders in this community. Ensuring that local residents and development interests have an opportunity to influence positive changes in this community is a priority.

VI. CONCLUSION

As communities in the District continue to grow and densify, the existing street network needs to advance in order to meet current and future needs for improved access and redundancy. Due to development interest in the Inter-River neighbourhood, the District has identified key opportunities to improve the quality of life of its existing and future residents.

The District recognizes that streets in the Inter-River sub-area should be designed to ensure that they are safe, comfortable, and welcoming for all users, including people walking, cycling, driving or taking transit. New streets that are introduced into the area need to be sensitive to the existing neighbourhood, and should reflect the other local streets. In addition, the new connections need to improve vehicular access through the site as well as increase permeability and access for all users.

In order to reflect the interests of the neighbourhood’s residents, the District further recognizes the need to maintain the neighbourhood character in all improvements to the existing network. This work will be done in consultation with local residents and developers to ensure key stakeholders are involved throughout this process.

The proposed recommendations require further studies to determine the most appropriate and cost effective alignment with the least impact to current residents. The proposed connections identified in this report were developed using stakeholder feedback. Each connection serves the purpose of improving circulation and redundancy in the neighbourhood, while providing required access to St. Denis Avenue.

These proposed connections, whether taken individually or collectively, serve to create a more complete and finer grained network in the neighbourhood. These connections intend to address a range of ongoing transportation related issues and help improve the quality of life of local residents, school-goers, and recreational trail users in the Inter-River sub-area.
APPENDIX
Planning Process

As part of the transportation review process, District staff consulted a total of 12 internal and external stakeholders, listed below in Table 1. Stakeholders from group #1 were chosen from internal departments to provide input on ongoing issues in the neighbourhood. Stakeholders from group #2 were chosen to represent the varying interests in the neighbourhood.

TABLE 1: Stakeholder Consultation Groups

<table>
<thead>
<tr>
<th>Stakeholder Group #1</th>
<th>Stakeholder Group #2</th>
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<tbody>
<tr>
<td>Engineering</td>
<td>Fire</td>
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<tr>
<td>Environment</td>
<td>Neighbourhood Representatives (2)</td>
</tr>
<tr>
<td>Parks (2)</td>
<td>School District #44</td>
</tr>
<tr>
<td>Planning</td>
<td>Transportation Consultation Committee</td>
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<tr>
<td>Public Safety</td>
<td>Vancouver Coastal Health</td>
</tr>
</tbody>
</table>

In the first set of meetings, stakeholders were requested to review the goals, assumptions, and criteria used to evaluate the options proposed for the study area. Stakeholders were also asked to collectively identify opportunities and barriers with the existing transportation network. Stakeholder input also played a key role in refining criteria to meet the needs of all representatives and identifying key priorities in the neighbourhood.

District staff reviewed the feedback and input of both stakeholder groups and worked to develop potential transportation options that best met the goals outlined for the study. These options were evaluated to determine the highest-ranking options. The criteria included below were used to evaluate a total of seven options.
<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria Description</th>
<th>Rating</th>
<th>Option 1a</th>
<th>Option 1b</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4a</th>
<th>Option 4b</th>
<th>Option 5</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Public Safety</td>
<td>• Improves safety for all users walking, cycling and driving.</td>
<td>●</td>
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<td>• Minor or no impact on safety for all users walking, cycling and driving.</td>
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<td></td>
<td>• Reduced safety for all users walking, cycling and driving.</td>
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<td></td>
<td>• Improves ease of access for emergencies throughout whole site.</td>
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<td></td>
<td>• Improves ease of access for emergencies to part of the site.</td>
<td>●</td>
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<td>• Does not improve ease of access for emergencies for most of the site.</td>
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<td>Mobility and Connectivity</td>
<td>• Improves access and circulation of all modes</td>
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<td></td>
<td>• Has a minimal impact on access and circulation of all modes.</td>
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<tr>
<td>Natural Areas</td>
<td>• Provides improved access for all users to key destinations (e.g. natural areas, school etc).</td>
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<td></td>
<td>• Provides improved access for only some users to key destinations (e.g. natural areas, school etc).</td>
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<td></td>
<td>• Reduces ease of access for all users to key destinations (e.g. natural areas, school etc)</td>
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<td>• No impact on parkland/natural areas.</td>
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<td>• Minimal impact on parkland/natural areas.</td>
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<td>• Negative impact on parkland/natural areas.</td>
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<td>Livability</td>
<td>• Positively enhances neighbourhood livability.</td>
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<td>• Has minimal to no impact on neighbourhood liveability.</td>
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<td>• Negatively impacts neighbourhood livability.</td>
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The second set of stakeholder meetings was used to confirm the revised goals and assumptions. District staff shared draft options and draft recommendations informed by an evaluation of each option. Stakeholders provided feedback on the preferred set of transportation improvements in the neighbourhood. The options that best reflect stakeholder input and analysis completed by staff are summarized in Chapter V: Recommendations. In September, 2016, District staff consulted the Inter-River Community Association with proposed recommendations. The results and minutes of this consultation are provided in Appendix C.

**TABLE 2: Evaluation Criteria**

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria Description</th>
<th>Rating</th>
<th>Option 1a</th>
<th>Option 1b</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4a</th>
<th>Option 4b</th>
<th>Option 5</th>
<th>Comments</th>
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<tr>
<td>Costs</td>
<td>• The cost of implementation is low.</td>
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<td>• The cost of implementation is medium.</td>
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<td>• The cost of implementation is high.</td>
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<td>Private Interests</td>
<td>• Has a positive impact on existing landowners and/or the development potential of land.</td>
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<td></td>
<td>• Has a neutral impact existing landowners and/or the development potential of land.</td>
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<td></td>
<td>• Has a negative impact on existing landowners and/or the development potential of land.</td>
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APPENDIX B: METHODOLOGY
Options for Consideration

Using stakeholder feedback as the foundation for further analysis, District staff developed a range of potential options to serve the goals and needs for the area. Each option was evaluated as a segment, with the understanding that combined options would serve to better improve the network as a whole. Staff presented options with two key objectives in mind:

1. Better connect and improve the existing network for current and future transportation needs; and
2. Provide required access to St. Denis Avenue.

The range of proposed options considered for further analysis and evaluation are shown below in Figure 15. These options are intended to delineate a general location for a proposed east-west connection. Further details on the exact alignment will need to be discussed with relevant property owners and upon Council’s direction.

Although the options presented in Figure 15 serve the purpose of providing vehicular access, the District supports creating streets that are safe for all users that walk, cycle, use transit, and drive to and through the site. Stakeholder feedback further highlighted the need to maintain and enhance existing formal and informal walking and cycling routes through the site. This study does not aim to detract from the existing walking and cycling network, but rather aims to highlight opportunities that improve the range of options for accessing various destinations in and adjacent to the sub-area.
EVALUATION

VEHICLE ACCESS

Stakeholders were asked to consider each option individually to determine which options best served the most needs in the neighbourhood. Although this study assumes Lynnmour Elementary School will remain open on site, the School Facilities Plan highlights the possibility that Lynnmour Elementary School may renew. The District believes access should be maintained, as a decision on its final location, whether on- or off-site, is still undecided.

Using the goals and assumptions as parameters for this study, stakeholders generally agreed with the following:
• Option 1b plays a key role in providing improved circulation and access to the school’s existing entrance, should the school remain in its current location. Combining option 1a is a logical connection through to St. Denis Avenue;
• A combination of options 1a and 1b with 2 will provide a similar connection to 4a and 4b with less impact on the park;
• Option 4b is a favourable option but, option 4a will have an impact on the southern portion of Inter-River Park, otherwise known as ‘Digger Park’;
• Options 3 and 5 have minimal support due to their impact on existing parkland and their minimal impact to overall network improvement; and

The meeting minutes that document the discussion can be found in Appendix C.

District staff used the feedback collected from both sets of stakeholder meetings to refine the options and present the most widely recommended ‘scenarios’. These scenarios are presented in Chapter V: Recommendations.

Scenarios that provided redundancy within the street network and improved circulation were ranked more favourably than those that had fewer overall benefits to the network. Scenarios that had the biggest impact to Inter-River Park and to existing development were not ranked favourably amongst stakeholders.

The highest ranking scenario from this evaluation was Scenario 4, which recommends a combination of options 1a, 1b, 2 and 4b. This scenario was preferred because it provides redundancy for access to St. Denis road while providing improved circulation and additional alternatives into/out the site. Option 2 provides a second option for users into and out of the sub-area by providing access via Premier Street or Orwell Street, and has a lower impact on the park than option 4a. It was however recognized that option 2 would place greater pressure on existing traffic patterns along Premier St. Option 2 was subsequently removed from the final recommendations.

A range of additional transportation needs were highlighted by stakeholders during the consultation process. These needs were not highlighted in any of the presented scenarios, but are addressed below.

PEDESTRIAN, CYCLING, AND TRANSIT ACCESS

Maintain and Enhance Existing Pedestrian and Cycling Commuter and Recreational Networks

• Stakeholders highlighted the importance of formal and informal pedestrian and cycling trails that travel to and through the site.
• Commuter and recreational trails that run through the site should be maintained to provide opportunities for active travel.

Improved Connections to Transit

• Stakeholders identified barriers to accessing the existing transit stops located southeast of the sub-area on Old Lilooet Road and Lilooet Road.
• District staff recommend exploring opportunities to put in more formalized paths that provide improved access to the existing bus stop locations.
• Stakeholders also identified opportunities to improve transit stop infrastructure for all abilities and for all weather conditions.

**SCHOOL CONGESTION**

**Drive to Five Program**

• The intent of Drive-to-Five programs is to provide locations where parents can park approximately a 5 minute walk away from school and encourage their children to engage in active modes to school.
• Stakeholders requested that opportunities for Drive-to-Five locations at existing parking lots in the adjacent area be explored.
• The Holiday Inn parking lot or existing Ministry land were recommended as two potential locations for this use.
• The District recommends that the Lynnmour Elementary PAC work with the local businesses to identify potential locations for short term-parking in support of Drive-to-Five.

**ADDITIONAL CONSIDERATIONS**

**PROPERTY ACQUISITION**

• The District understands that as part of this transportation review, network improvements will likely be timed with redevelopment opportunities. Where redevelopment opportunities do not exist, the District would need to consider acquiring properties to help create a complete network.
TABLE 3: Evaluation of Options

<table>
<thead>
<tr>
<th>Criteria Description</th>
<th>Rating</th>
<th>Option 1a</th>
<th>Option 1b</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4a</th>
<th>Option 4b</th>
<th>Option 5</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Public Safety</td>
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<td>• Improves safety for all users walking, cycling and driving.</td>
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<td>• Minor or no impact on safety for all users walking, cycling and driving.</td>
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<td>• Reduced safety for all users walking, cycling and driving.</td>
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<td>• All options being considered will be low-volume, low-speed streets, and will therefore have reasonably safe traveling conditions.</td>
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<td>• None of the options ‘reduce’ safety however, Options 3-5 present more opportunity for conflicts between users than Options 1-2.</td>
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<td>• Improves ease of access for emergencies throughout whole site.</td>
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<td>• Improves ease of access for emergencies to part of the site.</td>
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<td>• Does not improve ease of access for emergencies for most of the site.</td>
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<td>• Options 1a &amp;1b collectively provide the best access and circulation for emergency vehicles through the site.</td>
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<td>• Option 2 as well as 4a &amp; 4b collectively also provide good access and circulation but may not be the most efficient route for emergency access.</td>
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<td>• Option 3 and 5 provide access for emergency vehicles but provide the least circulation and efficiency of travel through the site.</td>
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<td>Mobility and Connectivity</td>
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<td>• Provides required access to St. Denis</td>
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<td>• Providing access to St. Denis is a required component of this study.</td>
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<td>• At a minimum, the chosen scenario must include an option that provides this required access.</td>
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<td>• Improves access and circulation of all modes</td>
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<td>• Has a minimal impact on access and circulation of all modes.</td>
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<td>• Reduces ease of access and circulation of all modes</td>
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<td>• All options, with the exception of 1b, provide access and connectivity to other streets but do not provide improved circulation.</td>
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<td>• Option 1b improves both access and ease of circulation for all modes as well for parents dropping off/picking up children at school.</td>
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<td>Mobility and Connectivity</td>
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<td>• Provides improved access for all users to key destinations (e.g. natural areas, school etc).</td>
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<td>• Provides improved access for only some users to key destinations (e.g. natural areas, school etc).</td>
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<td>• Reduces ease of access for all users to key destinations (e.g. natural areas, school etc).</td>
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<td>• This criterion is not an effective indicator.</td>
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<td>Natural Areas</td>
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<td>• No impact on parkland/natural areas.</td>
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<td>• Minimal impact on parkland/natural areas.</td>
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<td>• Negative impact on parkland/natural areas.</td>
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<td>• Option 1 a/b and 2 do not impact parkland or natural areas.</td>
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<td>• Option Options 3 and 4a/b would require removal of some park trees.</td>
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<td>• Option 5 would impact the Riverine Forest.</td>
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<td>Category</td>
<td>Criteria Description</td>
<td>Rating</td>
<td>Option 1a</td>
<td>Option 1b</td>
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<td>Option 4a</td>
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| Livability          | • Positively enhances neighbourhood livability.                                                                                                                                                                         |        |           |           |           |           |           |           |           | • Options 1a and 1b provide improved circulation and flow of traffic for school pick-up/drop-off  
  • Option 2 would divert traffic from any new development onto Premier St and negatively impact residents who take access off of Premier St.  
  • Options 3 and 4b provide no benefit to the community.  
  • Options 4a and 5 would have an impact on the park and the quality of the park as a public space.                                                                                          |
|                     | • Has minimal to no impact on neighbourhood liveability.                                                                                                                                                               |        |           |           |           |           |           |           |           |                                                                                              |
|                     | • Negatively impacts neighbourhood livability.                                                                                                                                                                         |        |           |           |           |           |           |           |           |                                                                                              |
| Costs               | • The cost of implementation is low.                                                                                                                                                                                |        |           |           |           |           |           |           |           | • The cost of implementing options 1-2 are considered low because of the narrow road widths and no impact to utilities.  
  • Options 3-4 are considered high because of utility costs and the length of the segment.  
  • Option 5 would be costly due to the length of the segment.                                                                                           |
|                     | • The cost of implementation is medium.                                                                                                                                                                          |        |           |           |           |           |           |           |           |                                                                                              |
|                     | • The cost of implementation is high.                                                                                                                                                                              |        |           |           |           |           |           |           |           |                                                                                              |
| Private Interests   | • Has a positive impact on existing landowners and/or the development potential of land.                                                                                                                                 |        |           |           |           |           |           |           |           | • Options 1a & 2 may impact the size of developable land.  
  • Option 1b may have a minor impact depending on size and location of public meeting place/square.  
  • Option 4a would have a negative impact on existing landowners.  
  • Option 5 would impact existing landowners and may have an impact if properties were redeveloped.                                                                                               |
|                     | • Has a neutral impact existing landowners and/or the development potential of land.                                                                                                                                  |        |           |           |           |           |           |           |           |                                                                                              |
|                     | • Has a negative impact on existing landowners and/or the development potential of land.                                                                                                                                |        |           |           |           |           |           |           |           |                                                                                              |
APPENDIX C: MEETING MINUTES & ATTACHMENTS
NOTE: A total of four meetings were held with internal and external stakeholders. All participants were given the same reference material, consisting of the study area map, study goals, assumptions, and criteria for evaluation. These study components were refined using stakeholder feedback and are presented in this report to provide context for the proposed recommendations.

Inter-River Sub-area Transportation Study

District of North Vancouver
Stakeholder Meeting #1a
Meeting Minutes & Attachments

Held at: Municipal Hall - Meeting Room ‘C’

Date/Time: May 17th at 2:00 pm Adjourned: 3:05 pm

Attended By:
Douglas Rose – Parks
Fiona Dercole – Public Safety
Pouya Behzadi – Engineering
Richard Boase – Environment
Susan Rogers – Parks
Tamsin Guppy – Planning
Ingrid Weisenbach - Transportation
Shazeen Tejani – Transportation

Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:
1) Introductions
2) Review Study Purpose
3) Discussion of Goals, Assumptions, Criteria
4) Existing Conditions & Issues
5) Wrap-Up & Next Steps

❖ REVIEW STUDY PURPOSE
• Weisenbach spoke about the purpose of the transportation study, which included a need to clarify the transportation needs for this area in advance of future development proposals.
• The boundaries of the study area were discussed. Weisenbach went over the study area and the tight timeframe. Group discussed that the boundary may not be an exact line as the study should also consider users that pass through the study area or people within the neighbourhood that need to access key destinations outside the study area.
DISCUSSION OF ASSUMPTIONS, GOALS & CRITERIA

• Assumptions
  ▪ Weisenbach shared the draft assumptions with the group.
  ▪ The group discussed the assumptions and provided additional suggestions that should be considered: a) park access, b) property access and c) commuter routes and active travel networks.

• Goals
  ▪ Weisenbach shared the draft goals and asked for feedback.
  ▪ Group suggested adding in goals that addressed protection of active travel networks and preservation of natural areas and recreational space.

• Criteria
  ▪ Tejani reviewed the draft criteria to be used for options evaluation.
  ▪ Group recommended additional criteria about protection of natural areas, flood protection, connection of trail networks, impact on utilities, and cost of option implementation.

EXISTING CONDITIONS & ISSUES

• Group recorded strengths and weaknesses of the existing transportation network on the study area map.

• Group then summarized issues into key themes. (See Attachment A on page 29)

Wrap Up & Next Steps

• Meeting minutes to be dispersed for confirmation of understanding
• Draft evaluation of options for presentation at next meeting, and layout of May 30th meeting provided.

NEXT MEETING: Monday, May 30th at 10:30 am in Meeting Room ‘C’
Held at: Municipal Hall - Meeting Room ‘A’

Date/Time: May 17th at 7:00 pm  Adjourned: 8:00 pm

Attended By: Antje Wahl – Transportation Consultation Committee
Brenda Barrick – Neighbourhood Representative
Erin Black – Vancouver Coastal Health
Mark Thomson – School District 44
Victor Penman – Fire
Ingrid Weisenbach – Transportation
Shazeen Tejani – Transportation

Regrets: Elise Roberts – Neighbourhood Representative

Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:

1) Introductions
2) Review Study Purpose
3) Discussion of Goals, Assumptions, Criteria
4) Existing Conditions & Issues
5) Wrap-Up & Next Steps

❖ INTRODUCTIONS
  • Participants introduced themselves and their roles relevant to this meeting.

❖ REVIEW STUDY PURPOSE
  • Weisenbach spoke about the purpose of the transportation study, which included a need to clarify the transportation needs for this area in advance of future development proposals.
  • The boundaries of the study area were discussed. Weisenbach went over the study area and the tight timeframe. Group discussed that the boundary may not be an exact line as the study should also consider users that pass through the study area or people within the neighbourhood that need to access key destinations outside the study area.

❖ DISCUSSION OF ASSUMPTIONS, GOALS & CRITERIA
  • Assumptions
    ▪ Weisenbach shared the draft assumptions with the group.
The group discussed the assumptions and provided additional suggestions that should be considered: a) park access, b) property access and c) commuter routes and active travel networks.

- **Goals**
  - Weisenbach shared the draft goals and asked for feedback.
  - Group suggested adding in goals that addressed protection of active travel networks and preservation of natural areas and recreational space.

- **Criteria**
  - Tejani reviewed the draft criteria to be used for options evaluation.
  - Group recommended additional criteria about protection of natural areas, livability of the neighbourhood to enhance social cohesion and sense of community, and health indicators.

- **EXISTING CONDITIONS & ISSUES**
  - Group recorded strengths and weaknesses of the existing transportation network on the study area map.
  - Group then summarized issues into key themes. (See Attachment A on page 29)

- **Wrap Up & Next Steps**
  - Meeting minutes to be dispersed for confirmation of understanding
  - Draft evaluation of options for presentation at next meeting, and layout of June 2nd meeting provided.

**NEXT MEETING:** Thursday, June 2nd at 7:00 pm in Meeting Room ‘A’
ATTACHMENT ‘A’: KEY THEMES IDENTIFIED BY TEAM

Summary of Existing Conditions & Opportunities (Both Groups):

- Study area not bound by the sub-area boundaries; issues like bike commuter routes and pedestrian paths outside and through the site seen as being important
- **Congestion**: Seen as potentially worsening with new development near Lynnmour Elementary school.
- **Transit accessibility**: Seen as being in ‘poor’ condition – walking distances to transit stops seem too far, with no transit connections in the internal network.
- **Cycling Routes**: Seen as being effective near the southern portion of the site, under the highway, but being very poor along Old Lillooet Road and crossing Keith Road. There was also a need for improved connections leading into and out of the sub-area.
- **Pedestrian connections**: Generally, the trail and footpath network through the site was seen as being excellent. There was an expressed need for continued maintenance of these trails and a desire for improved pedestrian connections immediately outside of the sub-area. Pedestrian connections should be emphasized for key destinations throughout the site.
- **Environmental Assets**: Both Inter-River and ‘Digger Park’ play a huge role in establishing a sense of community for residents – an assumption should be that both parks will be protected from disturbance. Lynn Creek is also a recreational and ecologically valued asset. The environmental & ecosystem health of the Riverine Forest should also be maintained.
- **Parking**: Seen primarily as an issue closer to Inter-River Park.
Held at: Municipal Hall - Meeting Room ‘C’

Date/Time: May 30\textsuperscript{th} at 10:30am \hspace{1cm} Adjourned: 11:30am

Attended By: Pouya Behzadi – Engineering
Richard Boase – Environment
Tamsin Guppy – Planning
Ingrid Weisenbach - Transportation
Shazeen Tejani – Transportation

Regrets: Fiona Dercole – Public Safety
Douglas Rose – Parks

Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:

1) Meeting #1 Recap & Approval of Minutes
2) Review Revised Goals & Assumptions
3) Review Options & Criteria Evaluation
4) Recommendations
5) Wrap-Up & Next Steps

MEETING RECAP & APPROVAL OF MINUTES

- Weisenbach summarized key ideas that arose in the previous May 17\textsuperscript{th} Stakeholder meeting and confirmed feedback received by the group.
- Group added that improved transit facilities and connections to transit were needed.
- Weisenbach addressed the potential for a pedestrian bridge on Crown Street to provide improved connections from Lynn Creek to Park and Tilford Centre.

DISCUSSION OF GOALS & ASSUMPTIONS

- Goals
  - Weisenbach shared the revised goals; making note of new additions based on feedback.
- Assumptions
  - Weisenbach shared the revised assumptions with the group.
  - Group recommended a change of wording regarding the Fire Training Site.
Group also recommended adding the assumption that ‘recreational’ routes would be maintained.

**OPTIONS & CRITERIA EVALUATION**

- Options
  1. Weisenbach shared each of the draft options and rationales with the group.
  2. Group discussed the opportunities for utilizing existing parking facilities to accommodate ‘Drive to Five’ locations, with the Holiday Inn Parking Lot, Premier Street, and Ministry Land being potential options.

- Criteria Evaluation
  1. Weisenbach & Tejani shared the draft evaluation of the proposed options, providing rationale for scoring on several criteria.
  2. Group recommended:
     1. Adding utility impacts as a separate category; and
     2. Revisiting scoring regarding improved safety for all users for options 1a and 1b; Recognizing that the introduction of cars by way of street, where none travelled before, has implications for the safety of pedestrians and cyclists.

**RECOMMENDATIONS**

- Weisenbach summarized key recommendations produced using the evaluation criteria.
- Group discussed the potential of combining options and the benefits of each.
- Group recommended:
  1. Placing 4a and 4b at a higher priority than currently ranked;
  2. Creating a hybrid option out of 4a and 4b that forms a ‘T’ junction;
  3. If selected, implementing 1a and 1b together;
  4. Beginning a discussion with the School District about options 1a, 1b and 4b;
  5. Factoring impacts to utilities at an earlier stage.
  6. (By general agreement from all participants) that option 5 not be pursued, since it provided the least benefit and at the highest social and environmental cost.

**WRAP-UP & NEXT STEPS**

- Draft meeting minutes to be dispersed for confirmation of understanding.
- Transportation to present recommendations for Council’s consideration this July*.

*NOTE: Presentation of recommendations to Council was delayed to the fall of 2016. Date of presentation to be decided.
Inter-River Sub-area Transportation Study
District of North Vancouver
Stakeholder Meeting #2b
Meeting Minutes

Held at: Municipal Hall - Meeting Room ‘A’
Date/Time: June 2nd 2016 at 7:00pm Adjourned: 8:30pm
Attended By: Antje Wahl – Transportation Consultation Committee
Brenda Barrick – Neighbourhood Representative
Elise Roberts – Neighbourhood Representative
Mark Thomson – School District #44
Victor Penman – Fire Department
Ingrid Weisenbach - Transportation
Shazeen Tejani – Transportation

Regrets: Erin Black – Vancouver Coastal Health

Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:

1) Meeting #1 Recap & Approval of Minutes
2) Review Revised Goals & Assumptions
3) Review Options & Criteria Evaluation
4) Recommendations
5) Wrap-Up & Next Steps

❖ MEETING RECAP & APPROVAL OF MINUTES
- Weisenbach summarized key ideas that arose in the previous May 17th Stakeholder meeting and confirmed feedback received from Antje Wahl.

❖ DISCUSSION OF GOALS & ASSUMPTIONS
- Goals
  - Tejani shared the revised goals; making note of new additions based on feedback.
- Assumptions
  - Tejani shared the revised assumptions with the group.
  - Group recommended a change of wording to include ‘Inter-River’ with regard to the bullet on park access. Group further recommended specifying that access to the park will be maintained from “Inter-River Road”.
  - Group also recommended revising the word ‘commuter’ to make it more clear that these routes are used for people accessing key destinations, not just those who commute to work.
Group also required further clarification on assumptions related to park use. Weisenbach informed the group that the District’s Parks Department was currently reviewing any future uses.

School District Facilities Plan indicates redevelopment potential for Lynnmour Elementary. The final location, whether on- or off-site, is still undecided.

**OPTIONS & CRITERIA EVALUATION**

- **Options**
  1. Weisenbach shared each of the draft options and rationales with the group.
  2. Group expressed concern about the impacts to the park with options 4a & 5, and for new residents that front the park, south of option 4a.
  3. Group was also concerned that option 1b would provide direct vehicular access to the school, thereby reducing the likelihood that children will walk or bike to school.
  4. Group further expressed concern with Option 1a as potentially increasing access and traffic along St. Denis Ave, a road currently used heavily by pedestrians and cyclists.

- **Criteria Evaluation**
  1. Weisenbach shared the draft evaluation of the proposed options.

**RECOMMENDATIONS**

- Weisenbach summarized key recommendations produced using the evaluation criteria.
- Group discussed the potential of combining options and the benefits/impacts of each.
- Group recommendations:
  1. 1a + 1b provides circulation for school pick up/drop off and direct access to St. Denis;
  2. Doing a combination of options 1a + 1b, 4b, and 2, all as public roads was most preferred;
  3. 4a provides improved access if the school were to have primary pick up/drop off on Orwell;
  4. 4a would be considered feasible if designed to reduce speeds and road widths;
  5. Group agreed option 5 was not reasonable; and
  6. Group suggested considering a 6th option that bisects the school site from Forsman through to Option 4b, if the school relocates.

- Group acknowledged that improved connectivity to transit stops and improved transit infrastructure were needed adjacent to the sub-area.

**WRAP-UP & NEXT STEPS**

- Draft meeting minutes to be dispersed for confirmation of understanding.
- Transportation to present recommendations for Council’s consideration this July.

*NOTE: Presentation of recommendations to Council was delayed to the fall of 2016. Date of presentation to be decided.*
APPENDIX D: DISTRICT OF NORTH VANCOUVER
E-DOCS REFERENCE LIST
Lynnmour/Inter-River Local Plan: 836865

Internal Stakeholder Meeting Minutes & Attachments – Meeting 1: 2896702

External Stakeholder Meeting Minutes & Attachments – Meeting 1: 2896686

Internal Stakeholder Meeting Minutes & Attachments – Meeting 2: 2906517

External Stakeholder Meeting Minutes & Attachments – Meeting 2: 2906422
Continuum
Construction Traffic Management Plan
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1. PROJECT DETAILS

1.1. INTRODUCTION AND BACKGROUND

Brody Developments is proposing to redevelop 858 Orwell/Premier Street in North Vancouver. The existing land includes residential buildings. The proposed development generally consists of several residential townhouses. The project has improvements to the boulevard fronting the site and to Orwell Street. The total site area is approximately 0.40ha.

Creus Engineering Ltd. has been retained by Brody Developments to prepare a traffic management plan that addresses the offsite civil construction, the onsite civil construction and the building construction. The traffic management plan will cover:

- Construction Overview: scope of construction, phasing
- Schedule: start of works and construction schedule
- Mobility Impact: impacts to road users including pedestrians, cyclists, transit and general traffic. Truck volumes and routing.
- Community Impact: impacts to area parking, construction parking.
- Work Zone Traffic Control: specific details of traffic control devices and plans.
- Communication Plan: how information is distributed to the general public, area residents, businesses and neighbors who are directly affected by construction activity.

The Traffic Management Plan covers the complete onsite and offsite civil / landscape and building construction.

1.2. CONSTRUCTION OVERVIEW

Construction activity at the Continuum site comprises many different aspects. The scope of work includes demolition of existing structures and clearing for building foundations, building construction, onsite civil and landscape works, and offsite civil and landscape works. The construction process will comprise four distinct phases as outlined below:

Phase 1: Site Clearing and Foundation Preparation (2 months)

Site preparation including removal of existing buildings and hardscapes. Rough site grading for foundation preparation.

Phase 2: Building Construction (9 months)

Building construction including foundations, structure, and finishing.

Phase 3: Onsite Civil and Landscaping (2 months)

Includes internal servicing, roadworks and landscaping.

Phase 4: Offsite Civil and Landscaping (2 months)

Offsite civil works for boulevard along site frontage and new curb and gutter.
2. SCHEDULE

2.1. CONSTRUCTION SCHEDULE

A preliminary construction schedule has been developed in coordination with Brody Developments. The works are planned to commence Fall 2016 with building construction ongoing until Fall 2017. See Appendix A for the complete preliminary construction schedule.

2.2. HOURS OF WORK

The District of North Vancouver Noise Bylaw 7188 prohibits any noise or sound which disturbs or tends to disturb the quiet, peace, rest, enjoyment, comfort, or convenience of the neighborhood or of the persons in the vicinity; or exceeds the Sound Levels prescribed in the bylaw. For construction activity, the maximum Sound Level is 80dB or the maximum Daytime Average Sound Level is 65dB (at the point of reception). Hours of work are:

- Monday to Friday: 07:00 to 20:00
- Saturday: 09:00 to 17:00
- Sunday: No work allowed

Night work is only possible with specific resolution of District of North Vancouver council. If night work is required, a written request to staff is required minimum 1 month in advance of the required night work. No night work is anticipated.

Brody Developments expects the standard working hours to be 07:00 to 17:00 Monday to Friday. Some Saturday work is also expected.

3. MOBILITY IMPACT

This section is intended to describe how the project will impact road users including pedestrians, cyclists, transit service, emergency vehicles, heavy vehicles (trucks) and general road traffic during construction. For each phase of work, we have worked with Brody Developments to estimate construction truck volumes.

The site sits at the end of Orwell Street which is a dead end road servicing two lots beyond the development. There is also significant pedestrian traffic using Orwell as access to Lynnmour Community School.

3.1. TRUCK ROUTES

The Continuum site is located on Orwell Street to the north of Highway 1. The proximity of the site to Highway 1 will minimize the time required on District of North Vancouver roads. There is one route to and from Highway 1.

- The main access route will be via exit 22 from Highway 1 onto Fern Street, a left turn on Mt Seymour Parkway (signalized), a right turn onto Old Lillooet Road, a left turn onto Keith Road, a right turn onto Orwell Street, and a right turn into the site. From the site, a left turn onto Orwell Street, a left turn onto Old Lillooet Road, a right turn onto Lillooet Road, and onto Highway 1 via exit 22.
The proposed truck route is shown in Appendix B.

### 3.2. TRUCK VOLUMES

Based on the proposed construction schedule and scope of work, the heavy vehicle (truck) volumes have been estimated as follows:

<table>
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<tr>
<th>Phase of Work</th>
<th>Typical Vehicles per Day</th>
<th>Maximum Vehicles per Hour</th>
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<tbody>
<tr>
<td>Phase 1: Site Clearing and Foundation Preparation</td>
<td>50 trucks/day</td>
<td>6 trucks/hour</td>
</tr>
<tr>
<td>Phase 2: Building Construction</td>
<td>5 trucks/day</td>
<td>2 trucks/hour</td>
</tr>
<tr>
<td>Phase 3: Onsite Civil and Landscaping</td>
<td>3 trucks/day</td>
<td>1 trucks/hour</td>
</tr>
<tr>
<td>Phase 4: Offsite Civil and Landscaping</td>
<td>3 trucks/day</td>
<td>1 trucks/hour</td>
</tr>
</tbody>
</table>

### 3.3. MITIGATION MEASURES

The proposed works has the potential to impact road users including pedestrians, cyclists, transit service, emergency vehicles, heavy vehicles (trucks) and general road traffic. The proposed construction activities have been reviewed against existing road users. In general, the following mitigation measures should be implemented to mitigate the potential impacts:

- The general public is to be protected from construction activities at all times by appropriate fencing, hoarding and communication.
- Existing pedestrian routes (sidewalks, trails) to remain clear and open at all times unless specifically noted in the TMP.
- Bike routes, once constructed, to remain clear and open at all times unless specifically noted in the TMP.
- Transit service and access to bus stops to remain available at all times unless specifically noted in the TMP. Temporary relocation of bus stops, as required, to be coordinated with Coast Mountain Bus Company with notification to District of North Vancouver transportation department.
- There is to be no restrictions to emergency vehicles at any time. Emergency vehicles to be given priority access at all times. Emergency services (police, fire, ambulance) to be notified in advance of any construction activities with the potential to cause delays or detours (ie intersection construction, road paving).
- Truck marshaling is only available on site. No marshaling on District of North Vancouver (or City of North Vancouver) roads.
- Copies of the TMP including enter / exit procedures and truck routes are to be sent to the trucking contractors prior to starting construction.
- All heavy vehicle drivers will be given a copy of the site construction traffic procedures and truck routes. The flag person should have additional copies available on the site.
- Heavy vehicles are to be equipped with radios so that trucks can be delayed, diverted or cancelled as required by current site conditions. The general contractor will be responsible for communicating with the heavy vehicles.
- An important part of heavy vehicle management is the mitigation of silt, mud, dust, debris, and litter.
  - All trucks are to be covered while in transit.
○ The trucking contractor will ensure that adjacent streets and truck routes are kept clean and free of dust and debris on a daily basis.
○ The general contractor is also responsible for installing and maintaining a site sediment & erosion control system including mud and dust control and a wheel wash during trucking. See drawing ESC for details of the site sediment control requirements.
- Provide enough on-site queue space to hold at least ½ an hour of truck traffic (for both inbound and outbound trucks).
- Construction traffic exiting the site (left turn) is to be operated by certified flag persons from 07:00 to 18:00
- Large tractor trailer type vehicle should be limited to the hours of 09:00 to 16:00.

Additional specific mitigation measures, per phase, are as follows:

**Phase 1: Site Clearing and Foundation Preparation**

This phase consists primarily of dump truck traffic to and from the site. Trucks will arrive empty and leave fully loaded. See TMP-1 for details. Additional specific mobility impact mitigation measures include:

- All truck traffic to be routed per the aforementioned truck routes.
- Construction traffic exiting/entering the site is to be operated by certified flag persons from 07:00 to 18:00
- In order to maintain minimal impacts to traffic, deliveries to/from the site are to generally be made outside peak hours and are to be made between 9 a.m. and 4:00 p.m.
- Workers arrive before morning peak hour (about 5 vehicles) therefore no impact on peak hour.
- Workers leave after 5 p.m. (about 5 vehicles). Truck hauling completed at 5pm.

**Phase 2: Building Construction**

This phase consists primarily of delivery truck traffic to and from the site. Trucks will arrive fully loaded and leave empty. See TMP-1 for details. Additional specific mobility impact mitigation measures include:

- All truck traffic to be routed per the aforementioned truck routes.
- Construction traffic exiting/entering the site is to be operated by certified flag persons from 07:00 to 18:00
- In order to maintain minimal impacts to traffic, deliveries to/from the site are to generally be made outside peak hours and are to be made between 9 a.m. and 4:00 p.m.
- Workers arrive before morning peak hour (about 15 vehicles) therefore no impact on peak hour.
- Workers leave during afternoon peak hour (about 15 vehicles). Trucking completed before afternoon peak hour.
Phase 3: Onsite Civil and Landscaping

This phase consists primarily of concrete/delivery truck traffic to and from the site. Trucks will arrive fully loaded and leave empty. See TMP-1 for details. Additional specific mobility impact mitigation measures include:

- All truck traffic to be routed per the aforementioned truck routes.
- Construction traffic exiting/entering the site is to be operated by certified flag persons from 07:00 to 18:00.
- In order to maintain minimal impacts to traffic, deliveries to/from the site are to generally be made outside peak hours and are to be made between 9 a.m. and 4:00 p.m.
- Workers arrive before morning peak hour (about 5 vehicles) therefore no impact on peak hour.
- Workers leave during afternoon peak hour (about 5 vehicles). Trucking completed before afternoon peak hour.

Note that this phase utilizes the same TMP as the Phase 2 and 4 works.

Phase 4: Onsite Civil and Landscaping

This phase consists primarily of large truck traffic to and from the site. Trucks will generally arrive fully loaded and leave empty. See TMP-2 for details. Additional specific mobility impact mitigation measures include:

- All truck traffic to be routed per the aforementioned truck routes.
- Construction traffic exiting/entering the site is to be operated by certified flag persons from 07:00 to 18:00.
- In order to maintain minimal impacts to traffic, deliveries to/from the site are to generally be made outside peak hours and are to be made between 9 a.m. and 4:00 p.m.
- Workers arrive before morning peak hour (about 5 vehicles) therefore no impact on peak hour.
- Workers leave during afternoon peak hour (about 5 vehicles). Trucking completed before afternoon peak hour.

This phase may occur simultaneously with phases 2, or 3.

4. COMMUNITY IMPACT

This section is intended to describe how construction activities will impact parking and includes existing parking availability, estimated construction parking requirements and estimated construction parking availability.

4.1. EXISTING PARKING

The existing site consists of residential buildings and vegetation that are to be removed. The site is private property and there is no public parking available. The adjacent streets, Orwell Street and Keith Road have limited on-street parking availability.
4.2. CONSTRUCTION PARKING

Estimated construction parking requirements have been reviewed with Brody Developments. For this phase of construction there is very limited parking available on-site for the early phases of construction. The developer expects to utilize street parking along the site frontage for contractor parking. Carpooling and ridesharing will be encouraged for all workers.

5. WORK ZONE TRAFFIC CONTROL DEVICES

This section is intended to describe the specific traffic control devices and plans required and include pavement markings, signage, delineation devices, traffic control persons, building zones, and site access points. All traffic control devices are to be installed and used in accordance with the BC Workers Compensation Board Section 18, the BC MOT Traffic Control Manual for Work on Roadways and the TAC Canadian Manual of Uniform Traffic Control Devices. All construction signage to be in place prior to any closures and removed or covered when lanes are re-opened. Contractor to plan for daily management of all traffic control devices including signs.

5.1. TRAFFIC CONTROL PLANS

Separate drawings have been prepared for each phase of the work (sometimes multiple drawings per phase). The plans are generally described below and reduced size copies are included in Appendix C. Full size copies of the plans are also included in CREUS Engineering’s civil design package.

The traffic management plans have been developed to show the proposed site arrangements and traffic control systems that are to be installed for each phase of the development. For all phases, the site exit/entrance is to be operated by certified flag persons from 7 a.m. to 6 p.m. No staging of trucks on district roads is permitted for each phase.

Phase 1: Site Clearing and Foundation Preparation

This plan has provided an arrangement for onsite storage of at least 3 trucks and allows for construction vehicle through access/turnaround. The onsite storage is to be used to ensure there will not be any street staging for trucks coming to the site and will provide a queuing area for trucks leaving the site so that they meet the requirements for exiting the site under the control of the flag person. No on-street staging or queuing will be permitted.

Phase 2: Building Construction

This plan has provided an arrangement for onsite storage of at least 3 trucks and allows for construction vehicle through access/turnaround. The onsite storage is to be used to ensure there will not be any street staging for trucks coming to the site and will provide a queuing area for trucks leaving the site so that they meet the requirements for exiting the site under the control of the flag person. No on-street staging or queuing will be permitted.

Phase 3: Onsite Civil and Landscaping

This plan has provided an arrangement for onsite storage of at least 3 trucks and allows for construction vehicle through access/turnaround. The onsite storage is to be used to ensure
there will not be any street staging for trucks coming to the site and will provide a queuing area for trucks leaving the site so that they meet the requirements for exiting the site under the control of the flag person. No on-street staging or queuing will be permitted.

Phase 4: Offsite Civil and Landscaping

Traffic management plans have been developed for all offsite works. See appendix C for details for each portion of work.

There will be no direct impacts to arterial roads due to construction activities. Two lanes of traffic are being maintained in all areas possible and single lane alternating is used where necessary. There are no road closures expected to be required for this development. Any vehicles entering or exiting a works zone must do so under the direction of flagpersons on site.

5.2. MONITORING STRATEGY

Traffic conditions and noise levels will be monitored by the project traffic consultant to confirm satisfactory performance and what modifications may be required. Once the traffic management plans have been implemented, periodic site inspections will be performed to confirm performance. Refer to the CTMP and the District of North Vancouver Noise Regulation Bylaw (No. 7188) for details. If deemed necessary by the District of North Vancouver, PTZ (Pan-Tilt-Zoom) cameras may be required.

The developer will be responsible for monitoring the implemented traffic management plans. All construction related detour and information signs and traffic control devises are to be checked every three days. There shall also be an inspection every time there is a change to the signage and devices posted.

6. COMMUNICATIONS PLAN

A number of residents, businesses and through traffic (commuters) have the potential to be impacted by the proposed construction activities. The following Communications Plan has been prepared to provide notifications and updates to all affected parties as well as the general public. It also provides contacts for unforeseen issues, complaints, coordination and emergencies.

6.1. PUBLIC NOTIFICATION

For neighbors with the potential to be directly affected by the proposed construction, written notifications are to be delivered prior to the commencement of general construction and before certain specific works. Included in Appendix D is a map identifying all the neighboring residents and business to be notified of construction activities and a sample notification letter. Copies of all notifications will be cc’d to the District of North Vancouver.

6.2. COORDINATION WITH NEIGHBOURING DEVELOPMENTS

Creus will make the Continuum traffic plans available to all neighbouring developments. The works involving any lane closures on district streets will need to be coordinated with neighbouring developments by the contractor. District of North Vancouver will be required to provide approved plans and schedules for neighbouring developments when requested.
6.3. CONTACT INFORMATION

Project Contacts
Main Contact Number: TBD
  TBD
  TBD

Owner / Developer: Brody Developments
  604-980-2954

General Contractor: Brody Developments
  TBD
  TBD

Coast Mountain Bus Company:
  Harjit Sidhu-Kambo, Transit Engineering Manager
  (604)-953-3051

District of North Vancouver:
  Christine Gibson, Transportation Engineering
  604-990-2356

  Daniel Cifarelli, Transportation Technologist
  604-990-2396

North Shore Chamber of Commerce
  102 – 124 West 1st St, North Vancouver, BC
  604-987-4488

Police (RCMP):
  147 East 14th St, North Vancouver, BC
  604-985-1311

District of North Vancouver Fire Services:
  1110 Lynn Valley Rd, North Vancouver, BC
  604-980-7575

District Operations Centre:
  1370 Crown St, North Vancouver, BC
  604-990-3831

CREUS Engineering:
  Fred Ciambrelli, Senior Project Engineer
  604-987-9070

Emergency Contacts

RCMP: 911
Fire Department: 911
BC Ambulance: 911
7. REPORT SUBMISSION

Yours Sincerely,

CREUS Engineering Ltd

Clayton Bailey, EIT
Reviewed By: Keith Kelly, P.Eng.
APPENDIX A: SCHEDULE
APPENDIX B: TRUCK ROUTES
SITE ACCESS ROUTE
APPENDIX C: TRAFFIC CONTROL PLANS
NOTES:
SEE CONTINUUM PREMIER CONSTRUCTION TMP REPORT FOR FULL DETAILS.

HOURS OF WORK: AS PER DISTRICT OF NORTH VANCOUVER NOISE BYLAW

ALL CONSTRUCTION TRAFFIC TO USE ORWELL STREET. TURNS IN OR OUT OF SITE WILL BE\nFLAGGED.

ALL CONSTRUCTION BRIDGE TO BE IN PLACE prior to any closures and remain on\nconstruction lanes are opened.
APPENDIX D: NOTIFICATIONS
SAMPLE NOTICE TO RESIDENTS AND BUSINESS OPERATORS

Temporary Street Closure/Building Zone
Location
Time and Dates

Date

Dear Residents and Business Operators:

We are writing to notify you that …

This is necessary to install/repair the <underground utilities, road, sidewalk, landscaping, lighting etc.> adjacent to the <Address>.

