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**ADAPTABLE DESIGN GUIDELINES
EDGEMONT SENIOR LIVING
February 4, 2013**

District of North Vancouver
Adaptable Design Guidelines
Level Two

- Unit Entry Door: Flush thresholds throughout
(maximum 1/2" or 13mm height)
- Unit Entry Door: 36" or 910mm wide suite entry door
- Unit Entry Door: Adjustable door closers to reduce force necessary
to open door to maximum 5 lbs or 22 N
- All Suite Doors: Lever door handles
- Interior Doors: 34" or 860mm clear door opening,
pocket doors in small spaces with
heavy duty hardware and "D" handles
- Balconies/Patios: Min. 34" or 860mm wide clear opening,
level thresholds (1/2" or 13mm) and
60" or 1520mm turning radius on balcony
- Windows: Opening mechanism max. of 46" or 1170mm
above floor, easy grasp levers
- Windows: Window sills max. of 30" or 760mm above floor
- Electrical: Switches and thermostats max. of 42" or 1060mm
above floor
- Electrical: Electrical outlets, cable outlets, telephone jacks
not lower than 18" or 460mm above floor
- Electrical: Wiring for visual alarm system in living room and
one bedroom connected to fire alarm system
- Electrical: Rocker switches
- Electrical/Phone: Duplex outlets beside phone jacks
- Kitchen: Continuous counter between sink and stove
- Kitchen: Pull out work boards at 32" or 810mm height



Kitchen:	Adjustable shelves in all cabinets: "D" cabinet handles
Kitchen:	Lever faucet handles
Bathroom:	Solid blocking provided in walls of tub/shower, toilet and behind towel bars
Bathroom:	Pressure balanced tub/shower valves (as per code)
Bathroom:	Adjustable height shower head or hand held shower head on adjustable bracket
Bathroom:	Offset plumbing for vanity
Bathroom:	Toilet located adjacent to wall
Bathroom:	Provide entry and turning radius within bathroom for wheelchair (removal of a vanity cabinet if necessary)
Bathroom:	Tub control valve placed at outer edge of tub with spout in middle
Bathroom:	Three way switched outlet near bed and doorway
Flooring:	Non-glare kitchen floors, slip resistant bathroom flooring; and high-density low loop carpet with max. 1/2" or 13 mm underlay

The District of North Vancouver

EXPLANATORY MEMO TO ADVISORY DESIGN PANEL

April 3, 2013
File: 3060-20/5.13

AUTHOR: Steven Petersson, Development Planner

SUBJECT: 3202 Woodbine Drive: Edgemont Senior Living
129 Supported Independent Living Units & Amenities
Detailed Application: Plan Amendment, Rezoning & Development Permit

Project Information:

This is the second presentation by the applicant to the Advisory Design Panel for this project. The first presentation was on March 14, 2013. A summary of the Panel's resolution is provided below.

Application Type **Detailed**
Official Community Plan
Amendment, Rezoning &
Development Permit

Applicant / Chuck Brook
Brook-Pooni Associates

Architect Raymond Letkeman
Architects

Landscape Architect Perry & Associates

**Official Community Plan
Designation** Residential 2: Detached Residential

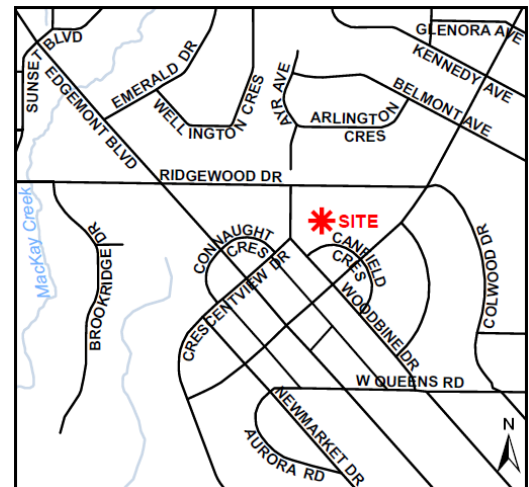
Existing Zoning Residential Single Family - Edgemont

Proposed Rezoning Comprehensive Development

Green Building Mandatory

Public Art Required

Accessibility Some accessible design features required.



Proposal **101,775 sf Supported Independent Living Seniors' Residence**

The applicant proposes to construct 129 units and amenities in a three-storey building. Access to parking is to be provided via Woodbine Drive. A public gathering place is proposed on the south corner of the property, at the intersection of Woodbine Drive and Highland Boulevard. The building is proposed to be constructed around a central courtyard.

Context: The development site is currently six single family lots and a portion of Canfield Crescent, located on the north edge of Edgemont Village. Across Highland Street to the south-east are single family homes. Across Woodbine Drive to the south-west is a mixed use building with two storeys of multi-family residential units on top of retail. Across Ayr Street to the west is the Super Value grocery store site. The north edge of the development is adjacent to single-family houses that front Ridgewood Drive.

Design Guidelines: The municipality is drawing from two separate design guidelines in the Official Community Plan, Schedule B: some applicable guidelines from *Guidelines for Ground-Oriented Housing* and *Guidelines for Commercial and Mixed-Use Buildings*.

At the meeting of March 14, 2013 the Panel made the following resolution:

MOVED by Kevin Hanvey and ***SECONDED*** by Eric Sandberg:

THAT the ADP has reviewed the proposal and ***SUPPORTS*** the general concept but recommends revisions to the proposal and a further presentation to address the following:

- *Consideration of additional variety in proposed colour palette;*
- *Further variation of roofline and balcony format to create more interest;*
- *Additional development of parking entrance/loading area to better resolve this portion of building;*
- *Exploration of options (such as a step-down) for mono-pitch roof component at north-east portion of site to provide an improved relationship to neighbouring properties;*
- *Provision of images showing neighbourhood perspectives as a way to better convey the impact of the project;*
- *Consideration of a “pedestrian zone” on the site at the intersection of Crescentview Dr. and Ayr Avenue to acknowledge the building exit and the likely pedestrian desire line to and from Edgemont Boulevard.*

CARRIED

The applicant's submission documents responses to the Panel's comments in a letter dated April 2, 2013. Responses include:

- Additional variation in the colour palette with darker tones in the gable roof forms and trims and fascia in a lighter colour for contrast;
- Revisions to the balcony profiles along Woodbine Drive, but no changes to the roofline in this area in order to respect community sensitivities to increased height;
- Changes to the parking entrance and loading area to improve the appearance of this area and reduce its impact on the streetscape;
- Elimination of the sloped roof profile at the north-east corner of the building;
- Provision of photographs of the model, rather than neighbourhood perspective drawings, to convey the neighbourhood impact of the project;
- Changes to the portion of the site plan near Crescentview and Ayr Avenue to provide a public gathering feature in this area.

I look forward to hearing the Panel's comments on this proposal.

Yours truly,

A handwritten signature in dark ink, reading "Steven B. Petersson". The signature is fluid and cursive, with the first name "Steven" and last name "Petersson" clearly legible.

Steven Petersson
Development Planner

Attachments:
Applicant's ADP Submission

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**MINUTES OF THE ADVISORY DESIGN PANEL MEETING HELD ON
APRIL 11, 2013 AT THE DISTRICT OF NORTH VANCOUVER**

ATTENDING: Mr. James Paul (Chair)
Mr. Kevin Hanvey
Mr. Robert Heikkila
Ms. Liane McKenna
Mr. Eric Sandberg
Sgt. Bracewell
Mr. Cedric Burgers
Mr. Beau Jarvis
Ms. Lynne Werker

6 members of the public.

STAFF: Mr. Michael Hartford
Ms. Shannon Martino
Mr. Doug Allan

REGRETS: Ms. Nastaran Moradinejad

The meeting came to order at 6:00 pm.

1. MINUTES

The Panel reviewed the minutes of the last meeting. A motion was made and seconded to adopt the minutes of the Advisory Design Panel meeting of March 14, 2013

MOTION CARRIED

2. ANNOUNCEMENTS

Michael Hartford noted that a new Panel member for accessibility issues is being considered with the appointment expected to be forwarded to Council in early April.

3. NEW BUSINESS

a. Preliminary Application for Rental Apartment Project – 1561-1583 Oxford Street

Mr. Doug Allan of the District Planning Department provided a brief review of the application and context. It was noted that this is a preliminary application that involves the redevelopment of four single family lots to accommodate a 111 unit, six-storey rental apartment building. Underground parking is proposed, as well as a small amount of commercial space on the east end of the building. FSR proposed is approximately 3.37 which exceeds the maximum 2.50 permitted under the OCP land use designation for the property.

The site is within the Lower Lynn Town Centre plan and is designated 'Residential Level 6: Medium Density Apartment.' It was noted that the neighbouring single family lots to the west of the project have the same OCP designation with an FSR of approximately 2.5 while the single family lots to the north are designated "Residential Level 5: Low Density Apartment" with an FSR of approximately 1.75. To the south are developed commercial properties designated 'Commercial Residential Mixed Use Level 1' and to the east of the site is the Phibbs Transit Exchange.

The site is located in development permit areas for: Form and Character, Energy and Water Conservation and Greenhouse Gas Emission Reductions, and Creek Hazard (liquefaction/flooding hazard).

Mr. Allan reviewed the Lower Lynn Town Centre conceptual drawings and the status of the Ministry of Transportation lands to the east.

The key staff concerns noted with the proposal include the increase to the FSR by approximately 0.8 and how this could affect the future redevelopment of the adjacent properties, the small setbacks from the east and north property lines, and the provision of sufficient private usable outdoor space for each unit.

Panel members asked Mr. Allan to clarify the parking requirements and it was noted that 1 space per unit is required, plus 1 space per 100 square meters of gross residential floor area up to a maximum of 2 spaces per unit, and inclusive of 0.25 spaces per unit for designated visitor parking. For commercial uses, parking is calculated on the basis of 1 space per 45 square meters of gross commercial floor area.

Panel members asked Mr. Allan what the traffic plans are for Oxford Street and the response was that Oxford Street will still be used as a principal connection by Translink for busses to access Mountain Highway and Main Street.

The Chair thanked Mr. Allan for his presentation and welcomed the applicant team to the meeting. The Chair outlined the procedure to be followed in presenting the proposal and the review by the Panel.

Mr. Oliver Webbe of Darwin Construction made some opening comments and confirmed that the design team has been in communication with Translink about their project plans and issues related to Phibbs Exchange, including security.

Mr. Webbe suggested that the proposed rental building would help to fulfill Lower Lynn Town Centre housing objectives and that due to potential noise issues from the transit exchange and nearby industrial activities; the project design provides some enclosed balcony spaces.

Mr. Stu Lyon of GBL Architects continued with the presentation, showing the OCP designation map, and noting the need in the area for rental housing and family housing. Mr. Lyon reviewed the suite mix and suite sizes and it was noted that the project will benefit from its location next to the transit exchange, and will help to bring more security and light to the area.

Due to economic issues, wood frame construction is proposed, and the FSR of the project is based on a financial necessity to make the project viable as a rental building. The enclosed balcony areas were identified, as well as the request to exclude these areas from the proposed FSR.

Mr. Lyon reviewed the shadow study, as well as the proposed floor plans and commercial space fronting Oxford Street and the transit exchange area.

It was noted that the site's front setback will be reflected by future development across the street and this will provide good separation between the buildings.

The design team has implemented a significant break in the centre of the building design which has helped to reduce the sense of scale. The top floor has also been well set back to reduce the impact of the building.

Mr. Lyon noted that the driveway entrance will be from Oxford Street as the laneway is constricted and provides for only limited vehicle movements. Further, a traffic signal is anticipated to be installed at Oxford Street and Mountain Highway.

It was suggested that the display boards did not show full details of the materials proposed as this is preliminary application, but the intent is to use a mix of textures, fiber cement panels, glass, glazed railings and punched metal guard rails to lend interest to the project.

The project landscape architect, Mr. Gerry Eckford, noted that there are currently no confirmed plans regarding the intent for the future of Phibbs Exchange or the adjacent Ministry lands abutting the east side of the subject property. The project team has been in communication with Translink, and the idea of an urban plaza in this location with some commercial activity has received some support.

Mr. Eckford noted that to create more interest in the boulevard facing Oxford Street, there is an opportunity to install trees in planters on the proposed plaza area and to provide paving areas that would create a seating area near the commercial frontage.

With regard to the loading area to the south, it was noted that usage should be minimal and this could probably be formatted as a paved area to be shared with the urban plaza, or an adjacent outdoor space.

At the west side of the site, there is a proposal for an amenity garden space including tree plantings to provide a screened buffer to the western property line.

Due to concerns expressed by rental operators, it was suggested that tenant access to be roof (with the exception of private terraces) would be restricted.

The Chair thanked the project team for the presentation and asked if there were any questions of clarification from the Panel members.

Questions of clarification were asked on the following topics:

Accessibility of grade level amenity area and whether this will be accessible only to tenants? The area will be gated and only accessible to tenants.

Whether the proposed commercial space is an OCP requirement? No, this is not a requirement, but seems to be a positive opportunity.

Whether public art is a requirement of the project? Yes.

Will District staff allow for the enclosed balconies to be excluded from the FSR calculation and will the increased density be supported? Mr. Allan noted that while the District recognizes the need for rental housing and that this is a suitable location, no decisions have been made on increased FSR or FSR exclusions.

The Chair thanked the applicant team and staff for their clarifications and asked for comments from the District Urban Design Planner. Mr. Alfonso Tejada was not able to attend the meeting, but his comments were read by Mr. Michael Hartford.

Comments referenced the fact that due to the building being sited with a 10 foot front setback and being elevated 3 feet above street level, there is a tight relationship created between the building and the sidewalk. It was suggested that the front setback be increased to at least 13 feet to enable a broader sidewalk and boulevard and an attractive edge condition abutting the front wall of the building. It was further noted that the existing character and function of Oxford Street as the main access route to the Phibbs transit exchange contributes to the need for this deeper setback. The current siting could be adjusted by shifting the building south up to four to five feet, without affecting livability of the units located on the south side of the building.

The current proposal includes a five-storey streetwall with a recessed sixth storey which will establish a very strong pattern in the neighbourhood. As the north side of the street is proposed to be redeveloped to a lower density, it will be important to consider how this project can be balanced with the anticipated built form on surrounding properties.

The material palette will be important in the success of this project and a sample colour/material board would be useful as part of the application materials.

The Chair thanked Mr. Hartford for sharing Mr. Tejada's comments and invited comments from the Panel.

Panel members commended the applicant for a rental housing proposal and noted support for the location of the proposal rental units.

Some security concerns were noted regarding the need to restrict the access to the roof in the evening and whether an increase in lighting would help to discourage inappropriate usage of the adjacent open area.

It was noted that given the location of service areas for the building (including loading and waste disposal), there could be merit in relocating the common open space from the south side of the building to the north side on Oxford Street. This would help to

provide more of a buffer from bus traffic and allow the green space to function in concert with the proposed commercial activity.

Some comments were made about the building facade looking very flat and institutional and that the project would benefit from more detail and color.

Some concerns were expressed and questions raised regarding the proposed FSR of approximately 3.37, and in particular, which elements of the building were included in the FSR. It was noted that as the first development project in this portion of the neighbourhood, there is a need to better understand how this project might influence nearby properties and their development potential. Accordingly, it was requested that a massing model be considered as a way to show the relationship to the OCP and to help better explain the impact of the height and density proposed.

It was noted that the building's small setback to the east property line and the uncertainty regarding future development on this site could create difficulties in complying with required spatial separation from this property line.

It was generally agreed that the proposed enclosed balconies should either be eliminated from the project, or if retained, should be counted toward FSR.