The closure will be required during week day business hours from <> to <>.

During construction there will be traffic diversions, parking restrictions and lane closures. The actual work site will be kept as compact and tidy as reasonably possible. The workers will cooperate with the businesses to try and minimize the impact the work will have on day-to-day business operations.

We apologize for any inconvenience the work may cause and thank you for your understanding and cooperation. Please contact the undersigned at <> or by e-mail at <> if you would like to discuss this matter in further detail.

Please also refer to project web site at <> for on-going construction updates.

Yours truly,

<Applicant>

cc: North Shore Chamber of Commerce
    RCMP
    District of North Vancouver Fire Services
    District Operations Centre
    District Hall – Transportation Department
    Coast Mountain Bus Company
The built-form of ground-oriented multi-family *development* should be integrated with existing neighbourhoods.

1. **Public Realm, Streetscape Elements and Neighbourhood Fit**

**Discussion:**

The built-form of ground-oriented multi-family *development* should be integrated with existing neighbourhoods, while enhancing architectural variety. *Development* should reflect the streetscape character of the neighbourhood in which it is located, or in the case of larger *developments*, it should create its own successful streetscape character.

Ground-oriented housing should be designed so that it complements the neighbourhood character, with minimum impact on adjacent properties. *Development* will often occur incrementally as pre-existing lots on record are assembled and consolidated. Accordingly, the design must carefully consider both the existing and future relationships to surrounding properties.
C1.1: Height and Massing: The height and massing of buildings should be in keeping with a single family dwelling or townhouse height, which is typically less than 12 metres. Architectural treatments that reduce apparent building height such as the use of trim, colour accents, secondary roof elements, building recesses and stepped building forms are encouraged (see Figure 81).

C1.2: Roof Treatment: The gable orientation and roof pitch should be sympathetic to the design of neighbouring buildings and help to maximize the space and light between buildings (see Figure 81).

C1.3: Street Orientation: Units are encouraged to be oriented towards, and have a visual connection to the street (see Figure 82).

C1.4: Corner Lots: Buildings on corner lots should “wrap the corner” providing an opportunity to have units facing both streets (see Figures 83).

C1.5: Minimum Frontage: Generally, development parcels should have a minimum frontage of 20 metres.

C1.6: Setbacks: The front yard setback should relate to, or appropriately transition from, the established pattern in the area.
2. Site Planning and Landscaping

Discussion:

Good site planning and landscaping contribute to neighbourhood character and aesthetics, resident livability and environmental sustainability. In principle, site planning should strive to minimize building coverage, preserve natural features and minimize rainwater run-off. Mature trees shade and cool homes in the summer and absorb carbon dioxide and trap dust particles. Trees and other landscaping provide habitat, aid with energy conservation and absorb rain water, reducing stormwater run-off into creeks. Landscape plans should complement the building design and harmonize with the local setting and be prepared by a BC Registered Landscape Architect.

C2.1: Tree Retention: Healthy mature trees and natural features should be retained where possible.

C2.2: Sustainable Landscape Design: Sustainable landscape design should incorporate best practices for tree planting, rainwater management, accessibility and feature native and drought tolerant species. Sustainable landscape design should also be coordinated with building design, site servicing and utility placement.

C2.3: Street Interface: Landscaping and fencing should be kept low and open in the front yard to foster a strong relationship to the street and maintain visibility through to the front of the building (see Figure 84).

C2.4: Privacy: Incorporate planting and fencing to maximize privacy between dwelling units and neighbouring sites (see Figure 85).

C2.5: Shared Outdoor Space: Units should be clustered to create interesting shared outdoor spaces as well as usable and accessible private outdoor spaces. Encourage/integrate informal gathering, play and urban gardening opportunities (see Figure 86).

C2.6: Private Outdoor Space: At least 9 square metres of usable private outdoor space should be provided for all units (see Figure 87).

C2.7: Outward Facing Aspect: Units should be oriented such that windows from the principle living space of each unit are separated by a minimum of 9 metres from those of any other unit (see Figure 88).
C2.8: Rear Yard Setbacks: Rear yard setbacks should be at least 6 metres, with some variation so that a visual wall is not created along the rear property line.

C2.9: Side Yard Setbacks: Side yard setbacks should be a minimum of 1.2 metres, and up to 3 metres when facing a side street or a single family home.

C2.10: Pedestrian Access: The main pedestrian access route should be from the street rather than the lane or parking area.

C2.11: Parking: Parking spaces should be located off a private driveway, and should not be visible from the street (see Figure 89).

C2.12: Parking access: When parking is accessed from the front street the number of driveways should be kept to a minimum (see Figure 89).

C2.13: Shared Driveways: Where adjacent to another potential redevelopment site, the driveway should be designed so that it could in future be shared with the adjacent property (see Figure 89).

C2.14: Oil and Grit Separators: Oil and grit separators are required in all parking areas.
3. Architectural Character

Discussion:

The built form and character of new ground-oriented multi-family development should be consistent with and in harmony with the general rhythm, scale and height of the existing buildings in the neighbourhood. Ground-oriented housing is usually located in or adjacent to single family neighbourhoods. Building design therefore should generally have a single family character and incorporate west coast references while responding to local conditions such as topography, vegetation and heritage resources.

Consideration should be given to unit identity, roofscape, and other architectural elements, including fenestration, materials, and colour. Dormers and similar roof projections should read as subordinate or secondary architectural elements.

Ground-oriented housing should be designed in consideration of the needs of all residents regardless of their state of health, mobility or disabilities. Units should incorporate basic features that allow the units to be adapted to accommodate special needs without expensive retrofitting.

C3.1: Massing: The front façade of buildings should be broken up and portions stepped back to reduce the impression of bulk (see Figure 90).

C3.2: Variations in Design: Subtle design variations should be incorporated between neighbouring buildings to avoid a repetitive appearance.

C3.3: Cladding: Buildings should be clad primarily in natural materials although stucco accents may be used as a subordinate finish.

C3.4: Varied Rooflines: Varied roof lines with overhangs are encouraged.

C3.5: Roofing Materials: Laminated asphalt shingles or fire retardant treated cedar shakes are recommended as roofing materials. Tile roofing is discouraged.

Figure 90
C3.6: Noise Levels: Designs should demonstrate that the noise levels (A-weighted 24-hour equivalent LEQ sound level (the average sound level over the period of the measurement)) in those portions of the dwelling listed below should not exceed the noise levels expressed in decibels set opposite such portions of the dwelling units. Examples include use of triple glazing, improved insulation etc.

<table>
<thead>
<tr>
<th>PORTION OF DWELLING UNIT</th>
<th>NOISE LEVEL (DECIBELS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrooms</td>
<td>35</td>
</tr>
<tr>
<td>living, dining, recreation rooms</td>
<td>40</td>
</tr>
<tr>
<td>kitchen, bathrooms, hallways</td>
<td>45</td>
</tr>
</tbody>
</table>

C3.7: Heating and Ventilation Systems: Ventilation, heating and cooling systems should be designed and insulated to minimize noise and located to be visually unobtrusive to neighbouring developments.

C3.8: Accessible Entrance: A level, no step entrance should be provided to each dwelling. If not possible, then platform areas should be provided at the top and bottom of ramps to facilitate the turning of wheelchairs, strollers and other mobility devices (see Figure 91).

C3.9: Weather Protection: A canopy should be provided over the front entrance.

C3.10: Front Door Width: The front door opening should be no less than 0.9 metre in width.

C3.11: Accessible Doorbell: The front doorbell should be no higher than 1 metre above the entry way

C3.12: Legible Address: The address should be indicated in easy-to-read, 10 centimetre or taller numbers, shown in a clearly contrasting colour.

Figure 91
LYNNMOUR / INTER-RIVER AREA ONE DESIGN GUIDELINES FOR MULTIPLEXES AND TOWNHOUSES

ADOPTED NOV.20/06
### DESIGN GUIDELINES

<table>
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<th>Pages</th>
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</thead>
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### INTENT

The Lynnmour / Inter-River Plan broadens the housing choices for the area around Lynnmour Community School enabling the neighbourhood to renew the single family character while providing a greater mix of family oriented housing. These housing choices will include garden suites behind existing homes, building new duplexes and triplexes on single family lots, or combining properties to build townhouses, like those on Premier Street.

The Design Guidelines are intended for use with every redevelopment application in this area, to help ensure good quality design that maintains the charm and liveability of the area. This package also provides some reference material on the engineering services in the area, and the anticipated changes for the neighbourhood.

If you are anticipating redeveloping your lot, please read this document, and review it with your consultants (architects, landscape architects and engineers) to ensure that their work is also in line with the requirements discussed here.
BUILDING IN A FLOOD PLAIN

The neighbourhood surrounding Lynnmour Community School (shown on the attached map) lies within the river valley for Lynn Creek. Historically the creek meandered through this area. In more recent times, modifications to the creek banks including rip rap, and raising the level of the bank, have helped ensure the creek maintains its course. Furthermore, the District of North Vancouver maintains a program of regular gravel removal from the creek bed, which reduces the risk of flooding. Nonetheless, a recent study by Kerr Wood Leidal Engineering Consultants demonstrated that in an extreme rain event (the 200 year storm event) there is the potential for some flooding in this neighbourhood. The Province recommends that renovations or new construction within flood plains be built to flood construction levels so that all living space is above the potential height of any flood waters. In this neighbourhood, this would mean raising the living space approximately 2 feet above the height of the adjacent roadway.

As there is no insurance for damage from flood waters, it is best for all new construction to be designed in a way that reduces the risk of flood damage, even though that risk is very low, and is something that may not happen in our lifetime.

To ensure that homes are not at risk of flood damage the following should be considered:

- All living space must be constructed above the flood construction level assigned to each property.
- Basements will not be permitted (unless tanked).
- Homes should step up from the grade.
- Lots should be regraded so that the finished grade is higher than the street.
- Driveways should not cut into the grade in such a way that flood water would be directed towards living space.
GOOD NEIGHBOUR POLICY

All new projects need to consider their neighbours and design in a manner that fits with the harmony, scale and character of the area. We recommend that designers meet with the neighbours early in the process so that new designs can balance community objectives with neighbours' concerns about such things as privacy, views and sunlight.

Neighbourly development should:

- Retain trees and mature vegetation where possible, to minimise the impacts of change.
- Maximise the sunlight to both the development's own outdoor garden areas, and the neighbours' garden areas.
- Minimise over-viewing, and reduce loss of privacy from side windows, through the use of skylights, translucent glass, and stepping back portions of the building.
- Use landscaping and fences to enhance backyard privacy, and privacy between developments.
- Use wider side yard setbacks next to single family zoned land, particularly if the proposed building height at the side yard exceeds the height of the adjacent single family house.
- Carefully site and enclose garbage and recycling containers to reduce the impact of noise and smell on adjacent properties.
- Design lot grading so that there is no run-off onto the adjacent properties.

This is the garbage area for a triplex on Fromme Road, it is boxed in and screened so as to minimise its impact on both the project and the neighbours.
MAXIMUM UNITS AND BUILDING SIZE

In the Lynnmour / Inter-River Local Plan, the maximum number of units and size of building is established for lot redevelopment as follows:

- With a lot size of less than 5000 square feet single family houses are permitted;
- With a lot size between 5001 and 7000 square feet a single family lot may be in-filled with a second unit or redeveloped as a duplex with a maximum density of 0.4 floor space ratio;
- With a lot size between 7001 and 8000 square feet a single family lot may be in-filled with a second unit or redeveloped as a duplex to a maximum density of 0.5 floor space ratio; and
- With a lot size between 8001 and 12000 square feet single family lot may be in-filled with a second and third unit or redeveloped as a duplex or triplex to a maximum density of 0.5 floor space ratio.

Where property owners choose to redevelop as a group in a consolidated fashion to create a redevelopment parcel of 15,000 square feet or greater, then the potential for townhouses exists with a maximum density of 0.7 floor space ratio and 24 units per acre.

Though the plan establishes maximum building potential, not everyone may wish to build to either the maximum number of units or the maximum size of building. For example, a single family home owner on an 8,500 square foot lot has the potential for a triplex, but may prefer to retain their home and construct a single garden suite in the rear.

BUILDING COVERAGE

To help ensure designs maximise open space on the lot, building coverage for all buildings and structures proposed on the lot is limited to 40%.
What are Floor Space Ratio and Building Coverage?

The tool that is traditionally used to measure building size is floor space (also called floor area). This is the measurement from wall to wall of all above ground floors. The floor space is then compared with the lot size to determine the floor space ratio. Floor space ratios are usually written as decimals e.g., 0.5 = 50%.

By comparison, building coverage represents the percentage of the lot that is covered in buildings and structures, including the dwelling units, garages, garden sheds and garden structures like gazebos.

This diagram shows a site area (A) or lot size of 100 squares (100%). The lower block (B) or main floor of the diagram covers 40 squares, equal to 40% building coverage. The second floor (C) covers another 10 squares. Combined the main floor (B) and upper floor (C) add up to 50 squares or 50% of the total, or a floor space ratio of 0.5.

In most residential zones, including single family homes and town houses, some parts of the building are excluded from floor space area calculations. Typically, these exclusions include the basement areas, garages, and garden sheds. In this neighbourhood, basements are not recommended (because of the flood risk) but exclusions for single car garages with some storage space will be considered. Since new development will not include basement space, some designers may wish to make use of the attics for additional living space. Attic floor space is excluded where the floor-to-ceiling height is less than 7 feet.
LOT CONSOLIDATION

The Lynnmour / Inter River-Plan was written with a flexible density so that properties could develop independently. However, there are some locations within Inter-River where lot consolidation is recommended in order to best address other types of design issues:

Noise Abatement:

One method of reducing the noise that spills into this community from the highway, is to design row housing along Keith Road so that there is a continual wall of residential buildings blocking the noise from spreading into the community. This would be more easily accomplished if properties along Keith Road redeveloped two or more at a time.

Lot Grading, Storm Water and Flood Water:

Every time a lot is redeveloped, there is a requirement that all grading and landscaping is done in a manner that does not cause storm water from the typical rain fall to flow onto adjacent lots. When building in a flood plain, the need to ensure rainwater doesn't run onto other properties must be carefully balanced against the desire to raise level of the lot so that floodwater is directed away from the buildings. Careful drainage and landscape plans ensure that a proper balance is met. However, in the south east portion of the Inter-River neighbourhood, along Forsman and between Forsman and Saint Denis, there is a low lying area where it will prove more difficult to meet this balance on individual lots, and therefore lot consolidation is recommended.

Flood Protection Works:

Saint Denis Avenue functions as a dyke, helping protect the neighbourhood against the risk of flooding. The recent study completed by Kerr Wood Leidal Consulting Engineers, recommends modest improvements along Saint Denis that would raise the roadway above its existing elevations. For 820 and 840 Saint Denis Avenue, where the road improvements will be the most dramatic, consolidation is recommended so that together the lots can find the most appropriate means of accessing their site.
SETBACKS AND SITING

When considering where to place a building on a site it is important to consider the potential impacts on neighbours and the street. Setback regulations are aimed at protecting and enhancing the neighbourhood, but all designers should consider the impacts of their designs in terms of privacy, over-viewing, and shading, as well the potential for enhancing the streetscape, and look of the site.

Front Yard Setbacks

To fit into the existing neighbourhood, a minimum front yard setback of 15 feet should be considered, unless an alternative pattern of setbacks already exists, like that found along Premier Street.

Rear Yard Setbacks

A minimum rear yard setback of 20 feet from the rear property line to building face is recommended to ensure that some area be set aside for rear gardens and open space.

Where townhouse sites are proposed a staggered setback combined with a varied design should be considered so that the project does not create a visual wall along the rear property, and so that successive townhouse projects do not create a feeling of a canyon running down the middle of the block.

Side Yard Setbacks

Side yards are used to provide access to the site, landscaping around the site, and provide a buffer to the adjacent properties. A larger building will tend to need a larger setback, especially if it is placed further back on the lot, where the impact of over-shadowing, and over-viewing may need to be reduced. The following table sets out recommendations for side yard setbacks.
2 or 2 ½ Storey Buildings

| Side yard setback, in the front 50 feet of the lot | Minimum 6 foot side yard |
| Side yard setback, after the front 50 feet of the lot | Minimum 10 foot side yard |
| Side yard setback for a side yard facing a road | Minimum of 15 foot, as it would function as a second front yard. |

1 Storey Building Elements

| Side yard Setback | Minimum 4 foot side yard |
| Side yard Setback, for a side yard facing a street (corner lots) | Minimum of 15 foot side yard, as it would function as a second front yard. |

Keith Road – Setbacks

Careful design along Keith Road can help reduce the highway noise impacting both the properties along Keith Road and the larger neighbourhood. Row house design with no side yard setback is encouraged to create a residential wall that will block the noise from the highway, and help create more liveable outdoor space in the rear.

Varying Setbacks

The setbacks listed above may be varied if:

a) Different setbacks will fit with established pattern of development, like that found along Premier Street with the existing townhouses;
b) Tree preservation or other environmentally benefits can clearly be demonstrated with the use of an alternative setback; or
c) Noise reduction from the highway can be enhanced.
RELATIONSHIP TO THE STREET

Streets feel safe and look great when buildings and landscaping are designed to relate to the street; allowing a passer-by to wave hello or chat with a neighbour. The following guidelines offer suggestions for ways to ensure new development “faces” the street.

- At least one unit’s front door should be directly oriented towards the street. High visibility of the front doors and paths to the rear units is also recommended.

- Prominent pathways should lead from the sidewalk to the front door of at least one unit to emphasize the building face. (Though pathways are required to each unit, designers must be careful not to clutter the open space with excessive pathways.)

- Buildings constructed on corner lots should “wrap the corner” providing an opportunity for multiplexes to have each unit face the street.

- Design details such as the use of verandas, porches, arbours, and decorative gates, should be considered to ensure each development has a visual connection to the street.

- On wide lots, or those lots that do not have to provide a driveway, designing either a wider front unit, or fitting additional units at the front of the development should be considered in order to maximise the street presence.

- Ensure living space at the front of the building is directed towards the street.

- New developments may choose to copy roof lines, building materials, or other design elements in order to blend with the harmony and scale of the street, however, “cookie cutter” and mirror-image design, is discouraged.

- In the front yard landscaping and fences should ensure openness and visibility through to the front of the building.
DRIVEWAYS

In this neighbourhood there are no back lanes, and therefore all parking is accessed from driveways leading off the street. It is beneficial to reduce the numbers of driveways because:

- The sidewalk becomes safer with fewer driveway crossings;
- More emphasis is placed on people and buildings and less on cars and garages, with more room at the front of the lot given to buildings and front gardens, making for a pleasant looking street; and
- There is more room for on street parking.

A lot choosing to redevelop by itself must design the driveway so that it may be shared with the adjacent property. However, no driveway need be shared with more than three units from a neighbouring property, as larger townhouse developments combining two or more lots, may have one driveway for their own development.

PARKING

Two parking spaces per unit is the recommended requirement. Parking spaces must be located off the private driveway, and should be located behind the front unit so they are not as visible from the street.

Though visitors may park on site, there is no formal requirement for additional visitor parking spaces, and most visitors will park on the street as they do now in the single-family areas.

Driveways and Parking Areas

- Driveways and parking areas should be designed in a manner that minimises their impact on the street and the development.
- Paved areas for driveways and parking have a significant impact on storm water run-off and therefore, paving methods that reduce the impact of the hard surface should be considered.
• As many rear units will require pathways along side or through the driveway, pavers may also serve to delineate the pathway system.

• Where developments are sharing a driveway, every effort should be made to match and coordinate with the materials and design of the existing driveway.

*In these sketches the parking for the units is located behind the front unit, to reduce its visibility from the street.*
REDDUCING THE IMPACT OF DEVELOPMENT ON THE ENVIRONMENT

With careful planning, development can occur in a manner that is more environmentally sustainable.

Construction and Design

New development should consider ways of ensuring that is energy efficient. Where appropriate guidelines and ideas outlined in the LEED and REAP and other sustainable building programs should be considered.

Rain Water

In order to develop more sustainably, new projects should consider ways of landscaping and grading so that rain water has a chance to soak into the ground, and is diverted away from the storm sewer system, where it would otherwise add to the erosion of the creeks.

Tree Preservation

Trees provide a number of environmental benefits beyond their aesthetic value including their role in shading homes in the summer, providing habitat for birds, absorbing rain water, absorbing carbon dioxide (a green house gas) and producing oxygen, trapping dust particles and pollutants from the air, and modestly reducing noise. For all these reasons, the preservation of mature trees, and planting of new trees is encouraged in North Vancouver. However, in some cases where flood protection measures require the grade to be changed, it may not always be possible to preserve a mature tree and replacement planting should be considered instead.

It is therefore recommended that new development:

- Retain as many healthy mature trees as possible.
- Plant new trees.
- Add a thicker layer of gardening quality soil, to the ground prior to landscaping, to increase water retention.
- Introduce "rain gardens" where appropriate so that garden areas can help soak up rain water and reduce storm water run-off.
- Consider using permeable paving material for pathways, driveways and parking areas, or grading the area so that the water can run-off into suitable garden areas.
- If water from the driveway and parking areas is not able to percolate through to the ground, include an oil and grit separator, and / or establish a car washing area to reduce the pollutants that are directed into the storm water system.

These multiplexes were built around existing trees.
LANDSCAPING

Each redevelopment proposal is required to provide a landscaping plan that will complement the building design and harmonize with the local setting. Landscape plans must be prepared by a BC Registered Landscape Architect. Landscape plans are to show how each site will be designed and landscaped once the construction is completed. In preparing landscape plans the following criteria should be considered:

- Use landscaping to soften the impacts of new development and help new development harmonize with the area.
- Ensure that landscape plans are prepared in conjunction with the project team, with input from the arborist, engineer and building designer.
- Ensure that the lot grading is consistent with flood proofing measures.
- Include street trees and boulevard planting on the landscape plan.
- Keep the landscaping and fencing low and open in the front yard to foster a strong relationship to the street.
- Preserve healthy trees where possible, and plant new trees where reasonable.
- Design each unit with private outdoor space that is large enough for barbequing and dining outside (100 square feet or larger).
- Use planting and fences to create a buffer, and maximise privacy between on-site units, and between the subject property and neighbouring sites.
- Use low maintenance “xeriscaping” landscaping practices, with native plant materials suited to the local climate.
- Provide a grading and drainage plan which will assist in the safe on-site management of surface water and rain water (storm water).
- Use porous materials on pathways, patios, and parking spaces to maximise rain-water infiltration.
• Minimise the amount of land used for pathways through careful building and landscape design.
• Consider roof decks or "green roofs" over top of parking structures where privacy will not be adversely impacted.
• Provide details for the method of screening the garbage containers and any other service structures.
• Implementation is to use current BCSLA/BCNTA standards for landscaping.
DEALING WITH NOISE

Finding methods of blocking the noise from the highway is a key issue for improving the liveability of this neighbourhood.

The impacts of noise may be reduced by:

a) Incorporating noise standards into the design and construction of new development to ensure a quiet interior environment for residents as follows:

Designs must demonstrate that the noise levels in those portions of the dwelling listed below shall not exceed the noise levels expressed in decibels set opposite such portions of the dwelling units. For the purpose of this section, the noise level is the A-weighted 24-hour equivalent (L eq) sound level and will be defined simply as the noise level in decibels:

<table>
<thead>
<tr>
<th>Portion of Dwelling Unit</th>
<th>Noise Level (Decibels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. bedrooms</td>
<td>35</td>
</tr>
<tr>
<td>3. living, dining, recreations rooms</td>
<td>40</td>
</tr>
<tr>
<td>4. kitchen, bathrooms, hallways</td>
<td>45</td>
</tr>
</tbody>
</table>

b) Using building design to create noise buffers in certain locations; and

c) By encouraging the Provincial Ministry of Transportation to provide noise fencing along Highway #1.

New development should also consider the impacts of their own ventilation and heating systems on neighbouring developments and ensure that design, style, and placement eliminate any additional noise pollution.

Buildings as Buffers

Designing row housing along Keith Road could serve as a barrier to noise from the highway.
PRIVACY

It is recommended that all new development consider maximising the privacy between units, and between new and existing developments. To this end the following items should be considered:

- Use building setbacks, landscaping, building design, and window placement to maximise privacy and reduce over-viewing.
- Use translucent frosted or stained glass in side windows, or replace windows with glass block, or skylights where privacy will be impacted.
BUILDING HEIGHT

In order to harmonize with the existing single family and townhouse character of the area, building height should be limited to two and half storeys.

Building height is measured from the lesser of natural or finished grade to the peak of the roof. In this area where all new development will be raised up to meet flood construction levels, house heights may be 1-2 feet taller than would normally be anticipated for a two and half storey building, and therefore heights may range from 22 feet for a flat roofed two storey home to 35 feet for a steeply pitched roofed two and half storey home.

Roof Pitch

Steeply sloped roofs are recommended but not mandatory. Roof pitches of 8:12 (rise over run) for the main structure of the roof are widely popular in North Vancouver and work well with the wet climate. However, alternative roof pitches are acceptable provided that flatter roofs have a lower height and compliment the architectural style of the building.
ADAPTABLE DESIGN

Many residents of North Vancouver have expressed a desire to stay in their homes regardless of the onset of illness, frailty or disabilities. It is therefore beneficial when designing new homes to ensure that they are built with basic features that allow the units to be adapted to help residents deal with disabilities without expensive retrofitting. To this end, redevelopment must comply with the District of North Vancouver's Adaptable Design Guidelines.
Since 2003 the District's Public Art Program has encouraged developers to commission works of public art as part of their development application. The District policy applies to applications that require rezoning, and is for residential building proposals with five or more units.

In Lynnmour/Inter-River, District staff undertook a public art mapping exercise with local residents to identify and prioritize potential sites, and to record themes that the community considers appropriate for future public art. The results can be seen on the following map.

Several clear community priorities emerge. For example, residents have identified the corner of Old Lillooet and East Keith Roads as the key location for a community gateway feature. Other clear priorities include art features integrated with the park and pathways, possibly as an enhancement to the Highway underpass, possibly as interpretive route-markers for the extensive net of park trails. As a whole, the map reveals a number of exciting and innovative projects-in-waiting — a loose “master plan” of possible projects of different type and scope. As applicants come forward with different proposals, they will be encouraged to work through the project options and possible themes endorsed through this community process, and to develop a project-specific public art plan that respects community priorities.
Public Art Map

1 Mt. Seymour Pkwy Intersection
Located on the outskirts of residential Lynnwood/Oliver River, this important traffic corridor presents a number of challenges for pedestrians, especially for those crossing to the local super market. Public Art could play an interesting role, integrated as an attractive and functional component as part of a traffic safety solution.

2 Mt. Seymour Pkwy & Old Lilloet
An opportunity to site a gateway or garden feature.

3 E.Keith/Old Lilloet Triangle
At this historic intersection of Lilloet and Keith Roads, an interesting opportunity emerges to acknowledge and to interpret the diverse histories that have shaped the North Shore. Today, this site is the "gateway" to a thriving residential community, and local residents have expressed the desire to: "clean up and develop this green space into something we can use and be proud of."

4 Trans-Canada Bridge Underpass
Much used by local residents, this currently neglected underpass could incorporate public art to create a pleasant "gateway" to the community.

5 Lynnmour School
Residents have suggested creating a "Welcome Carving" in a project that would involve students in expressing ownership & pride in the community.

6 Lynnmour School
Public Art could play an effective role in the re-design of this outdoor playground area for the students.

7 Lilloet Shopping Plaza
A highly visible retail area with potential to create an interesting community space.

8 Shortcut Footpath to Old Lilloet
Community trails and pathways provide many interesting opportunities to integrate interpretive markers.

9 Premier Street
Residents have expressed an interest in seeing traffic calming measures on this busy residential street.

10 Premier Street Pathway
Gateway and path improvement at East and West sides of Premier Street. Creative public art treatments can provide a functional and innovative response to community infrastructure needs.

11 Inter River Park Playground
Playgrounds provide an interesting opportunity to integrate public art in the design of the park space and/or playground amenities.

12 Inter River Park
Residents like the existing simple parkscape, describing it as "a magical area to walk and explore." Opportunities for public art could be integrated with the trail network and reflect multiple uses.

13 Inter River Park - St Denis Entrance
An important entry on "gateway" to Inter-River Park and to the trail network.

14 Pathway: St Denis to Orwell
Community trails and pathways provide many interesting opportunities to integrate interpretive markers.

15 River Pathway
River path improvements and amenities; public art with picnic tables, benches, BBQ areas.
ENGINEERING SERVICES

Throughout the District of North Vancouver, as properties redevelop, they are required to upgrade the services in front of their property to modern standards. This work normally includes:

• Upgrading to the centre of the road all aspects of the roadway including pavement, curb and gutter;
• Constructing sidewalks;
• Planting street trees;
• Installing street lights; and
• Extending services to the subject site; including water, and sanitary & storm lines.

Water and Sanitary Sewer

In anticipation of redevelopment in this neighbourhood, staff undertook an analysis of the water supply and sanitary sewer capacity, which showed that there is sufficient supply and capacity to meet the demands of the school, existing development and all potential redevelopment that could be considered in this area under the Lynnmour / Inter-River Community Plan.

Storm Sewer

Storm sewers do not exist on all streets in the study area. For anyone considering redeveloping the storm line may need extending to your property. If you are interested in redeveloping, please discuss the need for storm sewer upgrades with the District's engineering staff.
ROADWAY IMPROVEMENTS

Each development will be responsible for upgrading the road, sidewalk, curb and gutter, and planting in the boulevard in front of their own site. Over time, this has the potential to add sidewalks, and street trees throughout the neighbourhood.

This section details the road standards currently anticipated for each road.

<table>
<thead>
<tr>
<th>Saint Denis Avenue</th>
<th>Design Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saint Denis Avenue functions as a dyke providing flood protection to the adjacent neighbourhood. In the March 2006, Kerr Wood Leidal report on flood protection, the engineering consultants recommended further improvements to Saint Denis, including a slight change in grade, and the construction of a floodway. These improvements may cause some of the design work originally anticipated and described below to be undertaken a little differently.</td>
<td></td>
</tr>
<tr>
<td>Road Width</td>
<td>8 metres / 26 feet</td>
</tr>
<tr>
<td>Two travel lanes and one parking lane</td>
<td></td>
</tr>
<tr>
<td>Sidewalk Width and Location</td>
<td>Boulevard sidewalk, 1.5 - 2.0 metres wide on east side. Gravel path at curb, on west side, next to the top of the riverbank.</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground</td>
</tr>
<tr>
<td>Additional Features</td>
<td>Provides connection under the bridge and to the park.</td>
</tr>
<tr>
<td>Forsman Avenue</td>
<td>Design Standards</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Road Width</td>
<td>8 metres / 26 feet two travel lanes and one parking</td>
</tr>
<tr>
<td></td>
<td>lane</td>
</tr>
<tr>
<td>Sidewalk width and</td>
<td>Boulevard sidewalks, 1.5 – 2.0 metres wide on both</td>
</tr>
<tr>
<td>location</td>
<td>sides.</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground</td>
</tr>
<tr>
<td>Additional Features</td>
<td>To enhance pedestrian safety, the street will narrow</td>
</tr>
<tr>
<td></td>
<td>at the entrance, and the sidewalk will bulge out on</td>
</tr>
<tr>
<td></td>
<td>either side.</td>
</tr>
<tr>
<td><strong>Orwell Street</strong></td>
<td><strong>Design Standards</strong></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>Road Width</strong></td>
<td>8 metres / 26 feet. Two travel lanes and a parking lane</td>
</tr>
<tr>
<td><strong>Sidewalk width and location</strong></td>
<td>Boulevard sidewalks, 1.5 – 2.0 metres wide on both sides.</td>
</tr>
<tr>
<td><strong>Hydro and Tel</strong></td>
<td>Underground to each unit, but poles will remain as the upper tier of wires carries service beyond the neighbourhood.</td>
</tr>
</tbody>
</table>
| **Additional Features** | To enhance pedestrian safety, the street will narrow at the entrance, and the sidewalk will bulge out on either side.  
   The potential for an improved school drop off area exists, and could be considered should Lynnmour Community School be further renovated. |
<table>
<thead>
<tr>
<th>Premier Street</th>
<th>Design Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Width</td>
<td>10 metres / 33 feet</td>
</tr>
<tr>
<td></td>
<td>Two travel lanes and two parking lanes</td>
</tr>
<tr>
<td>Sidewalk width and location</td>
<td>Boulevard sidewalks, 1.5 – 2.0 metres wide on both sides.</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground to each unit, and eventually poles will be shifted to the east side, if not removed completely.</td>
</tr>
<tr>
<td>Additional Features</td>
<td>To enhance pedestrian safety, the street will narrow at the entrance and the alignment be shifted so that traffic must slow down when turning into the street. Possible improvements to the pedestrian crossing at mid block are also under consideration.</td>
</tr>
<tr>
<td>Keith Road</td>
<td>Design Standards</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Road Width</td>
<td>8 metres / 26 feet</td>
</tr>
<tr>
<td></td>
<td>Two travel lanes, one parking lane on the north side.</td>
</tr>
<tr>
<td>Sidewalk width and</td>
<td>Boulevard sidewalk, 1.5 – 2.0 metres wide on north</td>
</tr>
<tr>
<td>location</td>
<td>side</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground to each unit, and eventually poles will</td>
</tr>
<tr>
<td></td>
<td>be shifted removed.</td>
</tr>
<tr>
<td>Additional Features</td>
<td>Potential road realignment at intersection with Old</td>
</tr>
<tr>
<td></td>
<td>Lillooet Road</td>
</tr>
</tbody>
</table>
In order to ensure that these guidelines are feasible, staff worked closely with Mr. R. A. Spencer, a local designer who provided the following sketches to show how development on different size lots could be achieved. The following sketches do not show the details and ornamentation that is necessary, but do show the potential massing, layout and parking for different redevelopment options including rear yard infill, duplex and triplex development.

**Infilling the Backyard**

*This drawing shows how some homes could accommodate an additional building in the rear yard.*

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**Examples of an Existing Single Family Home**

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Duplexes

For smaller lots between 5,000 and 8,000 square feet in size, this illustration shows a potential duplex design.
Layouts for Triplexes on 8,500 square foot lots

For lots between 8,000 and 12,000 square feet triplexes are permitted at a density of 0.5 floor space ratio. The first illustration shows the potential for a smaller triplex on a 8,500 square foot lot.
Layouts for Triplexes on 10,000 square foot Lots

Here are four alternative designs for triplexes on 10,000 square foot lots. Each one is shown in the bird’s eye view, and the site plan.
VIEW NORTH-EAST ALONG ORWELL STREET AT THE PROPOSED DEVELOPMENT
The Lynnmour / Inter-River Local Plan recommends the area to be redeveloped with low-density, ground-oriented multiple-unit integrated with the established neighbourhood. The surrounding area is still largely single family, but successful townhouse projects have been completed nearby, including the adjacent Wedgewood and Legacy townhomes.

**DESIGN RATIONALE**

**PROJECT DESCRIPTION**

The development proposes twenty-three, four-bedroom townhouse units based on consolidation of four existing lots between Orwell Street and Premier Street. The units are an urban residential locale, range from three to six stories in height.

The current site layout reflects an incremental design approach taking into account a potential relationship to future townhouses following site expansion with two additional lots (2 and 22) to the north. The ultimate layout with the loop driveway would be a stronger and more functional urban design. At this stage the site consolidation will be given to maximize the impact of the current proposal on two existing single-family dwellings to the north. A rendered diagram illustrates future development potential for the single lots (2 and 22), as a duplex and triplex, in a scenario the lots remain separate.

Immediately to the north are two single-family homes, (1/2 story along the street) with shallow roof form. Adjacent to the south are the multi-family, 3-story Wedgewood Townhomes and a 2 1/2 story multi-family development with dominant roof form. The project is arranged with single vehicle access from Orwell Street with a five-plex and a duplex fronting the Orwell street and a triplex on the east along Premier Street. The central pathway provides pedestrian access across a visual link across the site, connecting shared outdoor spaces for playing, gardening and social gathering. All of the garages are accessed from the internal driveways.

**APPLICABLE GUIDELINES**

This development proposal consists of buildings consisting of two and three storeys with FSR 0.8 based on OCP designations as a Residential 3 zone (R3) and the Standards of Development for Ground Oriented Housing. The Lynnmour / Inter-River Local Plan Design Guidelines limits the density to a 3 FSR with one of units per floor due to the irregular shape of the site. The project proposes fewer units than allowable. The 3.0 FSR conversion is based on OCP designation, previously approved for the adjacent development in the same area as Orwell Street.

**SITE PLANNING**

A slope changes the site, with over eight-foot difference in grade between the high point at northeast corner and lower southwest corner. Flood mitigation requirements with different FCL (Flood Control Levels) between the east and west side significantly affect the siting and height of the buildings. This height is higher than what is recommended in the guidelines with a maximum 35 ft. The grading due to flood mitigation and storm management measures minimizes the opportunities for run-off on the site.

The challenge was to create an efficient design within the context of a sloping site and provide pedestrian and vehicular connections at different levels from the two streets.

Optimizing views and ensuring privacy of adjacent buildings were also key considerations in the design. Views and ventilation are critical to both, overlapping the sunspaces. The proposed roof forms will take advantage of the most proximate views. Primary windows for buildings along the south property line will face west and east ensuring required daylight exposure and minimizing overlooking neighbour. All units have large balconies and roof decks as main outdoor private spaces.

A large community garden is proposed in the south-west corner, with lush landscape and large specimen trees replacing the existing trees. The landscaped area will complement the local community Park and provide space for outdoor playing and socializing.

**SETBACKS**

The proposed development adopts the recommended 15-foot front yard setbacks along both streets. The deeper 35-foot setback, along the east-south property line creates a significant buffer of landscaping between the neighboring developments.

An eight foot and six-foot minimum side yard setbacks are provided along the south property line with a landscape buffer and privacy fence including a retaining wall where required. The building height along the property line being retained is being limited to meet the needs of the adjacent development as requested by the Wedgewood townhomes residents.

The north face of the development has 20- and15-foot setbacks, ensuring adequate space between the single-family homes to the north and the proposed units.

**FORM AND CHARACTER**

The design responds to apparent residential context. As per the early Public Input session comments, the buildings form line into the existing townhouse projects, at the same time creating clarity distinct character, with the different architectural style and finishes.

The project proposal produces a contemporary architectural language. The overall massing is simple with flat roofs, yet interesting with distinct window forms, defined by accent materials - metal panel. The window frame elements balance individual character, increase privacy of the units and solar protection.

The facades of different unit types have individual expression due to different module dimensions, design and material application. Individual unit entries have been created along the streets with decorative wood-composite decorative screens and gates.

Proposed roof decks for the units, as additional usable private open space, will create vertical rooflines mitigating the three-story massing. The flood control requirements impact the architecture by forcing a layout of three storeys together on the upper floor, creating effectively a three-story building mass. The triplex on the east along Premier Street has been articulated into a narrower module to reduce the effect of scale and give visual identity to the units.

**EXTERIOR WALLS AND FINISHES**

The materials of the buildings—floor/ceiling siding and stone cladding as accent material—have been chosen to be durable and to reflect the characteristics of the residential neighborhood.

Fiber cement lap siding in prefinished cedar texture is going to be predominantly used on the buildings.

To accentuate the ‘window frames’ along the main entrance elevations, aluminum metal panel system A-13 with prefinished solid and “Woodine” colors is being considered.

Other options are to be soaked off steel plate for Marley-Riveted panel; contrasted by dark lap siding. Black metal screens and detailing will also be incorporated. Cedar toned fiber-cement panels with Swedish grey finish will add visual warmth to the pedestrian experience around the site.

Roof overhangs will enhance the building envelope performance and provide durability and solar shading to the windows below. Masterly materials articulate the entries to the units and side elevations. Decorative privacy screens at the front and entries and at the roof decks in a wood composite material, with authentic wood grain appearance will create another distinct element for the project.

**SUSTAINABILITY**

Measurable sustainability targets will be developed and assessed for the project to ensure Built Green Gold equivalent with Energy Star 65.

Sustainability features, which are the norm of most residential developments, include the use of ENERGY STAR® appliances, low flow fixtures, low VOC materials & finishes, and a compact building envelope. Further sustainable development components include: water retention; large overhangs; electric car plug-in points in garages; reduced allergen carpeting; rainwater collection for watering; permeable paving; as well as high performance wall assemblies and windows.

The roof deck concrete pavers and potential planters will reflect some of the heat energy from the roof, while reducing exposure of heat into the building and thus, mitigating the impact of “heat island effect”. Large roof overhangs will provide solar shading and manage heat gain from western exposure in the summer.

Modeling report by certified professional and a completed checklist (Built Green Canada) to be provided by owner.

**PARKING TRANSPORTATION**

The proposed vehicle parking spaces meet the requirements of the parking bylaw, with 1.5 residential spaces; however, three units will have tandem parking. The project provides two additional visitor spaces to address concerns of the neighbours regarding street parking in the area. As part of the proposed new redeveloped planting, sidewalks (3.5m) improvements, and speed humps are going to be provided.
Copyright reserved. This drawing and design is and at all times remains the exclusive property of INTEGRA ARCHITECTURE INC. and cannot be used without the Architect's consent.
General Site Notes:

1. All materials and execution of landscape works shall conform to the BCSL/AROCTA Landscape standards. The standard for level of maintenance.

2. Curved entrance driveway leading off all walks and throughout site. All landscaped areas and pathways must maintain min. 2% positive drainage away from buildings.

3. Where self landscape areas meet building balked walk, min. 12’' wide gravel strip to be installed at landscape on the job and this office shall be 30’ L2 of 4

4. Do not construct these drawings unless marked "issued for construction".

5. All landscape works to be performed under this contract to meet the applicable provisions and recommendations set forth in the Master Municipal Specifications & Standards Guideline, Landscape Standards and respect all Municipal bylaws and standards.

6. The latest edition of the standards and codes referenced in these notes and on the landscape drawings shall apply.

7. The existing conditions were compiled from base plans of the site prepared by others. Although every effort has been made to accurately locate all conditions, stated conditions may vary from those shown. The contractor shall make all required investigations of structures, soil conditions, and any other condition on the site before starting work.

8. The contractor shall be responsible for verifying all conditions on site, including the presence of underground utilities, for all material and labor costs related thereto.

9. The landscape contractor shall be responsible for the use of all electrical, telephone, gas, or other underground utilities, and for the costs of repair or replacement thereof. The contractor shall remove all obstructions and debris, and restore the site to its original condition.

10. Contractor to repair any damage resulting from work on site.

11. The landscape contractor shall report, in writing, any discrepancies between the existing and proposed work to the landscape architect before starting work.

12. The landscape contractor shall verify dimensions shown on the drawings and notify the landscape architect of any discrepancies prior to the start of the final grade prior to construction.

13. Contractor to repair any damage resulting from work on site.

14. The landscape contractor shall refer any questions on materials, finishes, labour and/or products specified herein to the landscape architect.

15. Contractor to relieve the landscape contractor from their responsibility to perform the necessary operation for the successful completion of the project. The contractor shall assume responsibility for actual conditions as they exist on site.

16. The contractor shall provide, at no cost to the landscape architect, any necessary temporary facilities or structures necessary to complete the proposed improvements without any changes to the plans.

17. The landscape contractor shall verify dimensions shown on the drawings and notify the landscape architect of any discrepancies prior to the start of the final grade prior to construction.

18. Contractor to report any discrepancies to materials, finishes, labour and/or products specified herein to the landscape architect.
Planting Notes

1. All materials and execution of landscape works shall conform to the BC Landscaping Standards. Refer to written specifications for complete landscape documentation if applicable.

2. The Landscape Contractor shall ensure that the on-site planting materials meet the specification and recommendations of the BC Landscaping Standards. All recommendations of this plan shall be executed prior to the final grading and site work and shall be inspected and approved by the Contractor and the Municipality authorities.

3. Minimum planting medium depths:
   - 4" (100 mm)
   - 6" (150 mm)
   - 10" (250 mm)
   - 12" (300 mm)

4. All plant material shall meet minimum size requirements as indicated on plant list. Quality of plant material and planting site shall conform to BC LANDSCAPING standards for container grown stock.

5. Discrepancies between plant numbers on the plant list and those on the plan should be reported to the landscape architect prior to planting.

6. In case of any discrepancy between plant numbers on the plant list and on the plan, the plan shall take precedence.

- Acer rubrum
- Polystichum munitum
- Hakonechloa macra `Aureola`
- Creeping Wintergreen
- American Sweetgum
- Fagus sylvatica 'Dawyckii'
- Liriope muscari
- Rhexia mariana
- Polystichum munitum
- Creeping Wintergreen
- Hakonechloa macra `Aureola`
- Hakonechloa macra `Aureola`
- Hakonechloa macra `Aureola`
- Hakonechloa macra `Aureola`
Arizona Civic Plaza - Phoenix, AZ
In a shade protected and submerged court yard setting greenscreen® wall mounted panels are used to surround cafe patrons with vertical landscape elements connecting the view to the skyline.