Some questions were asked about public art. In response, staff confirmed that as rezoning is involved, a public art installation or a cash deposit for art is a requirement of the application, but that details of the approach to art have not yet been resolved. It was suggested by some members of the Panel that an art element within the green space could be an asset to the development.

The Chair thanked the Panel for their comments, and invited the project architect to respond to the comments made by the Panel.

Mr. Lyon noted that with regard to the proposed density, other projects completed at a 2.5 FSR have typically been taller than four-storey buildings. Mr. Lyon concluded by thanking the Panel for the comments and input and noted that these would be helpful for the project team as they move forward with the project design.

The Chair thanked the project architect, and invited the Panel to compose a motion.

MOVED by Kevin Hanvey and **SECONDED** by Beau Jarvis:

THAT the ADP has reviewed the proposal and **SUPPORTS** the general concept and looks forward to a presentation at the detailed stage that includes a review of the following items:

- The provision of drawings to demonstrate the fit of the building in its context in relation to the Lower Lynn Town Centre plan
- Further evolution of the colour and finish palette
- Further exploration of the east façade and the proposed relationship to the adjacent land to the east

- Exploration of options for site planning to provide for increased green space along the proposed commercial frontage and along Oxford Street, rather than along the lane
- That a physical massing model be provided at the detailed application stage to show the project's relationship to OCP implementation.

CARRIED

(Sgt. Bracewell departed the meeting prior to the start of the following agenda item)

b. Detailed Application for Edgemont Senior Living – 3202 Woodbine Drive

Mr. Michael Hartford of the District Planning Department provided a brief overview of the application. Mr. Hartford noted that this is a detailed application and the Panel had first reviewed the project at meeting held March 14, 2013. It was noted that the proposal is for an OCP amendment, rezoning and development permit for a site currently occupied by six single-family lots and a portion of Canfield Crescent.

The application proposes the construction of a supported independent living seniors' residence to consist of 129 units and common amenity areas in a three-storey building.

Access to underground parking (59 stalls) and a loading bay area is to be provided via Woodbine Drive. A public gathering place is proposed on the south-east corner of the property, at the intersection of Woodbine Drive and Highland Boulevard and the building is proposed to be constructed around a central courtyard.

Green building features and public art are each mandatory elements of the project.

At the March 14, 2013 meeting, the Panel made a motion indicating the need for attention to the following issues:

- Variety in the colour palette;
- Variation in the rooflines and balconies;
- Additional development of parking entrance/loading area;
- Options for the mono-pitch roof at the north-west corner;
- Provision of images showing neighbourhood perspectives;
- Consideration of a "pedestrian zone" at the intersection of Crescentview Drive and Ayr Avenue.

Mr. Hartford introduced Mr. Greg Voute, senior associate architect of Raymond Letkeman Architecture to present the project on behalf of the design team.

The Chair thanked Mr. Hartford for his presentation and welcomed the applicant team to the meeting. The Chair outlined the procedure to be followed in presenting the proposal and the review by the Panel.

Mr. Voute began his presentation by showing the revised exterior drawings noting the darker grey color selected for the wall surfaces and lighter, birch-coloured trims.

He pointed out that the colors are proposed to stay within the same family but will provide for more variation and more texture.

Mr. Voute pointed out the changes to the roofline and balconies and noted that the feature of the low-sloped pitched roof has been maintained, but changes have been made to the design of the railings at key locations such as corners. The adjusted railings are in a charcoal colour with a glass center panel for a “framed” design.

With regard to the garage entrance area, the loading bay has been changed to a single door from a double door, and the height of the opening has been lowered from 13 feet to 8 feet, all in an attempt to reduce the impact of this access. The railings above the entrance have been pulled back from the roof edge to further reduce the scale of the entrance. Timber elements have been added in the form of a trellis to reflect the porte cochere feature area on Highland Drive and to help make the service and driveway entrance more attractive.

With regard to the roofline at the north-east corner of the building, the angled mono-pitch roof element has been changed to a flat roof to reduce the scale and to improve the relationship with neighbouring properties.

Mr. Voute noted the context photos of the model that were included in the package to help illustrate the project’s relationship to nearby buildings in the neighbourhood.

Mr. Michael Patterson, the project landscape architect, spoke to the Panel’s suggestions for a “pedestrian zone” at the south-west portion of the site. Mr. Patterson noted that while there is a sizeable plaza at the south corner of the site, the revised plan pushes the public realm at the south-west corner of the site into the private landscaped area, slightly reducing the size of patios. This change will allow a public seating area at this corner with similar bench and plantings to the larger plaza area to the east.

Mr. John Kuharchuk, representative of the development firm, spoke to the amended model and confirmed that the adjusted model reflects all the changes described, with the exception of the changes to the balcony railings.

The Chair thanked the project team for the presentation and asked if there were any questions of clarification from the Panel members.

Questions of clarification were asked on the following topics:

Target market for the development? Local residents of an average age of 83 years with an expected stay of 7 years before needing higher level of care.

Current OCP designation for this property? “Residential Level 2; Detached Residential” which essentially provides for detached residential uses.

Origin of the concept for “Northwest” architectural theme and elements of the project that fulfill this concept? Input from the community meetings led to the design of the façade and the desire to reflect a Northwest architectural theme. The approach includes a response to the design elements in the area’s homes and includes

features such as low-sloped roofs and timber details to create a fresh interpretation of west coast modern design.

Likelihood of increased pedestrian traffic on Highland Drive? An increase is anticipated, and is accommodated by a new sidewalk installation.

Green building measures in the project? Intent is to meet equivalent of LEED NC (new construction) GOLD or Built Green Gold.

The Chair thanked the applicant team and staff for their clarifications and asked for comments from the District Urban Design Planner.

Mr. Hartford shared comments from Mr. Alfonso Tejada who was unable to attend the meeting.

- The relocation of the parking entrance toward the north boundary of the site on Ayr Avenue has not been pursued, and while the parking access and loading area shown in the current proposal is better resolved there are still some challenges with the pedestrian/vehicle interface and integration with the building form.
- The impact and response to the proposed electrical transformer located next to the parking access needs to be shown on the architectural elevation and the renderings.
- There is need for the residential units fronting Woodbine Drive to assist in creating a residential pattern that connects to the street - this will avoid the current sense of separation that a continuous low wall will produce.
- A more identifiable connection between units and sidewalks, such as gates that might include appropriate security provisions, would be a preferred approach.
- With regard to the building form, the flatness of the proposed linear roofline along Woodbine Drive, could be improved by creating subtle variations in thickness or movement at the roof edge.
- A sample materials board is necessary to ensure clarity on intent for the project.

The Chair thanked Mr. Hartford and invited comments from the Panel.

Panel members thanked the design team for the level of detail in the presentation and for the ways in which the Panel's previous suggestions were taken into account. Several Panel members noted that they felt each suggestion was successfully addressed.

Several Panel members noted their appreciation for the importance of this type of facility to help house an aging population.

Two panel members expressed their support for the project but noted some concerns with the roofline proposed along Woodbine Avenue and the suggestion that this could be improved with further articulation along this frontage.

It was noted that the long hallways create long travel distances to and from the elevator on each floor, and that creating smaller gathering spaces for residents along the hallways could be a benefit. It was also noted that basement level amenity

spaces could be improved with more natural light or by relocating some spaces to grade level.

Some members of the Panel expressed concerns with the massing of the building and felt that the scale of the project was too large to fit with the character of the surrounding neighbourhood.

It was recognized that there are some functional aspects of the building (including access to services and to provide security) but a desire was expressed to consider breaking the building into multiple structures to reduce the scale.

One Panel member expressed opposition to the project in this location. It was suggested that only the design of the project should be under review, not the proposed use, any perceived need in the community, or the functional objectives of the operator. The Panel member felt the project should better reflect the policies and guidelines of the OCP and it was suggested that the building was simply too large for its site, out of character with the Edgemont neighbourhood, and would be better located elsewhere.

The Chair thanked Panel members and invited the applicant team to respond.

Mr. John Kuharchuk, the developer's representative, thanked the Panel and noted that the comments and input are helpful. Mr. Kuharchuk referred to the demographic studies done in the area that identified a need for this type of facility within the neighbourhood and that many seniors need and can afford this housing. Home owners with strong roots in the community have stated support and note that this is the only place this use can occur in the Edgemont area.

It was noted that at the preliminary application stage, the project was larger with 135 units in a mixed 3 and 4 storey building. Following discussion with the District and the community, changes to the project reduced the height from 4 to 3 storeys, lowered the density and unit count, and adjusted the amenity package. Additional changes to the size of the project would be difficult and it was explained that reducing the number of units means smaller amenity opportunities and higher rents. Rental cost is dependent on the amount of space, size and services required and monthly rates are estimated to be \$3,400-\$5,000 per month including rent, three meals per day, house cleaning, social activities, parking, and transportation. It was noted that if the project was further reduced in size, rental fees would increase along with a reduction of amenities for residents.

The architectural style proposed was reviewed, and is based on municipal and community encouragement to reflect the work of Hollingsworth and Eriksson in the project design. Mr. Kuharchuk noted that the design team heard from the Panel previously that there was a desire for stronger animation on Woodbine and changes have been made in response

With regard to the possibility of opening the courtyard to public access, Mr. Kuharchuk pointed out that the courtyard serves a function for the project and provides an appropriate location for resident activities with staff oversight. Security

and peace of mind are priorities for residents and for the operators, so it is important the courtyard remain private space.

With regard to the proposal for individual entry gates along Woodbine, it was noted that the grade change and the desire to control access to the complex would each make this objective difficult to achieve.

Mr. Kuharchuk noted that strong support this product was expressed at the recent public information meeting and that the project works toward OCP directions regarding housing objectives.

The Chair thanked the project team for their comments, and proposed a motion for consideration by the Panel:

MOVED by Jim Paul and **SECONDED** by Cedric Burgers:

THAT the ADP has reviewed the proposal and cannot endorse the proposal in its present form. The ADP recommends **RECONSIDERATION** of the proposal and the submission to address the following major concerns:

The proposal should follow the OCP guidelines concerning Village Centres and Neighbourhoods including:

- Village Centres Item #5. *“Concentrate development in the Village core and transition sensitively outwards with appropriate ground-oriented housing forms (such as duplex and townhouse) to adjacent residential.”*

The proposed new building should follow in scale, density and use provisions of the OCP guidelines for Village Centres. Massing and scale of the building(s) should have an intermediate scale building form which transitions between larger 3 storey village commercial residential buildings and smaller neighbourhood single family houses.

- Village Centres item # 6. *“Establish Development Permit Areas and Design Guidelines regulating the form and character of development to promote design excellence and reflect the unique qualities of each Village Centre.”* and; Heritage and Archaeological Resources #4 *“Encourage the protection and enhancement of building and sites which have historic significance to the community...”*

In particular the proposal should demonstrate sensitivity to North Vancouver architectural and Urban Planning history including retention or sensitive redesign of existing street layouts, acknowledging and harmonizing with the scale of existing Edgemont Village buildings, especially building footprint sizes, and provision of safe pedestrian movement as it relates to vehicular traffic, minimizing curb cuts and vehicular access points to the site.

- Neighbourhoods item # 5. *“Prepare Housing Action Plan(s) to identify criteria for low intensity infill housing, such as coach and laneway housing and small lot subdivision as appropriate.”* and; Neighbourhoods item # 6. *“Enable sensitive redevelopment in appropriate areas, such as locations adjacent to existing multifamily or commercial uses, through Neighbourhood Infill Plans”* and;

Housing Diversity item # 2. *“Undertake Neighbourhood Infill plans and/or Housing Active Plans where appropriate to: a. identify potential townhouse, row house, triplex and duplex areas near designated Town and Village Centres, neighbourhood commercial uses and public schools; b. designate additional Small Lot Infill Areas; c. develop criteria and identify suitable areas to support detached accessory dwellings (such as coach houses, back yard cottages and laneway housing).”*

Develop a community of diverse demographics with creative housing alternatives for citizens of all ages and abilities including, but not limited to, affordable housing for nuclear families, empty nesters, and seniors wishing aging-in-lance housing.

- Energy-Efficient Buildings # 1. *“Promote the development of green/energy-efficient buildings for new multifamily, residential, commercial, industrial and institutional buildings”* and; Alternative Energy Supply Options # 4. *“For large developments undergoing rezoning require developers to conduct energy efficiency and alternative energy assessments.”*

The proposal should employ design and technological details that entail construction and operational efficiencies equal or greater than LEED Gold sustainability standards.

Discussion took place regarding the motion including Panel members’ comments on the typical process for formulating a motion, the mandate of the Panel, whether the Panel comments should be limited to topics noted in the Panel’s previous motion, and whether the use of the proposed building should affect the Panel’s approach to consideration.

DEFEATED
(Six Opposed)

The Chair invited the Panel to compose an alternate motion.

MOVED by Liane McKenna and **SECONDED** by Kevin Harvey:

THAT the ADP has reviewed the proposal and recommends **APPROVAL** of the project **SUBJECT** to addressing the following items to the satisfaction of staff:

- A review of the building roofline along the Woodbine Avenue elevation to address the flatness of the linear roofline as currently proposed.
- A review of the interface between the public realm of the sidewalk and the private realm landscaping along the Woodbine Avenue frontage to create a stronger connection between the public and private realms.
- That consideration be given to the proposed plaza space at the intersection of Highland and Woodbine as an appropriate opportunity for the location of public art.

CARRIED
(Two Opposed)

4. ADJOURNMENT

A motion was put forward to adjourn, the motion carried, and the meeting adjourned at 9:07 pm.

5. NEXT MEETING:

Thursday, May 9, 2013

Chair

Date

Edgemont Senior Living Inc.
2807 - 928 Homer Street
Vancouver, BC
V6B 1T7

April 11, 2013
File: 11187

Attention: John Kuharchuk

**Re: Geotechnical Report - Proposed Edgemont Seniors Living Development
3202 Woodbine Drive, 3220 to 3255 Canfield Crescent and 3227 Highland Boulevard,
North Vancouver, B.C.**

1.0 INTRODUCTION

We understand that a new Seniors Living Development is proposed for a site in the Edgemont Village neighbourhood of North Vancouver. The site is an assembly of the single family residential lots located at the intersection of Woodbine Drive and Highland Boulevard in North Vancouver. The intent is to construct 3 storey wood framed apartment style building over 1 level of underground parking and an at grade 3 storey building located towards the middle of the site. The concrete underground parking is proposed to have slab elevation of 86.4 m, whereas existing grades on site vary from 88 metres at the south end of the site to a high of 92.3 m at the north west corner of the site.

This report has been prepared exclusively for Edgemont Senior Living Inc., for their use and the use of others on their design and construction team. The report presents the results of an investigation of the soil and groundwater conditions at the proposed site and provides recommendations for the design and construction of the new building.

2.0 SITE DESCRIPTION

The site is located in the Edgemont Village neighbourhood of North Vancouver. The site is an assembly of 6 single family lots improved with one to two storey at grade residential homes. The site is bounded by Highland Boulevard to the south east, Woodbine Drive to the south west, and residential lots to the north. The site has a gentle slope from north to south, with a grade difference of approximately 4 metres. The slopes are sufficiently flat that instability is not a design concern and the site far exceeds the factors of safety required under the "APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia".

3.0 FIELD INVESTIGATION

The subsurface ground conditions at the site were investigated on March 27, 2013 using a truck mounted auger drill rig that was supplied by Uniwide Drilling of Burnaby, BC. During the investigation, 5 solid stem auger holes and 1 Dynamic Cone Penetration Test (DCPT) were advanced. The auger holes were drilled to depths of between of 1.5 and 6.1 m below grade. The DCPT was advanced adjacent to auger hole TH13-2 to assist in assessing the relative density of the soil profile. The DCPT is comprised of a 55 mm blunt nosed

cone that is driven into the soil with a 63.5 kg drop hammer from a controlled height of 760 mm and yields results similar to the Standard Penetration Test. The holes were backfilled with the drill cuttings upon completion of logging and sealed with bentonite chips and grout as required by the BC Groundwater Protection Legislation.

The approximate locations of the auger holes are shown on our drawing number 11187-1.

4.0 SUBSURFACE CONDITIONS

4.1 Soil Conditions

The soil classification used herein is based on the "Unified Soil Classification System", except as noted otherwise. According to the Geological Survey of Canada Surficial Geology Map 1484A, the site is underlain by Capilano Sediments of the Pleistocene epoch, which are defined as raised deltaic and channel fill medium sand to cobble gravel up to 15m thick deposited by proglacial streams and commonly underlain by silty to silty clay loam. The soil profile as encountered in our test holes consisted of a thin layer of pavement and FILL underlain by surficial SILT AND SAND layering, then SAND AND GRAVEL, SILT and SAND. A detailed description of the soils encountered is given below.

FILL

In general our test holes were drilled through pavements and thus the upper layers are comprised of asphalt or concrete overlying pavement gravel fills. Fill was encountered at all test hole locations and ranged in thickness between 150 to 250 mm. The fill is mainly comprised of a sand and gravel noted as mainly brown, moist and compact.

SILT & SAND

A surficial layering of silt, sand, or silt and sand was encountered within test holes TH13-1 through TH13-4 to final depths ranging between 0.5 to 1.2 metres. A silt and sand layer was encountered at TH13-2 and TH13-4 below the fills to depths ranging from 0.5 to 0.9 metres. This layer contained trace organics and gravel, and was noted as firm and dry/moist.. The silt layer was noted within TH13-1 and TH13-3 to a depth of 0.6 metres and contained trace to some sand and was noted as red/brown, moist and firm. A sand layer was encountered in test holes TH13-1 and TH13-4 to depths ranging between 1.2 to 1.5 metres and contained some gravel to gravelly and noted as brown, moist to wet, and very dense.

SAND & GRAVEL, SILT and SAND (Capilano Sediments)

A sand and gravel layer was encountered to refusal within test holes TH13-1 and TH13-4 at a depth of 1.5m. The sand and gravel was silty, cobbly, and was noted as brown, moist to wet and very dense. The sand and gravel layer was encountered within TH13-4 to final depths of exploration at 6.1 metres with no return on the auger below 3.0 metres due to the difficult drilling. The sand and gravel layer was also encountered within TH13-2 and TH13-3 to final depths ranging between 1.8 to 3.0 metres overlying a very stiff silt.

A silt layer was encountered at TH13-2 to final depths of exploration at 6.1 metres, and within TH13-3 to a depth of 3.0 metres. The silt contained various amounts of sand and gravel and was noted as

grey, moist and very stiff. Below the silt layer within TH13-3 to final depths of 6.1 metres was a sand layering containing some gravel to gravelly with trace silt and noted as brown, moist to wet and very dense.

For a more detailed description of the subsurface soil conditions refer to the test hole logs provided in Appendix A, following the report.

4.2 Groundwater Conditions

Groundwater was encountered at an average depth of 1.5 m below grade within TH13-1 through TH13-4. Based on our experience groundwater in the area is perched on fine grained silt and till layers that underlie the site. In our experience the water table can be readily lower with pumped sumps. Long term flows can be expected to be light to moderate.

5.0 DISCUSSION

In general, the site is underlain by some fill and surficial alluvial deposits of silt and sands, then very dense sand and gravels, very stiff silt, and very dense sands. The very dense sand and gravel or very stiff silt would be well suited for founding buildings at grade or at depth for the one level of underground parking. The excavation depth for the proposed building foundations is approximately 2.0 m at the south and 4.0 m at the north end. Buildings are setback from property lines allowing for a sloped excavation to be implemented. The groundwater was noted at an average depth of 1.5 m below current grades. The groundwater in this area of North Vancouver is typically perched due to the presence of less permeable layers. We expect that the site can be readily de-watered with pumped sumps.

6.0 RECOMMENDATIONS FOR DEVELOPMENT

6.1 Site Preparation

Prior to the construction of foundations and grade supported floor slabs, all organic materials, debris, fill, and loose or otherwise disturbed soils must be removed from the construction area to expose a suitable undisturbed subgrade of very dense sand and gravel or very stiff silt. Any grade reinstatement can be done with lean mix concrete or engineered fill based on the recommended bearing pressures below.

6.2 Spread Foundations

Pad and strip footings founded on the undisturbed, very dense sand with gravel, very stiff silt, or grade reinstated lean mix concrete (2 MPa), can be designed for a Service Limit State (SLS) pressure of 300 kPa and a factored ULS of 450 kPa.

Alternatively, the footings could be supported on engineered fill using a SLS pressure of 150 kPa and a factored ULS of 250 kPa. Engineered fill for the support of foundations is defined as 75 mm minus crushed gravel fill compacted in 300 mm loose lifts to a minimum of 100% SPMDD.

Footings should not be less than 450 and 600 mm in width for strip footings and pads, respectively. The footings should be located a minimum of 450 mm below final grades for frost protection. Post construction settlement should be less than 25 mm and differential settlements should be less than 10 mm over 5 m at the recommended bearing pressures.

All footing subgrades should must be inspected by GeoPacific to confirm the recommended bearing capacities for the site.

6.3 Seismic Design of Foundations

The soils underlying this site, as defined in Table 4.1.8.4.A. of the 2012 British Columbia Building Code are classified as Site Class C. The peak ground surface accelerations can be taken as 0.43 g.

6.4 Temporary Excavations

The excavation depths for the building are expected to be between 2 and 4 m below the existing site grades. The excavation may be sloped to at an angle of 1 horizontal to 1 vertical (1.5:1) within the surficial silt and sand, very sand and gravel, and very stiff silt. Steeper slopes can likely be supported locally using lock blocks.

6.5 Grade Supported Floor Slabs

It is recommended that the floor slab be directly underlain by a polyethylene moisture barrier and 100 mm of 19 mm clear crush gravel to inhibit upward migration of moisture beneath the slab.

The existing soils should be proof rolled after excavation to ensure there are no loose or disturbed zones requiring compaction, or removal. To provide suitable support for any concrete slabs-on-grade, we recommend that any grading fills placed under the slab should be compacted in 300 mm loose lifts to a minimum of 98% SPMDD.

6.6 Site and Foundation Drainage Systems

A conventional perimeter drainage system around the building is required. The granular drainage layer under the slab on grade should be hydraulically connected to the perimeter drainage system which should be connected to the storm drainage system. It is important that all backfill placed against the below grade foundation walls be free draining to prevent the build up of water pressures against the foundation walls.

We anticipate that the site and foundation drainage system will be collecting persistent groundwater seepage from the surrounding areas. We anticipate moderate flows initially and once stabilized flows will be in the range of 50 to 100 litres per minute for the entire site. This should be confirmed at the time of construction.

6.7 Earth Pressures on Foundation Walls

We recommend that the foundation walls be designed to resist a static triangular soil pressure distribution of $5.5 H$ (kPa), where H is equal to the total wall height in feet and metres, respectively. The dynamic loading induced by the 2012 BCBC design earthquake should be added to the static loads and should be taken as $6 H$ (kPa) inverted triangular. The dynamic earth pressure is based upon unfactored soil parameters. The earth pressures presented assume that the area behind the wall is fully drained.

6.8 On Site Storm Water Infiltration

On site infiltration would be feasible in the gravels on site, though given the high water table it may not be practical to infiltrate storm water on the site as it will likely “short circuit” into the drain tile.

7.0 FIELD REVIEWS

As required by the 2012 British Columbia Building Code “Letters of Assurance”, GeoPacific Consultants Ltd. will carry out sufficient field reviews during construction to ensure that the geotechnical design recommendations contained within this report have been adequately communicated to the design team and to the contractors implementing the design. These field reviews are not carried out for the benefit of the contractor's, therefore they do not in any way effect the contractor's obligations to construct the works in accordance with the design.

It is the contractor's responsibility to advise GeoPacific Consultants Ltd. (a minimum of 24 hours in advance) that a field review is required. Geotechnical field reviews are normally required at the time of the activities:

- | | | |
|----|---------------|--|
| 1. | Excavation | Review of temporary slopes and soil conditions |
| 2. | Foundation | Foundation subgrade |
| 3. | Slab-on Grade | Subgrade and under slab fill |
| 4. | Backfill | Placement of backfill along foundation walls |

8.0 CLOSURE

This report as been prepared for the use of our client and their design and construction team. We assume that it would be relied upon by the District of North Vancouver in their permit review process. Other parties should not rely on the report without specific approval from GeoPacific. If you would like further details or require clarification, please contact the undersigned.

For:
GeoPacific Consultants Ltd.

Reviewed by:



APR 12 2013

Mark Andricevic
Technician

Matt Kokan, M.A.Sc., P.Eng.
Principal



LEGEND:

- TH13-#  TEST HOLE LOCATION (TH2013)
 DCPT  DYNAMIC CONE PENETRATION TEST



REFERENCE:
 GEWeb (District of North Vancouver)
 PROJ. NO.:
 DATE:

2105-1200 West 21st Avenue
 Vancouver, BC
 V6P 5G5

GeoPacific
 Consultants Ltd.

DATE: April 9, 2013

DRN. BY: MA APP'D: MAK
 SCALE: 1:600

PROPOSED SENIORS LIVING DEVELOPMENT
 WOODBINE DRIVE AT HIGHLAND BOULEVARD, NORTH VANCOUVER, B.C.
 SITEPLAN

FILE NO.: **11187**

DWG. NO.: **11187-1**

REVISIONS:
 REV. A
 REV. B
 REV. C

Test Hole Log: TH13-1

File: 11187

Project: Proposed Edgemont Senior Living Development

Client: Edgemont Senior Living Inc.

Site Location: Woodbine Drive at Highland Blvd, North Vancouver, BC

GeoPacific

Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE				Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)				
0		Ground Surface	0.0				
0.1		ASPHALT (25mm)	0.1				
0.2		FILL (150mm)	0.2				
0.6		Sand and Gravel, 19mm minus, brown, moist, compact	0.6				
1.2		SILT Silt, some to trace sand, trace roots, red/brown, moist, firm/stiff	1.2				
1.5		SAND Sand, some gravel, rusted, red/brown, moist, very dense	1.5				
1.5		SAND AND GRAVEL Sand and Gravel, cobbly, silty, brown, moist to wet, very dense	1.5				
1.5		Refusal of auger at 1.5m	1.5				
1.5		End of Borehole	1.5				
1.35			1.35				-Groundwater noted at 1.35m -3 test hole attempts to 1.5m

Logged: MA

Method: Truck Mounted Solid Stem Auger

Date: March 27, 2013

Datum: Ground Surface

Figure Number: A.1

Page: 1 of 1

Test Hole Log: TH13-2

File: 11187

Project: Proposed Edgemont Senior Living Development

Client: Edgemont Senior Living Inc.

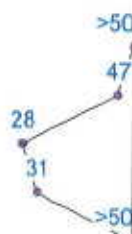
Site Location: Woodbine Drive at Highland Blvd, North Vancouver, BC

GeoPacific

Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE				Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)				
0 ft m		Ground Surface	0.0				
1		ASPHALT (50mm)	0.2				
2		FILL (150mm)	0.5				
3		Sand and Gravel, 19mm minus, brown, moist, compact					
4		SILT AND SAND					
5		Silt and Sand, some organics, dark brown, dry/moist, firm/compact					
6		SAND AND GRAVEL					
7		Sand and Gravel, cobbly, some silt, brown, moist to wet, very dense					-Groundwater noted at 1.5m
8		At 1.8m - Sand, gravelly, trace to some silt, red/brown, wet, compact					
9							
10							
11		SILT	3.0				-DCPT Drilled out to 3.0m
12		Silt, some sand to sandy, grey, moist, very stiff					
13							
14							
15							
16		At 4.6m - Silt, trace sand and gravel, interbedded sand seams, grey, moist, very stiff					
17							
18							
19							
20							
21							
22		End of Borehole	6.1				



Logged: MA

Method: Truck Mounted Solid Stem Auger

Date: March 27, 2013

Datum: Ground Surface

Figure Number: A.2

Page: 1 of 1

Test Hole Log: TH13-3

File: 11187

Project: Proposed Edgemont Senior Living Development

Client: Edgemont Senior Living Inc.

Site Location: Woodbine Drive at Highland Blvd, North Vancouver, BC

GeoPacific

Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE				Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)				
0 ft 0 m		Ground Surface	0.0				
1		ASPHALT (75mm)	0.3				
2		FILL (225mm)	0.6				
3		Sand and Gravel, 19mm minus, brown, moist, compact					
4		SILT					
5		Silt, trace sand, trace organics, red/brown, dry/moist, firm					
6		SAND AND GRAVEL					
7		Sand and Gravel, occasional cobble, trace to some silt, brown, moist to wet, dense	1.8				
8		SILT					
9		Silt, some sand, trace gravel, grey, moist, very stiff					
10		SAND	3.0				
11		Sand, gravelly to some gravel, trace silt, brown, moist, very dense					
12							
13							
14							
15		At 4.6m - Sand, some gravel, trace silt, grey/brown, wet, very dense					
16							
17							
18							
19							
20							
21							
22		End of Borehole	6.1				

Logged: MA

Method: Truck Mounted Solid Stem Auger

Date: March 27, 2013

Datum: Ground Surface

Figure Number: A.3

Page: 1 of 1

Test Hole Log: TH13-4

File: 11187

Project: Proposed Edgemont Senior Living Development

Client: Edgemont Senior Living Inc.

Site Location: Woodbine Drive at Highland Blvd, North Vancouver, BC

GeoPacific
Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE				Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)				
0 ft 0 m		Ground Surface					
1		CONCRETE (75mm)	0.0				
2		FILL (225mm)	0.3				
3		Silt, sandy, topsoil, organics, wood, dark brown, moist, firm					
4		SILT AND SAND	0.9				
5		Silt and Sand, layering, trace gravel, red/brown, dry/moist, firm/compact					
6		SAND	1.5				
7		Sand, gravelly, brown, moist to wet, very dense					
8		SAND AND GRAVEL					
9		Sand and Gravel, cobbly, silty to some silt, brown, wet, very dense					
10							
11		From 3.0 to 6.1m - Very cobbly drilling, no return on auger. Sand and Gravel based on observed drilling					
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
		End of Borehole	6.1				

Logged: MA

Method: Truck Mounted Solid Stem Auger

Date: March 27, 2013

Datum: Ground Surface

Figure Number: A.4

Page: 1 of 1

Test Hole Log: TH13-5

File: 11187

Project: Proposed Edgemont Senior Living Development

Client: Edgemont Senior Living Inc.

Site Location: Woodbine Drive at Highland Blvd, North Vancouver, BC

GeoPacific
Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE				Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)				
0 ft 0 m		Ground Surface	0.0				
1		ASPHALT (50mm)	0.3				
2		FILL (250mm)					
3		Gravel, crushed, <19mm, grey, moist, compact					
4		SAND AND GRAVEL					
5		Sand and Gravel, cobbly, silty to some silt, brown, moist, very dense					
6		At 1.4m - Refusal of Auger	1.4				
7		End of Borehole					
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Logged: MA

Method: Truck Mounted Solid Stem Auger

Date: March 27, 2013

Datum: Ground Surface

Figure Number: A.5

Page: 1 of 1

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E3 Eco Group Inc.
"The Building Blocks of Sustainability"

Troy Glasner, President, CEA, LEED AP
Einar Halbig, CEO, CEA, B.A.Sc.