Installed 2009
Hardiness Zone 9b

Crowne Plaza Hotel - Burlingame, CA
Standard greenscreen® Columns 12' tall are used as dramatic freestanding entry elements.

Installed 2002
Hardiness Zone 10a
MINUTES OF THE ADVISORY DESIGN PANEL MEETING HELD ON
FEBRUARY 11, 2016 AT THE DISTRICT OF NORTH VANCOUVER

ATTENDING: Mr. Dan Parke
Ms. Amy Tsang
Mr. Greg Travers
Sgt. Kevin Bracewell
Ms. Laurenz Kosichek
Mr. Craig Taylor
Mr. Steve Wong
Mr. Stefen Elmilt
Ms. Diana Zoe Coop

REGRETS: Ms. Tieg Martin
Mr. Samir Eidnani

STAFF: Mr. Michael Hartford
Ms. Ashley Rempel
Mr. Alfonso Tejada
Mr. Jessie Gresley-Jones (Item 4.a.)
Ms. Casey Peters (Item 4.b.)
Ms. Tamsin Guppy (Item 4.c.)

The meeting came to order at 6:00 pm.

1. ELECTION OF PANEL EXECUTIVE

Mr. Michael Harford, Community Planner, advised the Panel that at the start of each year, the Panel elects a Chair and Vice Chair. Nominations were called for the position of Chair and Mr. Dan Parke was nominated by a member of the Panel. A vote was called and Mr. Parke was unanimously elected to the position of Chair for the 2016 term.

Nominations were called for the position of Vice-Chair, and Ms. Amy Tsang was nominated by a member of the Panel. A vote was called and Ms. Tsang was unanimously elected to the position of Vice Chair for the 2016 term.

2. REVIEW OF PANEL MEETING PROCEDURES

Michael Hartford presented an overview of the Advisory Design Panel meeting procedures to the group. Questions were asked and answered.

3. ADOPTION OF MINUTES

A motion was made and seconded to adopt the minutes of the Advisory Design Panel meeting of December 10, 2015.
c. 858 Orwell St - Detailed Application for Rezoning and DP for 23 unit townhouse development.

Ms. Tamsin Guppy, Community Planner, introduced the project and explained that it is a detailed application for 23 townhomes. The site is located just outside of Lynn Creek Town Centre, across from Lynnmour Elementary School, is located within a Creek Hazard Development Permit Area which can be mitigated with constriction level 2 feet above the curb, and has an OCP designation of RES3 – “Attached Residential” with a maximum density of 0.80 FSR. Under the applicable Lynnmour/ Inter-River Design Guidelines, townhouses are permitted a maximum of 0.7 FSR and the Lynnmour/ Inter-River Design Guidelines are used as a reference document, as further OCP work has not been done in the area. In addition to the design guidelines the project design also must consider the form and character development permit area guidelines for ground-oriented housing.

Ms. Guppy raised the following two specific questions for the Panel’s consideration:

- Is the look of these townhomes sufficiently distinct from the other townhouse projects already on the street and currently under construction?
- Are the townhomes too tall or is there general support for a height variance to allow for roof deck access?

The Chair invited questions of clarification from the Panel and the following points were raised:

- Main access point to the school? Currently Forsman Ave, but families with young children sometimes park on Orwell St because there is limited parking. In the longer-term, the school will likely be rebuilt and the access would be on Orwell Street.

The Chair welcomed the applicant team and Mr. Duane Siegrist of Integra Architecture presented the project to the Panel. Mr. Siegrist noted of the following key points:

- Buildings on the site need to be elevated to address flood construction levels and this is creating challenges for the grade interface on most frontages;
- Area benefits from many north/south connections but few east/west connections;
- Site planning includes an east/west pedestrian connection through the site and front doors which are located on landscaped areas;
- The site is irregular but the layout has been formatted to allow the two remaining single family lots to be combined with the project, or to develop on their own in future;
- Investigated several layout options and would like to move away from tandem parking;
- Roof decks are proposed to provide generous and private outdoor space;
- A home elevator option is available for the homes to improve accessibility;
- Exterior design attempts to reduce the scale of buildings;
- A small variance in height is required to allow for the stair towers – these elements also help break up the roofline in the view from the street;
- Colours and finishes selected reflect the natural surroundings, including wood-look stained “Hardi” panel and stone veneer feature areas;
Proposal includes features to fulfill a Built Green "Gold" standard and the project will include a comprehensive stormwater management approach as well as sustainable landscape design features.

Mr. Bill Harrison of Forma Design presented the landscape approach with reference to the following:

- Focus on livability, interconnectedness to the area, parks, school and Premier Street with the proposed east/west walkway assisting in connectivity;
- Demographic is a younger family group mix so the cul-de-sac includes a safe play place for children with public benches on the street frontage to support this;
- A common open space/garden area is proposed at the south end of the project;
- Front doors open onto the walkway or green areas and help to create a formal entry experience for the townhomes;
- Simple practical materials are used in the landscape approach: asphalt driveway and concrete walkways, and green screen materials at entrances;
- Planting plan includes some large specimen trees that are intended to visible from a distance and other tree plantings to provide a leafy character;
- Diverse plant palette is proposed with a focus on native materials and an objective to encourage bird activity;

The Chair thanked the applicant team for the presentation and asked for questions of clarification from the Panel. Questions were asked and answered on the following topics:

- Will the east gate be open for the public? Intended to be locked and for use by residents;
- Will an easement be secured to provide access to future development parcels? Yes, but there are still some concerns whether this access will be practical in the future;
- Has a landscape design been done for the roof top decks? Yes, but just conceptual;
- Is the proposed "AL13" siding limited to a certain size? Sheet are approximately 4 feet x 10 feet, and the trim elements will be completed with portions of the sheets;
- Will "Hardi" panel corners be mitred? No, proposing an edge trim detail;
- How many guest parking spaces are proposed? Two on site, originally none were required for these types of projects, but based on previous experience some on-site visitor parking has been encouraged.

Mr. Alfonso Tejada, District Urban Design Planner, provided the following comments:

- Would like to see more diversity in repeated elements, such as varying the gate designs;
- Corner treatment relative to larger mass seems appropriate, but roof stair towers seem heavy – consideration should be given to hatch access for the roof decks to reduce impact of the stair towers;
- Ground floor elements on the corner would benefit from greater integration with the upper floors.
The Chair invited comments from Panel members, and the following comments and items for consideration were provided:

- Overall site planning, elevations, and massing were noted as positive, with an attractive street appeal and a successful entry experience;
- Would be a benefit to including the adjacent development sites in the project;
- Cultured stone details seem lacking, and these feature areas could be more integrated with the building facades;
- The proposed façade "frames" seem a bit heavy in thickness and there may not be a need for wood elements in these frames;
- High quality approach will be necessary in the detailing of the stone, "Hardi" material, metal siding and roof edges;
- Rooftop access noted as a positive feature and the associated height variance generally supported, but with suggestions that the stair tower design could be improved to reduce impact on the project with consideration given to pairing the stairs, adjusting the roof overhangs, and setting the stair towers back from the roof edges;
- Some concerns were expressed regarding the treatment of the garage elevations and whether options such as surfacing of driveways and methods to address the repetitive garage doors such as pergolas, translucent doors, or different colours could help make these elevations seem less harsh;
- It was suggested that driveway areas are popular playplaces for families with young children and it should not be assumed that all play will take place in dedicated play areas – helping to break up the expanses of asphalt would be positive;
- Proposed east/west link is very positive - would like to see this connection as an even stronger element, and open to the public if possible as a through-block connection;
- The project presents some accessibility challenges for people with disabilities, including the lack of an outdoor area that is accessible from the kitchen;
- Garbage and recycling access as currently proposed could be a challenge given that the trucks servicing this area will need to reverse out of the project;
- While the proposed plant palette appears positive, it would have been preferred to have more detail on the specific elements of the landscape;
- The south side of proposed Building 5 could benefit from some shade trees on the south edge of the driveway to help soften this area;
- Wayfinding is likely to be a challenge in the project to ensure clear access for visitors and for emergency responders and should be reviewed for a practical solution;

The Chair invited the project team to respond.

Mr. Siegrist and Mr. Harrison thanked the Panel for their comments and noted the following:

- Team has developed some new ideas for introducing variation in the project;
- Shade trees on the south side of main driveway would be a good addition and will be reviewed;
- Agree that wayfinding needs to be examined and reviewed carefully.
The Chair invited the Panel to compose a motion:

MOVED by Craig Taylor and SECONDED by Laurenz Kosichek:

THAT the Panel considers the project to have fulfilled the objective of a distinct project identity, supports the proposal for a height variance for roof deck access, and recommends APPROVAL of the project SUBJECT to addressing the items noted in the Panel's consideration of the project.

CARRIED
(one opposed)

OTHER BUSINESS

None.

5. ADJOURNMENT

The meeting was adjourned at 8:53 p.m.

6. NEXT MEETING

March 10, 2016

[Signature]
Chair

[Signature]
Date
A Review of the Trees on Site at:

858, 854 Orwell Street, and 855 Premier Street,
North Vancouver, B.C.

Prepared for Brody Development (A&C) Ltd.

by

Dr. Julian A. Dunster, R.P.F., R.P.P., ISA Certified Arborist
ASCA Registered Consulting Arborist # 378
ISA Tree Risk Assessment Qualified
BC Wildlife Danger Tree Assessor
Honorary Life Member ISA + PNWISA

October 14, 2015
A Review of the Trees on Site at:
858, 854 Orwell Street, and 855 Premier Street,
North Vancouver, B.C.

Background

At the request of the Brody Development (A&C) Ltd., Dunster & Associates Environmental Consultants Ltd. has been asked to document the trees presently on the lots noted. The site was visited on May 6th 2015, trees were reviewed and conditions noted. A survey plan prepared by Rankine Land Surveying, dated March 19th 2015 was used as the baseline.

Conditions on Site

Figure 1 shows the trees documented by tree number. These numbers identify the trees in Table 1. No trees have been tagged on site.

Figure 1. Location of trees on site.
Table 1. Tree data.

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Trunk diameter (cm)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Holly</td>
<td>30/20/30/</td>
<td>Open grown good condition</td>
</tr>
<tr>
<td>2</td>
<td>Holly</td>
<td>25/25</td>
<td>Open grown good condition</td>
</tr>
<tr>
<td>3</td>
<td>Pear</td>
<td>20</td>
<td>Poor condition</td>
</tr>
<tr>
<td>4</td>
<td>Apple</td>
<td>45/31</td>
<td>Fair to poor</td>
</tr>
<tr>
<td>5</td>
<td>Cherry</td>
<td>71</td>
<td>Poor, dieback in crown</td>
</tr>
<tr>
<td>6</td>
<td>Western redcedar</td>
<td>32</td>
<td>Topped, regrown, poor condition</td>
</tr>
<tr>
<td>7</td>
<td>Western redcedar</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Western redcedar</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Western redcedar</td>
<td>38</td>
<td>Topped, poor condition</td>
</tr>
<tr>
<td>10</td>
<td>Western redcedar</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Western redcedar</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Western redcedar</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Douglas-fir</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>13A</td>
<td>Apple</td>
<td>20</td>
<td>Three trees not on survey, fair condition. Condition shown in Figure 1 is approximate.</td>
</tr>
<tr>
<td>13B</td>
<td>Apple</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>13C</td>
<td>Apple</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Western redcedar</td>
<td>25/20</td>
<td>Topped, bushy, fair condition</td>
</tr>
<tr>
<td>15</td>
<td>Sitka spruce</td>
<td>67</td>
<td>Topped - multiple stems, fair condition, but may be too large for site once developed</td>
</tr>
<tr>
<td>16</td>
<td>Cherry</td>
<td>33</td>
<td>Poor condition</td>
</tr>
<tr>
<td>17/18</td>
<td>Cherry</td>
<td>45/43</td>
<td>Poor condition</td>
</tr>
<tr>
<td>19</td>
<td>Cherry</td>
<td>20/20</td>
<td>Growing in hedge fair condition. Not a specimen tree and could be replaced if necessary</td>
</tr>
<tr>
<td>20</td>
<td>Western redcedar</td>
<td>5 stems 15-25 typical</td>
<td>Good condition</td>
</tr>
<tr>
<td>21</td>
<td>Western redcedar</td>
<td>30</td>
<td>Good condition</td>
</tr>
<tr>
<td>22</td>
<td>Walnut</td>
<td>20/20/24/15</td>
<td>Poor condition</td>
</tr>
<tr>
<td>23</td>
<td>Douglas-fir</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Western redcedar</td>
<td>119</td>
<td>Topped, multiple codominant, fair to poor condition</td>
</tr>
</tbody>
</table>
Table 1. Tree data.

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Trunk diameter (cm)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Western redcedar</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Western redcedar</td>
<td>32</td>
<td>Row of codominant trees, good condition</td>
</tr>
<tr>
<td>27</td>
<td>Western redcedar</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>28/29</td>
<td>Western redcedar</td>
<td>40/30 joined</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Western redcedar</td>
<td>137</td>
<td>Open grown, good condition, raised wall at base. Not on survey. Condition shown is approximate.</td>
</tr>
</tbody>
</table>

Conclusions

Figure 2 shows the proposed development layout.

Figure 2. Proposed development plan.

With that design most trees will be removed in order to implement the new development. Tree # 30, can be retained at this time. Note that it has a built up wall at its base and is then surrounded by tarmac. If this lot later
comes into play, the extent of the raised wall should be increased and the underlying tarmac removed, to provide more soil volume for the tree roots. As it stands this tree will eventually suffer decline due to a lack of root space.

Tree 19 is a cherry tree growing in the existing hedge along the south boundary. It may be possible to retain that tree depending on what the adjacent landscape ends up as. If it is to be retained, it should be protected with a fence, 1.0 metres from the trunk during demolition and development with a fence.

No other trees are scheduled for retention.
August 2015- EnergyStar for New Homes Version 12.6 Shortlist:

Here's a shortlist of items to include in your EnergyStar Homes:

1) Enrollment fee is $150/house for CHBABC members
2) Must achieve Energuide Rating of 81 or higher (if "performance" compliance)
3) All insulation must meet Section 9.36 prescriptive minimums, including around plumbing drains/stacks on exterior walls, HVAC ducts in exterior walls/attics, around electrical panels on exterior walls, etc.
4) Basement slabs above frost line must be insulated under their full area
5) Edge of basement slabs above frost line must have a thermal break the same value as underslab
6) 2.5ACH@50Pa air tightness for single family homes; 3.0ACH@50Pa for rowhouses
7) Heat recovery ventilator:
   a. Certified by HVI as an HRV or ERV, or EnergyStar qualified
   b. Tested at 0C and -25C (test data to be used in the HOT2000 energy model)
   c. Installed such that the supply and exhaust flows are balanced within 10%
   d. HRV must be labelled with the installing company and the measured flow rates
8) EnergyStar windows, windows in doors (unless less than 20sq ft total) and skylights
9) EnergyStar exterior doors; one door per house can be excepted
10) 400kWhr/year of energy credits such as EnergyStar appliances and lighting
11) All ducts to be located within the heated boundary of the house, or else insulated to the same effective R value as that part of the assembly
12) All heating/cooling ducts to be fully sealed (tape or mastic)
13) Ducts between HRV and exterior to be insulated and sealed
14) Room by room heat load calculations

Please contact Einar Halbig at E3 Eco Group Inc for more information.

Einar@e3ecogroup.com
604-727-4322
The Built Green™ program has four levels of achievement, shown below as Bronze, Silver, Gold and Platinum. Points are awarded based on the minimum EnerGuide rating with additional points selected from each of the eight other areas of the checklist to give a cumulative total. Each separate category has minimum point totals that must be selected.

Built Green™ Level (For Detached, Semi-Detached & Row House Units)

<table>
<thead>
<tr>
<th>Checklist Categories</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold</th>
<th>Platinum</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnerGuide for New Houses Rating</td>
<td>72</td>
<td>75</td>
<td>77</td>
<td>82</td>
</tr>
<tr>
<td>I. Operational Systems</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Building Materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Exterior &amp; Interior Finishes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV. Indoor Air Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. Ventilation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI. Waste Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII. Water Conservation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII. Business Practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CHECKLIST CRITERIA

Five fundamental pillars serve as a basis for each item to be considered in the checklist. Each line item must meet at least one of the criteria listed in the left hand column, where two or more of the subsidiary points listed on the right must be addressed.

- Resource Use
- Energy Efficiency
- Recycled Content
- Indoor Air Quality
- Durability
- Innovation
- Alternative Construction
- Measurable or Validated
- Promotion of greater use
- Environmental Impact

ENERGUIDE RATING

This rates the energy efficiency and energy consumption of the home using the EnerGuide Rating System and HOT2000 software. House are modeling and tested by a Certified Energy Advisor working with the Built Green Society. Information such as home orientation, home dimensions, insulation values, type of heating system, construction material, window type and window design are input into HOT2000 in order to calculate a rating. An average rate of air changes per hour (ACH) is initially used for the calculation. Prior to completion of each house, a mandatory blower door test is performed and the actual rate of air changes per hour is then input into HOT2000 and the final EnerGuide rating is calculated. This standard applies to low-rise detached, semi-detached and row houses and small multi family buildings under 4 stories.

CHECKLIST REQUIREMENTS

In order to properly verify the Built Green™ program, for each item chosen from the checklist, a verification must be ready to be supplied, if the home is randomly chosen to be audited. The Builder will be given a short amount of time to compile verifications and supply them to the auditor. Forms of verification include: Installing Contract Letter, Supplier Verification Letter, Invoice or Purchase Order as well as an On-Site visual verification. Please ensure each verification has the required information included, as verifications missing required details will be rejected.

AUDIT VERIFICATION REQUIREMENTS

Built Green™ will conduct a visual verification of a portion of the Built Green™ Checklist to maintain quality control and program credibility on every Built Green home registered with the 2010 checklist. If deficiencies are found, follow-up full verification of several projects will be implemented. This full verification will assess the entire checklist at the expense of the Builder. Supporting documentation provided by the builder shall met at least one of the following criteria: on-site verification or written documentation including when and from whom the product was purchased, as well as when, where and by whom it was installed, including contact information for each company.
# HOME ENROLLMENT FORM

## BUILDER INFORMATION

<table>
<thead>
<tr>
<th>Application Date:</th>
<th>HBA Member ID #:</th>
<th>Company Name:</th>
<th>Main Contact:</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Brody Development Group</td>
<td>Mike Brody</td>
<td><a href="mailto:mike@brodydevelopment.vom">mike@brodydevelopment.vom</a></td>
</tr>
<tr>
<td>Full Mailing Address:</td>
<td>1060 West 14th Street North Vancouver V7P 3P3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone:</td>
<td>604-980-2954</td>
<td>Fax:</td>
<td>604-980-0833</td>
<td></td>
</tr>
<tr>
<td>On-Site Contact #1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Site Contact #2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## HOME INFORMATION

<table>
<thead>
<tr>
<th>Community:</th>
<th>Address:</th>
<th>Construction Start Date:</th>
<th>City:</th>
<th>Expected Completion Date:</th>
<th>Permit #:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuum</td>
<td>Continuum - 588 Orwell St</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## BUILT GREEN™ LEVEL

- Platinum

## TOTAL CHECKLIST POINTS

- 130

PLEASE COMPLETE SHADED AREAS ON THIS ENROLMENT FORM AND ON THE CHECKLIST. THE TOTAL POINTS AND BUILT GREEN™ LEVEL WILL BE FILLED IN AUTOMATICALLY FROM INFORMATION ENTERED IN THE SHADED AREAS.
I. OPERATIONAL SYSTEMS
This section awards points for construction methods and types of products that contribute toward lower energy consumption, as well as alternative heating and electrical systems.
Minimum 10 Points Required

1-1 Install a zoned heating system. Either, from a single HVAC source utilizing two or more, programable, thermostatically controlled zones or zoning separate systems through separate programable thermostats. (2 Zones = 2 points, 3 = points, 4 = points)
   Efficiency can be significantly improved by only heating or cooling when occupants are present and by only heating/cooling to the exact desired temperature. Different desired temperatures can be set in each room or space and an individual zone can be turned off when not occupied. This type of system results in a dramatic reduction of energy consumption and operating costs. 2, 3 or 4

1-2 Install high efficiency, sealed combustion heating appliance, with a minimum 94% AFUE (2 points) or 95% AFUE and above (3 points).
   (Not for electric heat.) High efficiency furnaces or boilers, such as condensing systems, reduce energy consumption and consequently fossil fuel reliance. Because AFUE takes into account efficiency losses during start-up and cool down it's rating is slightly lower. 2 or 3

1-3 Install ground or water source heat pumps (10 points) or air source heat pumps (6 points) for heating and cooling.
   Heat pumps can significantly reduce primary energy use for building heating and cooling. The renewable component displaces the need for primary fuels, which, when burned, produce greenhouse gases and contribute to global warming. Please Note: Cool climate heat pump systems are often more efficient due to the costs of electricity. However, cold climate heat pump systems are often not as efficient as typical boiler/furnace natural gas systems. 6 to 10

1-4 Programmable thermostat with dual set back & continuous fan setting.
   A set back thermostat regulates the heating/cooling system to provide optimum comfort when the house is occupied and to conserve energy when it is not. 2

1-5 Install HVAC appliance with variable speed fan (ECM).
   A variable speed fan motor (ECM or DC powered) is designed to vary its speed based on the homes heating and air conditioning requirements. Working in conjunction with the thermostat, it keeps the appropriate air temperature circulating through the home, reducing temperature variances in the home. It also provides greater air circulation and filtration, better temperature distribution, humidity control, higher efficiency and quiet performance. 3

1-6 Install sealed combustion 2 pipe tank system (2 points), or condensing DHW tank system (3 points)
   Hot water heater is direct vented with a closed combustion system. All air for combustion is taken directly from the outside. A direct system utilizes a co-axial vent pipe (pipe inside a pipe) draws combustion air in through the outer pipe, and exhausts the products of combustion through the inner pipe. A power vented heater exhausts air out of the building via a positive exhaust during main burner operation. Both systems eliminate the need for conventional chimneys or flue systems. 2 or 3

1-7 Install instantaneous “tankless” hot water heater.
   A tankless water heater does not have a storage tank to keep heated all day, or a pilot light; it burns gas only when you need hot water. This eliminates standby heat loss and its higher efficiency will save on utility costs. 4

1-8 Install high efficiency (AFUE 90 or better) boiler domestic hot water system. 4

1-9 Install Ground Source Heat Pump DHW heating system to supply a minimum of 25% of the peak DHW heating load and 70% of the total DHW energy load.
   A Ground Source Heat Pump system uses the earths constant temperature to heat water for the home. 4
1-10 Install drain water heat recovery units on the main drainage stack. 3 foot stack (1 point), 6 foot stack (2 points)

Drain water heat recovery units transfer the heat from waste water to incoming water. This reduces the amount of energy needed for the DHW system.

1 or 2

1-11 Sealed combustion fireplace with electronic ignition if gas fueled.

Sealed combustion fireplaces involve a double-walled special vent supplied by the manufacturer that normally vents through a sidewall in a horizontal position. The unit must be Sealed Combustion, meaning that combustion gasses can not enter the home even if the home becomes depressurized.

2

1-12 Install an EPA or CSA certified high-efficiency wood stove or pellet stove with a minimum efficiency of 72% (1 point) or 85% (2 points).

State-of-the-art wood and pellet stoves are among the cleanest burning heating appliances and deliver a high overall efficiency. EPA and CSA certified stoves ensure reduced emissions.

1 or 2

1-13 Install fireplace fan kit to circulate warm air into room (1 point per fan, maximum 2 points).

A fan kit allows the heat generated by a fireplace to be transferred into the home more effectively.

1 or 2

1-14 All windows in home are ENERGY STAR labeled or equivalent for the climatic zone of home.

ENERGY STAR labeled windows save energy by insulating better than standard windows, making the home more comfortable all year round, reducing outside noise and can result in less condensation forming on the window in cold weather.

2

1-15 Electric range is self cleaning and/or Convection based

Ranges that self clean or have convection are better insulated and sealed, performing at or less than 500 kwh (520 kwh for convection) when rated by EnerGuide.

1

1-16 Refrigerator is an ENERGY STAR labeled product.

An ENERGY STAR label for refrigerator indicates the product has met strict requirements to reduce energy consumption.

2

1-17 Dishwasher is an ENERGY STAR labeled product.

An ENERGY STAR label for a dishwasher indicates the product has met strict requirements to reduce energy consumption.

1

1-18 Clothes washer or combo washer dryer is an ENERGY STAR labeled product.

An ENERGY STAR label for a clothes washer indicates the product has met strict requirements to reduce energy consumption.

1

1-19 Clothes dryer has an energy performance "auto sense" dry setting which utilizes a humidity sensor for energy efficiency.

1

1-20 Home is built "Solar Ready" following Canadian Solar Industries Association (CANSIA) guidelines.

Designing a home to be solar ready will make the addition of panels in the future much easier. Contact the Canadian Solar Industries Association for more info: www.cansia.ca.

2

1-21 Install active solar hot water heating system. Sized for 30% of DHW load (4 points), 50% (6 points), 80% (8 Points)

System capacity must be verified by professional installer or engineer using modeling software such as RETScreen or better, data provided to Built Green Energy Advisor at time of modeling

4, 6, 8

1-22 Install photovoltaic electrical generation system. Sized for 30% of electric load (4 points), 50% (6 points), 80% (8 points).

A photovoltaic system will greatly reduce the reliance on fossil fuel energy and reduce greenhouse gas emissions. System capacity must be verified by professional installer or engineer.

4, 6, 8

1-23 50% (2 points) or 100% (4 points) of electricity used during construction of home is generated by wind power or equivalent green power certificate.

2 or 4

1-24 50% (2 points) or 100% (4 points) of electricity used by homeowner during first year of occupancy is generated by wind power or equivalent green power certificate. (prepaid by builder)

2 or 4

1-25 A properly supported and wired ceiling fan and a wall mounted switch roughed in for future installation.

Intended to allow for future temperature equalization.

1

1-26 Install interior motion sensor light switches. 1 point per switch to a maximum of 3 points.

Motion sensor switches prevent lights from remaining on in rooms that are unoccupied. This helps reduce electricity consumption. Switches on closet doors and pantries are also acceptable.

1 to 3

1-27 Install central, computerized control systems capable of unified automation control of lighting loads.

Lighting and automation control systems prevent lights from remaining on in rooms without occupants, thereby reducing electricity consumption.

4

1-28 Minimum 25% (1 point), 50% (2 points), 75% (3 points) or 100% (4 points) of interior and exterior light fixtures are fluorescent, compact fluorescent light bulbs or LEDs.

Fluorescent, compact fluorescent and LED lamps use 50% less energy than standard lamps and last up to ten times longer.

1 to 4
II. BUILDING MATERIALS

This section deals with building components that make up the structure of the home. Items involve alternatives to using large dimensional lumber, products with a recycled component, utilizing wood products that come from sustainably managed forests and reducing the overall amount of lumber used. Many Building Material items also improve thermal performance and EnerGuide scores.

Minimum 15 Points Required

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1</td>
<td>Insulated Concrete Form (ICF) system used for foundation walls.</td>
</tr>
<tr>
<td>2-2</td>
<td>Insulated Concrete Form (ICF) system used for 75% of above grade house walls.</td>
</tr>
<tr>
<td>2-3</td>
<td>Non-solvent based damp proofing (seasonal application).</td>
</tr>
<tr>
<td>2-4</td>
<td>Exterior and interior wall stud spacing at 19.2” on-center (1 point) or 24” on-center (2 points).</td>
</tr>
<tr>
<td>2-5</td>
<td>Use of insulated headers / lintels (either manufactured or site built insulated headers) with minimum insulation value of R10.</td>
</tr>
<tr>
<td>2-6</td>
<td>Install manufactured insulated rim/band joist, or build on-site built header wrap detail for continuous air barrier.</td>
</tr>
<tr>
<td>2-7</td>
<td>Elimination of headers at non-bearing interior and exterior walls.</td>
</tr>
<tr>
<td>2-8</td>
<td>Use of header hangers instead of jack studs.</td>
</tr>
<tr>
<td>2-9</td>
<td>Elimination of cripples on hung windows.</td>
</tr>
<tr>
<td>2-10</td>
<td>Elimination of double plates, using single plates with connectors by lining up roof framing with wall and floor framing.</td>
</tr>
<tr>
<td>2-11</td>
<td>Use of two stud corner framing with drywall clips or scrap lumber for drywall backing instead of studs.</td>
</tr>
<tr>
<td>2-12</td>
<td>Deck or veranda surfaces (1 point) and/or structure (1 point) made from a third-party certified sustainably harvested wood source.</td>
</tr>
<tr>
<td>2-13</td>
<td>Deck or veranda surfaces (1 point) and/or structure (1 point) made from a third-party certified sustainable concrete.</td>
</tr>
<tr>
<td>2-14</td>
<td>Structural insulated panel system used for at least 75% of roof/ceiling (4 points), 75% of walls (6 points), exposed floors (2 points) and/or Foundation (2 points).</td>
</tr>
<tr>
<td>2-15</td>
<td>Dimensional lumber from a third-party certified sustainably harvested source used for floor framing.</td>
</tr>
</tbody>
</table>
2-16 Dimensional lumber from a third-party certified sustainably harvested source used for wall framing.  
See 2-12  
2-17 Dimensional lumber from a third-party certified sustainably harvested source used for roof framing.  
See 2-12  
2-18 Use manufactured wood products for floor systems instead of dimensional lumber (1 point), from third party certified sustainably harvested sources (2 points).
Engineered wood floor systems saves old growth forests by using components from second generation forests and the use of recycled materials.  See 2-12  
2-19 Reduce dimensional lumber use by using engineered product for all load bearing beams & columns (1 point), from third party certified sustainable sources (2 points).
Engineered products include wood products, concrete and recycled steel.  
2-20 Reduce dimensional lumber use by using engineered products for all exterior window and door headers. 
Engineered products include wood products, concrete and recycled steel.  
2-21 Finger-jointed plate material and/or engineered plate material used for all framing plates. 
Use of recycled materials saves old growth forests.  
2-22 Reduce dimensional lumber use by using engineered stud material for 10% of structural stud wall framing. 
Use of engineered lumber products saves old growth forests by using components from second generation forests and the use of recycled materials.  
2-23 Finger-jointed studs for 90% of non-structural (1 point) and/or 90% of structural (1 point) wall framing. 
Use of recycled materials saves old growth forests.  
2-24 Recycled and/or recovered content gypsum wallboard, minimum of 15% recycled content.  
2-25 Recycled content exterior wall sheathing (minimum 50% pre- or post-consumer).  
2-26 Use rain screen system separating cladding from the wall sheathing with a drainage plane (2 point), 60% or more recycled content (additional 1 point).  
Use of recycled content polypropylene, steel or aluminum rain screen strapping may replace the traditional use of wood strapping on rain screen systems.  
2-27 Advanced sealing package, non HCFC expanding foam around window and door openings and all exterior wall penetrations.  
Controls air leakage and keeps heating and cooling costs to a minimum.  
2-28 All sill plates sealed with foam sill gaskets or a continuous sandwiched bead of acoustical sealant.  
Controls air leakage and keeps heating and cooling costs to a minimum.  
2-29 All insulation used in home is certified by a third-party to contain a minimum recycled content: 40% (1 point) or 50% (2 points).  
2-30 Install site applied spray foam to insulate entire rim joist area (1 point), Exposed floors (2 points) and/or house walls (4 points) and/or entire roof (3 points).  
Spray insulations provide excellent air sealing and insulation value.  Spray foam must be fire protected and some types cannot come in contact with heating ducts or lines.  Some foams meet requirements for vapour barriers.  Consult supplier or installer for further information.  
2-31 Replace exterior wood sheathing with insulating sheathing and structurally required metal bracing.  
Using less materials when possible saves the forest reserves, reduces thermal migration and controls air leakage and keeps heating and cooling costs to a minimum compared to a conventional wall.  
2-32 Install R5 (1 point), R8 (2 points) or R12 (3 points) above building code required under entire basement slab.  
Insulation installed under the basement slab will reduce the downward heat transfer into the ground below the slab, especially when hydronic in-slab heating is installed. Insulation under the slab can reduce temperature swings in the heated space and respond quicker to new changes in thermostat settings.  
2-33 Install additional rigid insulation on exterior of above grade walls, above code required framing cavity insulation.  
1.5" (1 point) or 2" (3 points). 
Exterior insulation can greatly reduce thermal bridging, improving thermal performance.  Care must be taken to ensure the wall cavity remains permeable to the outside and foam must be fully protected from UV damage during and after construction.  Refer to CHBA Builder Manual or Local Code Officials for additional information.  
2-34 Install additional exterior insulations system on exterior of foundation, R Value of 7.5 (1 point), R10 (2 points), or R15 (3 points), above code required interior insulation level  
Insulation on the outside of a foundation system reduced energy loss.  
2-35 Overhead garage door is made of 75% or greater recycled material.  
2-36 Attached garage overhead door is insulated with R8 to R12 (1 point) or greater than R12 (2 points).  
2-37 Attached garage is fully insulated.  
A fully insulated garage serves an additional insulating capacity for any walls encapsulated by it, further slowing heat loss through those walls.
2-38 Builder uses passive solar design shading devices for home. Permanent horizontal and/or vertical exterior shading devices for glazing (2 points), computer controlled devices (additional 1 point).

| 2 or 3 |

2-39 Install 100% recycled content carpet underlayment.

| 1 |

2-40 Install finished concrete interior floors instead of other types of finished floors (tile, carpet, hardwood, etc.). For 300-500 ft² (1 point), 501-1000 ft² (2 points), 1001-1500 ft² (3 points), 1501+ ft² (4 points).

| 1 to 4 |

Not applicable in unfinished basement areas. Using the concrete itself as a finished floor where concrete is being used regardless (for in floor heat or basement slabs) provides a durable floor with less material usage.

2-41 Install weather-stripped and insulated (R15 minimum) manufactured interior attic hatch (1 point), or no interior attic access (1 point)

| 1 |

TOTAL SECTION POINTS

| 20 |

### III. EXTERIOR and INTERIOR FINISHES

This section focuses on the finish materials used both inside and outside of the home. The items listed include using longer lasting products, products with recycled content and products that are harvested from third-party certified sustainably managed forests.

Minimum 10 Points Required

| 3-1 Exterior doors with a minimum of 15% recycled and/or recovered content. Recycled or recovered content ensures we keep our landfill use to a minimum. Not including overhead garage doors (see 2-33). | 1 |

| 1 |

| 3-2 Interior doors with a minimum of 15% recycled and/or recovered content. | 1 |

| 3-3 Interior doors made from third-party certified sustainably harvested wood. Uses trees from forests managed sustainably, that prevent clear cutting and replant trees in areas from which they’ve been harvested. | 2 |

| 3-4 All exterior doors manufactured from fiberglass. Fiberglass doors insulate better than steel skinned or wood doors, have a longer lifespan, do not warp, twist or crack, and therefore reduce landfill use. | 1 |

| 3-5 Exterior window frames contain a minimum of 10% recycled content. Reusing materials such as plastics that may not be biodegradable reduces landfill usage. | 1 |

| 3-6 Exterior window frames made from third-party certified sustainably harvested wood. Uses trees from responsible sources and forests certified to an independent third party forest certification program. | 2 |

| 3-7 Natural cementitious stone/stucco/brick or fiber cement siding – complete or combination thereof for 100% of exterior cladding. Strong, long lasting, fireproof material. | 4 |

| 3-8 Recycled or reclaimed exterior cladding material. 1/3 of exterior (1 point), 2/3 or more of home (2 points). Use of reclaimed bricks, recycled content siding, etc. Intent is to replace siding materials, primarily exterior finish materials. | 1 or 2 |

| 3-9 Fiber cement fascia and soffit. Fiber cement fascia and soffit, made with recycled content from sawmill waste and Portland cement, is a strong, long lasting and fireproof material. | 2 |

| 3-10 Recycled and/or recovered-content fascia and soffit (minimum 50% pre- or post-consumer). Recycled and/or recovered-content fascia and soffit reduces the amount of new material used in production by gluing up mill scraps into large pieces, which conserves natural resources and reduces landfill usage. | 1 |

| 3-11 Recycled and/or recovered-content siding (minimum 50% pre- or post-consumer). Recycled and/or recovered-content siding reduces the amount of new material used in production by gluing up mill scraps into large pieces, which conserves natural resources and reduces landfill usage. | 4 |

| 3-12 Exterior trim materials are made from alternatives to solid lumber. Trim materials manufactured from OSB uses a laminating process to make larger pieces from smaller pieces or strands of wood. The process saves old growth forests by using trees from forests managed sustainably, that prevent clear cutting and replant trees in areas from which they’ve been harvested. | 1 |

| 3-13 Exterior trim materials have recycled and/or recovered-content (minimum 50%). Recycled and/or recovered-content trim materials reduce the amount of new material used in production by gluing up mill scraps into large pieces, which conserves natural resources and reduces landfill usage. | 3 |

| 3-14 All exterior trim is clad with pre-finished metal (1 point over wood backings, 2 points without wood backings). Trim clad with pre-finished metal is a durable long lasting product that requires no maintenance and reduces waste in landfills due to long life of product. | 1 or 2 |

| 3-15 Deck or veranda surfaces made from low maintenance materials - deck surfaces do not need maintenance of any kind, including painting, for a minimum of 5 years. Materials that last longer reduce landfill usage and tend to require little to no maintenance, saving replacement costs and reducing energy use. | 2 |
3-16 Minimum 25-year manufacturer warranty roofing material (2 points plus 1 point for each additional 5 years).
A 25-year roof system saves homeowners money in replacement costs, and reduces the use of landfills due to the longevity of the product.

3-17 Minimum 25% recycled-content roofing system (1 point underlay and 2 points roofing finish).
Recycled content roofing material reduces the use of new resources and waste in landfills.

3-18 Domestic wood from reused/recovered or re-milled sources, 500 ft² minimum for flooring or all cabinets or all millwork.
Reused, recovered or re-milled sources eliminate the need for new resources, saving energy, transportation costs, and forestry from depletion.

3-19 Natural or recycled-content carpet pad made from textile, carpet cushion or tire waste (rebond still qualifies).
Natural or recycled-content carpet pad is a good use of reusable resources.

3-20 Install carpet that has a minimum of 50% recycled content.
Recycled-content carpet is a good use of renewable resources, lessens off-gassing and improves air quality.

3-21 Install a minimum of 300 ft² of laminate flooring.

3-22 Bamboo, cork or hardwood flooring used in home, minimum of 300 ft² installed. Products must be third-party certified from sustainably managed forests or certified sustainable sources.
Cork flooring comes from stripping the bark off cork oak, which regenerates itself. The cork tiles are moisture, rot and mould resistant, providing a floor that can last over 30 years. Bamboo flooring is a good use of natural resources because it is fast growing, durable and flexible. All hard floorings promote better indoor air quality by not trapping contaminants.

3-23 All ceramic tile installed in home has a minimum of 25% recycled-content.
Reduces landfill usage.

3-24 MDF and/or finger jointed casing and baseboard used throughout home (1 point), and all jambs (1 point)
Medium Density Fiberboard (MDF) casing is created from sawdust and glues, utilizing all wood waste to create usable product.

3-25 Solid hardwood trim from third-party certified sustainably harvested sources approved for millwork and/or cabinets (2 points per application – maximum of 4 points).
Uses trees from responsible sources and forests certified to an independent third party forest certification program.

3-26 Paints or finishes with minimum of 20% recycled content.
Paints or finishes made from recycled content are environmentally friendly because recycling paint reduces the hazardous waste in landfills.

3-27 Local natural stone or recycled content (30% of content) solid countertops for all kitchen counters (2 points), all other counter tops (1 point).
Solid counter top product is more durable, easy to clean and maintain, resistant to heat and scoring. By quarrying and sourcing in Canada, the environmental cost of shipping is greatly reduced. Foreign stone cut or polished in Canada is not acceptable, quarry must be located within 800km of project, see item 8-1 for additional point.

3-28 100% agricultural waste or 100% recycled wood particle board used for shelving.
Products such as wheat board are made from agricultural waste.

3-29 PVD finish on all door hardware.
Physical Vapour Disposition provides a more durable product. No toxic wastes are produced making it.

3-30 PVD finish on all faucets.
Physical Vapour Disposition provides a more durable product. No toxic wastes are produced making it.

3-31 Install only Type 1 or 2 grade door hardware with lifetime mechanical and coating warranty.
High quality, durable Type 1 and 2 hardware will not require replacing for life of home.

TOTAL SECTION POINTS

IV. INDOOR AIR QUALITY
This section focuses on the quality of the air within the finished home. Products listed here include materials that are low in VOC’s, products made from all natural materials as well as various air cleaning and ventilation systems.
Minimum 15 Points Required

4-1 Install pleated media filter on HVAC system with minimum MERV 7 rating.
MERV rating system specifies allowable amounts and practical sizes that a filter must catch. The higher the MERV rating, the smaller and greater number of particulates are caught, providing better indoor air quality.

4-2 Install electrostatic air cleaner on HVAC system.
Permanent washable air filter that traps and removes airborne particles from the air before being circulated through the furnace and into the home.

4-3 Install air filter on all fresh air inlets.
A filter installed on the fresh air inlet will reduce the particulate that can be transferred from outside into the home. All air intakes must be easily accessible for maintenance. Bug screens are not considered a “filter”. Check with funace or HRV manufacture for specific details.

TOTAL SECTION POINTS

20
4-4 Install electronic air cleaner on HVAC system.

An electronic air cleaner offers a superior level of filtration by using advanced, 3-stage filtration technology to trap and filter airborne particles like dust, cat dander and smoke. It works by placing an electric charge on airborne particles, and then collecting the charged pollutants like a magnet. The air cleaner cells can be washed in your dishwasher or sink.

4-5 Install HEPA filtration system in conjunction with an HVAC system.

HEPA stands for High-Efficiency Particle Arresting. HEPA filtration offers the highest particulate removal available - 99.97% of particles that pass through the system including dust, cat dander, certain bacteria, pollens and more. The system is connected to the cold air return of the forced air heating/cooling system which provides a whole house filtration system.

4-6 Install thermostat that indicates the need for the air filter to be changed or cleaned.

This feature displays filter maintenance reminders on the thermostat. Regular furnace maintenance is required to keep your mechanical equipment running efficiently and problem free as well as ensuring a healthy indoor air environment.

4-7 Power vacuum all HVAC ducting prior to occupancy by homeowner.

This process helps eliminate pollutants that drop into the HVAC ducting during the construction process from being circulated into the home.

4-8 Central vacuum system vented to exterior as recommended by the Carpet and Rug Institute.

A central vacuum system collects dust centrally, while exhausting to the exterior so that dust mites and bacteria do not have the opportunity to re-circulate. The result is cleaner, healthier air. Note: install far enough from air intake areas. See manufacturer's installation guidelines.

4-9 All insulation in the home is third-party certified or certified with low or zero formaldehyde.

Formaldehyde is colorless gaseous organic compound, water soluble, with a characteristic pungent and stifling smell. Products with low formaldehyde emission levels will improve indoor air quality of homes and long term owner health.

4-10 Low formaldehyde sub floor sheathing (less than 0.18 ppm).

Formaldehyde is colorless gaseous organic compound, water soluble, with a characteristic pungent and stifling smell. Products with low formaldehyde emission levels will improve indoor air quality of homes and long term owner health. Industry Standard ANSI A208.1-1999 sets a 0.20 ppm limit. Built Green™ requires a 10% better level of performance at 0.18 ppm. Products using Phenol Formaldehyde, or PMDI or MDI will meet this standard without testing.

4-11 Low formaldehyde underlayment is used in home (less than 0.18 ppm).

Low formaldehyde (phenol) and formaldehyde-free binders (PMDI) are available and becoming more common. FSC certified OSB is becoming more common, reducing environmental impacts on air, water, social quality.

4-12 Low formaldehyde particle board/MDF (less than 0.18 ppm) = 1 point, or zero formaldehyde particle board/MDF (2 points) used for cabinets.

Urea formaldehyde-free fiberboard can be used in the same way as conventional fiberboard, but with the added caution of greater potential for water damage.

4-13 Low formaldehyde particle board/MDF (less than 0.18 ppm) = 1 point, or zero formaldehyde particle board/MDF (2 points) for shelving.

Urea formaldehyde-free fiberboard can be used in the same way as conventional fiberboard, but with the added caution of greater potential for water damage.

4-14 All interior wire shelving is factory coated with low VOC / no off gassing coatings

Vinyl coating on conventional shelving units and site built MDF shelving off gas VOCs.

4-15 Water-based urethane finishes used on all site-finished wood floors.

Water-based epoxy finish (generally referred to as epoxy-modified finish) differs from its solvent-based counterpart in that the epoxy resin is itself the catalyst for an acrylic or urethane resin.

4-16 All wood or laminate flooring in home is factory finished.

Installing a pre-finished floor eliminates the time, the dust and the odours associated with the on-site sanding and finishing of an unfinished product.

4-17 Water-based lacquer or paints are used on all site built and installed millwork, including doors, casing and baseboards. (less than 200 grams/litre of VOC’s)

Using water based interior finish products reduces VOC off-gassing which improves indoor air quality.