Ph. 604-727-4322
604-874-3715

Troy@e3ecogroup.com
Einar@e3ecogroup.com

Date: 7 February 2013

**To: Mr. Steven Petersson MCIP, RPP
Development Planner
District of North Vancouver, 355 West Queens North Vancouver**
**Re: Edgemont Senior Living to meet District of North Vancouver's
Green Building Requirements**

Mr. Petersson;

Edgemont Senior Living Inc. has retained E3 Eco Group consultants to help ensure the Edgemont Senior Living development meets the District of North Vancouver's green building requirements.

Edgemont Senior Living Inc. intends to meet the requirements by:

- 1) achieving at least 100 points on the Built Green High Density Checklist (attached) which is equivalent to a Built Green HD "Gold" rating, and
- 2) building to an energy performance level at least 35% better than the 1997 MNECB

E3 Eco Group intends to provide both considerable experience in working with the Built Green program as well as documentation services which will provide verification that the Checklist items were implemented.

We look forward to being involved in this project.

Please address any questions to the undersigned.

Kind Regards,

Einar Halbig
CEO, E3 Eco Group Inc.

Attachment: Preliminary Built Green HD Checklist

Cc: Mr. John Kuharchuk, Edgemont Senior Living Inc.



BUILT GREEN® High Density (HD) Project Checklist

Items selected must be applied to every unit, except where noted otherwise (i.e.: central systems).

Section 1: 33 Section 2: 12 Section 3: 9 Section 4: 23 Section 5: 13 Section 6: 7 Section 7: 10 TOTAL POINTS: 107

Builder Name: Edgemont Senior Living Inc.

House Address:

I. OPERATIONAL SYSTEMS

This section awards points for construction methods and types of products that contribute toward lower energy consumption and/or renewable heating and electrical systems.

Minimum 32 (UNDER REVIEW)

1-1	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 additions to the system should be sized and designed to deliver the correct airflow to each room.	3	3
1-2	Install individual unit programmable thermostats capable of starting and stopping the system for at least 2 different daily schedules per week (2 pts. total for all units). A set back thermostat regulates the heating/cooling system to provide optimum comfort when the unit is occupied and to conserve energy when it is not. Builders are encouraged to install a central override system to ensure adequate temperatures for building durability (reference minimum temperatures recommended by CMHC).		2
1-3	Install high efficiency heating systems for all units and/or systems serving common areas (min. 90% AFUE gas furnace, min. 85% AFUE oil furnace, or min. 85% AFUE oil/gas boiler). High efficiency condensing furnaces and boilers reduce energy consumption and consequently fossil fuel reliance.	3	3
1-4	Calculate design heat loss and properly size HVAC equipment using CSA F280-M90 or ASHRAE/ACCA Standard 183, and/or implement a boiler management system to match the system operation to building loads and optimize controls for maximum energy savings. A properly sized heating and cooling system can reduce costs as well as conserve energy. When properly sized, HVAC equipment will run for longer periods which increases the efficiency and durability of the equipment due to less cycling on and off.	2	2
1-5a (new)	Install high efficiency cooling systems for all units and/or systems serving common areas (min. 14 SEER central A/C, or min. ENERGY STAR® window A/C). High efficiency A/C units reduce electricity consumption and associated pollution.		1
1-5	Centrally locate HVAC systems inside the building's heated envelope and reduce duct length. Roof top units are poorly insulated and waste heat is lost to the environment rather than added to the building. High efficiency heating systems with shorter distribution distances require less energy.		1
1-6	Install HVAC systems with variable speed motors (ECM). A variable speed fan motor is designed to vary its speed based on the building's heating and air conditioning requirements. Working in conjunction with the thermostat, it keeps the appropriate air temperature circulating through the building, 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
1-7	Units contain multiple heating/cooling zones, thermostatically controlled zones (2 zones = 2pts., 3 zones = 3pts., 4 zones = 4pts.). 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	2 to 4
1-8	Install ground/water/solar heat pumps (10) or air-source heat pumps (7), either radiant or forced air, to supply majority of space heating and cooling loads. 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: Effectiveness of heat pumps is related to climate zone and energy costs. Please consult with specialist or engineer to confirm effectiveness.		10
1-9	Provide electricity (1 pt.) and/or natural gas (1 pt.) direct metering for each unit. Direct metering in a Multi Context may require significant additional expenses above and beyond prorated condominium energy fees and holds individuals responsible for energy use.		1 to 2
1-10	Install and balance an individually controlled active Heat Recovery Ventilator (HRV) and/or solar/geo fresh air pre-heating for each unit (4 pts.) and/or common area (2 pts.) and/or buildings exhaust air (3 pts.) HRVs exhaust return air out of the home while bringing in fresh air for ventilation. The process used to do this takes advantage of the heat in the exhaust air to preheat the incoming air, saving energy.		2 to 9
1-13	Install a district high efficiency domestic hot water heating system, with min. 85% AFUE boiler, or min. 0.67 EF gas storage water heater (3 pts.). Alternatively install an instantaneous "tankless" domestic hot water system in each unit (3 pts.). Hot water heater is direct vented with a closed combustion system, i.e. all air for combustion is taken directly from the outside. A direct system utilizes a co-axial vent pipe (pipe inside a pipe), drawing combustion air in through the outer pipe and exhausting 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. 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.		3
1-13a	Install high efficiency pump drive motors for service water distribution with variable speed/flow capabilities.		1

(new)	Pumps with variable speed drive motors operative more efficiently and help reduce electricity consumption.		
1-14	Hot water storage tanks insulated by manufacturer to a minimum R-15. An insulation blanket will reduce the standby heat loss of the hot water in the tank.	2	2
1-15	Install solar/air/water/geo (solar fraction >50%) DHW Heating System to supply a minimum of 25% of the peak DHW heating load and 70% of the total DHW energy load. A substantial amount of energy is wasted heating water in a traditional gas system. Using renewable sources will reduce the consumption of non-renewable energy and also reduce green house gas emissions.		2
1-16	Provide roof area (min. 10% area of total) designed for future solar collector (Make solar ready; with solar thermal or PV conduit installed). A roof area with an appropriate slope allows for the effective addition of future solar air, water heating or photovoltaics.	1	1
1-17	Install urban wind/photovoltaic electrical generation system which supplies (10%-2 pts., 20%-4 pts., 50%-8 pts., 100%-10 pts.) of design electrical load for the private area(s) of the building. This does not include electric heat. Urban wind and photovoltaics use renewable energy to generate electricity for the home, greatly reducing reliance on non-renewable energy sources and also reducing green house gas emissions.		2 to 10
1-18	Install photovoltaic electrical generation system which supplies 50% (1 pt.) or 100% (2 pts.) of electrical needs for the common areas. This does not include electric heat. Photovoltaics use the sun's energy to generate electricity for the home, greatly reducing reliance on non-renewable energy sources and also reducing green house gas emissions.		1 or 2
1-19	50% (2 pts.) or 100% (4 pts.) of electricity used during construction of the project is generated by wind power or equivalent green power certificate. This practice encourages and promotes the use of renewable, sustainable energy resources as well as reducing green house gas emissions.		2 or 4
1-20	50% (2 pts.) or 100% (4 pts.) of electricity used by building during first year of occupancy is generated by wind power or equivalent green power certificate (prepaid by builder). This practice encourages and promotes the use of renewable, sustainable energy resources as well as reducing green house gas emissions.		2 or 4
1-21	Install a central drain water heat recovery, with a minimum of 1 DWHR unit installed per 4 apartments (2 pt.) or per 2 apartments (3 pts.). Drain water heat recovery units enable an exchange of heat from greywater to the incoming water. This pre-heating reduces the amount of energy required for the hot water tank.		1 to 3
1-22	Fireplaces in all units are electric, or gas with sealed combustion and electronic ignition. Sealed combustion fireplaces involve a double-walled special vent supplied by the manufacturer that normally vents through a sidewall in a horizontal position. The inner surface removes the flue gases and the outer container provides for passage of combustion air.		2
1-23	Install fireplace fan kit to circulate warm air into room on all fireplaces. A fan kit allows the heat generated by a fireplace to be transferred into the home more effectively.		2
1-24	All windows in the project are ENERGY STAR® labeled. 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	2
1-25	All Electric ranges use below 480 kWh/yr based on EnerGuide rating system. EnerGuide label often reduces fuel consumption by approximately 20%.		1
1-26	Refrigerators(1 pt.), dishwashers (1 pt.), clothes washers (1 pt.) and/or combo washer dryer (2 pts.) are all ENERGY STAR® labeled products. An ENERGY STAR label for refrigerator indicates the product has met strict requirements to reduce energy consumption.	4	1 to 4
1-27	All clothes dryers have an energy performance auto sense dry setting which utilizes a humidity sensor for energy efficiency. Sensor saves energy by shutting dryer off when clothes are dry rather than leaving it on for a specified time.	1	1
1-27a	Install ENERGY STAR® labeled bathroom exhaust fans for each unit	1	1
(new)	An ENERGY STAR label for a bathroom exhaust fan indicates the product has met strict requirements to reduce energy consumption.		
1-28	Other building appliances supplied at the time of sale (i.e.. TV, LCDs, security systems) are energy efficient/ENERGY STAR® rated. An ENERGY STAR label indicates the product has met strict requirements to reduce energy consumption.		1
1-29	Exposed Exterior Accessibility Ramps heated with renewable energy or waste heat. This practice encourages and promotes the use of renewable, sustainable energy resources as well as reducing green house gas emissions.		2
1-30	Install properly supported ceiling fan wired rough-in for each unit. Intended to allow for future temperature equalization .	1	1
1-31	Install interior motion sensor light switches in over 25% (1 pt.), 50% (2 pts.) or 75% (3 pts.) of hallways/corridors and stairwells. Motion sensor switches prevent lights from staying on in rooms that are unoccupied. This helps reduce electricity consumption.	1	1 to 3
1-32	Install lighting with an automation control system capable of unified automation control of lighting loads for all common areas. Lighting and automation control systems prevent lights from staying on in rooms without occupants, thereby reducing electricity consumption.	2	2
1-33	Install automatic lighting system (2 pts.) and/or ventilation system (2 pts.), which are triggered by movement or CO levels, for garages/ parkade. Automating will allow better control and energy efficiency.	2	2 to 4
1-34	Exterior Lighting follows IESNA illuminance requirements for recommended practice manual: Lighting for Exterior Environments.		2

This addresses light pollution issues. The Illuminating Engineering Society of North America can be found online at: iesna.org and the "Lighting for Exterior Environments" guide (IESNA RP-33-99) can be purchased there.

1-35	Common Area lit with high efficiency (non-incandescent) lamps. Incandescent lights lose much of their energy as heat rather than light and therefore are not as energy efficient as many of the other options available.	1	1
1-36	Minimum 25% (1 pt.), 50% (2 pts.) or 100% (4 pts.) of light fixtures are L.E.D., fluorescent or have compact fluorescent light bulbs installed in each unit. Fluorescent, compact fluorescent and L.E.D bulbs use 50% less energy than standard bulbs and last up to ten times longer.	1	1, 2 or 4
1-37	Minimum 50% of recessed lights in the entire building use halogen bulbs. Halogen bulbs are slightly more energy efficient, last longer and provide a more effective task light than conventional bulbs.	1	1
1-38	All EXIT signs are photo luminescent or LED. Photo luminescent exit signs use no power as the light is supplied by a phosphorous chemical that absorbs light until needed and then emits it.	2	2
1-39	Air tight, insulation contact-rated recessed lights are used in all insulated ceilings, or insulated ceilings have no recessed lights. Prevent heated air from exhausting through ceiling. Air tight light fixtures lead to a more airtight, energy efficient home.	1	1
TOTAL SECTION POINTS (min. 32 required):		33	

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 sustainable managed forests and reducing the overall amount of lumber used.

Minimum 10 (UNDER REVIEW)

2-1	Insulated Concrete Forming system (ICF's) used below grade (2 pts.) and/or above grade (2 pts.). Insulating Concrete Forms (ICFs) are hollow building elements made of plastic foam that are assembled, often like building blocks, into the shape of a building's exterior walls. The ICFs are filled with reinforced concrete to create structural walls. Unlike traditional forms, the ICFs are left in place to provide insulation and a surface for finishes.		2 to 4
2-2	Minimum of R-7.5 insulation installed under entire basement/foundation slab under conditioned space. 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
2-3	Attached garage, parking and/or loading dock overhead doors are insulated with R8 to R12 (1 pt.) or greater than R12 (2 pts.). An insulated overhead garage door will reduce heat loss.		1 or 2
2-4	Attached garage/parking walls and ceiling are insulated to NBC minimum (R12 for walls, R34 for ceilings). A fully insulated garage acts as a buffer zone, reducing heat loss.		1
2-5	Non-solvent based damp proofing (seasonal application). Water based damp proofing products use water as a thinner. Oil based damp proofing give off a number of volatile organic compounds (VOCs) as the solvent evaporates after application. These VOCs can be a strong irritant and can add to air pollution.		1
2-6	Paint Parkade semi gloss white to reduce number of required lighting fixtures. Using high reflectance white paint allows for fewer lights to be used in the parkade area.	1	1
2-7	Steel studs made from a recycled steel (min. 75%) are used to replace wood studs (min.15%). Recycling steel reduces landfill waste and saves on wood consumption.		1
2-8	Use Optimum Value Engineering (OVE) to reduce wood use in framing: - Exterior and interior wall stud spacing at 24" on-center (2 points) or 19.2" on-center (1 pt.). - Elimination of headers at non-bearing interior and exterior walls. (1 pt.) - Use of header hangers instead of jack studs. (1 pt.) - Elimination of cripples on hung windows. (1 pt.) - Elimination of double plates, use single plates with connectors by lining up roof framing with wall & floor framing (1 pt.) - Use of two stud corner framing with drywall clips or scrap lumber for drywall backing instead of studs. (1 pt.) For more details on Optimum Value Engineering (OVE) framing principles see www.buildingscience.com .		1 to 7
2-9	Walls and roof designed as 24" module to reduce waste. A 24" module takes into account the size of sheets of OSB or plywood, stud spacing, carpet size etc.		2
2-10	Use of insulated headers (either manufactured or site built open insulated single headers) with minimum insulation value of R10. Headers can either be insulated on site or can be a pre-manufactured product (often insulated with a foamed plastic).	1	1
2-11	Install manufactured insulated rim/band joist or build on site by setting back joists to allow rigid insulation filler of a minimum R10. Rim and band joists can either be insulated on site or can be pre-manufactured (often insulated with a foamed plastic).	2	2
2-12	Structural insulated panel system (SIPS) used for walls (3 pts.) and/or for roofs (2 pts.). Reduces thermal migration and controls air leakage – Keeps heating and cooling costs to a minimum compared to a conventionally framed wall.		2 to 5
2-13	All insulation used in the project is third-party certified to contain a minimum recycled content: 40% (1 pt.) or 50% (2 pts.).	2	1 or 2

Recycled content means less landfill waste and raw material use. Also, according the North American Insulation Manufacturer's Association, insulation with recycled content takes less energy to produce than using all raw materials.

2-14	Insulation levels meet or exceed the MNECB (may include Roof-R28, Walls R14, Floor R14).	1	1
Model New Energy Code minimums will help to keep heating and cooling costs to a minimum compared to a conventionally framed wall.			
2-15	Replace exterior wood sheathing with installed insulating sheathing. Using rigid insulation instead of wood for exterior sheathing conserves forest resources, reduces thermal migration and controls air leakage; it also keeps heating and cooling costs to a minimum compared to a conventional wall.		2
2-16	Deck (1pt.), balcony surfaces (1pt.), and/or veranda structure (1 pt.) made from a third-party certified sustainable harvested wood source or third-party certified sustainable concrete. The issue of sustainable forest management (SFM) is considered to be of such importance by the Canadian forest industry that, in 1993, a group of 22 organizations representing virtually all of the industry came together to form the Canadian Sustainable Forestry Certification Coalition. The coalition regroups several different certification standards that each have their strengths and weaknesses. For more information, see www.sfms.com . Concrete produced from aggregates derived from a pit or quarry with a valid reclamation plan approved by Materials and Resources Canada or the governing provincial body.		1 to 3
2-17	Dimensional lumber from a third-party certified sustainable harvested source used for floor framing (1 pt.), wall framing (2 pts.), and/or roof framing (1 pt.). Saves old growth forests by using trees from a second generation forest.		1 to 4
2-18	Environmentally engineered flooring system (i.e.. Uses reclaimed/recycled/rapidly renewable wood waste, fly ash concrete (1pt-30%), recycled steel (1pt-90%)). Use of Engineered floor system saves old growth forest by using components from second generation forests and the use of recycled materials.		1
2-19	Environmentally engineered products for all load bearing beams (i.e.. Uses reclaimed/recycled/rapidly renewable wood waste, fly ash concrete (30%), recycled steel (90%)). Engineered products include wood products, concrete and recycled steel.		2
2-20	Environmentally engineered products for all exterior window and door headers (i.e.. Uses reclaimed/recycled/rapidly renewable wood waste, fly ash concrete (30%), recycled steel (90%)). Engineered products include wood products, concrete and recycled steel.		1
2-21	Engineered stud material for 10% of stud wall framing. Use of Engineered lumber products saves old growth forest by using components from second generation forests and recycled materials.		1
2-22	Engineered and/or finger-jointed plate material. Use of recycled materials saves old growth forest.		1
2-23	Finger-jointed studs for 90% of non-structural stud wall framing. Use of recycled materials saves old growth forest.	2	2
2-25	Recycled content exterior wall sheathing (min. 50% pre or post consumer). Recycled content reduces landfill waste and the use of new materials.		2
2-27	100% Recycled content rainscreen attachment system. Use of recycled content polypropylene, steel or aluminum rainscreen strapping may replace the traditional use of treated wood strapping on rainscreen systems.		2
2-28	Advanced sealing package, non-HCFC expanding foam around window, door openings and all exterior wall penetrations (2 pts.). All sill plates sealed with foam gaskets or a continuous bead of acoustical sealant (1 pt.). Controls air leakage and keeps heating and cooling costs to a minimum.	3	1 to 3
2-29	Builder has installed a green roof over 50% (3 pts.), 75% (5 pts.) or 100% of total roof area (7 pts.). Green roofs are defined as a system of plants, growing medium and roof/waterproof membrane that acts as a whole to maximize the available environmental benefits of improving air temperature (reduced heat island effect), air pollution, storm water management and green space. Extensive or 2-6" Thickness typically requires 30-40 lbs./ft ² structural support, while Intensive roofs (8"-4') require significant structural support.		3, 5 or 7
2-30	Builder has incorporated exterior horizontal and/or vertical shading devices for glazing (2 pts.), or exterior operational shading devices (4 pts.). Shading windows from solar heat gain is a key design strategy for passive cooling and to reduce cooling loads on active HVAC systems in multi buildings. Light shelves and/or louvers can be optimized to allow for winter solar gain, while reducing overheating during the summer.		2 or 4
2-31	All decks or balconies are thermally broken from the envelope by R10 (1 pt.), or fully separated (3 pts.).		1 or 3
TOTAL SECTION POINTS (min. 10 required):		12	

III. EXTERIOR and INTERIOR FINISHES

This section focuses on the finish materials used both inside and outside of the project. The items listed include using longer lasting products, products with recycled content and products that are harvested from third party certified managed forests.

Minimum 10 (UNDER REVIEW)

3-1	Exterior doors with a minimum of 15% recycled, recovered, or third party sustainably harvested content. Recycled or recovered content ensures we keep our landfill use to a minimum.		1
3-2	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	1

3-3	Exterior window frames contain a minimum of 10% recycled, recovered, or third party sustainably harvested content. Reusing materials such as plastics reduces landfill usage, which may not be biodegradable.		1
3-4	Exterior window frames are made from third-party certified sustainable harvested wood. Uses trees from a forest managed system that prevents clear cutting trees, and replants trees to replace from which they've been harvested.		2
3-5	Concrete used in home has a minimum supplementary cementing material of 25% (1 pt.) and/or 40% (2 pts.) and is within the scope of proper engineering practices. For every one tonne of Portland cement generated, eighth tenths of a ton of carbon dioxide is produced. Supplementary cementitious products include fly ash, blast furnace slag as well as metakaolin.		1 to 2
3-6	Natural cementitious stone/stucco/brick or fiber cement siding – complete or combination thereof for 100% of exterior cladding. Battens are included in cladding. Strong, long lasting, fireproof material.		4
3-7	Exterior trim and finish is made of recycled content (50% min.) material, durable and fire rated; trim (1 pt.) and/or wall finish (4 pts.). Fiber cement fascia and soffit, made with recycled content from sawmill waste and Portland cement, is a strong, long lasting and fireproof material.		1 to 5
3-8	Exterior trim (3 pts.) and /or siding materials (4 pts.) have recycled and/or recovered-content (min. 50%). Recycled and/or recovered-content trim materials reduce the amount of new material used in production by gluing up miss scraps into large pieces, which conserves natural resources and reduces landfill usage.		3 to 4
3-9	Exterior trim materials are manufactured from OSB . 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 forest managed systems that prevents clear cutting trees, and replants trees in areas from which they have been harvested.		1
3-10	All exterior trim is clad with pre-finished metal (1 pt. over top wood backings, 2 pts. without wood backings). Trim clad with pre-finished metal is a durable long lasting product that requires no maintenance, reduces waste in landfills due to long life of product.		1 to 2
3-11	Deck or balcony surfaces made from recycled materials: 50% (1 pt.), 75% (2 pts.), 100% (3 pts.), and/or from low maintenance materials (2 pts.) (Deck surfaces should not need maintenance of any kind, including painting, for a minimum of 5 years). Substituting recycled material outdoors avoids the use of pressure treated and high mildew resistant wood that may otherwise be harvested from disappearing old growth or rain forests. Material which lasts longer and reduces landfill usage tends to require little to no maintenance, saving replacement costs and reducing energy spent.	2	1,2,3 or 5
3-12	Install 25-year (2 pts.), 30-year (3 pts.), 35-year (4 pts.), 40-year (5 pts.), or 50-year (6 pts.) roofing material -- with manufacturer's warranty. A longer warrantied roof system saves money in replacement costs, and reduces the use of landfills due to the longevity of the product.	3	2, 3, 4, 5 or 6
3-13	Minimum 25% recycled-content roofing material. Recycled content roof material reduces the use of new resources, and waste in landfills.		3
3-13a (new)	Use roofing material with a high solar reflectance index (SRI) of ≥78 (for roof slopes ≤ 2:12), or ≥29 (for roof slopes > 2:12). Roofs with a high solar reflectance help cool the building during the summer by reducing the heat island effect.	1	1
3-14	Interior doors made with recycled or recovered content (min.15%-1 pt.), or from third-party certified sustainably harvested sources (2 pts.). Recycled or recovered content ensures we keep our landfill use to a minimum.		1 to 2
3-16	Domestic wood from reused/recovered or re-milled sources – 500 square foot minimum for flooring or all cabinets or all millwork. Reused, recovered or re-milled sources eliminate the need for new resources, saves energy, transportation costs, and forestry from depletion.		6
3-17	All carpet padding made from natural or recycled textile, or tire waste. Natural or recycled-content carpet padding is a good use of reusable resources. Rebond still qualifies.		2
3-18	Install carpet that has a minimum of 50% recycled content. Recycled-content carpet is a good use of renewable resources, lessens off gases, and improves air quality.		2
3-19	100% recycled or recovered content underlayment or use of concrete finishes to enable the flooring to remain concrete. Concrete finishes such as stamped or stained concrete etc.	1	1
3-20	Install a minimum of 300 square feet per unit of laminate flooring. Laminate flooring is made up of sustainable raw materials.		2
3-21	Bamboo, cork or hardwood flooring used in the project (min. 300 square feet per unit installed). Products must be third-party certified to be from managed forests or from certified sustainable sources. Cork flooring comes from stripping the bark off cork oak, which regenerates itself. The cork tiles are moisture, rot and mold 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.		3
3-22	All ceramic tile installed in the project has a minimum of 25% recycled-content. Reduces landfill usage.		2
3-23	MDF casing and baseboard used throughout the project. MDF casing is created from sawdust and glues, utilizing all wood waste to create usable product.	1	1
3-24	Finger-jointed casings, baseboards and jambs used throughout the project.		1

Finger-jointed casing and baseboards maximize wood usage, buy using small pieces of wood glued together to create longer pieces. The process saves old growth forests by using trees from forest managed systems that prevents clear cutting trees, and replants trees in areas from which they have been harvested.

3-25	Solid hardwood trim from third party certified sustainable harvested sources approved for millwork (2 pts.) and/or cabinets (2 pts.). This process saves old growth forests by using trees from forest managed systems that prevents clear cutting trees, and replants trees in areas from which they have been harvested.		2 to 4
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.		1
3-27	Natural granite, concrete, recycled glass or stone countertops in 100% of the kitchens (2 pts.) and all other countertop areas (1 pt.). Natural product is more durable; easy to clean and maintain and is resistant to heat and scoring.		1 to 3
3-28	100% agricultural waste or 100% recycled wood particle board used for shelving. Products such as wheat board are made from agricultural waste.		2
3-29	PVD finish on all door hardware (1 pt.) PVD finish on all faucets (1 pt.). Physical Vapor Deposition (PVD) provides a more durable product; no toxic wastes are produced making it.		1 to 2
TOTAL SECTION POINTS (min. 10 required):			9

IV. INDOOR AIR QUALITY

This section focuses on the quality of the air within the finished project. 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 (UNDER REVIEW)

4-1	Install pleated media filter (1 pt.) or an electrostatic air cleaner (2 pts.) or an electronic air cleaner (3 pts.) or a HEPA filtration system (6 pts.) or an ultraviolet air purifier (2 pts.) in conjunction with the HVAC system. Pleated air filters are made with material that has been pleated or folded to provide more surface area. These pleated air filters are often the most efficient of all the media air filter types and are a whole house air filter. By increasing the surface area for collecting dust, airflow through the pleated air filter is less restricted. The electrostatic air cleaner is a permanent washable air filter that traps and removes airborne particles from the air before being circulated through the furnace and into the home. 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. 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		1,2, 3 or 6
4-2	Install power drum humidifier (1pt.) or a drip type humidifier (2 pts.) in conjunction with the HVAC system. Proper humidity provides a more comfortable living environment at a lower temperature, so you can turn down your thermostat for energy savings. Controlling humidity also means moisturizing dry air to prevent damage to hardwood floors and woodwork. Power drum humidifiers direct the heated air through a water-laden evaporator sleeve which absorbs moisture and then returns to the heating system for distribution throughout the home.		2
4-4	Install in-line ventilation fan with programmable timer (separate switch from lighting) in each unit. A programmable timer ensures necessary, regular, automatic mechanical ventilation of the housing units.		1
4-5	Install passive Heat Recovery Ventilator (HRV-2 pts.) or an active Heat Recovery Ventilator/ Energy Recovery Ventilator (HRV or ERV- 4pts.) in each unit . A Heat Recovery Ventilator (HRV) is an air exchanger that exhausts humid, stale, polluted air out of the housing unit and draws in fresh, clean outdoor air. 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 home's 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 housing unit and at the same time fresh air enters from outside through the unit and into the cold air return duct work. Much like the HRV the ERV recovers heat. it also recuperates the energy trapped in moisture; this 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 housing unit.		2 to 4
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.		1
4-6 a (new)	Install bathroom exhaust fan controls in each unit using either an occupancy sensor, automatic humidistat controller, automatic timer, or continuously operating exhaust fan. Bathroom exhaust fan controls increase occupant comfort by further controlling indoor moisture and odour levels.	1	1
4-6 b (new)	Install timer switches or occupancy sensors on all local exhaust fans outside of individual units (i.e. laundry, recreation, storage areas, etc.). Operating of local exhaust fans only when necessary using controls helps reduce heat loss of interior air to outside, and also reduces electrical consumption by reducing duration of fan operation.	1	1
4-6 c (new)	For indoor pool areas, install a designated dehumidification system designed by a consulting engineer or qualified contractor to match the water and air temperatures maintained in the area. Dehumidification systems serving pool areas eliminate the need to exhaust large quantities of indoor air, therefore reducing heat loss.		1
4-6 d (new)	For all permanent entryways leading from outdoors, install an entryway system of at least 10 feet in length to captures dirt and particulates (i.e. grates/grills/slotted systems, or roll-out mats that are maintained weekly by a service organization). Entryway systems that capture dirt and particulates from outdoors help reduce occupants exposure to indoor airborne contaminants		2

4-7	All combustion space and water heating equipment located within building are sealed with no possibility of backdraft. Sealed-combustion appliances draw all their combustion air from the outdoors, which eliminates any chance of back drafting. This feature is especially helpful in well sealed buildings. These types of appliances do not negatively affect indoor air quality.	3	3
4-8	Install hardwired carbon monoxide detector within each unit, if combustion spillage susceptible appliances are used in the building. Carbon monoxide detectors warn against high levels of toxic carbon monoxide.		1
4-9	Seal all permanent ductwork upon installation, removing seals once all phases of construction are complete (1 pt.), and/or power vacuum all HVAC ducting prior to occupancy (1 pt.). This process helps eliminate pollutants that drop into the HVAC ducting during the construction process from being circulated into the housing unit.	1	2
4-9 a (new)	Flush out each unit with fresh air for at least 48 hours after all construction phases and prior to occupancy by opening all exterior windows and interior doors and running ventilation system. Flushing out units with fresh air after construction helps reduce occupants' exposure to indoor airborne contaminants from dust, VOCs and other particulates that have accumulated during construction	2	2
4-11	All insulation in the project is third-party certified as low or zero formaldehyde. Formaldehyde may cause eye, nose, and throat irritation, headaches, loss of coordination, nausea, damage to liver, kidney, and central nervous system .	2	2
4-12	Third-party certified low formaldehyde sub floor sheathing. Formaldehyde is colorless gaseous organic compound, water soluble, with a characteristic pungent and stifling smell. Building materials low in or free of formaldehyde glues are used in the floor underlayment, cabinetry and elsewhere to protect the indoor air quality.	3	3
4-13	Third-party certified low formaldehyde underlayment is used in the project. (ANSI A208.1 – 2009 concentration ≤0.21 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.		1
4-14	Low formaldehyde particle board/MDF used for cabinets (ANSI A208.2 – 2009 concentration ≤ 0.21 ppm). Urea formaldehyde-free fibreboard can be used in the same way as conventional fibreboard, but with the added caution of greater potential for water damage.	1	1
4-15	Low formaldehyde particle board/MDF used for shelving (ANSI A208.2 – 2009 concentration ≤ 0.21 ppm).	1	1
4-16	Zero formaldehyde particle board/MDF used for cabinets (2 pts.) and/or for shelving (2 pts.). Cabinets made from formaldehyde free particleboard or MDF eliminate the Volatile Organic Compounds (VOC) that off gas into the home, resulting in healthier indoor air quality.		2 to 4
4-17	All interior wire shelving is factory powder coated. Vinyl coating on conventional shelving units off gas VOC toxins.		2
4-18	Water-based urethane finishes used on all site-finished wood floors. Water-Based Epoxy: Generally referred to as "epoxy-modified finish," water-based epoxy finish differs from its solvent-based counterpart in that the epoxy resin is itself the catalyst for an acrylic or urethane resin.		2
4-19	All wood or laminate flooring in the project is factory finished. Installing a pre-finished floor eliminates the time, the dust and the odors associated with the on-site sanding and finishing of an unfinished product.	2	2
4-20	Water-based Lacquer or paints are used on all site built and installed millwork, including doors, casing and baseboards. Water based interior finish products reduces VOC off-gassing which improves indoor air quality.	3	3
4-21	Interior paints are used that have low VOC content (2 pts.--Standards are < 150 grams/liter of VOCs) and/or interior paint is used that has no VOC's in base paint--prior to tint (3 pts.). Volatile Organic Compounds (VOC) 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 building's indoor air quality and occupant health. Any paint with VOC's in the range of 5 grams/litre or less can be called "Zero VOC", according to an EPA standard. Some manufacturers may claim "Zero-VOC's", but these paints may still use colorants, biocides and fungicides with some VOC's. Adding a color tint usually brings the VOC level up to 10 grams/liter, which is still quite low.	2	2 to 5
4-22	Carpet and Rug Institute (CRI) IAQ label on all carpet used in units (2 pts.) and/or on all underlay used in units (1 pt.). To identify carpet products that are truly low-VOC, CRI has established a labeling program. The green and white logo displayed on carpet samples, of the CRI Indoor Air Quality Carpet Testing Program, 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. 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.		1 to 3
4-23	Natural wool 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.		2
4-24	All vinyl sheet flooring is installed with low VOC adhesives (1 pt.--Low VOC = standard is < 60 grams per litre), and/or is replaced by hard surface flooring (2pts.), and/or is replaced by natural linoleum (1pt.). Low VOC adhesive or backing minimizes the amount of VOC off-gassing, therefore improving IAQ.	1	1 to 4
4-26	All ceramic tiles are installed with low VOC adhesives and plasticizer-free grout. (Low VOC = standard is less than 65 grams per litre).		1

Most adhesives are still based on SB latex, which releases large quantities of volatile organic compounds (VOCs). The volatile solvents are used to emulsify (or liquefy) 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.