4-18 Interior paints used have low VOC content (less than 200 grams/litre of VOCs).

Volatile Organic Compounds (VOCs) are a class of chemical compounds that can cause short or long-term health problems. A high level of VOCs in paints/finishes off gas and can have detrimental effects to a buildings indoor air quality and occupant health.

4-19 Interior paints used have no VOC’s in base paint prior to tint.

Volatile Organic Compounds (VOCs) are a class of chemical compounds that can cause short or long-term health problems. A high level of VOCs in paints/finishes off gas and can have detrimental effects to a buildings indoor air quality and occupant health.

4-20 All ceramic tiles are installed with low VOC adhesives and plasticizer-free grout (low VOC standard is less than 150 grams per litre).

Most adhesives are still based on SB latex which releases large quantities of VOCs. The volatile solvents are used to emulsify (or liquify) the resin that acts as the bonding agent. However, water-based adhesives emit far less VOCs than their conventional solvent based counterparts. There are three types of low-VOC formulas: water-based (latex and acrylics); reactive (silicone and polyurethane); and exempt solvent-based (VOC-compliant solvents). While all three technologies yield low- or zero-VOC caulks, sealants, and adhesives, their performance is slightly different.
4-21 All Vinyl flooring is replaced with natural linoleum installed with low VOC adhesives or other hard surface flooring (low VOC standard is less than 150 grams per litre). Hard surface flooring is generally more durable and improves the Indoor Air Quality within a building. Vinyl flooring typically releases VOCs as it ages and uses toxic glues in its application.  

4-22 Carpet and Rug Institute (CRI) IAQ label on all carpet used in home. To identify carpet products that are truly low-VOC, CRI has established a labeling program. The CRI Indoor Air Quality Carpet Testing Program green and white logo displayed on carpet samples in showrooms informs the consumer that the product type has been tested by an independent laboratory and has met the criteria for very low emissions.  

4-23 Carpet and Rug Institute (CRI) IAQ label on all underlay used in home. The adhesives used to install carpets and the latex rubber by some manufacturers to adhere face fibers to backing materials generate volatile organic compounds (VOCs). Carpets also cover large surfaces within an interior environment and can provide "sinks" for the absorption of VOCs from other sources.  

4-24 Natural material based carpet in all living areas. Natural wool carpets are durable and use less secondary backing materials and chemicals. Off-gassing is typically caused by the secondary backings and chemical additives in synthetic carpets, for controlling mildew, fungus, fire and rot.  

4-25 All carpet in home is replaced by hard surface flooring. Hard surface flooring is generally more durable and improves the Indoor Air Quality within a building. Carpets collect dust, dust mites and other allergens which when disturbed become airborne particulates-directly affecting the health of the occupants.  

TOTAL SECTION POINTS 20

V. VENTILATION

This section covers the mechanical ventilation systems in the home, including filtrations and heat recovery. Minimum 6 Points Required

* Platinum Level Note* Platinum level homes must use item 5-7 "Ventilation system is installed according to CSA Standard F326, as recommended by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI)." as well as 6 additional points from this section.

5-1 All ductwork joints and penetrations sealed with low toxic mastic or aerosolized sealant system. Duct mastic is a preferred flexible sealant that can move with the expansion, contraction, and vibration of the duct system components. A high quality duct system greatly minimizes energy loss from ductwork. The system should be airtight, sized and designed to deliver the correct airflow to each room.  

5-2 Install motorized damper on fresh air inlet (must be interlocked with furnace system). A constantly open fresh air supply (passive air) wastes energy. Positive control of this air will assure building comfort, safety and energy efficiency.  

5-3 Install all ventilation fans (bath or in-line type) to meet or exceed the Energy Star requirements. Energy Star fans have to meet standards for efficiency, and sound transmission, providing quiet and effective ventilation fans. www.see.nrcan.gc.ca/energystar/english  

5-4 Install a programmable timer or humidistat controlled ventilation fan meeting the Energy Star requirements for efficiency and sound level. A programmable timer ensures necessary, regular, automatic mechanical ventilation of the home.  

5-5 Install passive Heat Recovery Ventilator (HRV) and verify balanced installation. A Heat Recovery Ventilator (HRV) is an air exchanger that exhausts humid, stale, polluted air out of the home and draws in fresh, clean outdoor air into the home. Invisible pollutants produced by common household substances, plus dust and excess humidity that get trapped in today's houses, can increase your risk of chronic respiratory illness and your homes risk of serious structural damage. A passive HRV unit does not have its own internal fan and is 100% furnace assisted. It works by tying the exhaust side of the unit to the supply air plenum which forces air to exhaust from the home and at the same time fresh air enters from outside through the unit and into the cold air return duct work.  

5-6 Install an active Heat Recovery Ventilator or Energy Recovery Ventilator (HRV or ERV) and verify balanced installation. A Heat Recovery Ventilator (HRV) is an air exchanger that exhausts humid, stale, polluted air out of the home and draws in fresh, clean outdoor air into the home. Invisible pollutants produced by common household substances, plus dust and excess humidity that get trapped in today's houses, can increase your risk of chronic respiratory illness and your homes risk of serious structural damage. Much like the HRV, the ERV recovers heat; however, it also recovers the energy trapped in moisture, which greatly improves the overall recovery efficiency. In dry climates and humidified homes the ERV limits the amount of moisture expelled from the home. In humid climates and air conditioned homes, when it is more humid outside than inside, the ERV limits the amount of moisture coming into the home.  

5-7 Ventilation system is installed according to CSA Standard F326, as recommended by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI). www.hrai.ca
5-8  All bath fans used throughout home have a noise level of 1 sone or less

Installing quiet fans will encourage use for home ventilation.

TOTAL SECTION POINTS 16

VI. WASTE MANAGEMENT
This section deals with the handling of waste materials on the construction site and encourages recycling. Minimum 7 Points Required

6-1  Comprehensive recycling program for building site including education, site signage and bins.

A comprehensive recycling program that is strictly followed significantly reduces the amount of waste ending up in landfills. Currently it is estimated that up to 50% of landfill waste is construction related.

6-2  Collection of waste materials from site by a waste management company that is a current member of a provincial recycling council or equivalent association and verifies that a minimum of 10% of the materials collected from the construction site have been recycled.

Not only does this reduce overall waste of product, it ensures that as much product as possible is being utilized for the production of future resources.

6-3  Suppliers and trades recycle their own waste, including leftover material and packaging (1 point per trade - maximum 4 points).

Trades being responsible for recycling and removal of waste not only reduces landfill waste, but also promotes a cleaner and safer working environment.

6-4  Minimum 15% (1 point) 25% (2 points) or 50% (6 points) by weight of waste materials collected from construction site is diverted from waste stream.

Trades being responsible for recycling and removal of waste not only reduces landfill waste, but also promotes a cleaner and safer working environment.

6-5  Use of recycled materials derived from local construction sites (1 point for each different product used, to max. of 3).

Products recycled from the construction site, such as mulched clean dimensional lumber free of metals, or mulched paperless gypsum are often useable as either clay/soil water retention additives.

6-6  Trees and natural features on site protected during construction.

The protection of existing trees and other natural features such as streams, ponds and other vegetation reduces environmental and ecosystem impact. Many of these features can be protected simply by following good waste management procedures.

6-7  Metal or engineered durable form systems used for concrete foundation walls.

The use of metal forming systems reduces the requirement of lumber, a limited resource.

6-8  Concrete used in home has a minimum supplementary cementing material of 25% (1 point) or 40% (2 points) within the scope of proper engineering practices.

For every one ton of Portland cement generated, eighth tenths of a ton of carbon dioxide is produced. Supplementary cementations products include fly ash, blast furnace slag as well as metakaolin.

6-9  Install recycling center with two or more bins.

By installing built in recycling centers, which can be as simple as labeled containers (paper, cardboard, cans, plastics, etc), homeowners are more likely to utilize the pre-existing facilities and thus contribute to the reduction in landfill waste.

6-10 Provide composter to homeowner.

Providing a composter promotes a reduction in wastes heading to the landfill by giving homeowners an option for organic waste such as food leftovers.

6-11 Existing dwellings onsite are recycled or moved instead of demolished (recycled 2 points, moved 4 points).

TOTAL SECTION POINTS 10

VII. WATER CONSERVATION
This section encourages a reduction in the amount of water used in the home or in individual units within multi-story buildings. Minimum 7 Points Required

7-1  Install a dual flush or pressure assisted toilet in one or more bathrooms (3 points for first, 1 additional point for each after)

Dual flush toilets offer a choice between two water levels for every flush; at minimum should use, 1.6 GPF (6 LPF) or 0.8 GPF (3 LPF).

7-2  Install a 1.28 GPF toilet in one or more bathrooms (2 points for first, 1 additional point for each after)

1.28 GPF (Gallon per Flush) is general considered the new standard in water efficiency.
7-3 Install manufactured non-electric composting toilet (3 points each, max of 6 points).
A composting toilet uses no water and is odourless. It uses a biological processes to break down the waste into organic compost material.

7-4 Insulate the hot water lines with flexible pipe insulation, first three feet from hot water tank (1 point) or all hot water lines (2 points).
Minimizing the heat loss in the water line will decrease the initial water wasted by delivering hot water faster.

7-5 Install hot water recirculation system with all hot water lines insulated (4 points), or point-of-use instant DHW system (1 point each, max. 4)
Having the hot water re-circulated from the hot water source to the fixture points will decrease the initial water wasted by delivery the hot water faster. Pump must be on program or timer to reduce stand-by losses. Kitchen counter top "boiling water taps" are not credited.

7-6 Install low flow faucets for all kitchen faucets and lavatories (2 points), all showers & tub/showers (additional 1 point).
Reduces water consumption by lowering the flow rate. Showers must use 9.8 L/min (2.2 imp. Gal/min) or less. Faucets, both kitchen and bath, must use 8.3 L/min (1.8 imp. Gal./min) or less.

7-7 Install hands free lavatory faucets. 1 point per faucet/unit.
Battery powered electronic sensor minimizes the spread of germs and saves water.

7-8 Provide front loading clothes washer (3 points), or Condensing Combination wash/dry unit (4 points)
Front loading clothes washers conserve water by design, as they are only required to fill up the washing compartment 1/3 full to effectively wash clothing. Additionally they use up to 75% less environmentally damaging laundry detergent, AND they also conserve electrical or gas energy by significantly reducing drying time for clothes with a more thorough spin cycle.

7-9 Install water saving dishwasher that uses less than 20.0 L/water per load.
Water saving dishwasher use technology to reduce both the amount of water required as well as electrical energy requirements. The EnerGuide appliance directory put out by Natural Resources Canada has a comprehensive listing of all manufacturers and models of dishwashers and other appliances with water usage and energy efficiency ratings.

7-10 Install efficient irrigation technology that utilizes automatic soil moisture-based sensor technology at minimum
Show storm water management plan & design; water efficient irrigation systems, sensors, regulators, micro drip feed systems etc.

7-11 Install permeable paving materials for all driveways and walkways.
Permeable paving allows for storm water to flow back into the ground rather than into the storm sewers.

7-12 Provide a list of drought tolerant plants and a copy of the local municipality water usage guide to homebuyers with closing package.
Most municipalities provide a guide that gives the water requirements of various plants and grasses. When properly designed, landscaping choices can significantly contribute to water conservation.

7-13 Builder supplies a minimum of 8” of topsoil or composted yard waste, as finish grading throughout site.
Compared to subsoil materials, topsoil usually has higher aggregate stability, lower bulk density, and more favorable pore size distributions which leads to higher hydraulic conductivity, water holding capacity, and aeration porosity.

7-14 Builder incorporates water wise landscaping or xeriscaping in show home or customer home (customers 50% of lawn 2 points, 100% 4 points).
Xeriscaping (or drought resistant landscaping) plans and options can be obtained from professional landscaping contractors, and once a xeriscaping landscape is in place, it requires no manual watering. (Rain barrel usage, astro turf ineligible.)

7-15 Builder attaches water barrel with insect screen to downspout. Water barrel should also have a drain spout and overflow spout (1 point per barrel - maximum of 3 barrels).
Supplying a water barrel encourages homeowners to use rainwater for landscaping needs and therefore save on potable water.

7-16 Install grey water system collecting waste from sinks, shower and/or kitchen to capture and treat for use in toilets or irrigation (6 pts), rough-in for future grey water system (3 points)
By reusing waste water, consumption can be drastically reduced. Rough-in must include clearly identified grey water drain stack, separated from sewer line.

TOTAL SECTION POINTS 10

VIII. BUSINESS PRACTICE
This section deals more with manufacturers and builders office and business practices.
Minimum 6 Points Required

8-1 Products used for home are manufactured within 800 km (1 point for each product - maximum of 5).
Transportation of building materials is a substantial energy use, local manufacture reduces this embodied energy. Distances are calculated by road, not as the crow flies. Manufacturing or assembly must take place in a plant or factory, not on-site. Distance to raw material source is not included.
8-2 Builder provides Built Green™ homeowner manual, completed Built Green™ checklist and educational walkthrough with sale or possession.

8-3 Builders' office and show homes purchase a minimum of 50% (1 point) or 100% (2 points) solar, wind or renewable energy.

8-4 Manufacturers and/or suppliers purchase 50% or more solar, wind or renewable energy.

8-5 Builder has written an environmental policy which defines their commitment (must include an office recycling program and energy efficient lighting).

8-6 Manufacturer and/or supplier has written an environmental policy which defines their commitment (must include an office recycling program and energy efficient lighting). (1 point per supplier/manufacturer - maximum of 2 points).

8-7 Builder has written an environmental policy which prioritizes milestones for future net zero housing developments.

8-8 Builders' company vehicles are hybrid or bio-diesel vehicles (1 point per vehicle - maximum of 3 points).

8-9 Environmental certification for builders place of business (building, office, etc).

8-10 Builder agrees to construct and label a minimum of 50% of all homes to the Built Green™ standard per calendar year. (3 points for 50%, 5 points for 100%).

8-11 Contracted trades and/or suppliers have successfully taken and maintained Built Green™ Builder Training status (1 point per trade organization, Max 5).

TOTAL SECTION POINTS 8

TOTAL CHECKLIST POINTS 130
Brody Development (Continuum) Limited Partnership
1060 West 14th Street,
North Vancouver, BC
V7P 3P3

Attention:  Mike Brody
Principal

Via email:  mike@brodydevelopment.com

Re:  Flood Hazard Assessment
Orwell Street/Premier Street Lots G, H, 4, 5, 22, 21

1  INTRODUCTION

Brody Development (Continuum) Limited Partnership (Brody) retained Northwest Hydraulic Consultants Ltd. (NHC) to provide a flood hazard assessment (FHA) of the townhouse development proposed at 858 Orwell Street. The development is within the District of North Vancouver (DNV) and consists of the following lots:

- Lot G Block 3 District Lot 612 Plan 15643 (Lot G)
- Lot H Block 3 District Lot 612 Plan 15643 (Lot H)
- Lot 4 block 3 District Lot 612 Plan 2377 (Lot 4)
- Lot 5 Block 3 District Lot 612 Plan 2377 (Lot 5)
- Lot 22 Block 3 district Lot 612, Plan 2377 (Lot 22)
- Lot 21 Block 3 District Lot 612 Plan 2377 (Lot 21)

The objective of this assessment is to identify any hydraulic hazards that would suggest the property is not safe to further develop for residential use or that require mitigation for safe development. Assuming the property can be safely developed, than any mitigation measures – such as a flood construction level (FCL) – are to be documented along with the assessment in a manner that satisfies DNV’s SPE 106 Creek Hazard Report and SPE 107 Flood Hazard Report Master Requirements.
1.1 Study Area

1.1.1 Proposed Development

The property is located between Orwell Street and Premier Street near the northern terminus of Orwell Street. It consists of 6 lots, four of which are adjacent to Orwell Street (Lots G, H, 4, 5) and the remaining two adjacent to Premier Street (Lots 22, 21) (Figure 1). A Legacy Townhome development has recently been constructed within the lots immediately north of the study area while single and multi-family dwellings are located to the south. Inter-River Park is located north of the Legacy Townhome development and the DNV Fire Training Centre and Lynnmour School are located immediately west of Orwell Street. The proposed development is located 300 m east of Lynn Creek (left side of the channel) and is within the DNV’s Creek Hazard Development Permit Area (DPA). The range of elevations of each lot are listed in Table 1.

Table 1 Range of Elevations of Lots

<table>
<thead>
<tr>
<th>Lot Identifier</th>
<th>Elevation (m, GD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>17.59 – 17.95</td>
</tr>
<tr>
<td>H</td>
<td>16.82 – 17.86</td>
</tr>
<tr>
<td>4</td>
<td>16.61 – 17.00</td>
</tr>
<tr>
<td>5</td>
<td>15.51 – 17.10</td>
</tr>
<tr>
<td>22</td>
<td>16.67 – 18.23</td>
</tr>
<tr>
<td>21</td>
<td>16.30 – 17.95</td>
</tr>
</tbody>
</table>

1.1.2 Lynn Creek

Lynn Creek has historically flooded and been subject to damaging bank erosion and channel movement – since the early 1980s gravel removal management activities have greatly reduced the flood and bank erosion potential.

Roughly 370 m upstream of the development, Lynn Creek transitions from an incised, steep mountainous channel to a more shallow, sinuous channel with a wide floodplain, which corresponds to the upper portion of the Lynn Creek fan. The channel bed consists of gravel and cobbles with some boulders. The flood plain extends 270 m from the left bank and is densely vegetated with large, coniferous trees. The floodplain slopes downstream at roughly 0.9% and slopes towards the channel from Premier Street (Figure 2).
2  FLOOD HAZARD ASSESSMENT

2.1  Previous Studies

This assessment is assessing the potential hazards resulting from the study property’s proximity to Lynn Creek. This flood hazard assessment included review of the following past studies, reports, guidelines, and flood hazard assessments:


No provincial floodplain mappings exist for this creek. The most recent flood study conducted for the DNV relevant to this project appears to be KWL’s 2014 creek hydrology floodplain report; superseding their 2006 report.

The Lynnmour / Inter-River Local Plan Flood Protection Assessment prepared by Kerr Wood Leidal in 2006 (KWL, 2006) states flood overflow from a potential channel blockage is possible and that return periods of 500 years or greater are often used to model these types of flood events. It further suggests that Orwell Street is a natural floodway and is likely to convey upstream overbank floodwaters from Inter-River Park down to Keith Road. The FCLs for lots fronting on Orwell Street are determined as a summation of the floodway elevation (Orwell Street) and a 0.6 m freeboard. KWL (2006) noted that it is unlikely that flow would reach Premier Street and therefore FCLs for lots that front along Premier Street should be based on the Orwell Street grade.

The superseding 2014 report (KWL) states that under current conditions, Lynn Creek would not experience overbank flooding during a clear-water 200-year return period event. Although no discussion is presented on potential channel blockage or subsequent overland flow the District Risk Management group has chosen to institute a universal and nominal Flood Construction Levels (FCL) of 0.6 m above surrounding grade.

Previous flood assessment along this reach of Lynn Creek have considered design flows as large as 344 m\(^3\)/s, based on a 200-year peak flow of 216 m\(^3\)/s, a 13 m\(^3\)/s increase for expected climate change effects by the year 2080, and a 50% increase to reflect the hypothetical bulking of flow due to debris...
Flood Hazard Assessment
Orwell Street/Premier Street Lots G, H, 4, 5, 22, 21
Final

(LaCas, 2012). Such an event would result in overland flow along Orwell Street, breaching the banks just downstream of the playing fields (XS1 - Figure 2).

The following table provides a summary of past design flow events.

<table>
<thead>
<tr>
<th>Value (m$^3$/s)</th>
<th>Reference</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>229</td>
<td>KWL 2014</td>
<td>200-yr, instantaneous, clear water</td>
</tr>
<tr>
<td>216</td>
<td>KWL 2006</td>
<td>200-yr, instantaneous, clear water</td>
</tr>
<tr>
<td>344</td>
<td>LaCas 2012</td>
<td>200-yr, inst., climate change, debris</td>
</tr>
</tbody>
</table>

### 2.2 Assessment of Hazards

Flood extent of the 200-year Lynn Creek design flow event during clear-water conditions for year 2100 (229 m$^3$/s) shows that overtopping flooding is not anticipated for Lynn Creek at or upstream of the study location. However, overflow is likely if the channel is blocked by sediment or debris during a flood event.

To assess the extent of potential overland flooding at the study location, a cross section was extracted from the District of North Vancouver LiDAR data located just downstream of the Inter-River Playing Field (XS1 - Figure 2) and flood elevation estimated based on single section hydraulic model assuming a complete blockage and non-design, conservative flow of 344 m$^3$/s (Figure 3). The resulting water surface elevation is less than 1 to 2 m below Premier Street. A second section was cut immediately upstream of the development and Orwell Street (XS2 - Figure 2). Again the predicted flood level is 1 to 2 m below Premier Street (Figure 4).

Based on this assessment, the slope of the floodplain and the slope of Premier Street it appears unlikely that flood waters would inundate Premier Street but would return back to the Lynn Creek channel with a portion of the water flowing down Orwell Street.

Due to the distance of the proposed development from the channel, the development on the floodplain, relative stability of the channel, and lack of preferential overflow channels, the risk of avulsion or channel migration towards the study property is considered extremely low.
Figure 3  Modelled flood water surface elevation due to blockage of Lynn Creek channel XS 1 (looking downstream).

Figure 4  Modelled flood water surface elevation due to blockage of Lynn Creek channel XS 2 (looking downstream).
2.3 Proposed Mitigative Works

Mitigation for the perceived flood hazard is to provide a minimum construction level – the flood construction level (FCL) – to limit the likelihood of flooding, maintaining Orwell Street free from barriers and sloping towards Burrard Inlet to allow it to provide a floodway to convey overland flow, and having foundations set well below grade and/or their footings armoured to limit likelihood of being undermined by scour during overland flow.

Previously KWL prescribed FCLs for the development based on both Orwell and Premier Street (Table 3). However, flood flow from Lynn Creek along Premier Street is extremely unlikely. It is therefore recommended that the FCL be based solely on Orwell Street for the study properties. The predicted depth of flow on Orwell Street is less than 0.6 m, therefore an offset of 0.6 m above Orwell Street is appropriate (Table 3) as previously suggested by KWL (2006).

<table>
<thead>
<tr>
<th>Lot Number</th>
<th>Fronting Street</th>
<th>Orwell Street Crown Elevation (m, GD)</th>
<th>Previous FCL (m, GD)</th>
<th>Recommended FCL (m, GD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Orwell</td>
<td>17.30</td>
<td>17.90</td>
<td>17.90</td>
</tr>
<tr>
<td>H</td>
<td>Orwell</td>
<td>16.60</td>
<td>17.20</td>
<td>17.20</td>
</tr>
<tr>
<td>4</td>
<td>Orwell</td>
<td>16.15</td>
<td>16.75</td>
<td>16.75</td>
</tr>
<tr>
<td>5</td>
<td>Orwell</td>
<td>15.80</td>
<td>16.40</td>
<td>16.40</td>
</tr>
<tr>
<td>22</td>
<td>Premier</td>
<td>16.60</td>
<td>19.00</td>
<td>18.20</td>
</tr>
<tr>
<td>21</td>
<td>Premier</td>
<td>16.15</td>
<td>18.60</td>
<td>17.90</td>
</tr>
</tbody>
</table>

3 SAFE CERTIFICATION

NHC has not assessed the property for hazards related to fire, debris flow, landslide, stormwater drainage, groundwater seepage or any other hazards besides those resulting directly from an overland flood originating from Lynn Creek due to channel blockage. This assessment is based on findings from the KWL 2006 and 2014 reports and is applicable for flood events less than or equal to the 200-year clear water design flow event in Lynn Creek or localised blockage with the majority of flow returning to the Lynn Creek channel and the remaining portion flowing down Orwell Street.

NHC certifies that the subject property is considered safe for the intended use if:

- All habitable space is above the FCL.
- All infrastructure utilities and parking areas that are located below the FCL are designed such that the invert of any access points are above the FCL and the structure is designed to withstand the appropriate hydrostatic pressures.
• All flood protection works are designed by a qualified registered professional. Short and long term maintenance requirements for the flood protection works are outlined by a qualified registered professional and these works are followed by the owner/operator of the property. Site drainage and seepage mitigation internal to the property are designed by a qualified registered professional.

• Final building plans and as-built conditions have been assessed and approved for compliance with the conditions specified herein by a qualified registered professional.

• Any erosion or scour mitigation work for foundations or other critical infrastructure (i.e. along Orwell Street) are designed or reviewed by qualified registered professional.

4 CLOSURE

We hope that this work and report meet your current needs. If you have any questions, please do not hesitate to contact me at 604.980.6011 or gvass@nhcweb.com.

Sincerely,

Northwest Hydraulic Consultants Ltd.

Prepared by:

Graeme Vass, EIT
Project Engineer

Reviewed by:

Dale Muir, P.Eng
Principal

Attachments.

Figure 1 – Study Lot Locations

Figure 2 – Lynn Creek Floodplain and Cross Section Location
DISCLAIMER

This report has been prepared by Northwest Hydraulic Consultants Ltd. for the benefit of Brody Development (Continuum) Limited Partnership for specific application to the Flood Hazard Assessment Orwell Street/Premier Street Lots 864, 858, 854, 873, 855 – Lynn Creek. The information and data contained herein represent Northwest Hydraulic Consultants Ltd. best professional judgment in light of the knowledge and information available to Northwest Hydraulic Consultants Ltd. at the time of preparation, and was prepared in accordance with generally accepted engineering practices.

Except as required by law, this report and the information and data contained herein are to be treated as confidential and may be used and relied upon only by Brody Development (Continuum) Limited Partnership, its officers and employees. Northwest Hydraulic Consultants Ltd. denies any liability whatsoever to other parties who may obtain access to this report for any injury, loss or damage suffered by such parties arising from their use of, or reliance upon, this report or any of its contents.

REFERENCES


ATTACHMENT A
ADDITIONAL FIGURES
Figure 1
Study Lot Locations
Figure 2
Lynn Creek Floodplain and Cross Section Location
ATTACHMENT B
FLOOD ASSURANCE STATEMENT
Purpose

The Flood Hazard Report assesses the impact of flood hazards on a proposed development and outlines such conditions as may be required to ensure that the proposed development is safe for the use intended.

Background

Development may be directly affected by surface water flooding or, indirectly, by elevated ground water levels. Development and properties not directly adjacent to a river or creek may be at risk as flooding represents a hazard to a wide area.

In order to avoid unnecessary delays, complications or expense applicants are advised to ask a Plan Checker early in the design stages if a Flood Report will be necessary. A Pre-Application Request for Service may be required to confirm the requirement for a Flood Report. A Flood Report will be required if:

- the development is located within the provincially designated Seymour River Floodplain,
- the development is located adjacent to the designated Seymour River Floodplain and proposes basements or finished space below Flood Construction Levels,
- the development proposes basements or finished space below the High Water Mark,
- pursuant to s. 56 of the Community Charter the Building Inspector considers that construction would be on land that is subject to flooding or elevated ground water levels.

A building permit application will be accepted on the condition that:

1) the Flood Report has been submitted by a specialist professional engineer and such engineer certifies, subject to conditions contained within the report, that the land may be used safely for the use intended,

2) the Flood Report MUST provide a response to all headings identified in the Flood Report - Terms of Reference identified below. Incomplete reports will not be found acceptable and will result in delays,
3) the Building Inspector has reviewed and accepted the report,
4) the owner of the land covenants with the District to:
   a) use the land only in the manner determined and certified by the engineer as enabling the safe use of the land for the use intended,
   b) the covenant contains conditions respecting reimbursement by the covenantor for any expenses that may be incurred by the covenantee as a result of a breach of the covenant,
   c) the covenant be registered under section 219 of the Land Title Act.

Prior to constructing work within 30 metres of the top of bank of a watercourse an applicant will require District of North Vancouver Environmental approval with respect to the removal and importation of soil, tree cutting and proximity to sensitive aquatic areas.

Requirements

Content: Flood Report - Terms of Reference

- **Credentials:** Flood Reports are to be performed by a specialist professional engineer or professional geoscientist with experience or training in geotechnical study and geohazard assessments.

- **Statutes:** Section 56 of the Community Charter is applicable where the study is undertaken for the purpose of addressing flooding issues for a Building Permit.

- **Background Information:** Flood Reports shall include a review of available background information.

- **Property Description:** Flood Reports shall include both legal and street addresses of the subject property, and also a plan showing the location of the property relative to the pertinent creek, river or coastal area. Any existing restrictive covenants relative to land use or natural hazards shall be identified and attached to the report.

- **Flood Hazards:** Flood Reports shall provide a clear assessment of hazards associated with floods including surface and subsurface water. Uplift, hydrostatic pressure and the affects on perimeter drainage, storm water management and sanitary drainage must be addressed. The design magnitude of
each of these processes will be assessed to a level of accuracy appropriate for the project.

- **Other Hazards**: For waterfront properties, the risk of flooding and erosion from the sea shall be addressed. Where other hazards, such as rockfall, are apparent, they shall be noted.

- **Design Criteria for Floods**: For floods, the design flow shall be the 200-year return period peak instantaneous flow. New culverts should be capable of passing this flow with no surcharging. New bridges should be capable of passing this flow with a minimum of 1 metre of freeboard.

- **Safe Certification**: A clear certification, subject to conditions contained in the report, that the land may be used safely for the use intended. The conditions shall be with respect to the siting, structural design and maintenance of buildings, structures and works, the maintenance of planting or vegetation, the placement of landfill and other such conditions respecting the safe use of the land, buildings, structures or works.

Any assumptions regarding future watershed conditions as they relate to the hazard assessments are to be clearly stated.

- **Building Setbacks**: Proposed building setbacks shall be clearly defined. In most cases, it would be appropriate to consult with the Environmental Protection Department in determining setbacks.

- **Flood Construction Levels**: Proposed FCL’s for proposed building sites shall be clearly defined, preferably in Geodetic Survey of Canada datum. In general, FCL’s will be based on the 200-year return period flood criteria, plus a minimum of 0.6m freeboard allowance, plus a reasonable allowance for sedimentation. Behind dykes or other flood protection works, determination of appropriate FCL’s will be site-specific.

- **Proposed Mitigative Works**: Proposed mitigative works are to be permanent, and shall be designed to a conceptual level for the purpose of report submission. If the proposed works will result in transfer of risk to a third party, this will be clearly noted. The location and land ownership for proposed works is also to be noted. Following acceptance of the report, the requirements for design and construction of the works will be defined.
- **Environmental Approvals:** Where environmental approvals are required for construction of mitigative works, it may be necessary to obtain such approvals prior to acceptance of the report.

- **Maintenance Requirements:** *Flood Reports* shall fully outline short and long term maintenance requirements.

- **Report Submission:** *Flood Reports* shall be sealed by the engineer of record. Where required, engineering reports will be included within a restrictive covenant registered against the land title.

- **Peer Review:** The District regularly obtains a peer review of creek reports by independent engineering consultants. Any concerns resulting from a peer review will be directed to the engineer of record for consideration. Creek reports will not be accepted until concerns arising from a peer review are satisfactorily resolved.

### Section 219 Covenant

- **Per sample**

  **Timing:** The *Flood Report* must be found acceptable by the Building Inspector prior to a permit application being accepted. The *Section 219 Covenant* must be registered on title prior to permit issuance.

  **Owner:** Retain appropriate professional(s) to prepare *Flood Reports.* Registered Section 219 Covenant on land title.

### Related Requirements/Documents/Forms

Master Requirement SPE107 *Creek Hazard Report*

### Contacts

Planning, Permits & Properties  
District of North Vancouver  
355 West Queens Road  
North Vancouver, BC V7N 4N5

Tel 604-990-2480  
Fax 604-984-9683  
email building@dnv.org
Purpose

The Creek Hazard Report assesses the impact of creek hazards on a proposed development and outlines such conditions as may be required to ensure that the proposed development is safe for the use intended.

Background

Development may be adversely affected by creek hazards by a number of mechanisms including flooding, debris floods, debris flows, erosion and accretion. Development and properties not directly adjacent to a creek may be at risk as flooding, debris floods and debris flows represent a hazard to a wide area.

In 1999 the District of North Vancouver published "Overview Report on Debris Flow Hazards". The report identified potential debris flow hazard ratings for creeks within the District. The report is a public document and is available for review at the Parks and Engineering Division and the Planning Building & Environment Division counters at the Municipal Hall. The report is also available through North Vancouver public libraries.

In order to avoid unnecessary delays, complications or expense applicants are advised to ask a Plan Checker early in the design stages if a Creek Hazard Report will be necessary. A Pre-Application Request for Service may be required to confirm the requirement for a Creek Hazard Report. A Creek Hazard Report will be required if:

- the development is located within a creek fan as designated in the "Overview Report on Debris Flow Hazards".
- the development is located below the top of bank of a creek designated in the "Overview Report on Debris Flow Hazards" as medium or higher risk.
- pursuant to s. 56 of the Community Charter the Building Inspector considers that construction would be on land that is subject to flooding, mud flows, debris flows, debris torrents, erosion, land or slip rock falls.

A building permit application will be accepted on the condition that:

1) the Creek Hazard Report has been submitted by a specialist professional engineer and such engineer certifies, subject to conditions contained within the report, that the land may be used safely for the use intended,
2) The *Creek Hazard Report* MUST provide a response to all headings identified in the *Creek Hazard Report - Terms of Reference* identified below. Incomplete reports will not be found acceptable and will result in delays.

3) the Building Inspector has reviewed and accepted the report,

4) the owner of the land covenants with the District to:
   
a) use the land only in the manner determined and certified by the engineer as enabling the safe use of the land for the use intended,

   b) the covenant contains conditions respecting reimbursement by the covenantor for any expenses that may be incurred by the covenantee as a result of a breach of the covenant,

   c) the covenant be registered under section 219 of the Land Title Act.

Prior to construction work within 30 metres of the top of bank an applicant will require District of North Vancouver Environmental approval with respect to the removal and importation of soil, tree cutting and proximity to sensitive aquatic areas.

**Requirements**

**Content:** Creek Hazard Report - Terms of Reference

- **Credentials:** *Creek Hazard Reports* are to be performed by a specialist professional engineer or professional geoscientist with experience or training in river engineering, hydrology, and in some cases, debris flow processes.

- **Statutes:** Section 56 of the Community Charter is applicable where the study is undertaken for the purpose of addressing creek hazard issues for a Building Permit.

- **Background Information:** Creek studies shall include a review of available background information. The District’s *Overview Report on Debris Flow Hazards* (Kerr Wood Leidal Associates and EBA Engineering Consultants, April 1999) provides a preliminary assessment of debris flood and debris flow hazards on most creeks in the District and should be a starting point for background review. Hydrologic reports are also available for many of the creeks.

- **Property Description:** Creek reports shall include both legal and street addresses of the subject property, and also a plan showing the location of the property relative to the pertinent creek system. Any existing restrictive covenants relative to land use or natural hazards shall be identified and attached to the report.
Creek Hazards: Creek reports shall provide a clear assessment of hazards associated with floods, debris floods, debris flows, erosion, landslip, rockfalls and accretion. The design magnitude of each of these processes will be assessed to a level of accuracy appropriate for the project.

Design Criteria for Floods: For floods, the design flow shall be the 200-year return period peak instantaneous flow. New culverts should be capable of passing this flow with no surcharging. New bridges should be capable of passing this flow with a minimum of 1 metre of freeboard.

Design Criteria for Debris Floods: Debris flood magnitudes is to be estimated to at least the 200-year return period level.

Design Criteria for Debris Flows: Debris flow magnitude is to be estimated to at least the 500-year return period level.

Safe Certification: A clear certification, subject to conditions contained in the report, that the land may be used safely for the use intended. The conditions shall be with respect to the siting, structural design and maintenance of buildings, structures and works, the maintenance of planting or vegetation, the placement of landfill and other such conditions respecting the safe use of the land, buildings, structures or works.

Any assumptions regarding future watershed conditions as they relate to the hazard assessments are to be clearly stated.

Building Setbacks: Proposed building setbacks shall be clearly defined. In most cases, it would be appropriate to consult with the Environmental Protection Department in determining setbacks.

Flood Construction Levels: Proposed FCL’s for proposed building sites shall be clearly defined, preferably in Geodetic Survey of Canada datum. In general, FCL’s will be based on the 200-year return period flood criteria, plus a minimum of 0.6m freeboard allowance, plus a reasonable allowance for sedimentation (in view of the debris flood assessment). Behind dykes or other flood protection works, determination of appropriate FCL’s will be site-specific.

Proposed Mitigative Works: Proposed mitigative works are to be permanent, and shall be designed to a conceptual level for the purpose of report submission. If the proposed works will result in transfer of risk to a third party, this will be clearly noted. The location and land ownership for proposed works is also to be noted. Following acceptance of the report, the requirements for design and construction of the works will be defined.

Environmental Approvals: Where environmental approvals are required for construction of mitigative works, it may be necessary to obtain such approvals prior to acceptance of the report.
Maintenance Requirements: Creek reports shall fully outline short and long term maintenance requirements of the creek channel and any works construction. For creek channels, this shall address ongoing bedload and debris deposition. For creek works, this shall include both regular maintenance and any special maintenance requirements following an extreme event.

Report Submission: Creek Hazard Reports shall be sealed by the engineer of record. Where required, engineering reports will be included within a restrictive covenant registered against the land title.

Peer Review: The District regularly obtains a peer review of creek reports by independent engineering consultants. Any concerns resulting from a peer review will be directed to the engineer of record for consideration. Creek reports will not be accepted until concerns arising from a peer review are satisfactorily resolved.

Section 219 Covenant

Per sample attached

Timing: The Creek Hazard Report must be found acceptable by the Building Inspector prior to a permit application being accepted. The Section 219 Covenant must be registered on title prior to permit issuance.

Owner: Retain appropriate professional(s) to prepare Creek Hazard Report. Registered Section 219 Covenant on land title.

Related Requirements/Documents/Forms


Contacts

Planning, Permits & Properties
District of North Vancouver
355 West Queens Road
North Vancouver, BC V7N 4N5

Tel 604-990-2480
Fax 604-984-9683
email building@dnv.org
APPENDIX J: FLOOD HAZARD AND RISK ASSURANCE STATEMENT

Note: This Statement is to be read and completed in conjunction with the "APEGBC Professional Practice Guidelines - Legislated Flood Assessments in a Changing Climate, March 2012 ("APEGBC Guidelines") and is to be provided for flood assessments for the purposes of the Land Title Act, Community Charter or the Local Government Act. Italicized words are defined in the APEGBC Guidelines.

To: The Approving Authority

Date: 2016-Feb-02

Planning, Permits, and Properties, District of North Vancouver

355 West Queens Road, North Vancouver, BC V7N 4N5

Jurisdiction and address

With reference to (check one):

☐ Land Title Act (Section 86) – Subdivision Approval

☐ Local Government Act (Sections 919.1 and 920) – Development Permit

☒ Community Charter (Section 56) – Building Permit

☐ Local Government Act (Section 910) – Flood Plain Bylaw Variance

☐ Local Government Act (Section 910) – Flood Plain Bylaw Exemption

For the Property:

858 Orwell St., North Vancouver (Block 3, District Lot 612, Lot G, H (Plan 15643) and Lot 4, 5, 22, 21 (Plan 2377)

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a Qualified Professional and is a Professional Engineer or Professional Geoscientist.

I have signed, sealed and dated, and thereby certified, the attached flood assessment report on the Property in accordance with the APEGBC Guidelines. That report must be read in conjunction with this Statement. In preparing that report I have:

Check to the left of applicable items

☐ Collected and reviewed appropriate background information

☐ Reviewed the proposed residential development on the Property

☐ Conducted field work on and, if required, beyond the Property

☐ Reported on the results of the field work on and, if required, beyond the Property

☐ Considered any changed conditions on and, if required, beyond the Property

6. For a flood hazard analysis or flood risk analysis I have:

☐ reviewed and characterized, if appropriate, floods that may affect the Property

☐ estimated the flood hazard or flood risk on the property

☐ included (if appropriate) the effects of climate change and land use change

☐ identified existing and anticipated future elements at risk on and, if required, beyond the Property

☐ estimated the potential consequences to those elements at risk

7. Where the Approving Authority has adopted a specific level of flood hazard or flood risk tolerance or return period that is different from the standard 200-year return period design criteria(1), I have

☐ compared the level of flood hazard or flood risk tolerance adopted by the Approving Authority with the findings of my investigation

☐ made a finding on the level of flood hazard or flood risk tolerance on the Property based on the comparison

☐ made recommendations to reduce the flood hazard or flood risk on the Property

---

(1) Flood Hazard Area Land Use Management Guidelines published by the BC Ministry of Forests, Lands, and Natural Resource Operations and the 2009 publication Subdivision Preliminary Layout Review – Natural Hazard Risk published by the Ministry of Transportation and Public Infrastructure. It should be noted that the 200-year return period is a standard used typically for rivers and purely fluvial processes. For small creeks subject to debris floods and debris flows return periods are commonly applied that exceed 200 years. For life-threatening events including debris flows, the Ministry of Transportation and Public Infrastructure stipulates in their 2009 publication Subdivision Preliminary Layout Review – Natural Hazard Risk that a 10,000-year return period needs to be considered.

APEGBC • June 2012
8. Where the Approving Authority has not adopted a level of flood risk or flood hazard tolerance I have:

N/A 8.1 described the method of flood hazard analysis or flood risk analysis used
N/A 8.2 referred to an appropriate and identified provincial or national guideline for level of flood hazard or flood risk
N/A 8.3 compared this guideline with the findings of my investigation
N/A 8.4 made a finding on the level of flood hazard of flood risk tolerance on the Property based on the comparison
N/A 8.5 made recommendations to reduce flood risks

9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections.

Based on my comparison between

Check one
☐ the findings from the investigation and the adopted level of flood hazard or flood risk tolerance (item 7.2 above)
☐ the appropriate and identified provincial or national guideline for level of flood hazard or flood risk tolerance (item 8.4 above)

I hereby give my assurance that, based on the conditions contained in the attached flood assessment report,

Check one
☐ for subdivision approval, as required by the Land Title Act (Section 86), "that the land may be used safely for the use intended".

☐ with one or more recommended registered covenants.
☐ without any registered covenant.

☐ for a development permit, as required by the Local Government Act (Sections 919.1 and 920), my report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".

☐ for a building permit, as required by the Community Charter (Section 56), "the land may be used safely for the use intended".

☐ with one or more recommended registered covenants.
☐ without any registered covenant.

☐ for flood plain bylaw variance, as required by the Flood Hazard Area Land Use Management Guidelines associated with the Local Government Act (Section 910), "the development may occur safely”.

☐ for flood plain bylaw exemption, as required by the Local Government Act (Section 910), "the land may be used safely for the use intended".

Dale Muir
Name (print)

Signature

30 Gostick Place, North Vancouver, BC, V7M 3G3
Address

604-980-6011
Telephone

If the Qualified Professional is a member of a firm, complete the following.

I am a member of the firm Northwest Hydraulic Consultants Ltd. (NHC) and I sign this letter on behalf of the firm. (Print name of firm)
Residential Level 3: Attached Residential. Areas designated for attached residential are intended predominantly for ground-oriented multifamily housing within neighbourhoods, or as a transition between higher density sites and adjacent detached residential areas. Typical housing forms in this designation include duplex, triplex and attached row houses up to approximately 0.8 FSR.
Lynnmour / Inter-River Local Plan

Adopted November, 2006
LEGEND:

- EXISTING PARK OR OPEN SPACE
- R: RETAIN ROAD ALLOWANCES
- A: APPLY DESIGN GUIDELINES TO NEW DEVELOPMENT IN THIS AREA
- E: ENCOURAGE HIGH STANDARD OF MAINTENANCE OF PRIVATE PROPERTY
- ENCOURAGE HIGH STANDARD OF MAINTENANCE OF PUBLIC PROPERTY
- E: ENCOURAGE DISTRICT TO MAINTAIN STREET TREES
- RZ1: REZONE THIS PROPERTY FOR LIMITED PUBLIC ASSEMBLY OR INSTITUTIONAL USES
- RZ2: CONSIDER ALLOWING SOME ADDITIONAL HOUSING WITHIN LIMITS OF EXISTING PLAN DESIGNATIONS (See Plan Map)
- RZ3: RETAIN THE LARGE LOTS NORTH OF GRANTHAM BRIDGE
- E: ENSURE DEVELOPMENT MEETS NEW GUIDELINES FOR BUILDING ON FLOOD PLAINS
- D: DESIGNATE OR ADD AREA TO EXISTING PARK OR OPEN SPACE INVENTORY
- G: DEVELOP COMMUNITY GATEWAYS
- C: CONVERT JC HOUSE TO COMMUNITY CENTRE (Dorm)
- X: EXPAND COMMUNITY USE OF EXISTING FACILITY
- Y: EXPAND YOUTH ACTIVITIES

DEVELOPMENT DIRECTIONS

- AREA 1
- AREA 2

- DESIGNATE LOTS FOR SINGLE FAMILY USE ONLY

- CONSIDER PART OF THIS DISTRICT LAND FOR A WIDE VARIETY OF TOURIST COMMERCIAL, COMMERCIAL, RESIDENTIAL, LIMITED INSTITUTIONAL OR INDUSTRIAL USES COMPATIBLE WITH THE NEIGHBOURHOOD PROVIDED THAT:
  1. MEASURES TO ADDRESS LOCAL TRAFFIC IMPACTS ARE PROVIDED.
  2. RESIDENTIAL LANDS ARE ADDED TO THE DORM PARK, AND
  3. SIGNIFICANT LANDSCAPING IS RETAINED ON THE CORNER

- SUBJECT TO ENVIRONMENTAL AND ZOOLOGICAL STANDARDS, CONSIDER PART OF THIS DISTRICT LAND FOR USES ANCILLARY TO ADJACENT COMMERCIAL USES OR FOR LIMITED INSTITUTIONAL USES PROVIDED THAT:
  1. THE PROPOSED USE IS COMPATIBLE WITH EXISTING RESIDENTIAL DEVELOPMENTS.
  2. THE PROPOSED USE DOES NOT GENERATE SIGNIFICANT TRAFFIC DEMAND.
  3. SIGNIFICANT LANDSCAPE BARRIERS ARE RETAINED OR PROVIDED; AND
  4. A PUBLIC VIEWPOINT IS PROVIDED.