- 4-28

All carpet in units are replaced by hard surface flooring.

4
- Hard surface flooring is generally more durable and improves the IAQ 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 (min. 15 required): **23**

V. WASTE MANAGEMENT

This section deals with the handling of waste materials on the construction site and encourages recycling.
Minimum 7 (UNDER REVIEW)

- 5-1

Comprehensive recycling program for building site including education, site signage and bins.

2

2
- 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.
- 5-2

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.

4
- 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.
- 5-3

Suppliers and Trades recycle their own waste. (1 pt. per trade, max. 4 pts.).

3

1 to 4
- Trades being responsible for recycling and removal of waste not only reduces landfill waste, but also promotes a cleaner and safer working environment.
- 5-4

Minimum 25% (2 pts.) or 50% (4 pts.) by weight of waste materials collected from construction site is diverted from waste stream.

2

2 or 4
- Trades being responsible for recycling and removal of waste not only reduces landfill waste, but also promotes a cleaner and safer working environment.
- 5-5

Use of recycled materials derived from local construction sites (1 pt. for each different product used, max of 3 pts.).

1 to 3
- Products recycled from the construction site, such as mulched wood cut offs or mulched gypsum are often useable as either clay/ soil water retention additives or for organic burning.
- 5-6

Trees and natural features on site protected during construction.

1

1
- The protection of existing trees and other natural features such as streams, ponds and other vegetation reduces environmental impact, and ecosystem impact. Many of these features can be protected simply by following good waste management procedures.
- 5-7

Shared transportation benefits: provide one parking stall for a car-sharing vehicle (1 pt.), and/or a car sharing vehicle as one component of condominium association (3 pts.) and/or bicycle storage on site (1 pt.).

1

1 to 5
- Providing a vehicle to share allows occupants to live without their own vehicle and using the shared vehicle when needed. Provision of covered storage facilities for securing bicycles on site encourages the use of alternative transportation.
- 5-8

Metal or engineered durable form systems used for concrete foundation walls.

1

1
- The use of metal forming systems reduces the requirement of lumber, a limited resource.
- 5-9

Reusable bracing is used for framing.

1
- The use of reusable bracing for framing reduces the requirement of lumber, a limited resource.
- 5-10

Install built-in recycling center with two or more bins in each unit (2 pts.) and/or provide composter to each unit (1 additional pt.).

2

2 to 3
- By installing built in recycling centers, which can be as simple as labeled containers (paper, cardboard, cans, plastics, etc.), Occupants are more likely to utilize the pre-existing facilities and thus contribute to the reduction in landfill waste. Providing a composter promotes a reduction in wastes heading to the landfill by giving occupants an option for organic waste such as food leftovers.
- 5-11

Provide a central recycling center for the housing project (1 pt.--min. of paper, glass and tin recycling) and/or install trash compactor for unit or building (1 pt.).

1

1 to 2
- Providing a recycling center will promote recycling among the occupants. Installing a trash compactor, while not actually reducing the mass of waste, does help by reducing it's volume, which over time can make a significant difference to landfill levels.

TOTAL SECTION POINTS (min. 7 required): **13**

VI. 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 (UNDER REVIEW)

- 6-1

CSA approved single flush toilet averaging 1.6 GPF or less installed in all bathrooms.

2
- Lower flow toilets can save a substantial amount of water over time.
- 6-2

Install a dual flush or 1.2 GPF toilet in one or more bathrooms in each unit (2 pts. for one bathroom, 3 pts. for all)

3

2 or 3
- These toilets offer a choice between two water levels for every flush; 1.6 GPF (6 LPF) or 0.8 GPF (3 LPF).
- 6-3

Install waterless urinals in men's public facilities.

1

The Average public urinal uses approximately 400 litres of water/day or 3.8- 10 litres per flush. Waterless urinals are more sanitary, reduce maintenance, installation costs and are only marginally more expensive to purchase.

6-4	Insulate the first three feet of the water lines on the hot water tank with flexible pipe insulation where units contain independent DHW system (1 pt.) and/or insulate all hot water lines to all locations (2 pts.).		1
	Minimizing the heat loss in the water line will decrease the initial water wasted by delivering hot water faster. Minimizing the heat loss in the water line will decrease the initial water wasted by delivering hot water faster.		
6-5	Install hot water recirculation line.		3
	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.		
6-6	Install low flow faucet aerators on all bathroom and kitchen sinks (1 pt.) and/or install hands free lavatory or kitchen faucets in each unit (4 pts.).	1	1 to 5
	Low flow faucets may be included if flow rate is a maximum of 3.8 L/ minute on bathroom sinks and/or 6.8 L/minute on kitchen sinks. Battery powered electronic sensor minimizes the spread of germs and saves water.		
6-7	Supply front loading clothes washer in each unit.		3
	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.		
6-8	Install water saving dishwasher that uses less than 26.0 L/water per load in each unit.		1
	Water saving dishwasher uses 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.		
6-9	Install permeable paving materials for driveways and walkways (min. 70% of hardscape area).		1
	Permeable paving materials allow rainwater to flow back into the ground instead of into storm sewers.		
6-9 a	Design all impermeable hardscape surfaces to direct rainwater to an on-site infiltration feature (i.e. vegetated swale, rain-garden, cistern, etc.)		1
(new)	Designing for on-site infiltration allows rainwater to flow back into the ground instead of into storm sewers.		
6-10	Install a water meter in every unit.		3
	Installing a water meter in each unit makes the occupants more aware or and responsible for water use.		
6-11	Install Efficient Irrigation Technology that has head-to-head coverage (1 pt.), a central shut-off valve (1 pt.), a sub meter (1 pt.), uses drip irrigation for at least 50% of planting bed area (1 pts.), has a pressure regulating device to reduce (1 pt.), high efficiency nozzles with a distribution uniformity of ≥ 0.7 (1pt.), and/or motion sensor/rain delay controller (1 pt.). Max. 3 points can be claimed.	1	1 to 3
	Water efficient irrigation systems that include sensors, regulators, micro drip feed systems etc. help reduce the demand on the municipal water system.		
6-12	Provide a list of drought tolerant plants and a copy of the local municipality water usage guide to building owner with closing package.	1	1
	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.		
6-13	Reduce lawn/turf to 50% of landscaped area.	1	1
	Lawns require a large amount of water to maintain. By reducing the amount of lawn, water use can also be reduced.		
6-14	Builder captures rainwater for use in atrium, patio garden feature, landscaping and/or indoor water use.		1
	Using rainwater helps with stormwater management, and also reduces demand on the municipal water system		
6-15	Greywater is collected, treated and reused throughout the project for landscaping and/or indoor water use.		5
	Reusing greywater helps reduce demand on the municipal water system		
TOTAL SECTION POINTS (min. 7 required):		7	

VII. BUSINESS PRATICE

This section deals more with manufacturers and builders office and business practices
Minimum 9 (UNDER REVIEW)

7-1	Products used for the project are manufactured within 800 km. (1 pt. for each product to a max. of 5 products).	5	1 to 5
	Products made closer to the location of use will have less embodied energy. Basically this means that the shorter the transportation distance the less energy used in moving the product. Less energy used means fewer emissions.		
7-2	Builder provides BUILT GREEN building owner manual and/or educational walkthrough and/or Green systems manual for building managers.	2	2
	Building owner education is an important component to any high performance building. If the technology is not used correctly, it will diminish the efficiency.		
7-3	Builders office and show homes purchase a minimum of 50% (1 pt.) up to 100% (2 pts.) solar, wind or renewable energy.		1 to 2
	Wind Energy is a cleaner way to provide energy. Lower emissions benefit the environment.		
7-4	Manufacturers and/or suppliers purchase 50% or more solar, wind or renewable electricity.		1
	Wind Energy is a cleaner way to provide energy. Lower emissions benefit the environment.		
7-5	Builder supplies a minimum of 8" of topsoil as finish grading throughout site.	2	2
	Compared to subsoil materials, topsoils usually have higher aggregate stability, lower bulk density, and more favourable pore size distributions which leads to higher hydraulic conductivity, water-holding capacity, and aeration porosity.		
7-6	Development site provides community amenity space for not for profit community services.		2

	Floor area made available to the City for not-for-profit community use. (i.e.. Assemblies, offices, educational facilities etc.).		
7-7	Development site provides for Publicly Accessible Private Space . i.e.. Atriums, open courtyards etc. which are part of the residential project but have links to/for public access.		1
7-8	Development includes a diversity of housing types including 20% live/work units (2pts.), 25% mixed use (2 pts.) facilities and/or 20% with separate basement suite units (2pts.) This type of development encourages neighborhoods where people can live, work, shop etc. without having to drive.		2 to 6
7-9	Builder has written environmental policy which defines their commitment (which must include an office recycling program and energy efficient lighting). A statement of commitment helps to emphasize priority and ultimately define a corporate culture.	1	1
7-10	Manufacturer and/or supplier has a written environmental policy which defines their commitment (this must include an office recycling program and energy efficient lighting). (1 pt. per supplier/manufacturer, max. of 2 pts.). Doing business with others committed to the environment helps to promote the ideals of being earth friendly.		1 to 2
7-11	Builder has written an environmental policy which prioritizes milestones for future net zero housing developments. The next step toward easing our reliance on non-renewable energy is net zero housing. Net zero houses produce as much energy as they consume using renewable sources such as solar, thermal, wind, geoexchange etc.		1
7-12	Make provision Truck Management Plan, to avoid high congestion areas during construction. A truck management plan would minimize the impact of trucks in the construction neighborhood. Features include scheduled arrivals/departures, reuse of materials to reduce truck traffic, communication with community and specific hours of work designated.		1
7-13	Delivery Area wheel washed/ treated during construction. Wheel wash area will cut down on dust pollution in the neighborhoods where construction is taking place.		1
7-14	Builder's company vehicles are hybrid or bio-diesel vehicles (1 pt. per vehicle to max. of 3 pts.). 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%.		1
7-15	Builder uses radiantly supplied cold weather construction practice. Propane heaters under tarps are often inefficient; this results in a great deal of wasted energy while reducing the quality of workmanship. Alternatives may include manufacturing components indoors.		1
7-16	Environmental certification for builder's place of business (building, office etc.). Many commercial buildings have been rated with various energy efficiency standards. Does your company work within an ENERGY STAR or LEED certified office building?		3
7-17	Builder agrees to construct and label a min. of 50% of all projects to the BUILT GREEN standard per calendar year. (3 pts. for 50% or 5 pts. for 100%). A commitment to the environment from the builder can expand energy efficiency exposure to a large number of home owners and other home builders. Every BUILT GREEN project that is built is a reduction in material use, a reduction of green house gas emissions, less waste and better efficiency.		3 or 5
7-18	Contracted trades and/or suppliers have successfully taken BUILT GREEN Builder Training. (1 pt. per company, max 3 pts.). Using trades or suppliers who have successfully taken Built Green Builder Training means that there is common understanding about what needs to be done and how it will be accomplished, streamlining the process.		1 to 3
TOTAL SECTION POINTS (min. 9 required):		10	
TOTAL CHECKLIST POINTS		107	

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Memo

April 16, 2013
File: 08.3060.20/005.13

TO: Steven Petersson, Development Planning

FROM: David Hawkins, Policy Planning

SUBJECT: Edgemont Senior Living Detailed Application

The following memo contains Policy Planning comments regarding the detailed application for an independent seniors' rental apartment building comprising 129 suites.

These comments relate to and refer back to previous Policy Planning input provided in response to the Preliminary Application for this site, in a memo dated August 8, 2012 (Document # 1904436).

1. Official Community Plan (OCP) Context:

The OCP context for this application has already been described. As this application precedes the adoption of a refreshed Edgemont Village plan, it is proceeding on the policy basis of the reference 1999 Local Area Plan's direction to "explore alternative forms of seniors' housing that bridge the gap between independent living and long term care [...] on suitable sites should they become available [...] such housing should be designed to blend into the existing neighbourhood character" is also made (Policy 4.2.2.2).

2. Update to Ongoing Planning:

The previous Policy Planning memo outlined ongoing community planning initiatives at that time, including developer-hosted public events and the output of the Edgemont and Upper Capilano Community Association's (EUCCA) Canfield Working Group.

Public Information Meeting

Since that time, in accordance with District policy the developer held a Public Information Meeting (March 13, 2013). Policy Planning staff were in attendance to observe a very high public turnout (approx.. 200 people), with the clear majority of those who spoke doing so in favour of the proposal. Development Planning have been receiving public input from this meeting and can more precisely determine the degree of support and/or concern regarding the application.

Canfield Working Group

The Canfield Working Group reconvened February 21, 2013 to meet with the applicant and project architect for a presentation of the Detailed Application, and then again by themselves on February 28, 2013 to debrief from this meeting. Staff note the continued willingness of the applicant team to make themselves available, and the continued dedication of the Working Group.

The Working Group have communicated their inability to reach a formal consensus on how to respond to the detailed application. Two reports have subsequently been issued by the Working Group for the consideration of the applicant, staff and local stakeholders. This is in contrast to the 'single report approach' prepared by the group in response to the Preliminary Application that was formally attached to the August 8, 2012 Policy Planning memo. This previous report had a measurable influence on the applicant's revisions for the Detailed Application (notably with respect to the provision of public space at the Highlands/Woodbine intersection) and on Policy Planning staff's approach to the Edgemont Village guidelines and plan 'refresh' which has now begun.

Regarding the submission of two reports, staff's understanding is that key areas of division within the group relate to project size (the degree to which the size of the proposal is of concern to the community), project timing (the level of comfort with the proposal preceding the village 'refresh'), and group mandate (the degree to which the Working Group can or should provide opinion and/or judgment on the proposal). Both reports are attached as Appendices to this memo.

Edgemont Village 'Refresh'

The process to 'refresh' the Design Guidelines and Plan for Edgemont Village began with a series of public ideas forums held February 16, 19 and 25, 2013. Events were exceptionally well-attended, with over 250 participants and a further 50+ written feedback submissions provided outside the events.

It is important to note that these launch events were designed as a vehicle for the public to begin to articulate their vision for the future of the village and the issues and opportunities to address to realize this vision. The events were not designed to provide a referendum opportunity on this or any other specific development proposal or site.

Preliminary findings from the 'refresh' launch that relate generally to this proposal indicate:

- There is interest in planning for all demographics and age groups (including seniors)
- There is recognition that the existing housing stock does not meet the needs of today's population
- There is interest in identifying new opportunities for multifamily residential units in single family neighbourhoods next or close to the village
- There is support for new developments integrating with the existing character in and around the village

- The Woodbine/Highland intersection is considered one of the village's entry gateways

As indicated, public input was provided at a village-wide, not site-specific level, and there is no basis to infer or extrapolate from the above findings that there is support (or not) for the current development proposal. Information is provided here merely as an update to the emerging policy context in the village.

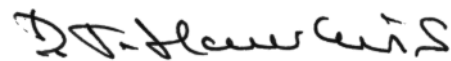
A Foundation Report outlining the planning and design principles to emerge from Phase 1 of the Edgemont refresh is currently being prepared. It will be used to structure the next round of community engagement in June 2013.

3. Overall Policy Planning Comments/Recommendations:

The process to refresh the design guidelines and plan for Edgemont Village is not sufficiently advanced to confirm new policy directions for the village. As such, the policy context remains the same as of time of writing the memo regarding the Preliminary Application (dated August 8, 2012, Document # 1904436). Development Planning are therefore referred back to this document.

Policy Planning will continue to provide Development Planning with updates regarding the refresh process as they arise.

David Hawkins, Policy Planner



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Edgemont Senior Living Development Transportation Study

Final Report

Prepared for
Edgemont Senior Living Inc.

Date
February 8, 2013

Prepared by
Bunt & Associates

Project No.
4888.01

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1. BACKGROUND

1.1 Proposed Development

Edgemont Senior Living Inc. is proposing to develop a seniors' independent supported living residence with 129 suites on a 1.558 acre site located adjacent to the Edgemont Village area of the District of North Vancouver. The development site is an assembly of six existing single family residential lots and bordered by Ayr Avenue to the west, Woodbine Drive to the southwest, Highland Boulevard to the southeast, and existing single family homes to the north. The western segment of Canfield Crescent between Highland Boulevard and Woodbine Drive bisects the site and the development proposal calls for its closure and removal.

The proposed development is a three storey building with one level of underground parking. The project is planned to be constructed in one phase and is anticipated to be completed by approximately 2014. This date may change based on approvals and construction timing, but for the purpose of this report, it was assumed that Opening Day for the development would take place at some time in 2014.

1.2 Study Purpose

The District of North Vancouver requires that a Transportation Study of the proposed development be undertaken to identify the following:

- Identify the volume of traffic likely to be generated by the proposed development and its impact to traffic operations on the area street network;
- Identify measures for the proposed development to reduce the reliance on automobile trips and promote alternative travel modes including walking, cycling, and transit;
- Ensure that the design of the driveway access, internal traffic circulation, parking, and loading areas (passenger loading as well as deliveries and garbage/waste collection) will be functionally efficient and safe with minimal impact to the adjacent street system.

1.3 Site Location & Study Area

The site is located immediately adjacent to Edgemont Village, with its commercial uses along Edgemont Boulevard through the study area to the west of the site, and otherwise predominantly single family homes to the north, south and east of the site. The study area is illustrated in **Figure 1**.

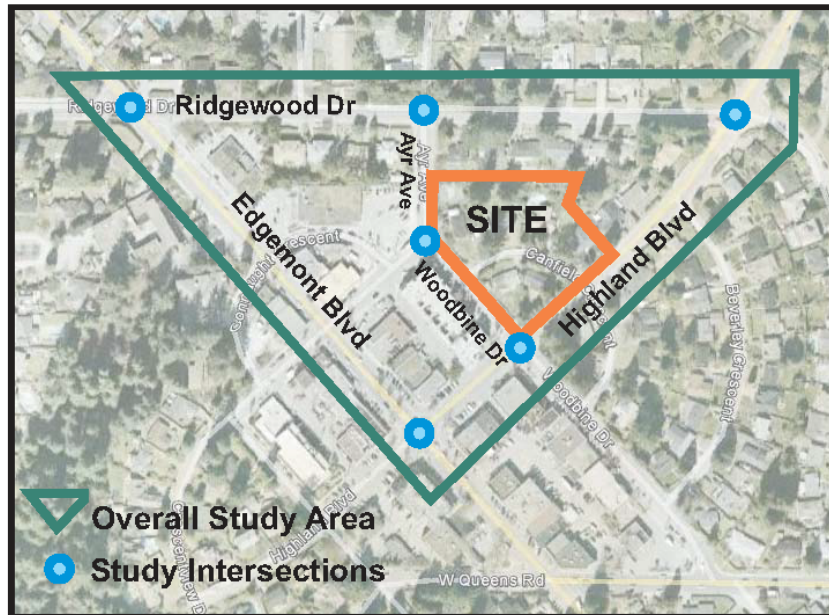


Figure 1 - Study Area

The study area intersections include:

- Ridgewood Drive & Edgemont Boulevard,
- Ridgewood Drive & Ayr Avenue,
- Ridgewood Drive & Highland Boulevard,
- Highland Boulevard & Woodbine Drive,
- Woodbine Drive & Ayr Avenue & Crescentview Drive,
- Highland Boulevard & Edgemont Boulevard, and
- Site access points on Woodbine Drive and Highland Boulevard.

All the study area intersections are currently unsignalized, and all the roads within the study area have two travel lanes (one in each direction), with the exception of right turn lanes at some legs of the Ridgewood & Edgemont and Ridgewood & Highland intersections. All roads within the study area, except Ridgewood Drive, have on-street parking on one or both sides. Edgemont Boulevard through the study area is designated a Major Arterial. Highland Boulevard through the study area is designated a Minor Arterial. Ridgewood Drive, Woodbine Drive, Ayr Avenue and Crescentview Drive through the study area are designated as Collector Roads.

2. EXISTING CONDITIONS

2.1 Data Collection & Existing Traffic Volumes

Bunt & Associates staff conducted traffic counts at the study area intersections on Thursday, September 27, 2012 and on Saturday, September 29, 2012. The counts captured all vehicles, pedestrians and cyclists at the study area intersections over the peak hour periods: Weekday PM from 3:00pm to 6:00pm, and Saturday afternoon from 1:00pm to 4:00pm.

The existing peak hour traffic volumes are illustrated in **Exhibit 2.1**. The existing peak hour pedestrian and cyclist volumes are illustrated in **Exhibit 2.2**.

2.2 Background 2014 Traffic Volumes

Through consultation with District staff, it was determined that little to no background growth in traffic volumes is anticipated along the roads through the study area. As such, the background 2014 volumes are essentially the existing traffic volumes, less the existing site traffic on Canfield Crescent generated by the current single family homes that will be redeveloped with the proposed seniors' residence.

The projected background 2014 traffic volumes are illustrated in **Exhibit 2.3**.