LYNNMOUR / INTER-RIVER REVISED DRAFT PLAN
LMAP 4 - HOUSING, DEVELOPMENT & COMMUNITY SERVICE STRATEGIES
• To manage new development to protect it from natural hazards such asflooding and landslides
• To beautify and make local streets safer
• To ensure any new development contributes to the overall improvement ofthe community

POLICY

9.1 Protect and enhance the character of all residential
neighbourhoods while accommodating residents' changing
housing needs.

IMPLEMENTATION

9.1.1 Except under conditions or locations specified in this Plan, no changes in
uses, densities or zoning will be supported unless the new built form and
type of housing proposed is compatible with the existing community, and a
substantial local community benefit can be demonstrated.

9.1.2 Height, bulk and lot coverage characteristics of replacement single family
homes must be compatible with the general neighbourhood context.

9.1.3 Maintain the character of the existing neighbourhood when considering
subdivision approval of any new residential lots.

9.1.4 Consolidation of lots with road allowances or portions thereof for the
purposes of subdivision will not be permitted unless there is a public benefit
to be obtained.

9.1.5 Owners of small lots or lots with less than 40 foot frontages are encouraged
to follow the "Design Principles for Small Lot Developments" (Appendix B to
the Small Lot Infill Report) in re-development of their property. These
provide guidance in the massing, height, window locations and facades for
new dwellings.

9.1.6 The District, in consultation with seniors groups, developers, and the North
Shore Advisory Committee on Disability Issues and other disability groups,
will develop and promote use of voluntary Adaptable Building Design and
Universal Access Guidelines to enable new construction to more easily
meet a broader range of needs of persons with disabilities or by seniors.
Encourage local strata councils and other property owners to continue maintaining their properties to a high standard (e.g. participate in “Communities in Bloom”).

Direct District staff to develop regulations to prevent the conversion of shared living spaces (i.e. living or dining rooms) into additional bedrooms within individual units in existing multi-family developments.

Encourage the Ministry of Transportation, District of North Vancouver, and other owners of undeveloped lands to maintain them to community standards.

Utilize Development Cost Charge funding to design the drainage and flood control measures and to provide the Inter-River Park floodway recommended in the “Lynnmour/Inter-River Local Plan Flood Protection Assessment” report by Kerr Wood Leidal.

Include in future District capital budgeting funding to construct protective flood control measures (berm) for the Fire Training Centre.

Establish a Lynnmour/Inter-River Flood Protection Levy to be funded as a condition of redevelopment of properties in Area 1 in order to provide the other flood mitigation and drainage measures recommended in the “Lynnmour/Inter-River Local Plan Flood Protection Assessment” report by Kerr Wood Leidal.

Retain the development at 1055 Premier for income assisted housing indefinitely.

POLICY

Encourage new residential development to occur primarily through infill and small-scale redevelopment in identified areas.

IMPLEMENTATION

Designate the single family zoned lots on Premier and Orwell Streets, East Keith Road, Forsman and St. Denis Avenues shown as Area 1 on LI Map 4 as suitable for ground oriented multiple unit built forms having a range of permitted densities such that on single lots of record:

- of less than 5000 square feet single family houses are permitted;
- between 5001 and 7000 square feet duplexes to a maximum density of 0.4 floor space ratio are permitted;
- between 7001 and 8000 square feet duplexes to a maximum density of 0.5 floor space ratio are permitted; and
- greater than 8001 square feet triplexes to a maximum density of 0.5 floor space ratio are permitted, provided that:
  - all multiple unit projects are designed to provide vehicle access for future development on an adjacent single lot;
  - all multiple unit projects consider accessible design principles and provide for improved pedestrian circulation where appropriate;
  - all multiple unit projects comply with the *Lynnmour/Inter-River Area One Design Guidelines for Multiplexes and Townhouses*;
  - all multiple unit projects meet environmental standards and individual units meet acoustic standards;
  - all multiple unit projects contribute to the achievement of the Community Development Objectives, and.
  - all individual development meets prescribed standards for drainage and flood protection and contributes to the shared flood protection measures as described in the Kerr Wood Leidal study titled *Lynnmour/Inter-River Local Plan, Flood Protection Assessment – Final*, completed in March 2006.

New family housing will help support the local school.

9.2.2 Designate the single family zoned lots on Premier and Orwell Streets, East Keith Road, Forsman and St. Denis Avenues shown as Area 1 on LI Map 4 as suitable for ground oriented Townhouse development to a maximum density of 0.7 floor space ratio where lots of record are consolidated to provide development sites greater than 15,000 square feet and provided that:

---

LYNNMOUR / INTER-RIVER LOCAL PLAN
• The number of units per project does not exceed 24 units per acre;
• all multiple unit projects consider accessible design principles and provide for improved pedestrian circulation where appropriate;
• all multiple unit projects comply with the Lynnmour/Inter-River Area One Design Guidelines for Multiplexes and Townhouses;
• all multiple unit projects minimize vehicle access points to the site;
• all multiple unit projects meet environmental standards and individual units in the vicinity of Highway #1 meet CMHC acoustic standards;
• all multiple unit projects contribute to the achievement of the Community Development Objectives; and
• all individual development meets prescribed standards for drainage and flood protection and contributes to the shared flood protection measures as described in the Kerr Wood Leidal study titled Lynnmour/Inter-River Local Plan, Flood Protection Assessment – Final, March 6, 2006.

9.2.3 Support in principle a replot of Ministry of Transportation lands to low density multi-family development in this area where an improved pedestrian and vehicle circulation pattern is achieved and the new development is better integrated into the existing community.

9.2.4 Apply Local Plan Development Guidelines as appropriate to ensure all new development achieves the goals and objectives set out in this community plan (see Schedule A, Section 4.3: Local Plan Guidelines)

9.2.5 Amend Development Permit Map 1 as necessary to incorporate new, or amend existing, Development Permit Areas as a result of this Local Plan.

POLICY

9.3 Improve streetscapes and provide safer streets.

IMPLEMENTATION

9.3.1 Include in the design and upgrading of collector and arterial streets provision for sidewalks and pedestrian lighting wherever possible.

9.3.2 Encourage provision of a Street Tree Maintenance Program and fund it in the annual Municipal Budget.

9.3.3 Include the provision of street trees where feasible in the future road works in Lynnmour/Inter-River.

LYNNMOUR/INTER-RIVER LOCAL PLAN
Keith & Orwell Traffic Impact Study

Prepared for


RECEIVED

DEC 21 2015

Planning Department
District of North Vancouver

Prepared by

CTS CREATIVE TRANSPORTATION SOLUTIONS

APRIL 2014
Mr. Mike Brody
1060 – 14th Street W
North Vancouver, B.C.
V7P 3P3

Dear Mr. Brody:

Re: Keith & Orwell Traffic Impact Study,
North Vancouver, BC

Creative Transportation Solutions (CTS) is pleased to submit this FINAL report summarizing our work on the above study. CTS was retained by Brody Development (2008) Ltd. on 12 December 2013 to undertake the traffic impact study of a proposed mixed use development in the District of North Vancouver, B.C. The primary objectives of this study were as follows:

1) To conduct a traffic impact assessment of the proposed development; and
2) To document the findings and analysis of the study in a report that meets the requirements of the District of North Vancouver.

This report documents the analysis and findings of the study.

1.0 BACKGROUND

1.1 The Site

The proposed development site is located on the north side of Keith Road and immediately west of Orwell Street in a rectangular shaped property. FIGURE 1 illustrates the study area and the road network adjacent to the site.

The proposed development consists of up to 32 multi-family dwelling units with one site access from Orwell Street. The construction of the development is anticipated to commence in mid-2014 and to be fully completed and fully occupied by 2015. This development replaces six (6) existing single-family lots. A copy of the site plan used for this traffic assessment is included in APPENDIX A.
1.2 The Road Network

East Keith Road adjacent to the site is a local road with the western end connected to St. Denis Avenue and the eastern section is constructed to an urban cross section (curb and gutter, sidewalk and streetlights) and the remaining portion constructed to a semi-rural cross section (shoulders ditch or swale, no streetlights, no sidewalk). The posted speed is 50 km/h with a 30 km/hr school zone speed limit due to the presence of Lynnmoor Elementary School.

Orwell Street is a local cul-de-sac with a section constructed to an urban cross section (curb and gutter, sidewalk and streetlights) at the south end with the remaining portion constructed to a semi-rural cross section (shoulders ditch or swale, no streetlights, no sidewalk).

Primary access into the neighbourhood is via Old Lillooet Road and Lillooet Road. There is a one-way inbound access from westbound Mt. Seymour Parkway (Hwy 1 on-ramp).

There is a traffic signal at the intersection of Old Lillooet Road & Lillooet Road and at the intersection of Lillooet Road and Mt. Seymour Parkway. Mt. Seymour Parkway in the vicinity of the project is under the jurisdiction of the Ministry of Transportation &
Infrastructure. The District of North Vancouver has plans to extend East Keith Road to the west as part of any widening or replacement of bridges on Highway 1.

1.3 Scope Development

A meeting was held with District of North Vancouver officials on Wednesday, 18 December 2013 to discuss the project, discuss local site issues and the draft terms of reference for the study. A copy of the approved scope of work has been included in APPENDIX B. The weekday afternoon peak hour was selected for the design hour of the traffic impact assessment.

The following horizon years were selected for the traffic impact assessment:

- 2014 Existing Base
- 2019 Future Base + Site Traffic (full build-out)

1.4 Future Road Network

The District of North Vancouver and the Ministry of Transportation & Infrastructure have undertaken high level planning studies to determine what major road network improvements would be required in the future. None of these plans have been finalized, and significant changes to the road network may not be made within the time horizons used in this study.

The only network change of significance included in the analysis period is the construction of the east leg of the Old Lillooet Road & Lillooet Road intersection. This leg of the intersection will provide the sole access to Capilano University. Traffic volumes through the intersection were estimated using 75% of the northbound and southbound volume being re-assigned to the east leg of the Old Lillooet Road & Lillooet Road intersection.

The ITE Trip Generation Manual recommends caution when using the trip rates as transit service levels were not documented. Given the high level of transit service to Capilano University and the fact that 5,000 students take non-credit courses (7,500 full-time equivalent students taking credit courses), it was felt that using the existing traffic volumes would be more relevant. Using the ITE rates, the volume would be 2,125 vehicles (assuming 12,500 students) or 1,275 vehicles using the 7,500 vehicles of the full-time equivalent students. Even using the lower figures, the estimated quantity of trips is 50% higher than what is observed. For this reason, the existing trips were re-assigned to the network as outlined above.

2.0 EXISTING CONDITIONS

2.1 Study Area

The study area is bounded by St. Denis Avenue to the west, Lillooet Road to the east, and Mt. Seymour Parkway to the south. The following intersections were included in the traffic impact assessment as agreed to by the District of North Vancouver:

1. Old Lillooet Rd & Lillooet Road;  
2. Lillooet Road & Mt. Seymour Parkway;  

3.0 BASE TRAFFIC VOLUMES  

2014 Base Traffic Volumes  

In order to obtain current traffic data for the study area, CTS conducted intersection traffic movement counts on Tuesday, 14 January 2014 from 0700-0900, 1100-1300 and 1500 - 1800. The traffic count data was tabulated and reviewed to ensure data integrity and validity. The tabulated traffic movement count data sheets are included in APPENDIX C. FIGURE 2 illustrates the weekday morning peak hour vehicle volumes and FIGURE 3 illustrates the weekday afternoon peak hour volumes, respectively.  

2019 Future Base Traffic Volumes  

Year 2015 is anticipated to be the year of full buildout for the proposed development. Therefore, in order to access the traffic impacts of the proposed development on the base future traffic volumes, the 2014 base traffic volumes were factored up by an approved traffic volume growth rate of 2.5% per annum (simple straight line) obtained from the District of North Vancouver Road Network Study, to represent initial base year 2019 volumes. FIGURE 4 illustrates the projected 2019 weekday afternoon peak hour volumes for future base conditions. Traffic volumes on the east leg (from Capilano University) were assumed to be 75% of the through traffic volume prior to reconfiguring the intersection.  

4.0 SITE TRAFFIC VOLUMES  

4.1 Traffic Generation  

TABLE 1 summarizes the forecast site generated traffic for the proposed development using the Institute of Transportation Engineer’s (ITE) Trip Generation Information Report (9th edition). Of note, the existing traffic generated by the six (6) single family dwellings was not discounted, so that the projected volumes would represent the worst case scenario in that all the traffic would be “new” traffic to the adjacent road network.  

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Peak Hour</th>
<th>Trip Generation Variable</th>
<th>Horizon Year</th>
<th>Scope of Development</th>
<th>Vehicle Trip Generation Rate</th>
<th>Trip Rate Source</th>
<th>Directional Split</th>
<th>Peak Hour Volumes (vph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Townhouse</td>
<td>Weekday Morning</td>
<td>Dwelling Units</td>
<td>2019</td>
<td>32</td>
<td>0.44</td>
<td>ITE 9th Edition - Code 255</td>
<td>17% out</td>
<td>3 in 12 out 15 total</td>
</tr>
<tr>
<td></td>
<td>Weekday Afternoon</td>
<td></td>
<td></td>
<td></td>
<td>0.52</td>
<td></td>
<td>67% in 33% out</td>
<td>11 in 6 out 17 total</td>
</tr>
</tbody>
</table>

From TABLE 1, the site is forecast to generate a total of 15 vehicle trips (3 inbound and 12 outbound) during the weekday morning peak hour and during the weekday afternoon.
peak hour, 17 vehicle trips (11 inbound and 6 outbound). The weekday afternoon peak hour was selected for analysis as this time period had the highest site trip generation.

There are currently six (6) single family residential dwelling units on the proposed development site. These dwellings generate 6 vehicle trips during the PM peak hour so the net increase in vehicle traffic is only 11 vehicle trips (approximately one vehicle every 9 minutes). To obtain the most conservative analysis of impacts, the full 17 vehicle trips were added to the network, assuming 100% mode share by cars.

It should be noted that the volume of trips generated by the proposed development during the peak hours is within the expected daily variation of traffic volumes through each of the adjacent signalized intersections.
FIGURE 2
2014 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES

LEGEND
- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- 100 Traffic Volume
- Site Access
- Elementary School

NOTE: NETWORK IS NOT TO SCALE
FIGURE 4
2019 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES

LEGEND
- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- Traffic Volume
- Site Access
- Elementary School

Note: Not to Scale

Study Site

Legend:
- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- Traffic Volume
- Site Access
- Elementary School

NOTE: METHODS IS NOT TO SCALE

Note: 2019 Base Traffic = 2014 Base Traffic x 1.125 (i.e., 2.5% annual growth rate)
4.2 Trip Distribution

Trip distribution parameters to distribute the site generated vehicle trips to/from the site were developed from existing traffic patterns entering and exiting the study area for the morning and afternoon peak hour. The trip distribution parameters used in this study are summarized in TABLE 2. The traffic volume assignment is summarized in TABLE 3.

**TABLE 2**

**TRIP DISTRIBUTION PERCENTAGES**

**FOR SITE GENERATED TRAFFIC**

<table>
<thead>
<tr>
<th>FROM / TO</th>
<th>WEEKDAY MORNING PEAK HOUR</th>
<th>WEEKDAY AFTERNOON PEAK HOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INBOUND</td>
<td>INBOUND</td>
</tr>
<tr>
<td>North</td>
<td>Lillooet Rd</td>
<td>394</td>
</tr>
<tr>
<td>East</td>
<td>Mt. Seymour Pkwy</td>
<td>1701</td>
</tr>
<tr>
<td>South</td>
<td>Lillooet Rd</td>
<td>1336</td>
</tr>
<tr>
<td>West</td>
<td>Mt. Seymour Pkwy</td>
<td>319</td>
</tr>
</tbody>
</table>

**TABLE 3**

**TRIP DISTRIBUTION VEHICLE VOLUMES**

**FOR SITE GENERATED TRAFFIC**

<table>
<thead>
<tr>
<th>FROM / TO</th>
<th>Weekday AM Peak Hour</th>
<th>Weekday PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INBOUND</td>
<td>OUTBOUND</td>
</tr>
<tr>
<td>North</td>
<td>Lillooet Rd</td>
<td>0</td>
</tr>
<tr>
<td>East</td>
<td>Mt. Seymour Pkwy</td>
<td>2</td>
</tr>
<tr>
<td>South</td>
<td>Lillooet Rd</td>
<td>1</td>
</tr>
<tr>
<td>West</td>
<td>Mt. Seymour Pkwy</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

**FIGURE 5** illustrates the projected site generated volumes on the road network for Buildout (Year 2015) weekday afternoon peak hour.
FIGURE 5
SITE TRAFFIC VOLUMES FOR THE WEEKDAY AFTERNOON PEAK HOUR

LEGEND

- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- Traffic Volume
- Site Access

Elementary School

NOTE: NETWORK IS NOT TO SCALE

5.0 TOTAL PROJECTED TRAFFIC VOLUMES

FIGURE 6 illustrates the total projected traffic for the year 2019 Weekday afternoon peak hour consisting of both future base and site traffic resulting from the proposed development. It is the result of superimposing FIGURE 5 onto FIGURE 4.

FIGURE 6
2019 WEEKDAY AFTERNOON PEAK HOUR BASE + SITE TRAFFIC VOLUMES

LEGEND
- Existing Road
- Existing Traffic Signal
- Existing Stop Sign Control
- Traffic Volume
- Site Access
- Elementary School

Note: Network is not to scale

Study Site

St. Denis Ave
Fern St

Keith Rd

Mt Seymour Pkwy

Mt Seymour Pkwy

Note: 2019 Base + Site Traffic = 2014 Base Traffic x 1.125 (i.e. 2.5% annual growth rate) + Site Traffic

6.0 TRAFFIC ENGINEERING ANALYSIS

6.1 Intersection Capacity Analysis

Capacity analysis was performed at each of the locations in order to determine the intersection levels of service (LOS) that is provided to motorists. LOS for intersections is defined in terms of delay (seconds per vehicle), which is a measure of driver discomfort and frustration, fuel consumption and lost travel time.

An intersection or movement LOS can range from "A" (which is excellent) to "E" (which is capacity). A LOS of "F" indicates that an intersection or movement capacity is failing because vehicle delays are excessive. A LOS of "D" during the critical peak hours is considered acceptable by many public agencies in large urban areas for overall intersection operation and a LOS of "E" or better is considered acceptable for left turn movements as it recognizes that the intersections normally perform much better the remaining 90% of the day.

Volume to capacity (v/c) ratios typically range from 0.25 to 1.20 with a v/c ratio of 1.0 indicating the movement, approach or intersection is at capacity.

Highway Capacity Software (HCS) was used for the unsignalized intersection analysis. The following assumptions were made with respect to the intersection capacity analysis:

- Saturation flow rate = 1,900 passenger cars/hour of green time/lane (pcphgpl)
- Heavy vehicle percentage for roads = 2%
- Peak hour factor (PHF) = 0.91 for weekday afternoon which are the average PHF measured from the surveyed intersections.

TABLE 4 summarizes and compares the main performance parameters of the intersection capacity analysis for signalized intersections. Also, delay time in seconds for each lane group was summarized. Wherever necessary, attempts at improvements have been made to maintain intersection and approach movement level of service standards for each of the post-development scenarios. The capacity analysis worksheets are included in APPENDIX D.

As illustrated in TABLE 4, the signalized intersection of Old Lillooet Road & Lillooet Road is currently operating at LOS B (Good) and with the proposed development traffic and anticipated growth in background traffic added, the intersection will operate a LOS C (Fair) in 2019. This intersection was assumed to be reconfigured with the east leg into Capilano University being constructed (and all Capilano University traffic diverted to this link) prior to 2019.

The intersection of Mt. Seymour Parkway & Lillooet Road is currently operating a LOS C (Fair) and will continue to operate at LOS C (Fair) at the 2019 Horizon with the signal timings optimized for the traffic volumes anticipated at that time.

The increase in traffic generated by the development site through each of the signalized intersections is less than the daily variation in traffic volume. In other words, if the turning movement volumes were counted on two or more days, the differences in the counts for specific movements between Day 1 and Day 2 would be greater than the volume of traffic generated by the development site.

### Table 4

**Vehicle Delay by Individual Movements for Signalized Intersections**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Time of Day</th>
<th>Scenario</th>
<th>Performance Measure</th>
<th>EASTBOUND</th>
<th>WESTBOUND</th>
<th>NORTHBOUND</th>
<th>SOUTHBOUND</th>
<th>LOS</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Left</td>
<td>Thu</td>
<td>Right</td>
<td>Left</td>
<td>Right</td>
<td>Left</td>
</tr>
<tr>
<td>Mount Seymour Parkway (SW/NS) and Lilboet Rd (NB/SB)</td>
<td>Weekday Afternoon</td>
<td>Peak Hour</td>
<td>Volumes</td>
<td>151</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>467</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>V/C</td>
<td>0.54</td>
<td>0.52</td>
<td>0.52</td>
<td>0.55</td>
<td>0.55</td>
<td>0.16</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Volumes</td>
<td>148</td>
<td>7</td>
<td>6</td>
<td>540</td>
<td>729</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>V/C</td>
<td>0.82</td>
<td>0.61</td>
<td>0.61</td>
<td>0.82</td>
<td>0.83</td>
<td>0.14</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Volumes</td>
<td>140</td>
<td>7</td>
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<td>Old Lilboet Rd (SW/NW) and Lilboet Rd (NB/SB)</td>
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<td>Peak Hour</td>
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V/C = Volume to Capacity Ratio

- Intersection approaching capacity (LOS 'D' or 'E'), or approach demand near capacity (v/c 0.85 to 0.99)
- Intersection equals or exceeds capacity (LOS 'F'), or approach demand exceeds capacity (v/c ≥ 1.00)

It is acknowledged that there are occasions when the road network is congested but this are due to operational problems that occur on Highway 1, nearby. While most of these problems on Highway 1 cannot be mitigated by the applicant, the pedestrian path at Lynn Creek may help mitigate the problems to some effect by encouraging people to walk/cycle rather than use the automobile.

6.3 Pedestrian Plan

In order to promote alternative modes of transport and to reduce future vehicle demand, CTS reviewed the existing pedestrian network in the study area in order to identify opportunities for the proposed development to encourage walking. FIGURE 7 illustrates both the existing pedestrian facilities adjacent to the site and proposed improvements. The key improvements include the following:

1. Provision of a sidewalk on the frontage of the development on Keith Road and Orwell Street.
2. Provision of a bulge on the North-West corner of Keith Road and Orwell St to aid in pedestrian crossing.

FIGURE 7
EXISTING AND PROPOSED PEDESTRIAN PATHS ADJACENT TO SITE

6.4 Public Transit Plan

The study area is serviced by Translink Buses 28, 130, 239, 255 and 880. The 28, 130, and 239 all connect through to the Phibbs Exchange, the 255 connects through to Dundarave (Marine at 25 Street), and the 880 a school special route. The closest existing bus stops for these routes are located on Lillooet Road between Mt Seymour Parkway and Old Lillooet Road. These routes are illustrated in FIGURE 8.

FIGURE 8
EXISTING TRANSIT ROUTES ADJACENT TO SITE
Normal planning guidelines have bus stops placed no more than 400 metres walking distance from a development in order to make public transit a viable transport option. As the entire site is within 400 metres of an existing bus stop, the site is well serviced by public transit and no additional bus stops are recommended. Both bus stops have benches.

6.5 Bicycle Plan

Currently, Lillooet Road, Fern Street and Mt. Seymour Parkway are all designated municipal bicycle routes. There are extensive bicycle path markings on Old Lillooet Rd at the intersection with Lillooet Road. Bicycle access in and out of the neighbourhood is very well defined with no additional measures proposed. East Keith Road is also marked for cyclist use. The local cycling network connects to the Spirit Trail network.

7.0 CONCLUSIONS & RECOMMENDATIONS

7.1 Conclusions

1) CTS was retained by Brody Development (2008) Ltd. on 12 December 2013 to undertake the traffic impact study of a proposed multi-family development in the District of North Vancouver, B.C. The site is proposed to consist of 32 multi-family housing units. The site access for will be from Orwell Street. The proposed development is anticipated to be constructed and fully occupied by the end of 2015.

2) The scope of work for the traffic impact assessment was confirmed with municipal officials both at a meeting on Wednesday, 18 December 2013 and subsequent communication.

3) CTS staff conducted a detailed site visit and collected traffic volume data on Wednesday, 15 January 2014 to document existing peak conditions.

4) The proposed development is forecast to generate a total of 15 vehicle trips (3 inbound and 12 outbound) during the weekday morning peak hour and 17 vehicle trips (11 inbound and 6 outbound) during the weekday afternoon peak.

5) Intersection capacity analysis was conducted for key intersections in order to determine what operational and/or geometrical improvements were required for the road network to be able to accommodate the projected site traffic volumes. All intersections examined were found to be operating below capacity when the signal timings have been optimized and no operational and/or geometrical improvements were warranted to mitigate the site generated traffic for the 2019 horizon year.

6) A review of the transit network and bus stop locations determined that the entire development would be within the comfortable walking distance of 400 metres to a bus stop and thus will provide good access to public transit for future residents.
7) A review of the pedestrian network determined that with the provision of sidewalks along the road frontages (Keith Road and Orwell Street), the pedestrian network to and from the site and to/from the elementary school will be served.

8) A review of the bicycle network determined that the existing cycling network and pavement markings are sufficient.

7.2 Recommendations

Based on the findings of this study, the following is recommended:

1) The applicant to provide sidewalks along the site road frontages of Keith Road and Orwell Street.

We would like to take this opportunity to thank you for this unique project and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments.

Yours truly,

CREATIVE TRANSPORTATION SOLUTIONS LTD.

Gary Vlieg, M.Sc., P.Eng.
Sr. Traffic Engineer

Attachments
APPENDIX A

Site Plan
APPENDIX B

Scope Development Meeting
**REVISED DRAFT TERMS OF REFERENCE (18 December 2013)**

Keith and Orwell Traffic Impact Study, District of North Vancouver, BC

A  **Study area limits and list of intersections to analyse**

- Site Access & Orwell Road;
- Old Lillooet Rd & Lillooet Rd
- Lillooet Rd & Mt. Seymour Parkway.

B  **Existing and future base road network in study area**

DNV advised that they have no scheduled geometrical and/or operational improvements to the intersection of Old Lillooet Rd & Lillooet Rd anticipated to occur within the next five (5) years.

CTS to contact MoTI to confirm that there no scheduled geometrical and/or operational changes to Mt Seymour Parkway at Lillooet Road.

C  **Relevant background material**

DNV to forward to CTS a copy of the existing signal timing sheet for the intersection of Lillooet Rd & Old Lillooet Rd.

CTS to contact MoTI to obtain current signal timing sheets for the signals at Lillooet Rd & Mt. Seymour Parkway.

D  **Anticipated future developments within study horizon that are above and beyond what can be assumed to be built into an annual traffic volume growth rate.**

MoTI and DNV to advise CTS if there are any likely projects nearby that will significantly impact future background volumes for the horizon years examined.

The DNV has planned to construct the fourth leg of the Lillooet Rd/Old Lillooet Rd intersection as a new access to Capilano University. At the five year horizon the study is to assume that this leg is complete and all CU traffic will use it. CU traffic to be estimated based on student population.

E  **Design Peak Hour of Analysis**

CTS to examine the weekday morning and afternoon peak hours.

F  **Horizon Years of Analysis**

CTS to examine the following years:

1. 2014 (i.e. existing base)
2. 2019 (future base)
3. 2019 (future base + site generated traffic)
G **Traffic Volume Growth Rate**

The growth rate is 2.5% annually (straight-line), based on the growth rate used in the Road Network Study (on DNV website) for Mt. Seymour Parkway at Lillooet Road.

H **Traffic Projection Methodology**

CTS to use current accepted traffic engineering practices for traffic projections and to document any assumptions in the report.

I **Trip Generation Methodology**

CTS proposes to use the vehicle trip generation rates from the Institute of Transportation Engineers (ITE) 9th edition.

J **Trip Distribution and Traffic Assignment Parameters**

CTS to use the measured travel patterns in the study area to develop trip distribution and traffic assignment parameters.

K **Traffic Engineering Methodology for Analysis**

CTS to use 2010 Highway Capacity Manual methodologies for all intersection capacity analysis. (HCS software for unsignalized intersections and Synchro for signalized intersections if applicable).

L **Engineering Standards**

CTS to propose to use MOTI standards (e.g. BC supplement to TAC) for Provincial roads and DNV standards for municipal roadways. The DNV standards are included as Appendices to the Development Services Bylaw. In addition the MMCD Platinum edition is also used.

M **Report Format**

CTS to submit the final report in a bound letter report format with appendices.

N **Number of Final Report Copies**

- District of North Vancouver (2 copies + pdf)
- Brody Development Group (1 copy + pdf)
- MOTI (2 copies + pdf)

O **Other Issues**

1. CTS to circulate draft report prior to issuance of the final report.
APPENDIX C

Traffic Movement Count
Summary Sheets
**Afternoon Peak Period**

**Lillooet Rd & Old Lillooet Rd**

**Tuesday, January 14, 2014**

**Project:** #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment

**Municipality:** District of North Vancouver

**Vehicle Class:** All Motorized Vehicles

---

### Peak Hour Traffic by Movement

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<th>SOUTH Approach</th>
<th>WEST Approach</th>
<th>EAST Approach</th>
<th>PEDESTRIANS</th>
<th>Total Volumes</th>
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### Traffic Volumes

- **Old Lillooet Rd**
- **Lillooet Rd**
- **All Motorized Vehicles**

---

**PH Factor**

- 0.84

**Peak 15 X 4**

- 764
- 16
- 240
- 388
- 72
- 260

**Average Hour**

- 544
- 17
- 161
- 342
- 23
- 156

**Survey Total**

- 1,031
- 50
- 453
- 1,025
- 69
- 587

---

**As mentioned in the image, the traffic analysis included peak hour volumes for different directions, and the data was collected during the Afternoon Peak Period.**

---

*Note: The image contains a traffic flow diagram and a table summarizing the traffic volumes for various directions.*
Lilooet Rd & Old Lilooet Rd
Tuesday, January 14, 2014
Afternoon Peak Period

Peak Hour Traffic by Movement

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<th>WEST Approach</th>
<th>EAST Approach</th>
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Project: #5185 Keith & Orwell Multi-family Development Traffic Impact Assessment
Municipality: North Vancouver
Weather:
Vehicle Class: Bicycles
Note: Crosswalk bike volumes shown are cyclists who walked their bike and are not included in the pedestrian volume totals

Afternoon Peak Period

Tuesday, January 14, 2014

Peak Hour Traffic by Movement

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Lillooet Rd and Mt Seymour Pkwy
Tuesday, January 14, 2014

Afternoon Peak Period

Project: #5186: Keith & Orwell Multi-family Development Traffic Impact Assessment
Municipality: District of North Vancouver
Vehicle Class: All Motorized Vehicles

**Peak Hour Traffic by Movement**

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<th>NORTH Approach</th>
<th>SCOUTH Approach</th>
<th>WEST Approach</th>
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**Lillooet Rd and Mt Seymour Pkwy**

**Project:** #5186: Keith & Orwell Multi-family Development Traffic Impact Assessment

**Municipality:** District of North Vancouver

**Vehicle Class:** All Motorized Vehicles
### Project: #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment

Municipality: North Vancouver

Weather: 
Vehicle Class: Passenger Cars

#### Afternoon Peak Period

**Lilooet Rd & Mt Seymour Pkwy**  
**Tuesday, January 14, 2014**

**Peak Hour Traffic by Movement**  
4:45 PM to 5:45 PM

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#### Peak Hour Traffic by Movement

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<th>Time</th>
<th>NORTH Approach</th>
<th>SOUTH Approach</th>
<th>WEST Approach</th>
<th>EAST Approach</th>
<th>PEDESTRIANS</th>
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3:00 PM to 4:00 PM

Vehicle Class: Heavy Vehicles (3 or more axles)
# Lilooet Rd & Mt Seymour Pkwy

**Traffic Impact Assessment**

**Project:** #5185: Keith & Orwell Multi-family Development Traffic Impact Assessment

**Municipality:** North Vancouver

**Vehicle Class:** Bicycles

**Weather:**

**Note:** Crosswalk bike volumes show cyclists who walked their bike and are not included in the pedestrian volume totals.

## Afternoon Peak Period

**4:00 PM to 5:00 PM**

### Peak Hour Traffic by Movement

#### Lilooet Rd & Mt Seymour Pkwy

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APPENDIX D

Intersection Capacity Analysis Worksheets
### Lanes, Velocities, Timings

#### 3. Lillooet Rd & NW Seymour Plwy

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**Intersection Details**

- **Area Type:** Other
- **Cyclist Lane:** LA
- **Actuated Cycle Length:** 154.1
- **offset:** 0.01 (0.01)"**Pre-Phase/2 W/S/t, Start of Green**
- **Traffic Control:** Actuated/Coordinated
- **Maximum Wt Rate:** 888
- **Intersection Signal Delay:** 22.2
- **Intersection Density:** 83.1%
- **Analytical Period:** 957

---

**Traffic Data**

- **Traffic Phase:** 3 Lillooet Rd & NW Seymour Plwy

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**Synthetic Impact**

- **Peak:** 20.4,
- **Phase:** 20.1

---

**Synthetic Impact**

- **Peak:** 20.4,
- **Phase:** 20.1

---

**Synthetic Impact**

- **Peak:** 20.4,
- **Phase:** 20.1

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**Synthetic Impact**

- **Peak:** 20.4,
- **Phase:** 20.1

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**Synthetic Impact**

- **Peak:** 20.4,
- **Phase:** 20.1

---

**Synthetic Impact**

- **Peak:** 20.4,
- **Phase:** 20.1
### Lanes, Volumes, Timings

#### 2019 Base + Site

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<th>1993</th>
<th>2019</th>
<th>Volume (vph)</th>
<th>Mean Flow (cph)</th>
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#### 2019 Base + Site

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**Volume (vph)**

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**Mean Flow (cph)**

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### System Report

#### 2019 Base + Site

**Inflow**

- 1993: 148, 7
- 2019: 6, 542

**Outflow**

- 1993: 6
- 2019: 542

**Volume (vpl)**

- 1993: 148
- 2019: 7

**Mean Flows (cph)**

- 1993: 148
- 2019: 7
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**5185 - Keith & Dowell Traffic Impact Study**

**Synchro 8 Report**

Page 1
### Lane Volumes, Timing, 2018 Base vs Site

#### 6 Liloa Rd & Old Liloa Rd

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<th>Lsk</th>
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<th>Lvl</th>
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#### 2016 Base vs Site

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#### 2019 Base vs Site

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#### 2020 Base vs Site

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Brody Development Group
1060 West 14th Street
North Vancouver, BC
V7P 3P3

Dear Ms. Brody:

Re: 858 Orwell Street Multi-Family Development – Traffic Assessment
District of North Vancouver, BC

CTS is pleased to submit this brief letter assessing the following:

1. That the findings for the approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street are applicable to the proposed twenty-three (23) unit multi-family development at 858 Orwell Street; and
2. That traffic calming measures proposed for Premier Street are appropriate.

1. TRAFFIC ASSESSMENT

858 Orwell Street – Traffic Impact

CTS staff conducted a review of the Traffic Impact Study for the approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street as well as made an assessment of the vehicle trips generated by the proposed twenty-three (23) unit multi-family development at 858 Orwell Street.

- Twenty-three (23) multi-family units are proposed for this location generating an additional 12 vehicle trips (8 inbound and 4 outbound) in the PM peak period. The approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street is expected to generate 17 vehicle trips (11 inbound and 6 outbound) in the PM peak period – the worst case scenario.

- Based on a site visit performed on Wednesday January 19, 2016 it was observed that there currently are no new vehicle trip generators in the area other than the proposed twenty-three (23) unit multi-family development at 858 Orwell Street.
Vehicle trips generated by both development sites, when added to the vehicle volumes at the two study intersections, Lillooet Road and Mount Seymour Parkway, and Lillooet Road and Old Lillooet Road, make up just 0.5% and 1.8% of the total intersection volumes respectively. These percentages are well within the expected day to day variance in intersection traffic volume.

A capacity analysis was performed and included the trips generated by the twenty-three (23) unit multi-family development at 858 Orwell Street. That analysis produced no change to the Level of Service at either study intersection.

Residential parking is available along both sides of Orwell Street. There is over 120 meters (17 cars) of public on-street parking in addition to the on-site parking proposed in the new development.

Premier Street – Traffic Calming

CTS staff reviewed and assessed the traffic calming measures proposed for Premier Street.

Premier Street - to the east of Orwell Street - is a predominantly multi-family residential street with a park (Inter River Park) at its northern terminus. The street is posted at 40 km/h.

There currently is a raised, signed and marked school crossing adjacent to 905 Premier Street. A second speed hump is proposed for Premier Street adjacent to 855 Premier Street approximately 100 meters to the south of the school crossing.

As per the Transportation Association of Canada Guide to Neighbourhood Traffic Calming, speed humps should be spaced at an approximate 60 meter interval beginning 10 to 15 meters in from the intersecting street.

Based on the Guide, three (3) speed humps would be required between Old Lillooet Road and the school crossing on Premier Street:

- On the property line between 689 and 691 Premier Street adjacent to the lamp standard / power pole.
- Just north of the access to 785-833 Premier Street.
- On the property line between 855 and 873 Premier Street.

Speed humps to be installed as per the District of North Vancouver standard.
2. CONCLUSIONS AND RECOMMENDATIONS

- The traffic impact by the proposed twenty-three (23) unit multi-family development at 858 Orwell Street is negligible.

- As of January 19, 2016 there is no other development ongoing in the area.

- The analysis within the Traffic Impact Study for the approved thirty-two (32) unit multi-family development at Keith Road / Orwell Street is applicable to the proposed twenty-three (23) unit multi-family development at 858 Orwell Street.

- The traffic calming proposed by Brody Development Group on Premier Street should be located at the north property line of 873 Premier Street.

- Based on the Transportation Association of Canada Guide to Neighbourhood Traffic Calming, to maximize the effectiveness of the proposed traffic calming on Premier Street, two additional speed humps are required.

We would like to take this opportunity to thank you for this unique project and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments.

Yours truly,

CREATIVE TRANSPORTATION SOLUTIONS LTD.

Gary Vlieg, M.Sc., P.Eng.
Engineering Group Manager
The District of North Vancouver
INFORMATION REPORT TO COUNCIL

September 19, 2016
File: 16.8620.20/056.000

AUTHOR: Erica Geddes, Transportation Section Manager
Shazeen Tejani, Transportation Planning Technologist

SUBJECT: Inter-River Sub-area Transportation Study

REASON FOR REPORT:
This report is to inform Mayor and Council that the Inter-River sub-area Transportation Study is now available on the District's website.

BACKGROUND:
The transportation study is an administrative tool based on existing Council policy that will provide guidance to ongoing development in the Inter-River neighbourhood, between Lynn Creek and Premier Street, north of Highway 1. The study area is illustrated in the APPENDIX.

This process provided staff with an opportunity to plan for network improvements through development that improve redundancy, circulation, and permeability for people walking, bicycling, driving, and/or taking transit in this neighbourhood.

EXISTING POLICY:
This study was guided by key principles contained within Council-approved policies and documents as listed below:

- Official Community Plan (2011);
- Transportation Plan (2012);
- Pedestrian Master Plan (2009);
- Bicycle Master Plan (2012);
- Road Network Study (2011); and
- Parks and Open Space Strategic Plan (2012).

ANALYSIS:

Timing/Approval Process:
The timing of this study allows for key recommendations and improvements to be implemented with development.

Document Number: 2994266
Public Input:
As part of the planning process, external stakeholders including neighbourhood representatives were engaged to provide input on goals, assumptions, criteria and key recommendations.

Staff intend to review the work to date with representatives of the Inter-River Community Association on September 29th, 2016. Staff would discuss the study findings and recommendations, answer questions, and collect community feedback.

Conclusion:
The Inter-River Sub-area Transportation Study engaged a range of stakeholders to inform key recommendations for improved connectivity in the Inter-River neighbourhood.

The study is available on the District's website on the 'Transportation Plan' web page under 'Related Documents'.

Respectfully submitted,

Erica Geddes
Transportation Section Manager

Shazeen Tejani
Transportation Planning Technologist
APPENDIX – STUDY AREA
(outlined in blue dashed line)
Inter-River Sub-Area Transportation Study

August, 2016
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EXECUTIVE SUMMARY

STUDY PURPOSE

Recent development interest and design work on the Ministry of Transportation and Infrastructure (MOTI)'s nearby Highway 1 Lillooet Interchange Improvement Project has prompted District staff to reconsider the transportation network in the Inter-River neighbourhood. These recent initiatives have provided the District of North Vancouver (District) with an opportunity to develop a plan that provides a network that addresses redundancy, circulation, and permeability for people walking, bicycling, driving, or taking transit in this neighbourhood.

The study provides an overview of the range of options considered and provides recommendations that address the study's goals.

METHODS

Using feedback obtained from stakeholder groups consulted, District staff developed a range of potential options to serve the collective goals and needs for the area. Each option was evaluated as a segment using a set of refined criteria designed to help achieve the study's objectives. Options were formulated to improve the network with key study goals in mind, as found in the green box to the right.

RECOMMENDATIONS

New connections identified through the planning process include facilities for people walking, biking and driving and will be local streets that will carry relatively low volumes of vehicular traffic (less than 1,500 vehicles per day).

The following new connections are recommended:

- St. Denis Avenue to Forsman Avenue (south of Lynnmour Elementary School);
- Forsman Avenue to Orwell Street (proximate to the south of Lynnmour Elementary School); and
- St. Denis Avenue to Orwell Street (proximate to the north of Lynnmour Elementary School).

ADDITIONAL RECOMMENDATIONS

- Continue to meet the needs of people who walk and cycle to and through the sub area by enhancing and/or formalizing informal trails throughout the site;

STUDY GOALS

- Provide safe & efficient access to all key destinations within and outside of the neighbourhood;
- Minimize neighbourhood traffic impacts & improve livability;
- Provide secondary access were feasible to provide redundancy, better circulation, better emergency access and ability to disperse vehicle traffic;
- Further develop formal and informal walking and cycling networks;
- Provide improved safety and connectivity of commuter & recreational routes & trail networks;
- Preserve and enhance existing natural areas;
- Provide alternative access to St. Denis Avenue; and
- Provide flexibility with ongoing development and highway interchange design work.
• Enhance the existing pathway from Premier Street to Orwell Street, south of 'Digger Park' and dedicate space for a utility corridor;
• Support a Drive-to-Five program to encourage physical activity to and from school; and
• Improve circulation for pick-up and drop-off at Lynnmour Elementary.

FIGURE 1: Summary map of proposed connections.
NOTE: Proposed connections are consolidated for convenience purposes only. Each connection may be implemented individually or collectively. Exact alignment is subject to further study.

LIMITATIONS OF THE STUDY
The study recognizes that due to adjacent unknowns, the timing of each individual segment will vary. While some segments may be realized through development, other segments may be completed in conjunction with District initiatives. Although new connections have been identified, further study is required to determine the exact alignment of each connection. Lastly, each segment is contingent upon successful partnerships with the stakeholders in this community.
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I. STUDY PURPOSE

In recent months, the District of North Vancouver (District) has received notice of further development interest in the Inter-River neighbourhood. It is timely to consider opportunities to improve the transportation network in the neighbourhood since options for providing additional connection(s) may become limited as redevelopment proceeds. Occurring simultaneously, recent design work being undertaken by the Ministry of Transportation and Infrastructure (MOTI) on the nearby Highway 1 Lillooet Interchange is expected to have an impact on the existing road network.

II. CONTEXT

a. LOCAL CONTEXT

The Inter-River sub-area is defined as being north of Highway 1, east of Lynn Creek, south of Inter-River Park and west of Premier Street, as shown in Figure 1 below. This sub-area has been undergoing redevelopment characterized primarily from low-density single family to newer low density multi-family housing. Ongoing guidance for change in the area has been in accordance with the 2011 Official Community Plan and the 2006 Lynnmour/Inter-River Local Plan.

![Inter-River Sub-area Map](image)
b. **KEY DESTINATIONS**

The Inter-River sub-area is within close proximity to a range of destinations and amenities, as shown above in Figure 1. Lynnmour Elementary is at the heart of the sub-area, with the fire training centre and Inter-River Park located just north of the school. The southern portion of the park, known locally as 'Digger Park', is characterized by play structures and picnic tables. The northern and western portions of Inter-River Park consist of a series of recreational trails, an off-leash dog park, a bike skills park, and sports fields, which often host sports tournaments. Traffic generated by tournaments in the park are encouraged to enter and leave from the park's main access on Lillooet Road. People driving to the lower fields can either enter from the park's main entrance on Lillooet Road or from Premier Street.

One of the key destinations within this sub-area is Lynnmour Elementary School, serving a catchment area of families generally residing between Lynn Creek and Seymour River, as far north as Lynnmour North and as far south as Lynnmour South. It also serves families east of Seymour River toward the Maplewood Conservation Area and south of Mount Seymour Parkway. The school's primary pick-up and drop-off is located at the end of Forsman Avenue, with people walking, cycling, driving, and taking transit to access the school. Circulation is poor for parents who drive to this primary entrance on Forsman Avenue, with minimal space to turn around at the end of the street for travel back to E Keith Road.

Outside of the sub-area boundaries, residents have access to Real Canadian Superstore, Capilano University and the Lynn Creek Town Centre. Phibbs Exchange, the key transit hub in North Vancouver, is located approximately 1.5 kilometres south, or a 15 minute walk from Lynnmour Elementary School. Residents maintain access to these amenities by either by foot, bicycle, transit or vehicle.

c. **EXISTING PEDESTRIAN, CYCLING, TRANSIT & VEHICULAR NETWORK**

Passage to and through the Inter-River sub-area from the south can be accessed by foot or bicycle using a highway underpass south of East Keith Road and St. Denis Avenue (see Figure 1). People cycling and walking often travel up St. Denis Avenue through the park and further north, or east along East Keith Road to other destinations.

Several informal east-west pathways exist for people walking and cycling from St. Denis Avenue to Premier Street and from Premier Street to internal street networks off of Lillooet Road (see Figure 2 below). Students of Lynnmour Elementary often access 'Digger Park' using an informal path behind the school's gravel field, while all other users access 'Digger Park' either from Orwell Street or along the informal powerline trail that runs between St. Denis Avenue and Premier Street. Dog walkers often access the off-leash dog park from St. Denis Avenue or through the park's internal network.

In 2009, Council endorsed the Spirit Trail Route Planning Report. The Spirit Trail is envisioned as a 35-kilometre long, accessible, lowing trail that will link Horseshoe Bay and Deep Cove. In June of 2016, Council indicated general agreement with a route that would travel north through Seylynn Park and along E Keith Road before moving onto Mount Seymour Parkway, as shown in Figure 2 below.
There are currently two bus stops within walking distance on the eastern side of the site (see Figure 2 above). The stop located on Old Lillooet Road services route 239 to Capilano University, while the stop located on Lillooet Road at Mount Seymour Parkway (west side) services routes 239 and 255 to Park Royal and Dundarave via Capilano University respectively. The stop on the east side of Lillooet Road services the 255 route to Dundarave. Access to the bus stop on Lillooet Road is taken from south of the site along the road to the Highway 1 Westbound off-ramp or through the Holiday Inn parking lot.

The existing street network in the sub-area is comprised of mostly north-south public roads, with the exception of East Keith Road and Old Lillooet Road. This street configuration does not provide any redundancy\(^1\) for vehicles trying to access key destinations and residences on St Denis Avenue, Forsman Avenue, Orwell Street, and Premier Street, providing only one access in and out within the sub-area. Minimal connectivity with the surrounding street network limits access into the sub-area from Old Lillooet Road and the E Keith Road ramp.

### c. EXISTING GUIDING POLICY

Key goals and recommendations from this study received general direction from Council-approved documents that outline overarching District priorities. The following policies and documents were used to inform the parameters of this study:

---

\(^1\) ‘Redundancy’ – refers to the provision of alternative access in and out of a street (i.e. two ways in and out of a street)
Official Community Plan (OCP) (2011) aims to increase the mode share of walking and cycling by 2020.

Zoning Bylaws provide information on existing and intended land uses for the Inter-River sub-area and District as a whole.

Form & Character Development Permit Area (DPA) Guidelines are contained within Schedule B of the 2011 OCP and address the need for improved pedestrian connectivity through and around developments.

Transportation Plan (2012) outlines the need to manage the existing road network to optimize safety and efficiency, while ensuring the integration of sustainable travel modes into the system.

Pedestrian Master Plan (2009) emphasizes a need to provide a well-connected network of pedestrian facilities to encourage active modes of travel throughout the District.

Bicycle Master Plan (2012) identifies one of its key goals as establishing a bicycle network that strengthens community connections and improves safety. Additional supporting goals and objectives include: promoting cycling as a key part of a sustainable transportation system and making all municipal streets more appealing to cyclists in addition to accommodating pedestrians and vehicles.

Road Network Study (2011) addresses the need to identify opportunities for roadway reconfiguration to accommodate other modes and points to the benefits in circulation when improvements to road networks are effective.
The following assumptions provide parameters for this study. These assumptions are guided by Council approved documents like the Official Community Plan and Zoning Bylaw, where applicable. Due to adjacent uncertainties with regard to existing land uses and ongoing development, these assumptions allow District staff to plan for network improvements under the following conditions:

- **St. Denis**
  Due to ongoing MOTI work on the Lillooet Highway Interchange, it is assumed that access to St. Denis Avenue would no longer be provided from E. Keith Road, as per preliminary highway improvement designs.

- **Lynnmour Elementary School**
  It is assumed that Lynnmour Elementary School would remain open and on this site.

- **Fire Training Centre**
  It is assumed that access to the fire training centre site would continue to be provided.

- **Park Access**
  It is assumed that primary access to Inter-River Park would continue to be from Lillooet Road.

- **Property Access**
  It is assumed that access to all properties must be maintained.

- **Existing Pedestrian and Cycling Commuter Routes**
  It is assumed that existing commuter and recreational routes that go through and to the Inter-River neighbourhood would be maintained and/or enhanced where appropriate.

- **Additional Connections**
  It is assumed that staff will continue to look for viable proximate connection options as opportunities arise and where such connections provide increased benefit to the community.

IV. **STUDY GOALS**
The following goals have been developed to guide the study. These goals have been reviewed and refined using feedback and input from internal and external stakeholders:

- Provide safe and efficient access to all key destinations within and outside of the neighbourhood;
- Minimize neighbourhood traffic impacts and improve livability;
- Provide secondary access where feasible to provide the following: redundancy, better circulation, better emergency access and ability to disperse vehicle traffic;
- Further develop formal and informal walking and cycling networks;
- Provide improved safety and connectivity of commuter and recreational routes as well as trail networks;
- Preserve and enhance existing natural areas;
- Provide alternative access to St. Denis Avenue; and
- Provide flexibility with ongoing development and highway interchange design work.

V. RECOMMENDATIONS
The following recommendations were based on discussions with stakeholders and meet the goals of the study.

NOTE: The alignments shown are schematic. Exact alignments for the proposed connections below are subject to additional detailed review. Each option has been evaluated individually due to timing and phasing, but can be implemented in isolation or together.

a. ROAD CONNECTIONS

Connections identified in this section include facilities for people walking, biking and driving. The road connections are classified as a local street and generally carry lower volumes of vehicular traffic. The form of the road connection should be designed to reflect the classification and volume. Conceptual road configurations as shown in Figures 3 and 4 may be considered.

FIGURE 3: Olympic Village, Vancouver

FIGURE 4: Henry Hudson Elementary School, Kitsilano
Connection A: St. Denis Avenue – Forsman Avenue

- **Purpose:** Provides direct access to St. Denis Avenue from E. Keith Road.
- **Benefit**
  - Provides users with options for accessing St. Denis Avenue; and
  - Can occur independently or in conjunction with other proposed segments.
- **Impact**
  - Depending on final alignment, school and assembled properties would need to accommodate the new connection.
- **Timing:** Would coincide with development of residential housing south of the proposed connection and/or renewal of the school.
- **Collaboration:** School District 44, residents and developers.

![Map of proposed connection and study area](image)

**FIGURE 5:** St. Denis Avenue to Forsman Avenue Segment
Connection B: Forsman Avenue – Orwell Street

- Purpose: Provides redundancy to the road network, specifically to Forsman Avenue.
- Benefit:
  - Provides users with options for accessing the school (and to St. Denis Avenue if connected).
- Impact:
  - Requires coordination between the school and DNV to develop the segment.
- Timing: Would occur when the school renews.
- Collaboration: School District 44 and residents.

![Diagram of Forsman Avenue to Orwell Street](image-url)

**FIGURE 6:** Forsman Avenue to Orwell Street
Connection C: St. Denis Avenue – Orwell Street

- **Purpose:** Provides access and/or redundancy to St. Denis Avenue users and fire training site.
- **Benefit**
  - Provides users with options for accessing St. Denis Avenue and Orwell Street;
  - In conjunction with the southern connection, enables ease of traffic flow through the site for parents picking up/dropping off their child(ren) at school while minimizing impact on residents along Forsman Avenue;
  - If the fire training site is redeveloped per the land-use zoning designation, this connection may provide a more direct access to the site; and
  - Can occur independently or in conjunction with other proposed segments.
- **Impact**
  - Would intersect the existing informal pathway that exists between Lynnmour Elementary School and 'Digger Park'; and
  - Would require DNV to purchase property located at the northern end of Orwell Street or from the school district.
- **Timing:** Would occur when the DNV is able to acquire property.
- **Collaboration:** School District 44, Fire Training Centre site operators and residents.

![FIGURE 7: St. Denis Avenue to Orwell Street](image-url)
b. WALKING & BICYCLING CONNECTIONS

Connection D: Maintain and Improve Existing Walking and Cycling Connections

- Purpose: To continue to meet the needs of people who walk and cycle to and through the sub-area.
- Benefit:
  - Allows users to use existing routes for recreational and commuter purposes; and
  - Encourages continued active travel through the site;
  - Encourages linkages with the proposed Spirit Trail route, which provides an important East-West connection through the District of North Vancouver and other North Shore Municipalities
- Impact: Minimal/none.
- Timing: As opportunities arise.
- Collaboration: Residents.

FIGURE 8: Pathway on Cardero Street, West End

FIGURE 9: Pathway on Guildford Street, West End

FIGURE 10: Trails and Pathways
c. ADDITIONAL RECOMMENDATIONS: OTHER ELEMENTS

Enhanced Pathway & Utility Corridor

- Purpose: To ensure space is available for pathway enhancements and to reserve additional land required for a utility corridor.
- Benefit:
  - Provides an improved walking space for pedestrians and users of 'Digger Park';
  - Provides additional space for those who walk, cycle and require mobility aids with minimal competition for space; and
  - Provides the required space for maintaining and storing underground utilities.
- Impact: Minimal/none.
- Timing: Space to be reserved immediately, with enhancement occurring when opportunities arise.
- Collaboration: Residents.

![Enhanced Pathway & Utility Corridor Diagram](image-url)

FIGURE 11: Enhanced Pathway & Utility Corridor
Support Drive-to-Five Program

- Purpose: This program is aimed at encouraging students to use more active modes of travel to school. Parents are encouraged to drop their children off a five-minute walk away from school, allowing students to get physical exercise and to learn how to become more safe and aware as pedestrians.

- Benefit:
  - Encourages parents and students to incorporate limited physical activity to and from school; and
  - Reduces traffic in and around the school drop-off/pick-up zone.

- Impact: Minimal/none.

- Timing: Would be contingent upon interest of the Parent Advisory Committee (PAC) to work on this issue.

- Collaboration: PAC possibly in collaboration with local businesses.

FIGURE 12: Drive-to-Five Walking Distances
Lynnmour Elementary Internal Circulation

- **Purpose:** Improve circulation of parents dropping off and picking up students during peak times.
- **Benefit:**
  - Improves neighbourhood livability for nearby residents; and
  - Allows for efficient and safe circulation near the school.
- **Impact:** May impact site design for the school's future development.
- **Timing:** When the school renews.
- **Collaboration:** School District 44, PAC, students, residents.

**FIGURE 13:** Example of Internal Circulation: Highlands Elementary School

**FIGURE 14:** Example of Internal Circulation: Highlands Elementary School
d. ADDITIONAL RECOMMENDATIONS: OUTSIDE STUDY AREA

Formalize Walking and Pedestrian Connections between Lilooet Road and Premier Street

- **Purpose:** Provides formal indication of a trail from Lilooet Road to Premier Street.
- **Benefit**
  - Provides improved access from Premier Street to Lilooet Road for users trying to access the transit stop on Lilooet Road;
  - Provides improved access for students walking to Lynnmour Elementary School from the east; and
  - Formalizes an already existing informal route through a residential complex to serve the greater neighbourhood, as well as the complex’s residents, using wayfinding signage.
- **Impact**
  - Some residents may not support users from neighbouring areas using a path through private development.
- **Timing:** As opportunities arise.
- **Collaboration:** School District 44, Edgewater Estate residents and property managers, and Lynnmour West residents and property managers.

Vehicle Connection from Lilooet Road to Premier Street

- **Purpose:** Provides access and redundancy for Premier Street and the neighbourhood.
- **Benefit**
  - Currently, there are two ways into the neighbourhood and one way out. This segment provides improved redundancy and egress from the site.
- **Impact**
  - Would be designed with redevelopment to have a minimal impact to future residents.
  - Further studies need to be completed to determine alignment with grade and development.
- **Timing:** Would occur if and when the existing developments between Lilooet Road and Premier Street redevelop. (possible 10-20 year timeframe)
- **Collaboration:** Edgewater Estate residents and property managers, Lynnmour West Estate residents and property managers, future developers.
V. LIMITATIONS

The study recognizes that due to adjacent unknowns, the timing of each individual segment will vary. While some segments may be recognized through development, others can be completed in conjunction with District initiatives (i.e. property acquisition). Although specific segments have been identified, further study is required to determine the exact alignment of each connection. The proposed connections outlined in this Study are intended solely to show through connections in a general area. Lastly, each segment is contingent upon successful partnerships with stakeholders in this community. Ensuring that local residents and development interests have an opportunity to influence positive changes in this community is a priority.

VI. CONCLUSION

As communities in the District continue to grow and densify, the existing street network needs to advance in order to meet current and future needs for improved access and redundancy. Due to development interest in the Inter-River neighbourhood, the District has identified key opportunities to improve the quality of life of its existing and future residents.

The District recognizes that streets in the Inter-River sub-area should be designed to ensure that they are safe, comfortable, and welcoming for all users, including people walking, cycling, driving or taking transit. New streets that are introduced into the area need to be sensitive to the existing neighbourhood, and should reflect the other local streets. In addition, the new connections need to improve vehicular access through the site as well as increase permeability and access for all users.

In order to reflect the interests of the neighbourhood’s residents, the District further recognizes the need to maintain the neighbourhood character in all improvements to the existing network. This work will be done in consultation with local residents and developers to ensure key stakeholders are involved throughout this process.

The proposed recommendations require further studies to determine the most appropriate and cost effective alignment with the least impact to current residents. The proposed connections identified in this report were developed using stakeholder feedback. Each connection serves the purpose of improving circulation and redundancy in the neighbourhood, while providing required access to St. Denis Avenue.

These proposed connections, whether taken individually or collectively, serve to create a more complete and finer grained network in the neighbourhood. These connections intend to address a range of ongoing transportation related issues and help improve the quality of life of local residents, school-goers, and recreational trail users in the Inter-River sub-area.
APPENDIX
APPENDIX A: PLANNING PROCESS
Planning Process

As part of the transportation review process, District staff consulted a total of 12 internal and external stakeholders, listed below in Table 1. Stakeholders from group #1 were chosen from internal departments to provide input on ongoing issues in the neighbourhood. Stakeholders from group #2 were chosen to represent the varying interests in the neighbourhood.

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<tr>
<th>Stakeholder Group #1</th>
<th>Stakeholder Group #2</th>
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<tr>
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<td>School District #44</td>
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<td>Transportation Consultation Committee</td>
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<td>Public Safety</td>
<td>Vancouver Coastal Health</td>
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In the first set of meetings, stakeholders were requested to review the goals, assumptions, and criteria used to evaluate the options proposed for the study area. Stakeholders were also asked to collectively identify opportunities and barriers with the existing transportation network. Stakeholder input also played a key role in refining criteria to meet the needs of all representatives and identifying key priorities in the neighbourhood.

District staff reviewed the feedback and input of both stakeholder groups and worked to develop potential transportation options that best met the goals outlined for the study. These options were evaluated to determine the highest-ranking options. The criteria included below were used to evaluate a total of seven options.

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<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria Description</th>
<th>Option 1a</th>
<th>Option 1b</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4a</th>
<th>Option 4b</th>
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<th>Comments</th>
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<td>• Minor or no impact on safety for all users walking, cycling and driving.</td>
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<td>• Reduced safety for all users walking, cycling and driving.</td>
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<td></td>
<td>• Improves ease of access for emergencies throughout whole site.</td>
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<td>• Improves ease of access for emergencies to part of the site.</td>
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<td>• Does not improve ease of access for emergencies for most of the site.</td>
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<tr>
<td>Mobility and Connectivity</td>
<td>• Improves access and circulation of all modes</td>
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<td></td>
<td>• Has a minimal impact on access and circulation of all modes.</td>
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<td>• Reduces ease of access and circulation of all modes.</td>
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<td></td>
<td>• Provides improved access for all users to key destinations (e.g. natural areas, school etc).</td>
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<td></td>
<td>• Provides improved access for only some users to key destinations (e.g. natural areas, school etc).</td>
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<td>• Reduces ease of access for all users to key destinations (e.g. natural areas, school etc).</td>
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<tr>
<td>Natural Areas</td>
<td>• No impact on parkland/natural areas.</td>
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<td>• Minimal impact on parkland/natural areas.</td>
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<td></td>
<td>• Negative impact on parkland/natural areas.</td>
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<td>Livability</td>
<td>• Positively enhances neighbourhood livability.</td>
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<td></td>
<td>• Has minimal to no impact on neighbourhood livability.</td>
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<td>• Negatively impacts neighbourhood livability.</td>
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<td>Costs</td>
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<td></td>
<td>The cost of implementation is low.</td>
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<td></td>
<td>The cost of implementation is medium.</td>
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<tr>
<td></td>
<td>The cost of implementation is high.</td>
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<td></td>
<td>Has a positive impact on existing landowners and/or the development potential of land.</td>
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<tr>
<td></td>
<td>Has a neutral impact existing landowners and/or the development potential of land.</td>
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<tr>
<td></td>
<td>Has a negative impact on existing landowners and/or the development potential of land.</td>
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</table>

The second set of stakeholder meetings was used to confirm the revised goals and assumptions. District staff shared draft options and draft recommendations informed by an evaluation of each option. Stakeholders provided feedback on the preferred set of transportation improvements in the neighbourhood. The options that best reflect stakeholder input and analysis completed by staff are summarized in Chapter V: Recommendations. In September, 2016, District staff consulted the Inter-River Community Association with proposed recommendations. The results and minutes of this consultation are provided in Appendix C.
APPENDIX B: METHODOLOGY
Options for Consideration

Using stakeholder feedback as the foundation for further analysis, District staff developed a range of potential options to serve the goals and needs for the area. Each option was evaluated as a segment; with the understanding that combined options would serve to better improve the network as a whole. Staff presented options with two key objectives in mind:

1. Better connect and improve the existing network for current and future transportation needs; and
2. Provide required access to St. Denis Avenue.

The range of proposed options considered for further analysis and evaluation are shown below in Figure 15. These options are intended to delineate a general location for a proposed east-west connection. Further details on the exact alignment will need to be discussed with relevant property owners and upon Council’s direction.

Although the options presented in Figure 15 serve the purpose of providing vehicular access, the District supports creating streets that are safe for all users that walk, cycle, use transit, and drive to and through the site. Stakeholder feedback further highlighted the need to maintain and enhance existing formal and informal walking and cycling routes through the site. This study does not aim to detract from the existing walking and cycling network, but rather aims to highlight opportunities that improve the range of options for accessing various destinations in and adjacent to the sub-area.
Sidewalks needed throughout site for enhanced pedestrian connectivity

Maintain informal trails for bikes and pedestrians

Maintain/Improve Pedestrian & Cycling Commuter Route

5: Map of Options Considered

EVALUATION

VEHICLE ACCESS

Stakeholders were asked to consider each option individually to determine which options best served the most needs in the neighbourhood. Although this study assumes Lynnmour Elementary School will remain open on site, the School Facilities Plan highlights the possibility that Lynnmour Elementary School may renew. The District believes access should be maintained, as a decision on its final location, whether on- or off-site, is still undecided.

Using the goals and assumptions as parameters for this study, stakeholders generally agreed with the following:
- Option 1b plays a key role in providing improved circulation and access to the school's existing entrance, should the school remain in its current location. Combining option 1a is a logical connection through to St. Denis Avenue;
- A combination of options 1a and 1b with 2 will provide a similar connection to 4a and 4b with less impact on the park;
- Option 4b is a favourable option but, option 4a will have an impact on the southern portion of Inter-River Park, otherwise known as 'Digger Park';
- Options 3 and 5 have minimal support due to their impact on existing parkland and their minimal impact to overall network improvement; and

The meeting minutes that document the discussion can be found in Appendix C.

District staff used the feedback collected from both sets of stakeholder meetings to refine the options and present the most widely recommended 'scenarios'. These scenarios are presented in Chapter V: Recommendations.

Scenarios that provided redundancy within the street network and improved circulation were ranked more favourably than those that had fewer overall benefits to the network. Scenarios that had the biggest impact to Inter-River Park and to existing development were not ranked favourably amongst stakeholders.

The highest ranking scenario from this evaluation was Scenario 4, which recommends a combination of options 1a, 1b, 2 and 4b. This scenario was preferred because it provides redundancy for access to St. Denis road while providing improved circulation and additional alternatives into/out the site. Option 2 provides a second option for users into and out of the sub-area by providing access via Premier Street or Orwell Street, and has a lower impact on the park than option 4a. It was however recognized that option 2 would place greater pressure on existing traffic patterns along Premier St. Option 2 was subsequently removed from the final recommendations.

A range of additional transportation needs were highlighted by stakeholders during the consultation process. These needs were not highlighted in any of the presented scenarios, but are addressed below.

**PEDESTRIAN, CYCLING, AND TRANSIT ACCESS**

**Maintain and Enhance Existing Pedestrian and Cycling Commuter and Recreational Networks**
- Stakeholders highlighted the importance of formal and informal pedestrian and cycling trails that travel to and through the site.
- Commuter and recreational trails that run through the site should be maintained to provide opportunities for active travel.

**Improved Connections to Transit**
- Stakeholders identified barriers to accessing the existing transit stops located southeast of the sub-area on Old Lilooet Road and Lilooet Road.
• District staff recommend exploring opportunities to put in more formalized paths that provide improved access to the existing bus stop locations.
• Stakeholders also identified opportunities to improve transit stop infrastructure for all abilities and for all weather conditions.

SCHOOL CONGESTION

Drive to Five Program

• The intent of Drive-to-Five programs is to provide locations where parents can park approximately a 5 minute walk away from school and encourage their children to engage in active modes to school.
• Stakeholders requested that opportunities for Drive-to-Five locations at existing parking lots in the adjacent area be explored.
• The Holiday Inn parking lot or existing Ministry land were recommended as two potential locations for this use.
• The District recommends that the Lynnmour Elementary PAC work with the local businesses to identify potential locations for short term-parking in support of Drive-to-Five.

ADDITIONAL CONSIDERATIONS

PROPERTY ACQUISITION

• The District understands that as part of this transportation review, network improvements will likely be timed with redevelopment opportunities. Where redevelopment opportunities do not exist, the District would need to consider acquiring properties to help create a complete network.
### TABLE 3: Evaluation of Options

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria Description</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All options being considered will be low-volume, low-speed streets, and will therefore have reasonably safe traveling conditions.</td>
<td></td>
<td>None of the options 'reduce' safety however, Options 3-5 present more opportunity for conflicts between users than Options 1-2.</td>
</tr>
<tr>
<td><strong>Public Safety</strong></td>
<td>• Improves safety for all users walking, cycling and driving.</td>
<td>●</td>
<td>Options 1a &amp;1b collectively provide the best access and circulation for emergency vehicles through the site.</td>
</tr>
<tr>
<td></td>
<td>• Minor or no impact on safety for all users walking, cycling and driving.</td>
<td>● ● ●</td>
<td>Option 2 as well as 4a &amp; 4b collectively also provide good access and circulation but may not be the most efficient route for emergency access.</td>
</tr>
<tr>
<td></td>
<td>• Reduced safety for all users walking, cycling and driving.</td>
<td>●</td>
<td>Option 3 and 5 provide access for emergency vehicles but provide the least circulation and efficiency of travel through the site.</td>
</tr>
<tr>
<td></td>
<td>• Improves ease of access for emergencies throughout whole site.</td>
<td>●</td>
<td>Providing access to St. Denis is a required component of this study.</td>
</tr>
<tr>
<td></td>
<td>• Improves ease of access for emergencies to part of the site.</td>
<td>● ● ●</td>
<td>At a minimum, the chosen scenario must include an option that provides this required access.</td>
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<tr>
<td></td>
<td>• Does not improve ease of access for emergencies for most of the site.</td>
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<tr>
<td></td>
<td>• Provides required access to St. Denis</td>
<td>●</td>
<td>All options, with the exception of 1b, provide access and connectivity to other streets but do not provide improved circulation.</td>
</tr>
<tr>
<td></td>
<td>• Does not provide required access to St. Denis</td>
<td>● ● ●</td>
<td>Option 1b improves both access and ease of circulation for all modes as well for parents dropping off/picking up children at school.</td>
</tr>
<tr>
<td>Mobility and Connectivity</td>
<td>• Improves access and circulation of all modes</td>
<td>●</td>
<td>This criterion is not an effective indicator.</td>
</tr>
<tr>
<td></td>
<td>• Has a minimal impact on access and circulation of all modes.</td>
<td>● ● ●</td>
<td></td>
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<tr>
<td></td>
<td>• Reduces ease of access and circulation of all modes</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Provides improved access for all users to key destinations (e.g. natural areas, school etc).</td>
<td>●</td>
<td>Option 1a/b and 2 do not impact parkland or natural areas.</td>
</tr>
<tr>
<td><strong>Natural Areas</strong></td>
<td>• Provides improved access for only some users to key destinations (e.g. natural areas, school etc).</td>
<td>● ● ●</td>
<td>Option Options 3 and 4a/b would require removal of some park trees.</td>
</tr>
<tr>
<td></td>
<td>• Reduces ease of access for all users to key destinations (e.g. natural areas, school etc).</td>
<td>●</td>
<td>Option 5 would impact the Riverine Forest.</td>
</tr>
<tr>
<td>Category</td>
<td>Criteria Description</td>
<td>Rating</td>
<td>Option 1a</td>
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<td>Li Va</td>
<td>• Positively enhances neighbourhood livability.</td>
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<td>☐</td>
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<tr>
<td>Costs</td>
<td>• The cost of implementation is low.</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Private Interests</td>
<td>• Has a positive impact on existing landowners and/or the development potential of land.</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
APPENDIX C: MEETING MINUTES & ATTACHMENTS
NOTE: A total of four meetings were held with internal and external stakeholders. All participants were given the same reference material, consisting of the study area map, study goals, assumptions, and criteria for evaluation. These study components were refined using stakeholder feedback and are presented in this report to provide context for the proposed recommendations.

Inter-River Sub-area Transportation Study

District of North Vancouver
Stakeholder Meeting #1a
Meeting Minutes & Attachments

Held at: Municipal Hall - Meeting Room 'C'
Date/Time: May 17th at 2:00 pm
Adjourned: 3:05 pm

Attended By:
- Douglas Rose - Parks
- Fiona Dercole - Public Safety
- Pouya Behzadi - Engineering
- Richard Boase - Environment
- Susan Rogers - Parks
- Tamsin Guppy - Planning
- Ingrid Weisenbach - Transportation
- Shazeen Tejani - Transportation

Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:
1) Introductions
2) Review Study Purpose
3) Discussion of Goals, Assumptions, Criteria
4) Existing Conditions & Issues
5) Wrap-Up & Next Steps

- REVIEW STUDY PURPOSE
  - Weisenbach spoke about the purpose of the transportation study, which included a need to clarify the transportation needs for this area in advance of future development proposals.
  - The boundaries of the study area were discussed. Weisenbach went over the study area and the tight timeframe. Group discussed that the boundary may not be an exact line as the study should also consider users that pass through the study area or people within the neighbourhood that need to access key destinations outside the study area.
DISCUSSION OF ASSUMPTIONS, GOALS & CRITERIA

- Assumptions
  - Weisenbach shared the draft assumptions with the group.
  - The group discussed the assumptions and provided additional suggestions that should be considered: a) park access, b) property access and c) commuter routes and active travel networks.

- Goals
  - Weisenbach shared the draft goals and asked for feedback.
  - Group suggested adding in goals that addressed protection of active travel networks and preservation of natural areas and recreational space.

- Criteria
  - Tejani reviewed the draft criteria to be used for options evaluation.
  - Group recommended additional criteria about protection of natural areas, flood protection, connection of trail networks, impact on utilities, and cost of option implementation.

EXISTING CONDITIONS & ISSUES

- Group recorded strengths and weaknesses of the existing transportation network on the study area map.
- Group then summarized issues into key themes. (See Attachment A on page 29)

Wrap Up & Next Steps

- Meeting minutes to be dispersed for confirmation of understanding
- Draft evaluation of options for presentation at next meeting, and layout of May 30th meeting provided.

NEXT MEETING: Monday, May 30th at 10:30 am in Meeting Room 'C'
Inter-River Sub-area Transportation Study
District of North Vancouver
Stakeholder Meeting #1b
Meeting Minutes

Held at: Municipal Hall - Meeting Room ‘A’
Date/Time: May 17th at 7:00 pm               Adjourned: 8:00 pm
Attended By: Antje Wahl – Transportation Consultation Committee
             Brenda Barrick – Neighbourhood Representative
             Erin Black – Vancouver Coastal Health
             Mark Thomson – School District 44
             Victor Penman – Fire
             Ingrid Weisenbach – Transportation
             Shazeen Tejani – Transportation

Regrets: Elise Roberts – Neighbourhood Representative
Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:
1) Introductions
2) Review Study Purpose
3) Discussion of Goals, Assumptions, Criteria
4) Existing Conditions & Issues
5) Wrap-Up & Next Steps

◆ INTRODUCTIONS
  • Participants introduced themselves and their roles relevant to this meeting.

◆ REVIEW STUDY PURPOSE
  • Weisenbach spoke about the purpose of the transportation study, which included a
    need to clarify the transportation needs for this area in advance of future development
    proposals.
  • The boundaries of the study area were discussed. Weisenbach went over the study area
    and the tight timeframe. Group discussed that the boundary may not be an exact line as
    the study should also consider users that pass through the study area or people within
    the neighbourhood that need to access key destinations outside the study area.

◆ DISCUSSION OF ASSUMPTIONS, GOALS & CRITERIA
  • Assumptions
    • Weisenbach shared the draft assumptions with the group.
The group discussed the assumptions and provided additional suggestions that should be considered: a) park access, b) property access and c) commuter routes and active travel networks.

- **Goals**
  - Weisenbach shared the draft goals and asked for feedback.
  - Group suggested adding in goals that addressed protection of active travel networks and preservation of natural areas and recreational space.

- **Criteria**
  - Tejani reviewed the draft criteria to be used for options evaluation.
  - Group recommended additional criteria about protection of natural areas, livability of the neighbourhood to enhance social cohesion and sense of community, and health indicators.

**EXISTING CONDITIONS & ISSUES**
- Group recorded strengths and weaknesses of the existing transportation network on the study area map.
- Group then summarized issues into key themes. (See Attachment A on page 29)

**Wrap Up & Next Steps**
- Meeting minutes to be dispersed for confirmation of understanding
- Draft evaluation of options for presentation at next meeting, and layout of June 2nd meeting provided.

**NEXT MEETING:** Thursday, June 2nd at 7:00 pm in Meeting Room ‘A’
ATTACHMENT ‘A’: KEY THEMES IDENTIFIED BY TEAM

Summary of Existing Conditions & Opportunities (Both Groups):

- Study area not bound by the sub-area boundaries; issues like bike commuter routes and pedestrian paths outside and through the site seen as being important
- **Congestion**: Seen as potentially worsening with new development near Lynnmour Elementary school.
- **Transit accessibility**: Seen as being in ‘poor’ condition – walking distances to transit stops seem too far, with no transit connections in the internal network.
- **Cycling Routes**: Seen as being effective near the southern portion of the site, under the highway, but being very poor along Old Lillooet Road and crossing Keith Road. There was also a need for improved connections leading into and out of the sub-area.
- **Pedestrian connections**: Generally, the trail and footpath network through the site was seen as being excellent. There was an expressed need for continued maintenance of these trails and a desire for improved pedestrian connections immediately outside of the sub-area. Pedestrian connections should be emphasized for key destinations throughout the site.
- **Environmental Assets**: Both Inter-River and ‘Digger Park’ play a huge role in establishing a sense of community for residents – an assumption should be that both parks will be protected from disturbance. Lynn Creek is also a recreational and ecologically valued asset. The environmental & ecosystem health of the Riverine Forest should also be maintained.
- **Parking**: Seen primarily as an issue closer to Inter-River Park.
Inter-River Sub-Area Transportation Study
District of North Vancouver
Stakeholder Meeting #2a
Final Meeting Minutes

Held at: Municipal Hall - Meeting Room ‘C’
Date/Time: May 30th at 10:30am Adjourned: 11:30am
Attended By:
- Pouya Behzadi – Engineering
- Richard Boase – Environment
- Tamsin Guppy – Planning
- Ingrid Weisenbach - Transportation
- Shazeen Tejani – Transportation

Regrets:
- Fiona Dercole – Public Safety
- Douglas Rose – Parks

Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:

1) Meeting #1 Recap & Approval of Minutes
2) Review Revised Goals & Assumptions
3) Review Options & Criteria Evaluation
4) Recommendations
5) Wrap-Up & Next Steps

MEETING RECAP & APPROVAL OF MINUTES
- Weisenbach summarized key ideas that arose in the previous May 17th Stakeholder meeting and confirmed feedback received by the group.
- Group added that improved transit facilities and connections to transit were needed.
- Weisenbach addressed the potential for a pedestrian bridge on Crown Street to provide improved connections from Lynn Creek to Park and Tilford Centre.

DISCUSSION OF GOALS & ASSUMPTIONS
- Goals
  - Weisenbach shared the revised goals; making note of new additions based on feedback.
- Assumptions
  - Weisenbach shared the revised assumptions with the group.
  - Group recommended a change of wording regarding the Fire Training Site.
  - Group also recommended adding the assumption that ‘recreational’ routes would be maintained.
OPTIONS & CRITERIA EVALUATION

- Options
  i. Weisenbach shared each of the draft options and rationales with the group.
  ii. Group discussed the opportunities for utilizing existing parking facilities to accommodate 'Drive to Five' locations, with the Holiday Inn Parking Lot, Premier Street, and Ministry Land being potential options.

- Criteria Evaluation
  i. Weisenbach & Tejani shared the draft evaluation of the proposed options, providing rationale for scoring on several criteria.
  ii. Group recommended:
      1. Adding utility impacts as a separate category; and
      2. Revisiting scoring regarding improved safety for all users for options 1a and 1b; Recognizing that the introduction of cars by way of street, where none travelled before, has implications for the safety of pedestrians and cyclists.

RECOMMENDATIONS

- Weisenbach summarized key recommendations produced using the evaluation criteria.
- Group discussed the potential of combining options and the benefits of each.
- Group recommended:
  i. Placing 4a and 4b at a higher priority than currently ranked;
  ii. Creating a hybrid option out of 4a and 4b that forms a 'T' junction;
  iii. If selected, implementing 1a and 1b together;
  iv. Beginning a discussion with the School District about options 1a, 1b and 4b;
  v. Factoring impacts to utilities at an earlier stage.
  vi. (By general agreement from all participants) that option 5 not be pursued, since it provided the least benefit and at the highest social and environmental cost;

WRAP-UP & NEXT STEPS

- Draft meeting minutes to be dispersed for confirmation of understanding.
- Transportation to present recommendations for Council's consideration this July*.

*NOTE: Presentation of recommendations to Council was delayed to the fall of 2016. Date of presentation to be decided.
Inter-River Sub-Area Transportation Study
Appendix C

District of North Vancouver
Stakeholder Meeting #2b
Meeting Minutes

Held at: Municipal Hall - Meeting Room ‘A’
Date/Time: June 2nd 2016 at 7:00pm Adjoined: 8:30pm
Attended By: Antje Wahl – Transportation Consultation Committee
Brenda Barrick – Neighbourhood Representative
Elise Roberts – Neighbourhood Representative
Mark Thomson – School District #44
Victor Penman – Fire Department
Ingrid Weisenbach - Transportation
Shazeen Tejani – Transportation
Regrets: Erin Black – Vancouver Coastal Health
Minutes taken by: Shazeen Tejani

Meeting Agenda Topics:
1) Meeting #1 Recap & Approval of Minutes
2) Review Revised Goals & Assumptions
3) Review Options & Criteria Evaluation
4) Recommendations
5) Wrap-Up & Next Steps

✦ MEETING RECAP & APPROVAL OF MINUTES
  • Weisenbach summarized key ideas that arose in the previous May 17th Stakeholder meeting and confirmed feedback received from Antje Wahl.

✦ DISCUSSION OF GOALS & ASSUMPTIONS
  • Goals
    □ Tejani shared the revised goals; making note of new additions based on feedback.
  • Assumptions
    □ Tejani shared the revised assumptions with the group.
    □ Group recommended a change of wording to include ‘Inter-River’ with regard to the bullet on park access. Group further recommended specifying that access to the park will be maintained from “Inter-River Road”.
    □ Group also recommended revising the word ‘commuter’ to make it more clear that these routes are used for people accessing key destinations, not just those who commute to work.
- Group also required further clarification on assumptions related to park use. Weisenbach informed the group that the District’s Parks Department was currently reviewing any future uses.
- School District Facilities Plan indicates redevelopment potential for Lynnmour Elementary. The final location, whether on- or off-site, is still undecided.

**OPTIONS & CRITERIA EVALUATION**

- **Options**
  i. Weisenbach shared each of the draft options and rationales with the group.
  ii. Group expressed concern about the impacts to the park with options 4a & 5, and for new residents that front the park, south of option 4a.
  iii. Group was also concerned that option 1b would provide direct vehicular access to the school, thereby reducing the likelihood that children will walk or bike to school.
  iv. Group further expressed concern with Option 1a as potentially increasing access and traffic along St. Denis Ave, a road currently used heavily by pedestrians and cyclists.
- **Criteria Evaluation**
  i. Weisenbach shared the draft evaluation of the proposed options.

**RECOMMENDATIONS**

- Weisenbach summarized key recommendations produced using the evaluation criteria.
- Group discussed the potential of combining options and the benefits/impacts of each.
- Group recommendations:
  i. 1a + 1b provides circulation for school pick up/drop off and direct access to St. Denis;
  ii. Doing a combination of options 1a + 1b, 4b, and 2, all as public roads was most preferred;
  iii. 4a provides improved access if the school were to have primary pick up/drop off on Orwell;
  iv. 4a would be considered feasible if designed to reduce speeds and road widths;
  v. Group agreed option 5 was not reasonable; and
  vi. Group suggested considering a 6th option that bisects the school site from Forsman through to Option 4b, if the school relocates.
- Group acknowledged that improved connectivity to transit stops and improved transit infrastructure were needed adjacent to the sub-area.

**WRAP-UP & NEXT STEPS**

- Draft meeting minutes to be dispersed for confirmation of understanding.
- Transportation to present recommendations for Council’s consideration this July.

*NOTE: Presentation of recommendations to Council was delayed to the fall of 2016. Date of presentation to be decided.*
APPENDIX D: DISTRICT OF NORTH VANCOUVER
E-DOCS REFERENCE LIST
Lynnmour/Inter-River Local Plan: 836865

Internal Stakeholder Meeting Minutes & Attachments – Meeting 1: 2896702

External Stakeholder Meeting Minutes & Attachments – Meeting 1: 2896686

Internal Stakeholder Meeting Minutes & Attachments – Meeting 2: 2906517

External Stakeholder Meeting Minutes & Attachments – Meeting 2: 2906422
CLIENT: BRODY DEVELOPMENTS

PROJECT: CONTINUUM - TRAFFIC MANAGEMENT PLAN

858, 854, & VACANT LOT ORWELL ST,
855 PREMIER ST
NORTH VANCOUVER, BC

CREUS Engineering Ltd.

ISSUED FOR DP
TYPE OF CONSTRUCTION: CURB & GUTTER AND SIDEWALK
WORK TO BE COMPLETED: TBD
WORKING DAYS: MONDAY TO FRIDAY
WORK DURATION: 5 DAYS
WORKING HOURS: MON-THU, 7AM TO 6PM
CONSTRUCTION INFO

SYMBOL LEGEND

- - -

D

WORKS TO BE COMPLETED: TBD
WORKING DAYS: MONDAY TO FRIDAY
WORKING HOURS: MON-FRI, 7AM TO 6PM

CREUS Engineering Ltd

BROOK DEVELOPMENTS

CONTINUUM

DISTRICT OF NORTH VANCOUVER

ORWELL STREET OVERLAY
CONSTRUCTION CONTACT INFO:

CREUS Engineering Ltd
Civil Engineers

Symbol Legend:

TYPE OF CONSTRUCTION: PAVING
WORK TO BE COMPLETED: TBD
WORKING DATES: MONDAY TO FRIDAY
WORK DURATION: 2 DAYS
WORKING HOURS: MON-FRI, 7AM TO 6PM

PREMIER STREET
C Guidelines for Ground-Oriented Housing

The built-form of ground-oriented multi-family development should be integrated with existing neighbourhoods.

1. Public Realm, Streetscape Elements and Neighbourhood Fit

Discussion:

The built-form of ground-oriented multi-family development should be integrated with existing neighbourhoods, while enhancing architectural variety. Development should reflect the streetscape character of the neighbourhood in which it is located, or in the case of larger developments, it should create its own successful streetscape character.

Ground-oriented housing should be designed so that it complements the neighbourhood character, with minimum impact on adjacent properties. Development will often occur incrementally as pre-existing lots on record are assembled and consolidated. Accordingly, the design must carefully consider both the existing and future relationships to surrounding properties.
C1.1: Height and Massing: The height and massing of buildings should be in keeping with a single family dwelling or townhouse height, which is typically less than 12 metres. Architectural treatments that reduce apparent building height such as the use of trim, colour accents, secondary roof elements, building recesses and stepped building forms are encouraged (see Figure 81).

C1.2: Roof Treatment: The gable orientation and roof pitch should be sympathetic to the design of neighbouring buildings and help to maximize the space and light between buildings (see Figure 81).

C1.3: Street Orientation: Units are encouraged to be oriented towards, and have a visual connection to the street (see Figure 82).

C1.4: Corner Lots: Buildings on corner lots should "wrap the corner" providing an opportunity to have units facing both streets (see Figures 83).

C1.5: Minimum Frontage: Generally, development parcels should have a minimum frontage of 20 metres.

C1.6: Setbacks: The front yard setback should relate to, or appropriately transition from, the established pattern in the area.
2. Site Planning and Landscaping

Discussion:

Good site planning and landscaping contribute to neighbourhood character and aesthetics, resident livability and environmental sustainability. In principle, site planning should strive to minimize building coverage, preserve natural features and minimize rainwater run-off. Mature trees shade and cool homes in the summer and absorb carbon dioxide and trap dust particles. Trees and other landscaping provide habitat, aid with energy conservation and absorb rain water, reducing stormwater run-off into creeks. Landscape plans should complement the building design and harmonize with the local setting and be prepared by a BC Registered Landscape Architect.

C2.1: Tree Retention: Healthy mature trees and natural features should be retained where possible.

C2.2: Sustainable Landscape Design: Sustainable landscape design should incorporate best practices for tree planting, rainwater management, accessibility and feature native and drought tolerant species. Sustainable landscape design should also be coordinated with building design, site servicing and utility placement.

C2.3: Street Interface: Landscaping and fencing should be kept low and open in the front yard to foster a strong relationship to the street and maintain visibility through to the front of the building (see Figure 84).

C2.4: Privacy: Incorporate planting and fencing to maximize privacy between dwelling units and neighbouring sites (see Figure 85).

C2.5: Shared Outdoor Space: Units should be clustered to create interesting shared outdoor spaces as well as usable and accessible private outdoor spaces. Encourage/integrate informal gathering, play and urban gardening opportunities (see Figure 86).

C2.6: Private Outdoor Space: At least 9 square metres of usable private outdoor space should be provided for all units (see Figure 87).

C2.7: Outward Facing Aspect: Units should be oriented such that windows from the principle living space of each unit are separated by a minimum of 9 metres from those of any other unit (see Figure 88).
C2.8: Rear Yard Setbacks: Rear yard setbacks should be at least 6 metres, with some variation so that a visual wall is not created along the rear property line.

C2.9: Side Yard Setbacks: Side yard setbacks should be a minimum of 1.2 metres, and up to 3 metres when facing a side street or a single family home.

C2.10: Pedestrian Access: The main pedestrian access route should be from the street rather than the lane or parking area.

C2.11: Parking: Parking spaces should be located off a private driveway, and should not be visible from the street (see Figure 89).

C2.12: Parking access: When parking is accessed from the front street the number of driveways should be kept to a minimum (see Figure 89).

C2.13: Shared Driveways: Where adjacent to another potential redevelopment site, the driveway should be designed so that it could in future be shared with the adjacent property (see Figure 89).

C2.14: Oil and Grit Separators: Oil and grit separators are required in all parking areas.
3. Architectural Character

Discussion:

The built form and character of new ground-oriented multi-family development should be consistent with and in harmony with the general rhythm, scale and height of the existing buildings in the neighbourhood. Ground-oriented housing is usually located in or adjacent to single family neighbourhoods. Building design therefore should generally have a single family character and incorporate west coast references while responding to local conditions such as topography, vegetation and heritage resources.

Consideration should be given to unit identity, roodscape, and other architectural elements, including fenestration, materials, and colour. Dormers and similar roof projections should read as subordinate or secondary architectural elements.

Ground-oriented housing should be designed in consideration of the needs of all residents regardless of their state of health, mobility or disabilities. Units should incorporate basic features that allow the units to be adapted to accommodate special needs without expensive retrofitting.

C3.1: Massing: The front façade of buildings should be broken up and portions stepped back to reduce the impression of bulk (see Figure 90).

C3.2: Variations in Design: Subtle design variations should be incorporated between neighbouring buildings to avoid a repetitive appearance.

C3.3: Cladding: Buildings should be clad primarily in natural materials although stucco accents may be used as a subordinate finish.

C3.4: Varied Rooflines: Varied roof lines with overhangs are encouraged.

C3.5: Roofing Materials: Laminated asphalt shingles or fire retardant treated cedar shakes are recommended as roofing materials. Tile roofing is discouraged.

Figure 90
C3.6: Noise Levels: Designs should demonstrate that the noise levels (A-weighted 24-hour equivalent LEQ sound level (the average sound level over the period of the measurement) in those portions of the dwelling listed below should not exceed the noise levels expressed in decibels set opposite such portions of the dwelling units. Examples include use of triple glazing, improved insulation etc.

<table>
<thead>
<tr>
<th>PORTION OF DWELLING UNIT</th>
<th>NOISE LEVEL (DECIBELS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrooms</td>
<td>35</td>
</tr>
<tr>
<td>living, dining, recreation rooms</td>
<td>40</td>
</tr>
<tr>
<td>kitchen, bathrooms, hallways</td>
<td>45</td>
</tr>
</tbody>
</table>

C3.7: Heating and Ventilation Systems: Ventilation, heating and cooling systems should be designed and insulated to minimize noise and located to be visually unobtrusive to neighbouring developments.

C3.8: Accessible Entrance: A level, no step entrance should be provided to each dwelling. If not possible, then platform areas should be provided at the top and bottom of ramps to facilitate the turning of wheelchairs, strollers and other mobility devices (see Figure 91).

C3.9: Weather Protection: A canopy should be provided over the front entrance.

C3.10: Front Door Width: The front door opening should be no less than 0.9 metre in width.

C3.11: Accessible Doorbell: The front doorbell should be no higher than 1 metre above the entry way

C3.12: Legible Address: The address should be indicated in easy-to-read, 10 centimetre or taller numbers, shown in a clearly contrasting colour.

Figure 91
LYNNMOUR / INTER-RIVER
AREA ONE
DESIGN GUIDELINES FOR MULTIPLEXES AND TOWNHOUSES
ADOPTED NOV.20/06
The Lynnmour / Inter-River Plan broadens the housing choices for the area around Lynnmour Community School enabling the neighbourhood to renew the single family character while providing a greater mix of family oriented housing. These housing choices will include garden suites behind existing homes, building new duplexes and triplexes on single family lots, or combining properties to build townhouses, like those on Premier Street.

The Design Guidelines are intended for use with every redevelopment application in this area, to help ensure good quality design that maintains the charm and liveability of the area. This package also provides some reference material on the engineering services in the area, and the anticipated changes for the neighbourhood.

If you are anticipating redeveloping your lot, please read this document, and review it with your consultants (architects, landscape architects and engineers) to ensure that their work is also in line with the requirements discussed here.
BUILDING IN A FLOOD PLAIN

The neighbourhood surrounding Lynnmour Community School (shown on the attached map) lies within the river valley for Lynn Creek. Historically the creek meandered through this area. In more recent times, modifications to the creek banks including rip rap, and raising the level of the bank, have helped ensure the creek maintains its course. Furthermore, the District of North Vancouver maintains a program of regular gravel removal from the creek bed, which reduces the risk of flooding. None the less, a recent study by Kerr Wood Leidal Engineering Consultants demonstrated that in an extreme rain event (the 200 year storm event) there is the potential for some flooding in this neighbourhood. The Province recommends that renovations or new construction within flood plains be built to flood construction levels so that all living space is above the potential height of any flood waters. In this neighbourhood, this would mean raising the living space approximately 2 feet above the height of the adjacent roadway.

As there is no insurance for damage from flood waters, it is best for all new construction to be designed in a way that reduces the risk of flood damage, even though that risk is very low, and is something that may not happen in our lifetime.

To ensure that homes are not at risk of flood damage the following should be considered:

- All living space must be constructed above the flood construction level assigned to each property.
- Basements will not be permitted (unless tanked).
- Homes should step up from the grade.
- Lots should be regraded so that the finished grade is higher than the street.
- Driveways should not cut into the grade in such a way that flood water would be directed towards living space.
GOOD NEIGHBOUR POLICY

All new projects need to consider their neighbours and design in a manner that fits with the harmony, scale and character of the area. We recommend that designers meet with the neighbours early in the process so that new designs can balance community objectives with neighbours' concerns about such things as privacy, views and sunlight.

Neighbourly development should:

- Retain trees and mature vegetation where possible, to minimise the impacts of change.
- Maximise the sunlight to both the development's own outdoor garden areas, and the neighbours' garden areas.
- Minimise over-viewing, and reduce loss of privacy from side windows, through the use of skylights, translucent glass, and stepping back portions of the building.
- Use landscaping and fences to enhance backyard privacy, and privacy between developments.
- Use wider side yard setbacks next to single family zoned land, particularly if the proposed building height at the side yard exceeds the height of the adjacent single family house.
- Carefully site and enclose garbage and recycling containers to reduce the impact of noise and smell on adjacent properties.
- Design lot grading so that there is no run-off onto the adjacent properties.

This is the garbage area for a triplex on Fromme Road, it is boxed in and screened so as to minimise its impact on both the project and the neighbours.
MAXIMUM UNITS AND BUILDING SIZE

In the Lynnmour / Inter-River Local Plan, the maximum number of units and size of building is established for lot redevelopment as follows:

- With a lot size of less than 5000 square feet single family houses are permitted;
- With a lot size between 5001 and 7000 square feet a single family lot may be in-filled with a second unit or redeveloped as a duplex with a maximum density of 0.4 floor space ratio;
- With a lot size between 7001 and 8000 square feet a single family lot may be in-filled with a second unit or redeveloped as a duplex to a maximum density of 0.5 floor space ratio; and
- With a lot size between 8001 and 12000 square feet single family lot may be in-filled with a second and third unit or redeveloped as a duplex or triplex to a maximum density of 0.5 floor space ratio.

Where property owners choose to redevelop as a group in a consolidated fashion to create a redevelopment parcel of 15,000 square feet or greater, then the potential for townhouses exists with a maximum density of 0.7 floor space ratio and 24 units per acre.

Though the plan establishes maximum building potential, not everyone may wish to build to either the maximum number of units or the maximum size of building. For example, a single family home owner on an 8,500 square foot lot has the potential for a triplex, but may prefer to retain their home and construct a single garden suite in the rear.

BUILDING COVERAGE

To help ensure designs maximise open space on the lot, building coverage for all buildings and structures proposed on the lot is limited to 40%.
What are Floor Space Ratio and Building Coverage?

The tool that is traditionally used to measure building size is floor space (also called floor area). This is the measurement from wall to wall of all above ground floors. The floor space is then compared with the lot size to determine the floor space ratio. Floor space ratios are usually written as decimals eg. 0.5 = 50%.

By comparison building coverage represents the percentage of the lot that is covered in buildings and structures, including the dwelling units, garages, garden sheds and garden structures like gazebos.

This diagram shows a site area (A) or lot size of 100 squares (100%). The lower block (B) or main floor of the diagram covers 40 squares, equal to 40% building coverage. The second floor (C) covers another 10 squares. Combined the main floor (B) and upper floor (C) add up to 50 squares or 50% of the total, or a floor space ratio of 0.5.

In most residential zones, including single family homes and town houses, some parts of the building are excluded from floor space area calculations. Typically, these exclusions include the basement areas, garages, and garden sheds. In this neighbourhood basements are not recommended (because of the flood risk) but exclusions for single car garages with some storage space will be considered. Since new development will not include basement space, some designers may wish to make use of the attics for additional living space. Attic floor space is excluded where the floor- to-ceiling height is less than 7 feet.
LOT CONSOLIDATION

The Lynnmour / Inter River-Plan was written with a flexible density so that properties could develop independently. However, there are some locations within Inter-River where lot consolidation is recommended in order to best address other types of design issues:

Noise Abatement:

One method of reducing the noise that spills into this community from the highway, is to design row housing along Keith Road so that there is a continual wall of residential buildings blocking the noise from spreading into the community. This would be more easily accomplished if properties along Keith Road redeveloped two or more at a time.

Lot Grading, Storm Water and Flood Water:

Every time a lot is redeveloped, there is a requirement that all grading and landscaping is done in a manner that does not cause storm water from the typical rain fall to flow onto adjacent lots. When building in a flood plain, the need to ensure rainwater doesn’t run onto other properties must be carefully balanced against the desire to raise level of the lot so that floodwater is directed away from the buildings. Careful drainage and landscape plans ensure that a proper balance is met. However, in the south east portion of the Inter-River neighbourhood, along Forsman and between Forsman and Saint Denis, there is a low lying area where it will prove more difficult to meet this balance on individual lots, and therefore lot consolidation is recommended.

Flood Protection Works:

Saint Denis Avenue functions as a dyke, helping protect the neighbourhood against the risk of flooding. The recent study completed by Kerr Wood Leidal Consulting Engineers, recommends modest improvements along Saint Denis that would raise the roadway above its existing elevations. For 820 and 840 Saint Denis Avenue, where the road improvements will be the most dramatic, consolidation is recommended so that together the lots can find the most appropriate means of accessing their site.
SETBACKS AND SITING

When considering where to place a building on a site it is important to consider the potential impacts on neighbours and the street. Setback regulations are aimed at protecting and enhancing the neighbourhood, but all designers should consider the impacts of their designs in terms of privacy, over-viewing, and shading, as well the potential for enhancing the streetscape, and look of the site.

Front Yard Setbacks

To fit into the existing neighbourhood, a minimum front yard setback of 15 feet should be considered, unless an alternative pattern of setbacks already exists, like that found along Premier Street.

Rear Yard Setbacks

A minimum rear yard setback of 20 feet from the rear property line to building face is recommended to ensure that some area be set aside for rear gardens and open space.

Where townhouse sites are proposed a staggered setback combined with a varied design should be considered so that the project does not create a visual wall along the rear property, and so that successive townhouse projects do not create a feeling of a canyon running down the middle of the block.

Side Yard Setbacks

Side yards are used to provide access to the site, landscaping around the site, and provide a buffer to the adjacent properties. A larger building will tend to need a larger setback, especially if it is placed further back on the lot, where the impact of over-shadowing, and over-viewing may need to be reduced. The following table sets out recommendations for side yard setbacks.
### 2 or 2 ½ Storey Buildings

| Side yard setback, in the front 50 feet of the lot | Minimum 6 foot side yard |
| Side yard setback, after the front 50 feet of the lot | Minimum 10 foot side yard |
| Side yard setback for a side yard facing a road | Minimum of 15 foot, as it would function as a second front yard. |

### 1 Storey Building Elements

| Side yard Setback | Minimum 4 foot side yard |
| Side yard Setback, for a side yard facing a street (corner lots) | Minimum of 15 foot side yard, as it would function as a second front yard. |

---

**Keith Road – Setbacks**

Careful design along Keith Road can help reduce the highway noise impacting both the properties along Keith Road and the larger neighbourhood. Row house design with no side yard setback is encouraged to create a residential wall that will block the noise from the highway, and help create more liveable outdoor space in the rear.

**Varying Setbacks**

The setbacks listed above may be varied if:

a) Different setbacks will fit with established pattern of development, like that found along Premier Street with the existing townhouses;
b) Tree preservation or other environmentally benefits can clearly be demonstrated with the use of an alternative setback; or
c) Noise reduction from the highway can be enhanced.

---

*This photograph of some row housing in the City of North Vancouver, illustrates how low density homes can be placed side by side, to form a wall of housing.*
RELATIONSHIP TO THE STREET

Streets feel safe and look great when buildings and landscaping are designed to relate to the street; allowing a passer-by to wave hello or chat with a neighbour. The following guidelines offer suggestions for ways to ensure new development “faces” the street.

- At least one unit’s front door should be directly oriented towards the street. High visibility of the front doors and paths to the rear units is also recommended.

- Prominent pathways should lead from the sidewalk to the front door of at least one unit to emphasize the building face. (Though pathways are required to each unit, designers must be careful not to clutter the open space with excessive pathways.)

- Buildings constructed on corner lots should “wrap the corner” providing an opportunity for multiplexes to have each unit face the street.

- Design details such as the use of verandas, porches, arbours, and decorative gates, should be considered to ensure each development has a visual connection to the street.

- On wide lots, or those lots that do not have to provide a driveway, designing either a wider front unit, or fitting additional units at the front of the development should be considered in order to maximise the street presence.

- Ensure living space at the front of the building is directed towards the street.

- New developments may choose to copy roof lines, building materials, or other design elements in order to blend with the harmony and scale of the street, however, “cookie cutter” and mirror-image design, is discouraged.

- In the front yard landscaping and fences should ensure openness and visibility through to the front of the building.
DRIVEWAYS

In this neighbourhood there are no back lanes, and therefore all parking is accessed from driveways leading off the street. It is beneficial to reduce the numbers of driveways because:

- The sidewalk becomes safer with fewer driveway crossings;
- More emphasis is placed on people and buildings and less on cars and garages, with more room at the front of the lot given to buildings and front gardens, making for a pleasant looking street; and
- There is more room for on street parking.

A lot choosing to redevelop by itself must design the driveway so that it may be shared with the adjacent property. However, no driveway need be shared with more than three units from a neighbouring property, as larger townhouse developments combining two or more lots, may have one driveway for their own development.

PARKING

Two parking spaces per unit is the recommended requirement. Parking spaces must be located off the private driveway, and should be located behind the front unit so they are not as visible from the street.

Though visitors may park on site, there is no formal requirement for additional visitor parking spaces, and most visitors will park on the street as they do now in the single-family areas.

Driveways and Parking Areas

- Driveways and parking areas should be designed in a manner that minimises their impact on the street and the development.
- Paved areas for driveways and parking have a significant impact on storm water run-off and therefore, paving methods that reduce the impact of the hard surface should be considered.
• As many rear units will require pathways along side or through the driveway, pavers may also serve to delineate the pathway system.

• Where developments are sharing a driveway, every effort should be made to match and coordinate with the materials and design of the existing driveway.

*In these sketches the parking for the units is located behind the front unit, to reduce its visibility from the street.*
REDUCING THE IMPACT OF DEVELOPMENT ON THE ENVIRONMENT

With careful planning, development can occur in a manner that is more environmentally sustainable.

Construction and Design

New development should consider ways of ensuring that is energy efficient. Where appropriate guidelines and ideas outlined in the LEED and REAP and other sustainable building programs should be considered.

Rain Water

In order to develop more sustainably, new projects should consider ways of landscaping and grading so that rain water has a chance to soak into the ground, and is diverted away from the storm sewer system, where it would otherwise add to the erosion of the creeks.

Tree Preservation

Trees provide a number of environmental benefits beyond their aesthetic value including their role in shading homes in the summer, providing habitat for birds, absorbing rain water, absorbing carbon dioxide (a greenhouse gas) and producing oxygen, trapping dust particles and pollutants from the air, and modestly reducing noise. For all these reasons, the preservation of mature trees, and planting of new trees is encouraged in North Vancouver. However, in some cases where flood protection measures require the grade to be changed, it may not always be possible to preserve a mature tree and replacement planting should be considered instead.

It is therefore recommended that new development:

- Retain as many healthy mature trees as possible.
- Plant new trees.
- Add a thicker layer of gardening quality soil, to the ground prior to landscaping, to increase water retention.
- Introduce "rain gardens" where appropriate so that garden areas can help soak up rain water and reduce storm water run-off.
- Consider using permeable paving material for pathways, driveways and parking areas, or grading the area so that the water can run-off into suitable garden areas.
- If water from the driveway and parking areas is not able to percolate through to the ground, include an oil and grit separator, and / or establish a car washing area to reduce the pollutants that are directed into the storm water system.

These multiplexes were built around existing trees.
LANDSCAPING

Each redevelopment proposal is required to provide a landscaping plan that will compliment the building design and harmonize with the local setting. Landscape plans must be prepared by a BC Registered Landscape Architect. Landscape plans are to show how each site will be designed and landscaped once the construction is completed. In preparing landscape plans the following criteria should be considered:

- Use landscaping to soften the impacts of new development and help new development harmonize with the area.
- Ensure that landscape plans are prepared in conjunction with the project team, with input from the arborist, engineer and building designer.
- Ensure that the lot grading is consistent with flood proofing measures.
- Include street trees and boulevard planting on the landscape plan.
- Keep the landscaping and fencing low and open in the front yard to foster a strong relationship to the street.
- Preserve healthy trees where possible, and plant new trees where reasonable.
- Design each unit with private outdoor space that is large enough for barbequing and dining outside (100 square feet or larger).
- Use planting and fences to create a buffer, and maximise privacy between on-site units, and between the subject property and neighbouring sites.
- Use low maintenance “xeriscaping” landscaping practices, with native plant materials suited to the local climate.
- Provide a grading and drainage plan which will assist in the safe on-site management of surface water and rain water (storm water).
- Use porous materials on pathways, patios, and parking spaces to maximise rain-water infiltration.
- Minimise the amount of land used for pathways through careful building and landscape design.
- Consider roof decks or "green roofs" over top of parking structures where privacy will not be adversely impacted.
- Provide details for the method of screening the garbage containers and any other service structures.
- Implementation is to use current BCSLA/BCNTA standards for landscaping.
DEALING WITH NOISE

Finding methods of blocking the noise from the highway is a key issue for improving the liveability of this neighbourhood.

The impacts of noise may be reduced by:

a) Incorporating noise standards into the design and construction of new development to ensure a quiet interior environment for residents as follows:

Designs must demonstrate that the noise levels in those portions of the dwelling listed below shall not exceed the noise levels expressed in decibels set opposite such portions of the dwelling units. For the purpose of this section the noise level is the A-weighted 24-hour equivalent (L eq) sound level and will be defined simply as the noise level in decibels:

<table>
<thead>
<tr>
<th>Portion of Dwelling Unit</th>
<th>Noise Level (Decibels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. bedrooms</td>
<td>35</td>
</tr>
<tr>
<td>2. living, dining, recreations rooms</td>
<td>40</td>
</tr>
<tr>
<td>3. kitchen, bathrooms, hallways</td>
<td>45</td>
</tr>
</tbody>
</table>

b) Using building design to create noise buffers in certain locations; and

c) By encouraging the Provincial Ministry of Transportation to provide noise fencing along Highway #1.

New development should also consider the impacts of their own ventilation and heating systems on neighbouring developments and ensure that design, style, and placement eliminate any additional noise pollution.

Buildings as Buffers

Designing row housing along Keith Road could serve as a barrier to noise from the highway.
PRIVACY

It is recommended that all new development consider maximising the privacy between units, and between new and existing developments. To this end the following items should be considered:

- Use building setbacks, landscaping, building design, and window placement to maximise privacy and reduce over-viewing.
- Use translucent frosted or stained glass in side windows, or replace windows with glass block, or skylights where privacy will be impacted.

This elegant fence provides a pleasant privacy screen.

The careful location of windows makes this patio area in the middle of a triplex project feel private.
BUILDING HEIGHT

In order to harmonize with the existing single family and townhouse character of the area, building height should be limited to **two and half storeys**.

Building height is measured from the lesser of natural or finished grade to the peak of the roof. In this area where all new development will be raised up to meet flood construction levels, house heights may be 1-2 feet taller than would normally be anticipated for a two and half storey building, and therefore heights may range from 22 feet for a flat roofed two storey home to 35 feet for a steeply pitched roofed two and half storey home.

**Roof Pitch**

Steeply sloped roofs are recommended but not mandatory. Roof pitches of 8:12 (rise over run) for the main structure of the roof are widely popular in North Vancouver and work well with the wet climate. However, alternative roof pitches are acceptable provided that flatter roofs have a lower height and compliment the architectural style of the building.
ADAPTABLE DESIGN

Many residents of North Vancouver have expressed a desire to stay in their homes regardless of the onset of illness, frailty or disabilities. It is therefore beneficial when designing new homes to ensure that they are built with basic features that allow the units to be adapted to help residents deal with disabilities without expensive retrofitting. To this end, redevelopment must comply with the District of North Vancouver’s Adaptable Design Guidelines.
PUBLIC ART

Since 2003 the District’s Public Art Program has encouraged developers to commission works of public art as part of their development application. The District policy applies to applications that require rezoning, and is for residential building proposals with five or more units.

In Lynnmoor/Inter-River, District staff undertook a public art mapping exercise with local residents to identify and prioritize potential sites, and to record themes that the community considers appropriate for future public art. The results can be seen on the following map.

Several clear community priorities emerge. For example, residents have identified the corner of Old Lillooet and East Keith Roads as the key location for a community gateway feature. Other clear priorities include art features integrated with the park and pathways, possibly as an enhancement to the Highway underpass, possibly as interpretive route-markers for the extensive net of park trails. As a whole, the map reveals a number of exciting and innovative projects-in-waiting — a loose “master plan” of possible projects of different type and scope. As applicants come forward with different proposals, they will be encouraged to work through the project options and possible themes endorsed through this community process, and to develop a project-specific public art plan that respects community priorities.
Public Art Map

1 Mt. Seymour Pkwy Intersection
Located on the outskirts of residential Lynnmoor/Water River, this important traffic corridor presents a number of challenges for pedestrians, especially for those crossing in the local super market. Public Art could play an interesting role, integrated as an attractive and functional component as part of a traffic safety solution.

2 Mt. Seymour Pkwy & Old Lilloet
An opportunity to site a gateway or garden feature.

3 E. Keith/Old Lilloet Triangle
At this historic intersection of Lilloet and Keith Roads, an interesting opportunity emerges to acknowledge and to interpret the diverse histories that have shaped the North Shore. Today, this site is the "gateway" to a thriving residential community, and local residents have expressed the desire to "clean up and develop this green space into something we can use and be proud of."

4 Trans-Canada Bridge Underpass
Much used by local residents, this currently neglected underpass could incorporate public art to create a pleasant "gateway" to the community.

5 Lynnmoor School
Resident have suggested creating a "Welcome Carving" in a project that would involve students in expressing ownership & pride in the community.

6 Lynnmoor School
Public Art could play an effective role in the re-design of this outdoor refuge/play area for the students.

7 Lilloet Shopping Plaza
A highly visible retail area with potential to create an interesting community space.

8 Shortcut Footpath to Old Lilloet
Community trails and pathways provide many interesting opportunities to integrate interpretive markers.

9 Premier Street
Residents have expressed an interest in seeing traffic calming measures on this busy residential street.

10 Premier Street Pathway
Gateway and path improvement at East and West sides of Premier Street. Creative public art treatments can provide a functional and innovative response to community infrastructure needs.

11 Inter River Park Playground
Playgrounds provide an interesting opportunity to integrate public art in the design of the park space and/or playground amenities.

12 Inter River Park
Residents like the existing simple parkscape, describing it as "a magical area to walk and explore." Opportunities for public art could be integrated with the trail network and reflect multiple uses.

13 Inter River Park - St Denis Entrance
An important entry or "gateway" to Inter-River Park and to the trail network.

14 Pathway: St Denis to Orwell
Community trails and pathways provide many interesting opportunities to integrate interpretive markers.

15 River Pathway
River path improvements and amenities: public art with picnic tables, benches, BBQ areas.
ENGINEERING SERVICES

Throughout the District of North Vancouver, as properties redevelop, they are required to upgrade the services in front of their property to modern standards. This work normally includes:

- Upgrading to the centre of the road all aspects of the roadway including pavement, curb and gutter;
- Constructing sidewalks;
- Planting street trees;
- Installing street lights; and
- Extending services to the subject site; including water, and sanitary & storm lines.

Water and Sanitary Sewer

In anticipation of redevelopment in this neighbourhood, staff undertook an analysis of the water supply and sanitary sewer capacity, which showed that there is sufficient supply and capacity to meet the demands of the school, existing development and all potential redevelopment that could be considered in this area under the Lynnmour / Inter-River Community Plan.

Storm Sewer

Storm sewers do not exist on all streets in the study area. For anyone considering redeveloping the storm line may need extending to your property. If you are interested in redeveloping, please discuss the need for storm sewer upgrades with the District’s engineering staff.
ROADWAY IMPROVEMENTS

Each development will be responsible for upgrading the road, sidewalk, curb and gutter, and planting in the boulevard in front of their own site. Over time, this has the potential to add sidewalks, and street trees throughout the neighbourhood.

This section details the road standards currently anticipated for each road.

<table>
<thead>
<tr>
<th>Saint Denis Avenue</th>
<th>Design Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saint Denis Avenue functions as a dyke providing flood protection to the adjacent neighbourhood. In the March 2006, Kerr Wood Leidal report on flood protection, the engineering consultants recommended further improvements to Saint Denis, including a slight change in grade, and the construction of a floodway. These improvements may cause some of the design work originally anticipated and described below to be undertaken a little differently.</td>
<td></td>
</tr>
<tr>
<td>Road Width</td>
<td>8 metres / 26 feet</td>
</tr>
<tr>
<td>Two travel lanes and one parking lane</td>
<td></td>
</tr>
<tr>
<td>Sidewalk Width and Location</td>
<td>Boulevard sidewalk, 1.5 – 2.0 metres wide on east side. Gravel path at curb, on west side, next to the top of the riverbank.</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground</td>
</tr>
<tr>
<td>Additional Features</td>
<td>Provides connection under the bridge and to the park.</td>
</tr>
<tr>
<td>Forsman Avenue</td>
<td>Design Standards</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Road Width</td>
<td>8 metres / 26 feet two travel lanes and one parking lane</td>
</tr>
<tr>
<td>Sidewalk width and location</td>
<td>Boulevard sidewalks, 1.5 – 2.0 metres wide on both sides.</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground</td>
</tr>
<tr>
<td>Additional Features</td>
<td>To enhance pedestrian safety, the street will narrow at the entrance, and the sidewalk will bulge out on either side.</td>
</tr>
<tr>
<td><strong>Orwell Street</strong></td>
<td><strong>Design Standards</strong></td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Road Width</td>
<td>8 metres / 26 feet. Two travel lanes and a parking lane</td>
</tr>
<tr>
<td>Sidewalk width and location</td>
<td>Boulevard sidewalks, 1.5 – 2.0 metres wide on both sides.</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground to each unit, but poles will remain as the upper tier of wires carries service beyond the neighbourhood.</td>
</tr>
<tr>
<td>Additional Features</td>
<td>To enhance pedestrian safety, the street will narrow at the entrance, and the sidewalk will bulge out on either side. The potential for an improved school drop off area exists, and could be considered should Lynnmour Community School be further renovated.</td>
</tr>
<tr>
<td>Premier Street</td>
<td>Design Standards</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Road Width</td>
<td>10 metres / 33 feet</td>
</tr>
<tr>
<td></td>
<td>Two travel lanes and two parking lanes</td>
</tr>
<tr>
<td>Sidewalk width and location</td>
<td>Boulevard sidewalks, 1.5 – 2.0 metres wide on both sides.</td>
</tr>
<tr>
<td>Hydro and Tel</td>
<td>Underground to each unit, and eventually poles will be shifted to the east side, if not removed completely.</td>
</tr>
<tr>
<td>Additional Features</td>
<td>To enhance pedestrian safety, the street will narrow at the entrance and the alignment be shifted so that traffic must slow down when turning into the street.</td>
</tr>
<tr>
<td></td>
<td>Possible improvements to the pedestrian crossing at mid block are also under consideration.</td>
</tr>
<tr>
<td>Keith Road</td>
<td>Design Standards</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Road Width</strong></td>
<td>8 metres / 26 feet</td>
</tr>
<tr>
<td></td>
<td>Two travel lanes, one parking lane on the north side.</td>
</tr>
<tr>
<td><strong>Sidewalk width and</strong></td>
<td>Boulevard sidewalk, 1.5 – 2.0 metres wide on north side</td>
</tr>
<tr>
<td><strong>location</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hydro and Tel</strong></td>
<td>Underground to each unit, and eventually poles will be shifted removed.</td>
</tr>
<tr>
<td><strong>Additional Features</strong></td>
<td>Potential road realignment at intersection with Old Lillooet Road</td>
</tr>
</tbody>
</table>
SAMPLE LAYOUTS

In order to ensure that these guidelines are feasible, staff worked closely with Mr. R. A. Spencer, a local designer who provided the following sketches to show how development on different size lots could be achieved. The following sketches do not show the details and ornamentation that is necessary, but do show the potential massing, layout, and parking for different redevelopment options including rear yard infill, duplex and triplex development.

Infilling the Backyard
This drawing shows how some homes could accommodate an additional building in the rear yard.
For smaller lots between 5,000 and 8,000 square feet in size, this illustration shows a potential duplex design.
Layouts for Triplexes on 8,500 square foot lots

For lots between 8,000 and 12,000 square feet triplexes are permitted at a density of 0.5 floor space ratio. The first illustration shows the potential for a smaller triplex on a 8,500 square foot lot.
Layouts for Triplexes on 10,000 square foot Lots

Here are four alternative designs for triplexes on 10,000 square foot lots. Each one is shown in the bird’s eye view, and the site plan.
**DESIGN RATIONALE**

The Lymoor Inter-Reserve Link. The site is located between two existing roads, Lymoor Street and Blackwood Street. The site ranges from 3 to 5 hectares and is surrounded by urban areas.

**PROJECT DESCRIPTION**

The development proposal consists of a medium-rise residential development with a mix of two-bedroom, three-bedroom, and four-bedroom units. The design of the buildings is an important aspect of the development. The following are the key features of the proposed development:

1. **Site Planning**
   - **Excavation Level**: The site is located above the existing road level.
   - **Drainage**: The site is situated on a natural slope, which allows for natural drainage.

2. **Building Character**
   - **Material Use**: The building materials are selected to complement the local environment.
   - **Perspective**: The building is designed to provide a sense of enclosure and privacy to the residents.

3. **Exterior Walls and Finishes**
   - **Materials**: The materials used in the exterior walls and finishes are selected to provide durability and aesthetic appeal.

4. **Sustainability**
   - **Energy Efficiency**: The buildings are designed to meet energy efficiency standards.
   - **Water Efficiency**: The buildings are designed to minimize water usage.

5. **Parking Transportation**
   - The proposed parking facilities are designed to accommodate the needs of the residents.

**APPLICATION GUIDELINES**

The development proposal is located in a medium-rise residential area and is designed to complement the local environment. The design of the buildings is an important aspect of the development. The following are the key features of the proposed development:

1. **Exterior Walls and Finishes**
   - **Materials**: The materials used in the exterior walls and finishes are selected to provide durability and aesthetic appeal.

2. **Sustainability**
   - **Energy Efficiency**: The buildings are designed to meet energy efficiency standards.
   - **Water Efficiency**: The buildings are designed to minimize water usage.

3. **Parking Transportation**
   - The proposed parking facilities are designed to accommodate the needs of the residents.
MINUTES OF THE ADVISORY DESIGN PANEL MEETING HELD ON FEBRUARY 11, 2016 AT THE DISTRICT OF NORTH VANCOUVER

ATTENDING: Mr. Dan Parke
Ms. Amy Tsang
Mr. Greg Travers
Sgt. Kevin Bracewell
Ms. Laurenz Kosichek
Mr. Craig Taylor
Mr. Steve Wong
Mr. Stefen Elmilt
Ms. Diana Zoe Coop

REGRETS:
Ms. Tieg Martin
Mr. Samir Eidnani

STAFF:
Mr. Michael Hartford
Ms. Ashley Rempel
Mr. Alfonso Tejada
Mr. Jessie Gresley-Jones (Item 4.a.)
Ms. Casey Peters (Item 4.b.)
Ms. Tamsin Guppy (Item 4.c.)

The meeting came to order at 6:00 pm.

1. ELECTION OF PANEL EXECUTIVE

Mr. Michael Harford, Community Planner, advised the Panel that at the start of each year, the Panel elects a Chair and Vice Chair. Nominations were called for the position of Chair and Mr. Dan Parke was nominated by a member of the Panel. A vote was called and Mr. Parke was unanimously elected to the position of Chair for the 2016 term.

Nominations were called for the position of Vice-Chair, and Ms. Amy Tsang was nominated by a member of the Panel. A vote was called and Ms. Tsang was unanimously elected to the position of Vice Chair for the 2016 term.

2. REVIEW OF PANEL MEETING PROCEDURES

Michael Hartford presented an overview of the Advisory Design Panel meeting procedures to the group. Questions were asked and answered.

3. ADOPTION OF MINUTES

A motion was made and seconded to adopt the minutes of the Advisory Design Panel meeting of December 10, 2015.
c. 858 Orwell St - Detailed Application for Rezoning and DP for 23 unit townhouse development.

Ms. Tamsin Guppy, Community Planner, introduced the project and explained that it is a detailed application for 23 townhomes. The site is located just outside of Lynn Creek Town Centre, across from Lynnmour Elementary School, is located within a Creek Hazard Development Permit Area which can be mitigated with constriction level 2 feet above the curb, and has an OCP designation of RES3 – “Attached Residential” with a maximum density of 0.80 FSR. Under the applicable Lynnmour/ Inter-River Design Guidelines, townhouses are permitted a maximum of 0.7 FSR and the Lynnmour/ Inter-River Design Guidelines are used as a reference document, as further OCP work has not been done in the area. In addition to the design guidelines the project design also must consider the form and character development permit area guidelines for ground-oriented housing.

Ms. Guppy raised the following two specific questions for the Panel’s consideration:

- Is the look of these townhomes sufficiently distinct from the other townhouse projects already on the street and currently under construction?
- Are the townhomes too tall or is there general support for a height variance to allow for roof deck access?

The Chair invited questions of clarification from the Panel and the following points were raised:

- Main access point to the school? Currently Forsman Ave, but families with young children sometimes park on Orwell St because there is limited parking. In the longer-term, the school will likely be rebuilt and the access would be on Orwell Street.

The Chair welcomed the applicant team and Mr. Duane Siegrist of Integra Architecture presented the project to the Panel. Mr. Siegrist noted the following key points:

- Buildings on the site need to be elevated to address flood construction levels and this is creating challenges for the grade interface on most frontages;
- Area benefits from many north/south connections but few east/west connections;
- Site planning includes an east/west pedestrian connection through the site and front doors which are located on landscaped areas;
- The site is irregular but the layout has been formatted to allow the two remaining single family lots to be combined with the project, or to develop on their own in future;
- Investigated several layout options and would like to move away from tandem parking;
- Roof decks are proposed to provide generous and private outdoor space;
- A home elevator option is available for the homes to improve accessibility;
- Exterior design attempts to reduce the scale of buildings;
- A small variance in height is required to allow for the stair towers – these elements also help break up the roofline in the view from the street;
- Colours and finishes selected reflect the natural surroundings, including wood-looking "Hardi" panel and stone veneer feature areas;
Proposal includes features to fulfill a Built Green "Gold" standard and the project will include a comprehensive stormwater management approach as well as sustainable landscape design features.

Mr. Bill Harrison of Forma Design presented the landscape approach with reference to the following:

- Focus on livability, interconnectedness to the area, parks, school and Premier Street with the proposed east/west walkway assisting in connectivity;
- Demographic is a younger family group mix so the cul-de-sac includes a safe play place for children with public benches on the street frontage to support this;
- A common open space/garden area is proposed at the south end of the project;
- Front doors open onto the walkway or green areas and help to create a formal entry experience for the townhomes;
- Simple practical materials are used in the landscape approach: asphalt driveway and concrete walkways, and green screen materials at entrances;
- Planting plan includes some large specimen trees that are intended to visible from a distance and other tree plantings to provide a leafy character;
- Diverse plant palette is proposed with a focus on native materials and an objective to encourage bird activity;

The Chair thanked the applicant team for the presentation and asked for questions of clarification from the Panel. Questions were asked and answered on the following topics:

- Will the east gate be open for the public? Intended to be locked and for use by residents;
- Will an easement be secured to provide access to future development parcels? Yes, but there are still some concerns whether this access will be practical in the future;
- Has a landscape design been done for the roof top decks? Yes, but just conceptual;
- Is the proposed "AL13" siding limited to a certain size? Sheet are approximately 4 feet x 10 feet, and the trim elements will be completed with portions of the sheets;
- Will "Hardi" panel corners be mitred? No, proposing an edge trim detail;
- How many guest parking spaces are proposed? Two on site, originally none were required for these types of projects, but based on previous experience some on-site visitor parking has been encouraged.

Mr. Alfonso Tejada, District Urban Design Planner, provided the following comments:

- Would like to see more diversity in repeated elements, such as varying the gate designs;
- Corner treatment relative to larger mass seems appropriate, but roof stair towers seem heavy – consideration should be given to hatch access for the roof decks to reduce impact of the stair towers;
- Ground floor elements on the corner would benefit from greater integration with the upper floors.
The Chair invited comments from Panel members, and the following comments and items for consideration were provided:

- Overall site planning, elevations, and massing were noted as positive, with an attractive street appeal and a successful entry experience;
- Would be a benefit to including the adjacent development sites in the project;
- Cultured stone details seem lacking, and these feature areas could be more integrated with the building facades;
- The proposed façade "frames" seem a bit heavy in thickness and there may not be a need for wood elements in these frames;
- High quality approach will be necessary in the detailing of the stone, "Hardi" material, metal siding and roof edges;
- Rooftop access noted as a positive feature and the associated height variance generally supported, but with suggestions that the stair tower design could be improved to reduce impact on the project with consideration given to pairing the stairs, adjusting the roof overhangs, and setting the stair towers back from the roof edges;
- Some concerns were expressed regarding the treatment of the garage elevations and whether options such as surfacing of driveways and methods to address the repetitive garage doors such as pergolas, translucent doors, or different colours could help make these elevations seem less harsh;
- It was suggested that driveway areas are popular playplaces for families with young children and it should not be assumed that all play will take place in dedicated play areas – helping to break up the expanses of asphalt would be positive;
- Proposed east/west link is very positive - would like to see this connection as an even stronger element, and open to the public if possible as a through-block connection;
- The project presents some accessibility challenges for people with disabilities, including the lack of an outdoor area that is accessible from the kitchen;
- Garbage and recycling access as currently proposed could be a challenge given that the trucks servicing this area will need to reverse out of the project;
- While the proposed plant palette appears positive, it would have been preferred to have more detail on the specific elements of the landscape;
- The south side of proposed Building 5 could benefit from some shade trees on the south edge of the driveway to help soften this area;
- Wayfinding is likely to be a challenge in the project to ensure clear access for visitors and for emergency responders and should be reviewed for a practical solution;

The Chair invited the project team to respond.

Mr. Siegrist and Mr. Harrison thanked the Panel for their comments and noted the following:

- Team has developed some new ideas for introducing variation in the project;
- Shade trees on the south side of main driveway would be a good addition and will be reviewed;
- Agree that wayfinding needs to be examined and reviewed carefully.
The Chair invited the Panel to compose a motion:

MOVED by Craig Taylor and SECONDED by Laurenz Kosichek:

THAT the Panel considers the project to have fulfilled the objective of a distinct project identity, supports the proposal for a height variance for roof deck access, and recommends APPROVAL of the project SUBJECT to addressing the items noted in the Panel's consideration of the project.

CARRIED
(one opposed)

OTHER BUSINESS

None.

5. ADJOURNMENT

The meeting was adjourned at 8:53 p.m.

6. NEXT MEETING

March 10, 2016

[Signature]

[Date]
A Review of the Trees on Site at:

858, 854 Orwell Street, and 855 Premier Street, North Vancouver, B.C.

Prepared for Brody Development (A&C) Ltd.

by

Dr. Julian A. Dunster, R.P.F., R.P.P., ISA Certified Arborist
ASCA Registered Consulting Arborist # 378
ISA Tree Risk Assessment Qualified
BC Wildlife Danger Tree Assessor
Honourary Life Member ISA + PNWISA

October 14, 2015
A Review of the Trees on Site at:
858, 854 Orwell Street, and 855 Premier Street,
North Vancouver, B.C.

Background

At the request of the Brody Development (A&C) Ltd., Dunster \& Associates Environmental Consultants Ltd. has been asked to document the trees presently on the lots noted. The site was visited on May 6th 2015, trees were reviewed and conditions noted. A survey plan prepared by Rankine Land Surveying, dated March 19th 2015 was used as the baseline.

Conditions on Site

Figure 1 shows the trees documented by tree number. These numbers identify the trees in Table 1. No trees have been tagged on site.

Figure 1. Location of trees on site.
DUNSTER & ASSOCIATES
Environmental Consultants Ltd.

Table 1. Tree data.

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Trunk diameter (cm)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Holly</td>
<td>30/20/30/</td>
<td>Open grown good condition</td>
</tr>
<tr>
<td>2</td>
<td>Holly</td>
<td>25/25</td>
<td>Open grown good condition</td>
</tr>
<tr>
<td>3</td>
<td>Pear</td>
<td>20</td>
<td>Poor condition</td>
</tr>
<tr>
<td>4</td>
<td>Apple</td>
<td>45/31</td>
<td>Fair to poor</td>
</tr>
<tr>
<td>5</td>
<td>Cherry</td>
<td>71</td>
<td>Poor, dieback in crown</td>
</tr>
<tr>
<td>6</td>
<td>Western redcedar</td>
<td>32</td>
<td>Topped, regrown, poor condition</td>
</tr>
<tr>
<td>7</td>
<td>Western redcedar</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Western redcedar</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Western redcedar</td>
<td>38</td>
<td>Topped, poor condition</td>
</tr>
<tr>
<td>10</td>
<td>Western redcedar</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Western redcedar</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Western redcedar</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Douglas-fir</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>13A</td>
<td>Apple</td>
<td>20</td>
<td>Three trees not on survey, fair condition. Condition shown in Figure 1 is approximate.</td>
</tr>
<tr>
<td>13B</td>
<td>Apple</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>13C</td>
<td>Apple</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Western redcedar</td>
<td>25/20</td>
<td>Topped, bushy, fair condition</td>
</tr>
<tr>
<td>15</td>
<td>Sitka spruce</td>
<td>67</td>
<td>Topped - multiple stems, fair condition, but may be too large for site once developed</td>
</tr>
<tr>
<td>16</td>
<td>Cherry</td>
<td>33</td>
<td>Poor condition</td>
</tr>
<tr>
<td>17/18</td>
<td>Cherry</td>
<td>45/43</td>
<td>Poor condition</td>
</tr>
<tr>
<td>19</td>
<td>Cherry</td>
<td>20/20</td>
<td>Growing in hedge fair condition. Not a specimen tree and could be replaced if necessary</td>
</tr>
<tr>
<td>20</td>
<td>Western redcedar</td>
<td>5 stems 15-25 typical</td>
<td>Good condition</td>
</tr>
<tr>
<td>21</td>
<td>Western redcedar</td>
<td>30</td>
<td>Good condition</td>
</tr>
<tr>
<td>22</td>
<td>Walnut</td>
<td>20/20/24/15</td>
<td>Poor condition</td>
</tr>
<tr>
<td>23</td>
<td>Douglas-fir</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Western redcedar</td>
<td>119</td>
<td>Topped, multiple codominant, fair to poor condition</td>
</tr>
</tbody>
</table>
Table 1. Tree data.

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Trunk diameter (cm)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Western redcedar</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Western redcedar</td>
<td>32</td>
<td>Row of codominant trees, good condition</td>
</tr>
<tr>
<td>27</td>
<td>Western redcedar</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>28/29</td>
<td>Western redcedar</td>
<td>40/30 joined</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Western redcedar</td>
<td>137</td>
<td>Open grown, good condition, raised wall at base. Not on survey. Condition shown is approximate.</td>
</tr>
</tbody>
</table>

Conclusions

Figure 2 shows the proposed development layout.

With that design most trees will be removed in order to implement the new development. Tree # 30, can be retained at this time. Note that it has a built up wall at its base and is then surrounded by tarmac. If this lot later
comes into play, the extent of the raised wall should be increased and the underlying tarmac removed, to provide more soil volume for the tree roots. As it stands this tree will eventually suffer decline due to a lack of root space.

Tree 19 is a cherry tree growing in the existing hedge along the south boundary. It may be possible to retain that tree depending on what the adjacent landscape ends up as. If it is to be retained, it should be protected with a fence, 1.0 metres from the trunk during demolition and development with a fence.

No other trees are scheduled for retention.
August 2015- EnergyStar for New Homes Version 12.6 Shortlist:

Here's a shortlist of items to include in your EnergyStar Homes:

1) Enrollment fee is $150/house for CHBABC members
2) Must achieve Energuide Rating of 81 or higher (if "performance" compliance)
3) All insulation must meet Section 9.36 prescriptive minimums, including around plumbing drains/stacks on exterior walls, HVAC ducts in exterior walls/attics, around electrical panels on exterior walls, etc.
4) Basement slabs above frost line must be insulated under their full area
5) Edge of basement slabs above frost line must have a thermal break the same value as underslab
6) 2.5ACH@50Pa air tightness for single family homes; 3.0ACH@50Pa for rowhouses
7) Heat recovery ventilator:
   a. Certified by HVI as an HRV or ERV, or EnergyStar qualified
   b. Tested at 0C and -25C (test data to be used in the HOT2000 energy model)
   c. Installed such that the supply and exhaust flows are balanced within 10%
   d. HRV must be labelled with the installing company and the measured flow rates
8) EnergyStar windows, windows in doors (unless less than 20sq ft total) and skylights
9) EnergyStar exterior doors; one door per house can be excepted
10) 400kWhr/year of energy credits such as EnergyStar appliances and lighting
11) All ducts to be located within the heated boundary of the house, or else insulated to the same effective R value as that part of the assembly
12) All heating/cooling ducts to be fully sealed (tape or mastic)
13) Ducts between HRV and exterior to be insulated and sealed
14) Room by room heat load calculations

Please contact Einar Haibig at E3 Eco Group Inc for more information.

Einar@e3ecogroup.com
604-727-4322
BUilt GREEN™ CHECKLIST
Effective January 1, 2011

The Built Green™ program has four levels of achievement, shown below as Bronze, Silver, Gold and Platinum. Points are awarded based on the minimum EnerGuide rating with additional points selected from each of the eight other areas of the checklist to give a cumulative total. Each separate category has minimum point totals that must be selected.

Built Green™ Level (For Detached, Semi-Detached & Row House Units)

Checklist Categories
- EnerGuide for New Houses Rating
- Operational Systems
- Building Materials
- Exterior & Interior Finishes
- Indoor Air Quality
- Ventilation
- Waste Management
- Water Conservation
- Business Practices

Bronze Silver Gold Platinum
- 72 75 77 82
- 76 Points 90 Points 100 Points 120 Points

CHECKLIST CRITERIA
Five fundamental pillars serve as a basis for each item to be considered in the checklist. Each line item must meet at least one of the criteria listed in the left hand column, where two or more of the subsidiary points listed on the right must be addressed.

- Resource Use
- Energy Efficiency
- Recycled Content
- Indoor Air Quality
- Durability
- Innovation
- Alternative Construction
- Measurable or Validated
- Promotion of greater use
- Environmental Impact

ENERGUIDE RATING
This rates the energy efficiency and energy consumption of the home using the EnerGuide Rating System and HOT2000 software. House are modeling and tested by a Certified Energy Advisor working with the Built Green Society. Information such as home orientation, home dimensions, insulation values, type of heating system, construction material, window type and window design are input into HOT2000 in order to calculate a rating. An average rate of air changes per hour (ACH) is initially used for the calculation. Prior to completion of each house, a mandatory blower door test is performed and the actual rate of air changes per hour is then input into HOT2000 and the final EnerGuide rating is calculated. This standard applies to low-rise detached, semi-detached and row houses and small multi family buildings under 4 stories.

CHECKLIST REQUIREMENTS
In order to properly verify the Built Green™ program, for each item chosen from the checklist, a verification must be ready to be supplied, if the home is randomly chosen to be audited. The Builder will be given a short amount of time to compile verifications and supply them to the auditor. Forms of verification include: Installing Contract Letter, Supplier Verification Letter, Invoice or Purchase Order as well as an On-Site visual verification. Please ensure each verification has the required information included, as verifications missing required details will be rejected.

AUDIT VERIFICATION REQUIREMENTS
Built Green™ will conduct a visual verification of a portion of the Built Green™ Checklist to maintain quality control and program credibility on every Built Green home registered with the 2010 checklist. If deficiencies are found, follow-up full verification of several projects will be implemented. This full verification will assess the entire checklist at the expense of the Builder. Supporting documentation provided by the builder shall meet at least one of the following criteria: on-site verification or written documentation including when and from whom the product was purchased, as well as when, where and by whom it was installed, including contact information for each company.

Version: 2011-1
HOME ENROLLMENT FORM

BUILDER INFORMATION

Application Date: HBA Member ID #: Company Name: Brody Development Group
Full Mailing Address: 1060 West 14th Street North Vancouver V7P 3P3 Main Contact: Mike Brody
Phone: 604-980-2954 Fax: 604-980-0833 Email: mike@brodydevelopment.vom

HOME INFORMATION

Community: Continuum Construction Start Date: 
Address: Continuum - 588 Orwell St City: 

BUILT GREEN™ LEVEL

Platinum

TOTAL CHECKLIST POINTS

130

PLEASE COMPLETE SHADED AREAS ON THIS ENROLMENT FORM AND ON THE CHECKLIST. THE TOTAL POINTS AND BUILT GREEN™ LEVEL WILL BE FILLED IN AUTOMATICALLY FROM INFORMATION ENTERED IN THE SHADED AREAS.
I. OPERATIONAL SYSTEMS
This section awards points for construction methods and types of products that contribute toward lower energy consumption, as well as alternative heating and electrical systems.
Minimum 10 Points Required

1-1 Install a zoned heating system. Either, from a single HVAC source utilizing two or more, programable, thermostatically controlled zones or zoning separate systems through separate programable thermostats. (2 Zones = 2 points, 3 = points, 4 = points)

1-2 Install high efficiency, sealed combustion heating appliance, with a minimum 94% AFUE (2 points) or 95% AFUE and above (3 points).

1-3 Install ground or water source heat pumps (10 points) or air source heat pumps (5 points) for heating and cooling.

1-4 Programmable thermostat with dual set back & continuous fan setting.

1-5 Install HVAC appliance with variable speed fan (ECM).

1-6 Install sealed combustion 2 pipe tank system (2 points) or condensing DHW tank system (3 points).

1-7 Install instantaneous “tankless” hot water heater. A tankless water heater does not have a storage tank to keep hot water all day, it only heats water as it’s needed.

1-8 Install high efficiency (AFUE 90 or better) boiler domestic hot water system.

1-9 Install Ground Source Heat Pump DHW heating system to supply a minimum of 25% of the peak DHW heating load and 70% of the total DHW energy load.

= TOTAL POINTS: 130
1-10 Install drain water heat recovery units on the main drainage stack. 3 foot stack (1 point), 6 foot stack (2 points)

1-11 Sealed combustion fireplace with electronic ignition if gas fueled.

1-12 Install an EPA or CSA certified high-efficiency wood stove or pellet stove with a minimum efficiency of 72% (1 point) or 85% (2 points).

1-13 Install fireplace fan kit to circulate warm air into room (1 point per fan, maximum 2 points).

1-14 All windows in home are ENERGY STAR labeled or equivalent for the climatic zone of home.

1-15 Electric range is self cleaning and/or Convection based

1-16 Refrigerator is an ENERGY STAR labeled product.

1-17 Dishwasher is an ENERGY STAR labeled product.

1-18 Clothes washer or combo washer dryer is an ENERGY STAR labeled product.

1-19 Clothes dryer has an energy performance "auto sense" dry setting which utilizes a humidity sensor for energy efficiency.

1-20 Home is built "Solar Ready" following Canadian Solar Industries Association (CANSIA) guidelines.

1-21 Install active solar hot water heating system. Sized for 30% of DHW load (4 points), 50% (6 points), 80% (8 points)

1-22 Install photovoltaic electrical generation system. Sized for 30% of electric load (4 points), 50% (6 points), 80% (8 points)

1-23 50% (2 points) or 100% (4 points) of electrically used during construction of home is generated by wind power or equivalent green power certificate.

1-24 50% (2 points) or 100% (4 points) of electricity used by homeowner during first year of occupancy is generated by wind power or equivalent green power certificate. (prepaid by builder)

1-25 A properly supported and wired ceiling fan and a wall mounted switch roughed in for future installation.

1-26 Install interior motion sensor light switches. 1 point per switch to a maximum of 3 points.

1-27 Install central, computerized control systems capable of unified automation control of lighting loads.

1-28 Minimum 25% (1 point), 50% (2 points), 75% (3 points) or 100% (4 points) of interior and exterior light fixtures are fluorescent, compact fluorescent light bulbs or LEDs.
1-29 Minimum 50% of recessed lights use halogen bulbs.

Halogen bulbs are slightly more energy efficient, last longer and provide a more effective task light than conventional bulbs.

1-30 Air tight, insulation contact-rated recessed lights are used in all insulated ceilings, or insulated ceilings have no recessed lights.

Prevents heated air from exhausting through ceiling. Air tight light fixtures lead to a more airtight energy efficient home.

**TOTAL SECTION POINTS**

**II. BUILDING MATERIALS**

This section deals with building components that make up the structure of the home. Items involve alternatives to using large dimensional lumber, products with a recycled component, utilizing wood products that come from sustainably managed forests and reducing the overall amount of lumber used. Many Building Material items also improve thermal performance and EnerGuide scores.

**Minimum 15 Points Required**

2-1 Insulated Concrete Form (ICF) system used for foundation walls.

- Insulating Concrete Forms (ICFs) are hollow building elements made of pre-cast concrete that are assembled, often like building blocks, into the shape of the building's exterior walls. The ICFs are filled with either loose concrete to create structural walls. Unlike traditional forms, the ICFs are left in place to provide insulation and a substrate for finishes.

2-2 Insulated Concrete Form (ICF) system used for 75% of above grade house walls.

See description in 2-1. Use of ICFs is a substantial energy saving, i.e. a brick veneer, party walls and load-bearing walls.

2-3 Non-solvent based damp proofing (seasonal application).

- Water-based dampproofing products can be used in exterior walls. Non-solvent based dampproofing products are a cost-effective solution. These products can be a strong barrier and can be used in a variety of environments.

2-4 Exterior and interior wall stud spacing at 19.2" on-center (1 point) or 24" on-center (2 points).

Decreasing stud spacing reduces the thermal performance of the walls saving materials.

2-5 Use of insulated headers and lintels (either manufactured or site built insulated headers) with minimum insulation value of R10.

Headers can either be insulated on site or can be a pre-manufactured product insulated with a foam insulation.

2-6 Install manufactured insulated rim and band joist, or build on-site built header wrap detail for continuous air barrier.

Reinforced band joists can either be insulated on site, or can be pre-manufactured and insulated with a foam insulation.

2-7 Elimination of headers at non-bearing interior and exterior walls.

If not necessary to use the additional wood members in load-bearing construction of the openings are less than 4' wide and 1' high/ or following. For more details on Optimum Value Engineering framing principles see www.building-science.com.

2-8 Use of header hangers instead of jack studs.

Using metal header hangers instead of jack studs allows for savings in wall use. For more details on Optimum Value Engineering framing principles see www.building-science.com.

2-9 Elimination of cripples on hung windows.

For hung window openings, cripples are eliminated, thereby reducing air leakage. For more details on Optimum Value Engineering framing principles see www.building-science.com.

2-10 Elimination of double plates, using single plates with connectors by lining up roof framing with wall and floor framing.

Stock framing principles still allow for reduced thermal usage. For more details on Optimum Value Engineering framing principles see www.building-science.com.

2-11 Use of two stud corner framing with drywall clips or scrap lumber for drywall backing instead of studs.

Drywall clips can be used instead of a third corner and allowing for reduced water usage. For more details on Optimum Value Engineering framing principles see www.building-science.com.

2-12 Deck or veranda surfaces (1 point) and/or structure (1 point) made from a third-party certified sustainable harvested wood source.

Wood must come from a sustainably harvested source with certification from Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), or Canadian Standards Association's Sustainable Forest Management Standards (CANSAS-1769) or.

2-13 Deck or veranda surfaces (1 point) and/or structure (1 point) made from a third-party certified sustainable concrete.

Concrete produced from aggregates derived from a pit or quarry with a valid reclamation plan approved by Materials and Resources Canada or the government provincial body.

2-14 Structural insulated panel system used for at least 75% of roof/ceiling (4 points), 75% of walls (6 points), exposed floors (2 points) and/or Foundation (2 points).

Factory built insulated walls and roofs can reduce thermal migration and control air leakage -- keep homes and buildings comfortable and making homes energy efficient.

2-15 Dimensional lumber from a third-party certified sustainably harvested source used for floor framing.

See 2-12.

**TOTAL SECTION POINTS**
2-16 Dimensional lumber from a third-party certified sustainably harvested source used for wall framing.

2-17 Dimensional lumber from a third-party certified sustainably harvested source used for roof framing.

2-18 Use manufactured wood products for floor systems instead of dimensional lumber (1 point), from third party certified sustainably harvested sources (2 points).

2-19 Reduce dimensional lumber use by using engineered product for all load bearing beams & columns (1 point), from third party certified sustainable sources (2 points).

2-20 Reduce dimensional lumber use by using engineered products for all exterior window and door headers.

2-21 Finger-jointed plate material and/or engineered plate material used for all framing plates.

2-22 Reduce dimensional lumber use by using engineered stud material for 10% of structural stud wall framing.

2-23 Finger-jointed studs for 90% of non-structural (1 point) and/or 90% of structural (1 point) wall framing.

2-24 Recycled and/or recovered content gypsum wallboard, minimum of 15% recycled content.

2-25 Recycled content exterior wall sheathing (minimum 50% pre- or post-consumer).

2-26 Use rain screen system separating cladding from the wall sheathing with a drainage plane (2 points), 60% or more recycled content (additional 1 point).

2-27 Advanced sealing package, non HCFC expanding foam around window and door openings and all exterior wall penetrations.

2-28 All sill plates sealed with foam sill gasket or a continuous sandwiched bead of acoustical sealant.

2-29 All insulation used in home is certified by a third-party to contain a minimum recycled content: 40% (1 point) or 50% (2 points).

2-30 Install site applied spray foam to insulate entire rim joist area (1 point), Exposed floors (2 points) and/or house walls (4 points) and/or entire roof (3 points).

2-31 Replace exterior wood sheathing with insulating sheathing and structurally required metal bracing.

2-32 Install R5 (1 point), R6 (2 point) or R12 (3 points) above building code required under basement slab.

2-33 Install additional rigid insulation on exterior of above grade walls, above code required framing cavity insulation.

2-34 Install additional exterior insulation system on exterior of foundation, R Value of 7.5 (1 point), R10 (2 points), or R15 (3 points), above code required interior insulation level.

2-35 Overhead garage door is made of 75% or greater recycled material.

2-36 Attached garage overhead door is insulated with R8 to R12 (1 point) or greater than R12 (2 points).

2-37 Attached garage is fully insulated.

A fully insulated garage serves an additional insulating capacity for any walls encased by it, further slowing heat loss through those walls.
III. EXTERIOR and INTERIOR FINISHES

This section focuses on the finish materials used both inside and outside of the home. The items listed include using longer lasting products, products with recycled content and products that are harvested from third-party certified sustainably managed forests.

Minimum 10 Points Required

3-1 Exterior doors with a minimum of 15% recycled and/or recovered content.

3-2 Interior doors with a minimum of 15% recycled and/or recovered content.

3-3 Interior doors made from third-party certified sustainably harvested wood.

3-4 All exterior doors manufactured from fiberglass.

3-5 Exterior window frames contain a minimum of 10% recycled content.

3-6 Exterior window frames made from third-party certified sustainably harvested wood.

3-7 Natural cementitious stone/stucco/brick or fiber cement siding -- complete or combination thereof for 100% of exterior cladding.

3-8 Recycled or reclaimed exterior cladding material. 1/3 of exterior (1 point), 2/3 or more of home (2 points).

3-9 Fiber cement fascia and soffit.

3-10 Recycled and/or recovered-content fascia and soffit (minimum 50% pre- or post-consumer).

3-11 Recycled and/or recovered-content siding (minimum 50% pre- or post-consumer).

3-12 Exterior trim materials are made from alternatives to solid lumber.

3-13 Exterior trim materials have recycled and/or recovered-content (minimum 50%).

3-14 All exterior trim is clad with pre-finished metal (1 point over wood backings, 2 points without wood backings).

3-15 Deck or veranda surfaces made from low maintenance materials - deck surfaces do not need maintenance of any kind, including painting, for a minimum of 5 years.
3-16 Minimum 25-year manufacturer warranty roofing material (2 points plus 1 point for each additional 5 years).
- A 25-year roof system saves homeowners money in replacement costs and reduces the use of landfills due to the longevity of the product.

3-17 Minimum 25% recycled-content roofing system (1 point underlay and 2 points roofing finish).
- Recycled content roofing material reduces the use of new resources and waste in landfills.

3-18 Domestic wood from reused/recovered or re-milled sources, 500 ft² minimum for flooring or all cabinets or all millwork.
- Reused or re-milled sources eliminate the need for new hardwoods, saving energy, transportation costs, and forestry from depletion.

3-19 Natural or recycled-content carpet pad made from textile, carpet cushion or tire waste (rebond still qualifies).
- Natural or recycled-content carpet pad is a good use of reusable resources, resists off-gassing, and improves indoor quality.

3-20 Install carpet that has a minimum of 50% recycled content.
- Recycled-content carpet is a good use of reusable resources, resists off-gassing, and improves indoor quality.

3-21 Install a minimum of 300 ft² of laminate flooring.

3-22 Bamboo, cork, or hardwood flooring used in home, minimum of 300 ft² installed. Products must be third-party certified from sustainably managed forests or certified sustainable sources.
- Cork flooring comes from stopping the tree off stream, which regenerates itself. This cork tiles are sustainable, not into wood resistant, providing a floor that can last over 50 years. Bamboo flooring is a great use of natural resources because it is fast growing, durable, and flexible. All hard flooring materials better indoor quality by not trapping contaminants.

3-23 All ceramic tile installed in home has a minimum of 25% recycled-content.
- ceramic tile is a good use of reusable resources, resists off-gassing, and improves indoor quality.

3-24 MDF and/or finger jointed casing and baseboard used throughout home (1 point), and all jambs (1 point)
- Medium Density Fiberboard (MDF) casing is created from special high-pressure flutes all wood waste to create usable product.

3-25 Solid hardwood trim from third-party certified sustainably harvested sources approved for millwork and/or cabinets (2 points per application - maximum of 4 points).
- Sawn softwood or sustainable sources and those certified to an independent third-party forest certification program.

3-26 Paints or finishes with minimum of 20% recycled content.
- Paints or finishes made from recycled content are environmentally friendly, because recycling paint reduces the hazardous waste in landfills.

3-27 Local natural stone or recycled content (30% of content) solid countertops for all kitchen counters (2 points), all other counter tops (1 point).
- Solid surfaces are more durable, easy to clean and maintain, resistant to heat and scoring. By quarying and quarrying in Canada, the environmental cost of shipping is greatly reduced. Filling stone and getting cut or polished in Canada is not acceptable, quarries must be located within 500 miles of project site. (3 or 4 points).

3-28 100% agricultural waste or 100% recycled wood particle board used for shelving.
- Products such as wheat board are made from agricultural waste.

3-29 PVD finish on all door hardware.
- Physical Vapor Deposition provides a more durable product. No toxic contents are produced making it

3-30 PVD finish on all faucets.
- Physical Vapor Deposition provides a more durable product. No toxic contents are produced making it

3-31 Install only Type 1 or 2 grade door hardware with lifetime mechanical and coating warranty.
- High-quality durable Type 1 and 2 hardware will not need replacing for 50 years of home.

TOTAL SECTION POINTS: 20

IV. INDOOR AIR QUALITY
This section focuses on the quality of the air within the finished home. Products listed here include materials that are low in VOC's, products made from all natural materials as well as various air cleaning and ventilation systems.
Minimum 15 Points Required

4-1 Install pleated media filter on HVAC system with minimum MERV 7 rating.
- MERV rating system specifies the number of contaminants a filter must catch. The higher the MERV rating, the smaller and greater number of particles are caught, providing better indoor air quality.

4-2 Install electrostatic air cleaner on HVAC system.
- Permanent washable filter that traps and removes airborne particles from the air before being circulated through the furnace and into the home.

4-3 Install air filter on all fresh air inlets.
- An air filter on the fresh air inlet will reduce the particulate that can be transferred from outside into the home. All air intakes must be easy to access for maintenance. Bug screens are not considered a "filter." Check with furnace or HRV manufacturer.
4-4 Install electronic air cleaner on HVAC system.  
An electronic air cleaner offers a superior level of filtration by using advanced, 3-stage filtration technology to filter and filter airborne particles like dust, cat dander and smoke. It works by placing an electric charge on airborne particles, and then collecting these charged pollutants like a magnet. The air cleaner can be installed in your dishwasher or sink.

4-5 Install HEPA filtration system in conjunction with an HVAC system.  
HEPA stands for High Efficiency Particulate Air. HEPA filtration offers the highest particle removal available: 99.97% of particles that pass through the system including dust, pollen, smoke and bacteria. The system is connected to the return air return of the forced air heating/cooling system, which provides a whole house filtration system.

4-6 Install thermostat that indicates the need for the air filter to be changed or cleaned.  
This feature displays filter maintenance reminders on the thermostat. Regular filter maintenance is required to keep your mechanical equipment running efficiently and problem-free as well as ensuring a healthy indoor environment.

4-7 Power vacuum all HVAC ducting prior to occupancy by homeowner.  
This process helps eliminate pollutants that enter into the HVAC ducting during the construction process from being circulated with the home.

4-8 Central vacuum system vented to exterior as recommended by the Carpet and Rug Institute  
A central vacuum system collects dust centrally. Unlike exhaust air to the exterior so that dust haze and bacteria does not have the opportunity to be re-circulated. The result is a cleaner, healthier air. Install for all homes from all homes.

4-9 All insulation in the home is third-party certified or certified with low or zero formaldehyde.  
Formaldehyde is a known general organic compound that affects all areas of the human body. Products with low formaldehyde emission levels all improve indoor air quality, of homes and long term human health.

4-10 Low formaldehyde sub floor sheathing (less than 0.18 ppm).  
Formaldehyde is a known general organic compound that affects all areas of the human body. Products with low formaldehyde emission levels all improve indoor air quality of homes and long term human health.

4-11 Low formaldehyde underlayment is used in home (less than 0.18 ppm).  
Low formaldehyde, putty and topcoat adhesive floor levels (PMDD) are available and become more common. ESG certified OCS is focusing more common reducing environmental impacts in an, water, or optical quality.

4-12 Low formaldehyde particle board/MDF (less than 0.18 ppm) = 1 point, or zero formaldehyde particle board/MDF (2 points) used for cabinets.  
Units formaldehyde-free interior board can be used in the same way a conventional interior board, but with the added caution of greater potential for water damage.

4-13 Low formaldehyde particle board/MDF (less than 0.18 ppm) = 1 point, or zero formaldehyde particle board/MDF (2 points) for shelving.  
Units formaldehyde-free interior board can be used in the same way a conventional interior board, but with the added caution of greater potential for water damage.

4-14 All interior wire shelving is factory coated with low VOC / no off gassing coatings.  
Any coating on commercial shelving units are site built MDF shelving off gas VOCs.

4-15 Water-based urethane finishes used on all site-finished wood floors.  
Water-based urethane finish Generally referred to as an epoxy modified finish. It is not solvent based. The formula is like a catalyst for an epoxy or urethane resin.

4-16 All wood or laminate flooring in home is factory finished.  
Indoleating a pre-finished floor eliminates the mess, the dust and the odors associated with the on-site sanding and finishing of an interior finish product.

4-17 Water-based lacquer or paints are used on all site built and installed millwork, including doors, casing and baseboards. (less than 200 grams/litre of VOC's).  
Using water-based interior finish products reduces VOC off gassing and maintains indoor air quality.

4-18 Interior paints used have low VOC content (less than 200 grams/litre of VOC's).  
Volatile Organic Compounds (VOC's) are a class of chemical compounds that can cause short or long-term health problems. A high level of VOC's in paints/finishes off gas and can have detrimental effects to a building's indoor air quality and occupant health.

4-19 Interior paints used have no VOC's in base paint prior to tint.  
Volatile Organic Compounds (VOC's) are a class of chemical compounds that can cause short or long-term health problems. A high level of VOC's in paints/finishes off gas and can have detrimental effects to a building's indoor air quality and occupant health.

4-20 All ceramic tiles are installed with low VOC adhesives and plasticizer-free grout (low VOC standard is less than 150 grams per litre).  
Most adhesives are still based on SB latex which releases large quantities of VOCs. The volatile solvents are used to thicken or (equally) the resin that acts on the bonding agent. However, water-based adhesives emit far less VOCs than their conventional solvent-based counterparts. There are three types of low-VOC formulas: water-based (SB) and adhesives. Relative humidity and polyurethanes, and exterior sealant (VOC compliant solvents). While all these technologies yield low or zero VOC cured adhesives, and adhesives, their performance is slightly different.
4-21 All Vinyl flooring is replaced with natural linoleum installed with low VOC adhesives or other hard surface flooring.

(Notes: VOC standard is less than 150 grams per liter. Hard surface flooring is generally more durable and improves the Indoor Air Quality within a building. Vinyl flooring typically releases VOC's as it ages and uses toxic glues in its application.)

2

4-22 Carpet and Rug Institute (CRI) IAQ label on all carpet used in home.

To identify carpet products that are truly low-VOC, CRI has established a labeling program. The CRI Indoor Air Quality (IAQ) Textile Testing Program green and white logo displayed on carpet samples in showrooms informs the consumer that the product type has been tested by an independent laboratory and has met the criteria for very low emissions.

2

4-23 Carpet and Rug Institute (CRI) IAQ label on all underlay used in home.

This applies to the adhesives used to install carpets and the latex rubber by some manufacturers to adhere face to backing materials. Generating volatile organic compounds (VOCs). Carpets also cover large surfaces within an interior environment and can provide spikes or the adsorption of VOCs from other sources.

1

4-24 Natural material based carpet in all living areas.

Natural wool carpets are durable and use less secondary backing materials and chemicals. Off-gassing is typically caused by the secondary backing and chemical additives in synthetic carpets. For containing mildew, fungus, fire and rot.

2

4-25 All carpet in home is replaced by hard surface flooring.

Hard surface flooring is generally more durable and improves the Indoor Air Quality within a building. Carpets collect dust, dander and other allergens which when trapped become airborne particulates directly affecting the health of the occupants.

4

TOTAL SECTION POINTS 20

V. VENTILATION

This section covers the mechanical ventilation systems in the home, including filtrations and heat recovery.

Minimum 6 Points Required

* Platinum Level Note* Platinum level homes must use item 5-7 "Ventilation system is installed according to CSA Standard F326, as recommended by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI)." as well as 6 additional points from this section.

5-1 All ductwork joints and penetrations sealed with low toxic mastic or aerosolized sealant system.

3

5-2 Install motorized damper on fresh air inlet (must be interlocked with furnace system).

1

5-3 Install all ventilation fans (bath or line type) to meet or exceed the Energy Star requirements.

2

5-4 Install a programmable timer or humidistat controlled ventilation fan meeting the Energy Star requirements for efficiency and sound level.

2

5-5 Install passive Heat Recovery Ventilator (HRV) and verify balanced installation.

2

5-6 Install an active Heat Recovery Ventilator or Energy Recovery Ventilator (HRV or ERV) and verify balanced installation.

4

5-7 Ventilation system is installed according to CSA Standard F326, as recommended by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI).

5
5-8 All bath fans used throughout home have a noise level of 1 sone or less

Installing quiet fans will encourage use for home ventilation

TOTAL SECTION POINTS 2

VI. WASTE MANAGEMENT
This section deals with the handling of waste materials on the construction site and encourages recycling.
Minimum 7 Points Required

6-1 Comprehensive recycling program for building site including education, site signage and bins.
A comprehensive recycling program that is strictly followed significantly reduces the amount of waste ending up in landfills.
Currently it is estimated that up to 60% of landfills waste is construction related.

6-2 Collection of waste materials from site by a waste management company that is a current member of a provincial recycling council or equivalent association and verifies that a minimum of 10% of the materials collected from the construction site have been recycled.

Not only does this reduce overall waste of products, it ensures that the maximum possible amount is being utilized for the production of future resources.

6-3 Suppliers and trades recycle their own waste, including leftover material and packaging (1 point per trade - maximum 4 points).

Trades being responsible for recycling and recovery of waste not only promotes landfill reduction, but also promotes a cleaner and safer working environment.

6-4 Minimum 15% (1 point) 25% (2 points) or 50% (6 points) by weight of waste materials collected from construction site is diverted from waste stream.

Trades being responsible for recycling and removal of waste material only reduces landfill waste, but also promotes a cleaner and safer working environment.

6-5 Use of recycled materials derived from local construction sites (1 point for each different product used, to max. of 3).

Products recycled from the construction site, such as materials, bricks, and other recycled products, can be often used as an alternative to new construction materials.

6-6 Trees and natural features on site protected during construction.

The protection of existing trees and other natural features such as streams, ponds, and other vegetation reduces environmental and ecosystem impact. Many of these features can be protected simply by following good waste management procedures.

6-7 Metal or engineered durable form systems used for concrete foundation walls.

The use of metal forming systems reduces the requirement of lumber, a limited resource.

6-8 Concrete used in home has a minimum supplementary cementing material of 25% (1 point) or 40% (2 points) within the scope of proper engineering practices.

For every one ton of Portland cement generated, eight tons of a ton of carbon dioxide is produced. Supplementary cementing products include fly ash, blast furnace slag, and other minerals.

6-9 Install recycling center with two or more bins.

By installing built-in recycling centers, which can be as simple as labeled containers (paper, cardboard, cans, plastics, etc.), homeowners are more likely to utilize the recycling facilities and thus contribute to the reduction in landfill waste.

6-10 Provide composter to homeowner.

Providing a composter promotes a reduction in waste by giving homeowners an action for organic waste such as food leftovers.

6-11 Existing dwellings onsite are recycled or moved instead of demolished (recycled 2 points, moved 4 points).

TOTAL SECTION POINTS 6

VII. WATER CONSERVATION
This section encourages a reduction in the amount of water used in the home or in individual units within multi-story buildings. Minimum 7 Points Required

7-1 Install a dual flush or pressure assisted toilet in one or more bathrooms
(3 points for first, 1 additional point for each after)

Dual flush toilets offer a choice between two water levels for every flush: the minimum should use 1.6 GPF (8 LPF) or 0.5 GPF (3 LPF).

7-2 Install a 1.28 GPF toilet in one or more bathrooms (2 points for first, 1 additional point for each after)

1.28 GPF (Galton per Flush) is generally considered the new standard in water efficiency.

TOTAL SECTION POINTS 10 or 12
7-3 Install manufactured non-electric composting toilet (3 points each, max of 6 points).

7-4 Insulate the hot water lines with flexible pipe insulation, first three feet from hot water tank (1 point) or all hot water lines (2 points).

7-5 Install hot water recirculation system with all hot water lines insulated (4 points), or point-of-use instant DHW system (1 point each, max. 4)

7-6 Install low flow faucets for all kitchen faucets and lavatories (2 points), all showers & tub/showers (additional 1 point).

7-7 Install hands free lavatory faucets. 1 point per faucet/urinal.

7-8 Provide front loading clothes washer (3 points), or Condensing Combination wash/dry unit (4 points)

7-9 Install water saving dishwasher that uses less than 20 L water per load.

7-10 Install efficient irrigation technology that utilizes automatic soil moisture-based sensor technology at minimum

7-11 Install permeable paving materials for all driveways and walkways.

7-12 Provide a list of drought tolerant plants and a copy of the local municipality water usage guide to homebuyers with closing package.

7-13 Builder supplies a minimum of 6" of topsoil or composted yard waste, as finish grading throughout site.

7-14 Builder incorporates water wise landscaping or xeriscaping in show home or customer home (customers 50% of lawn 2 points, 100%, 4 points).

7-15 Builder attaches water barrel with insect screen to downspout. Water barrel should also have a drain spout and overflow spout (1 point per barrel - maximum of 3 barrels).

7-16 Install grey water system collecting waste from sinks, shower and/or kitchen to capture and treat for use in toilets or irrigation (6 pts), rough-in for future grey water system (3 points)

TOTAL SECTION POINTS

VIII. BUSINESS PRACTICE

This section deals more with manufacturers and builders office and business practices.

Minimum 6 Points Required

8-1 Products used for home are manufactured within 800 km (1 point for each product - maximum of 5).

Transportation of building materials is a substantial energy use. Local manufacture reduces this embodied energy. Distances are calculated by road, not as the crow flies. Manufacturing or assembly must take place in a plant or factory, not on site. Distance to raw material source is not included.
8-2 Builder provides Built Green™ homeowner manual, completed Built Green™ checklist and educational walkthrough with sale or possession.

8-3 Builders office and show homes purchase a minimum of 50% (1 point) or 100% (2 points) solar, wind or renewable energy.

8-4 Manufacturers and/or suppliers purchase 50% or more solar, wind or renewable electricity.

8-5 Builder has written an environmental policy which defines their commitment (must include an office recycling program and energy efficient lighting).

8-6 Manufacturer and/or supplier has written an environmental policy which defines their commitment (must include an office recycling program and energy efficient lighting). (1 point per supplier/manufacturer - maximum of 2 points).

8-7 Builder has written an environmental policy which prioritizes milestones for future net zero housing developments.

8-8 Builders' company vehicles are hybrid or bio-diesel vehicles (1 point per vehicle - maximum of 3 points).

Environmental certification for builders place of business (building, office, etc).

8-9 A commitment to the environment shouldn't stop at construction. Using a hybrid vehicle produces lower harmful emissions. Diesel construction vehicles converted to bio-diesel reduce fuel consumption by up to 75%.

8-10 Builder agrees to construct and label a minimum of 50% of all homes to the Built Green™ standard per calendar year. (3 points for 50%, 5 points for 100%).

8-11 Contracted trades and/or suppliers have successfully taken and maintained Built Green™ Builder Training status (1 point per trade organization, Max 5).

TOTAL SECTION POINTS

TOTAL CHECKLIST POINTS
Brody Development
Public Information Meeting
Holiday Inn
March 29, 2016

Summary Report

Presenters:
Mike Brody, Brody Development
Duane Siegrist, Integra Architecture
Ron Smith, Forma Design Inc.

Q & A Responders:
All presenters plus:
Tamsin Guppy, District of North Vancouver, Community Planner

Facilitator: Brenda Chaddock, Odyssey Leadership Centre

The evening opened at 6:30 p.m. with refreshments, an informal viewing of the boards and personal conversation with the project consultants. There were displays around the room.

At 7:00 Brenda opened the formal portion of the evening, introducing the Presentation Panel and going over the agenda.

She reminded the group that there are a variety of ways in which they can have questions answered and communicate their thoughts, concern and opinions.

These include:
- Ability to have questions answered verbally with the panelists / consultants within the evening
- The meeting is being recorded by several note takers
- There are Comment Sheets available for people who choose to put their words in writing
- Tamsin Guppy, the Community Planner at the District of North Vancouver on this project welcomes calls to provide more information
- The public is welcome to attend the Public Hearings and the presentation to Council
There were approximately 30 people in attendance.

After the presentations by Mike, Duane and Ron, the floor was opened to questions.

**Q & A**

Q: What are the provisions for traffic?
A: Mike: All traffic will be off Orwell.

Q: What is the allowance for parking?
A: Parking will be 2 parking stalls per unit plus 2 designated stalls for visitors.

Comment: Orwell is already very congested. It is a huge problem.

Comment – another attendee – Premier is also congested.

A: Tamsin – all developments must provide 2 parking stalls per unit. There are additional parking bays on the streets. The school district provides a drop off zone and the renovations will increase that availability. Some residents may use their garages for storage. We recognize that parking is an issue and we are working with Mike to have wider and deeper garages.

Comment: Mike, you have been a steward on the North Shore for a long time. Things are changing and we want to make sure you understand that we (the residents) are bearing the results of the densification.

Comment: I coach teams in the community. Unavailable parking near my house delays my ability for community service.

Q: Will Orwell Street take the brunt of construction annoyance? Is the curb being removed for the access of construction vehicles? We are pleased that the hedge will defer the dust. And what are the timelines?

A: Mike – We are working with the DNV process so probably 2017 Jan – May will be the start of their building with a 14 month plan from start to finish – spring 2018. Road realignment is planned with rebuilding of half the road. This will include new curbs and gutters north of Wedgewood.

Q: What kind of view will there be from the rooftop patios?

A: Duane – the rooftops are screened, which came as a request from buyers, and are meant to be private space. There is not much view onto other properties.

A: Tamsin – DNV asks developers to set in the roof gardens.
Mike: In addition Tamsin asked them to look at the setback lines for the property to allow for more green space. The plan includes putting in larger trees at some points – 7 or 8 interspersed with the other trees.

Q: What is the plan for community art?

A: Mike – Money will be given to the District.
   Tamsin – DNV invites suggestions.

Q: Two owners on Orwell ask about the trees.

A: Ron – We are not retaining any trees. We will try to retain the laurel hedge against the Wedgewood property line.

Q: Do you have long term plans for annexes to existing developments?

A: Mike - There are plans to add to existing developments if the properties become available.
   Duane – We are working with the planning department for continuity.

Comment: There is a concern about lack of sufficient speedbumps with the number of young children in the neighbourhood.

A: Mike – There is one to be added at the south end of the development on Premier Street. Tamsin added that another is being added closer to the highway. This concern will also be brought forward to Transport.

Comment: There is a need for more sidewalk space.

A: Tamsin – This depends upon the progress of the projects. Since this is one of the last projects we can now proceed with the sidewalks.

Q: How much material are you bringing in to make the land buildable?

A: Mike – It will be similar to the Legacy and Connect developments. First the organics will be stripped off and then the land built up to accommodate the F.C.L. Civil and geotechnical engineers will be involved in this process.

The meeting then adjourned with some people continuing to have personal conversations with the consultants.

Submitted by
Brenda Chaddock
Odyssey Leadership Centre
**Meeting Agenda:**

Doors Open: 7:00 pm

Open House Discussion:

7:00 pm – 8:30 pm

Presentation: 7:30 pm – 7:45 pm

This is not a Public Hearing

District Council will consider the proposal at a later date.

**Information:**

If you wish further information or clarification regarding this proposal, please contact:

Tamsin Guppy 604-990-2391
District of North Vancouver, Planning Department

Brianne Brody 604-980-2954
Brody Development (Continuum) LP

Duane Siegrist 604-688-4220
Integra Architecture Inc.

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**Public Information Meeting**

Brody Development (Continuum) LP & Integra Architecture Inc. will be co-hosting a public information meeting to present a residential townhouse development proposal for:

854, 858 and a neighbouring vacant lot on Orwell Street and 855 Premier Street, North Vancouver, BC

This information package is being distributed to owners and occupants within 75 metres of the proposed development in accordance with the District of North Vancouver policy.

Location: Holiday Inn
700 Old Lillooet Road
North Vancouver, BC V7J 2H5

Time: 7:00 pm
Tuesday, March 29, 2016
We moved to Premier Street in September 2015. Immediately we became aware of the street parking problem – namely the lack thereof. Whether from Cap U. students, visitors, tradespeople, etc. – the problem eases during the day but returns each night. Also on weekends and especially holidays – Thanksgiving, Christmas, Easter, etc. Also although the speed limit is marked at 40kph – a lot of the vehicles travel much faster especially going to and from the park.

Our Strata (Wedgewood 2) consists of 10 units with two visitor spaces. All have two parking spots. Incredibly the Brody Project proposes 23 units, also with only 2 visitor spots. Of course this project will affect Premier Street parking even though the access is from Orwell Street.

The question of Parking Permits was raised at the meeting but was not dealt with in any substantive way. We are not sure if parking permits would resolve the problem.

Mark & Annette Stanton
**BRODY DEVELOPMENTS (2008) LTD.**  
(TIM FOLKMAN)  
1060 WEST 14TH STREET  
NORTH VANCOUVER, BC V7P 3P3

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**MEMO INVOICE**

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**From:**

North Shore News  
d/o LMP Publication Limited Partnership  
3355 Grandview Highway, Vancouver, BC V5M 1Z5  
PH: (604) 630-3540  FAX: 604-439-2948

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**DATE** | **NEWSPAPER REFERENCE** | **DESCRIPTION - OTHER COMMENTS / CHARGES** | **SALES SIZE** | **SALES UNIT** | **TBORED UNITS** | **TAT** | **RATE** | **NET AMOUNT** |
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03/23/2016 | Ad #3405919 | public info meeting | North Shore News | 2 x 5.25 | 1 | -159.06 |
| Order #1210996 | | | Ad Space | | | 520.00 |
03/25/2016 | Ad #3405920 | public info meeting | North Shore News | 2 x 5.25 | 1 | -159.06 |
| Order #1210996 | | | Ad Space | | | 520.00 |
| | | Sub Total | | | | 721.88 |
| | | HST/GST (6%515 3105 RT0001) | | | | 36.10 |
| | | Total | | | | 757.98 |
PUBLIC INFORMATION MEETING

A redevelopment is being proposed for 854, 858 and a vacant neighbouring lot on Orwell Street and 855 Premier Street to construct a residential townhouse project. You are invited to a meeting to discuss the project.

Date: Tuesday March 29, 2016
Time: 7:00 p.m.
Location of the Meeting: Holiday Inn
700 Old Lillooet Road, North Vancouver

The applicant proposes to rezone the site from single-family zoning to a comprehensive development zone to permit a 23-unit ground oriented townhouse development. The proposal includes 7 buildings (1-5 unit, 4-3 unit, 1-4 unit and 1-2 unit building). Units range in size from 1250 sq.ft. to 1800 sq.ft. 20 units will have double garages and 3 units will have a double garage that is stacked parking.

The meeting is being held by Brody Development (Continuum) Ltd. and Integra Architecture Inc., in compliance with District of North Vancouver Council Policy. The applicant will present details of the proposal and discuss any concerns residents may have.

Information packages are being distributed to residents within a 75 metre radius of the site. If you would like to receive a copy or if you would like more information, please contact:

Brianne Brody of Brody Development (Continuum) Ltd. at 604-980-2954;
Tamsin Guppy of the Community Planning Department at 604-990-2388; or
Duane Siegrist of Integra Architecture Inc. at 604-688-4220

or bring your questions or comments to the meeting.

*This is not a Public Hearing. Council will receive a report from staff on issues raised at the meeting and will formally consider the proposal at a later date.
Proposal:
23 Unit Ground Oriented Townhouse Project

7 PM, Tuesday March 29
Holiday Inn
700 Old Lillooet Road, North Vancouver

Brody Development (Continuum) LP
604-980-2954

This meeting has been required by the District of North Vancouver as part of the regulatory process.
Meeting Agenda:
Doors Open: 7:00 pm
Open House Discussion: 7:00 pm – 8:30 pm
Presentation: 7:30 pm – 7:45 pm
This is not a Public Hearing

Information:
If you wish further information or clarification regarding this proposal, please contact:

Tamsin Guppy 604-990-2388
District of North Vancouver, Planning Department

Brianne Brody 604-980-2954
Brody Development (Continuum) LP

Duane Siegrist 604-688-4220
Integra Architecture Inc.

Public Information Meeting

Brody Development (Continuum) LP & Integra Architecture Inc. will be co-hosting a public information meeting to present a residential townhouse development proposal for:

854, 858 and a neighbouring vacant lot on Orwell Street and 855 Premier Street, North Vancouver, BC

This information package is being distributed to owners and occupants within 75 metres of the proposed development in accordance with the District of North Vancouver policy.

Location: Holiday Inn
700 Old Lillooet Road
North Vancouver, BC V7J 2H5

Time: 7:00 pm
Tuesday, March 29, 2016
The Proposal:

Brody Development (Continuum) LP is proposing a development application involving the rezoning of 4 properties, 854, 858, vacant lot Orwell Street and 855 Premier Street, consistent with the Official Community Plan for this area.

The application is for 23 residential ground oriented townhouse units consisting of 7 buildings (1-5 unit, 4-3 unit, 1-4 unit and 1-2 unit building).

20 units will have standard double garages and 3 units will have a double garage that is stacked parking. There are 19-3 bedroom, 3-2 bedroom and 1-4 bedroom townhouse units. Units range from 1250sq.ft. to 1800sq.ft. The units will have private exterior living areas on the main floor and rooftop and in-unit storage.

The proposal includes the Community Amenity Contribution to be applied to a project to be determined at a later date by the District of North Vancouver with input from the community.