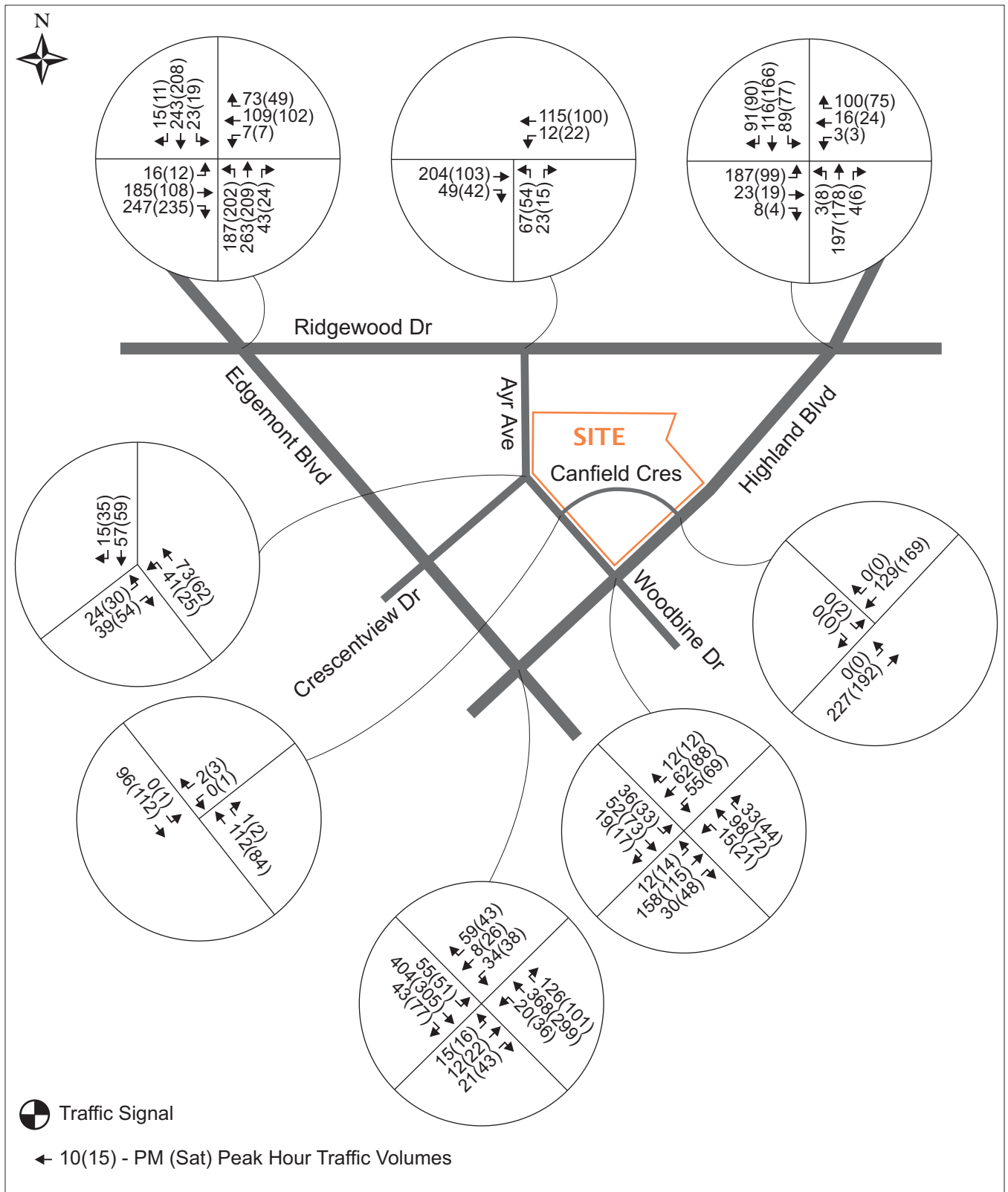


Exhibit 2.1
Existing 2012 Peak Hour Traffic Volumes

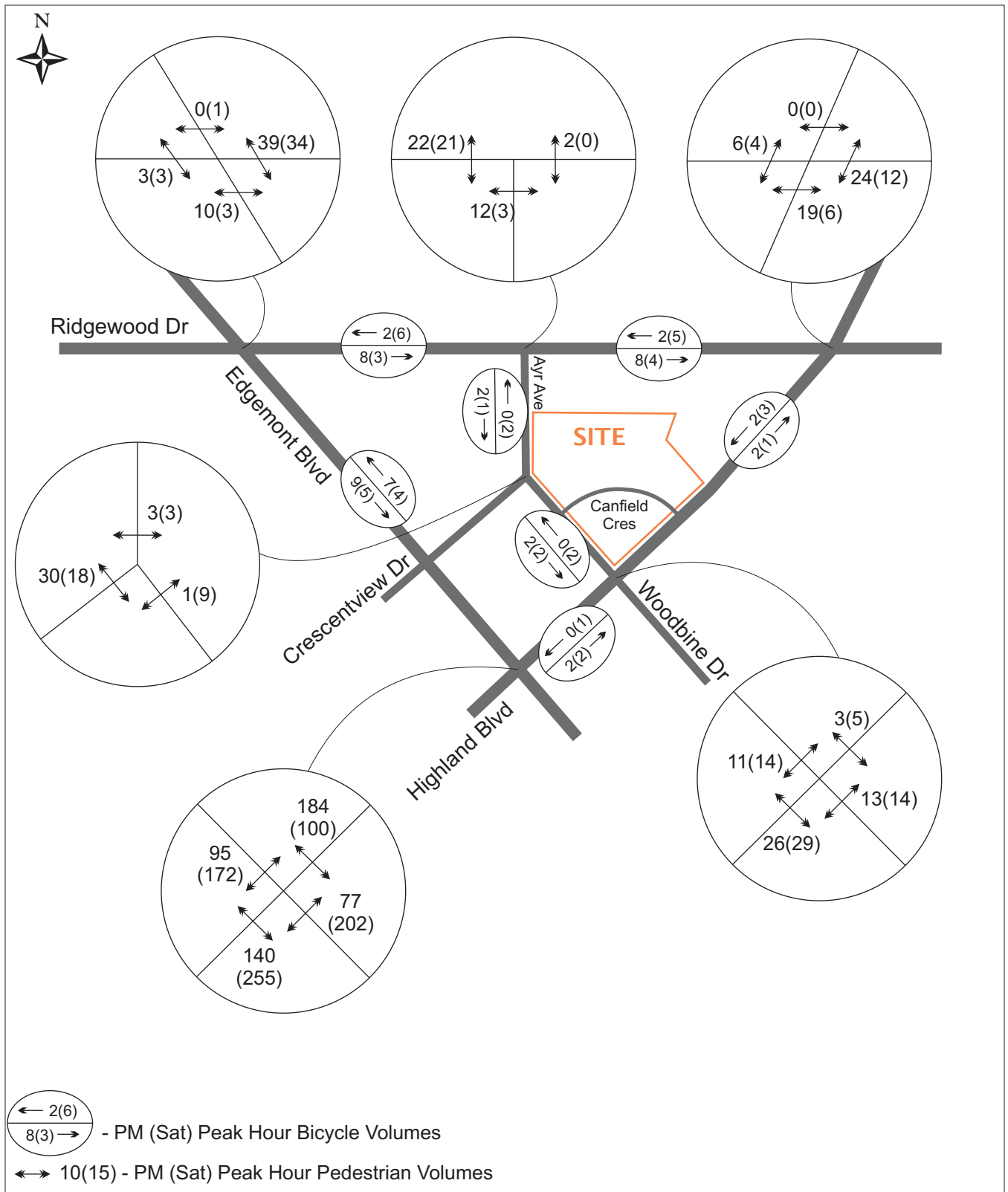


Exhibit 2.2 Existing 2012 Peak Hour Pedestrian & Cyclist Volumes

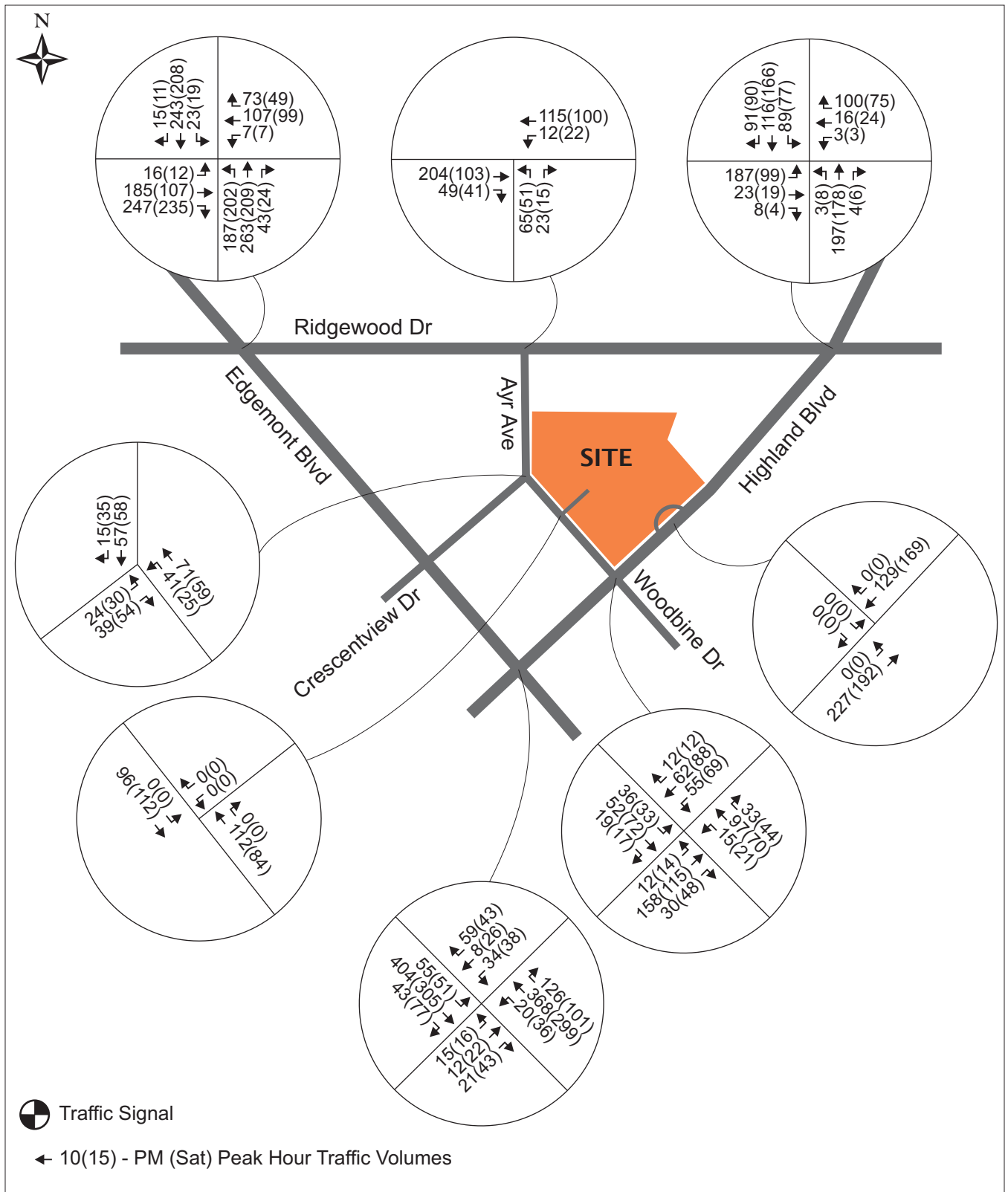


Exhibit 2.3
Estimated Background 2014 Peak Hour Traffic Volumes

3. TRANSPORTATION DEMAND MANAGEMENT

3.1 Introduction

Transportation Demand Management (TDM) is increasingly seen as a key tool in providing tangible travel choices to residents (and their visitors) as well as employees, to reduce reliance on single occupant vehicle trips. When successfully implemented, TDM can lead to a number of benefits as outlined in the District of North Vancouver's Transportation Plan, including:

- Improved community liveability;
- Improved physical fitness and health;
- Greater mobility options;
- Time and cost savings for individuals;
- Reduced congestion;
- Road and parking infrastructure cost savings;
- Greater return on municipal investments in walking, cycling and transit infrastructure;
- Reduced demand on road and parking infrastructure; and
- Reduced traffic collisions.

Case studies published by TransLink through their "OnBoard" program show that single-occupancy vehicle trips can be reduced by up to 40% with a robust TDM package. The following sections describe existing pedestrian, cycling, and transit connections to the development site (as highlighted in **Exhibit 3.1**), as well as associated deficiencies and some suggested and proposed improvements (as highlighted in **Exhibit 3.2**). The following sections also discuss relevant plans from the District of North Vancouver's new Transportation Plan, as well as potential TDM measures that could be utilized by the development either in the near-term or in the future to help encourage non-automobile trips.

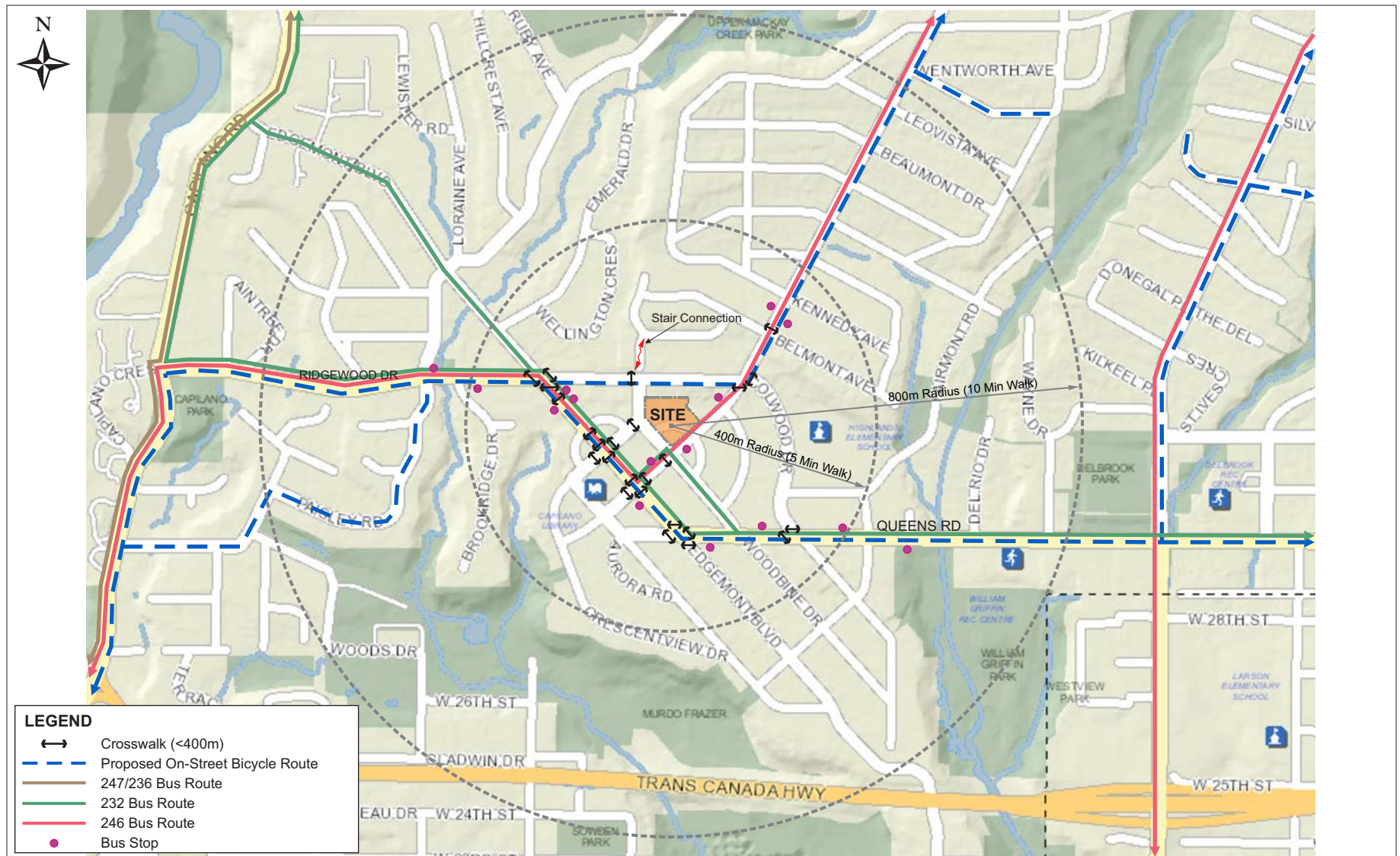


Exhibit 3.1 Pedestrian, Cycling, and Transit Connections

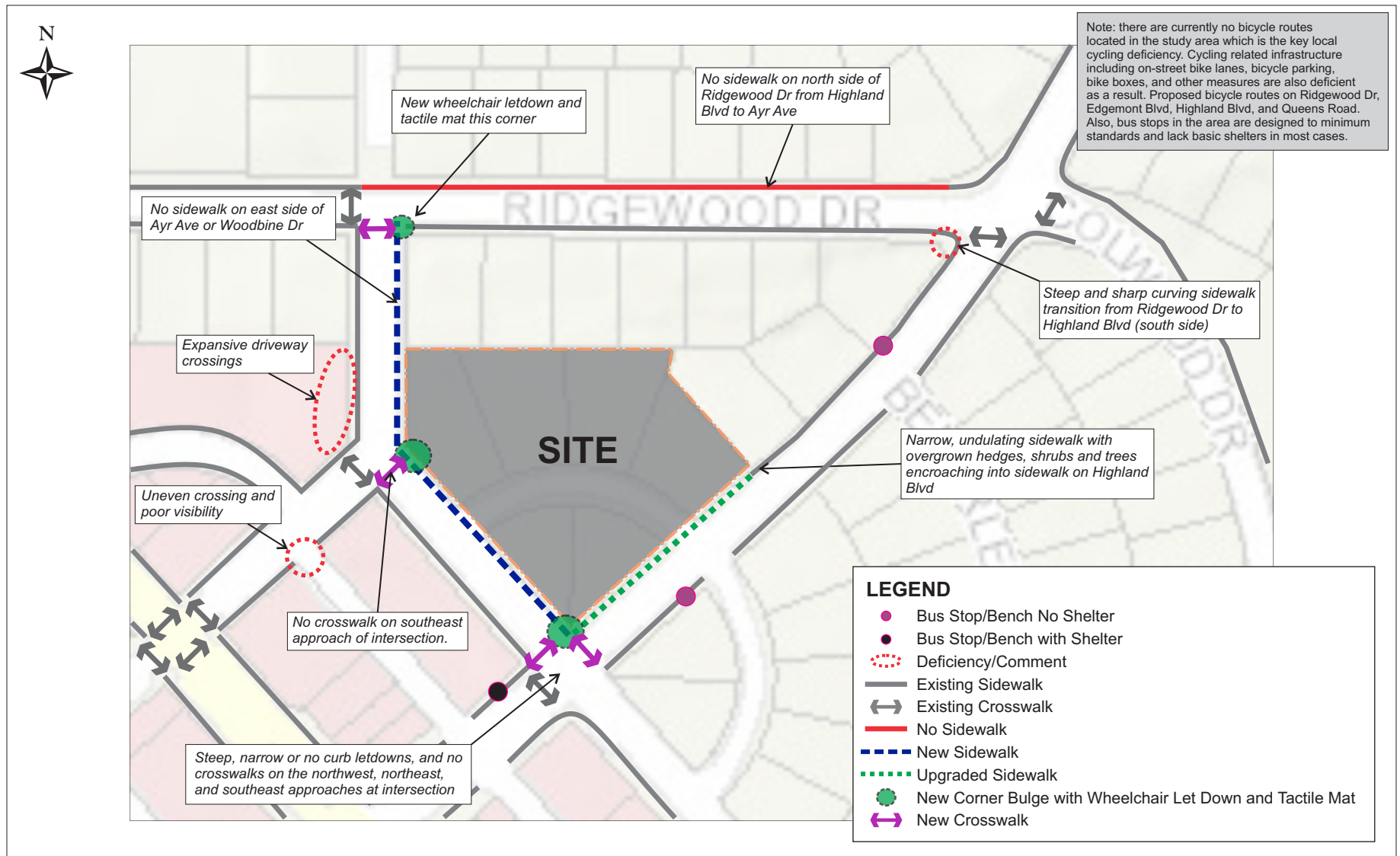


Exhibit 3.2 Local Pedestrian, Cycling, and Transit Deficiencies and Proposed Improvements

3.2 Pedestrian Connections

3.2.1 Existing Conditions

The development site is located on Woodbine Drive, adjacent to the Edgemont Village commercial centre. Its close proximity (i.e. less than 100m) to a local commercial centre with an array of everyday shops, services and amenities fosters the potential walkability of the site for residents, visitors and employees. In general, Edgemont Village has an excellent pedestrian environment with nice sidewalks, short blocks, small scale buildings, well defined crosswalks, curb letdowns, and parkettes with benches at corner bulges of key intersections. However, this pertains mainly to Edgemont Boulevard while the surrounding streets lack many of these key features which enable a safe, comfortable and efficient walking environment for pedestrians.

Exhibits 3.1 & 3.2 illustrate the existing facilities and deficiencies and proposed improvements within the study area.

3.2.2 DNV Pedestrian Plan

The District of North Vancouver's Pedestrian Plan highlights areas where there are missing or inadequate sidewalks in the Sidewalk Priority Index Map, which are prioritized for the purpose of implementing upgrades. As indicated in this map, the west side of Edgemont Boulevard (from Edgemont Road to Ridgewood Drive), the south side of Colwood Drive (from Highland Boulevard to Queens Road), and the west side of Edgemont Boulevard (from Queens Road to Thorncliffe Drive) are all high priority candidates for new sidewalks in the vicinity of the site. Within the study area, the north side of Ridgewood Drive (from Edgemont Boulevard to Highland Boulevard) has been identified as a high priority candidate for new and upgraded sidewalks.

The Pedestrian Plan highlights Edgemont Village as a pedestrian-friendly commercial area with the following objectives within the Upper Capilano Local Plan:

- "To provide safe and convenient pedestrian linkages throughout the community inter-connecting all neighbourhoods and Edgemont Village" and
- "Edgemont Village: To foster an interesting pedestrian environment and maintain a human scale in the relationship of buildings on the street".

Lastly, the Pedestrian Plan recommends Edgemont Village as a pedestrian priority area which would "create an environment that is safe and comfortable for pedestrians, while still allowing an adequate level of vehicle access". It would also function to accommodate cyclists and transit, but with the emphasis on providing for pedestrian accommodation along the main commercial segments on Edgemont Boulevard where the cafes, shops, and services are located.

3.2.3 Proposed Improvements

As part of the development, the District of North Vancouver has requested improvements adjacent to the site to enhance the connectivity and safety for pedestrians, which are highlighted in **Exhibit 3.2**.

Recommendations for additional improvements for pedestrian infrastructure and other intersection improvements in the surrounding area are also shown.

The proposed improvements as part of the proposed new residence include:

- New sidewalk and planted boulevard along the site frontage side of Woodbine Drive and Ayr Avenue;
- New sidewalk and planted boulevard along the east side of Ayr between the site property line and Ridgewood Drive;
- Wheelchair let down and tactile mat at the southeast corner of Ayr Avenue & Ridgewood Drive;
- Corner bulge at the southeast corner of Woodbine Drive & Ayr Avenue, with wheelchair let down and tactile mat;
- Crosswalk across Woodbine Drive at the new corner bulge at Woodbine Drive & Ayr Avenue;
- Wider sidewalk and planted boulevard on the site frontage of Highland Boulevard;
- Corner bulge at the northeast corner of Highland Boulevard & Woodbine Drive intersection with dual wheelchair let downs and tactile mats; and
- Crosswalks across Woodbine and Highland at the new corner bulge at the Highland & Woodbine intersection.

3.3 Cycling Connections

3.3.1 Existing Conditions

There are currently no marked on-street or off-street bicycle routes in the vicinity of the development. However, as the development site is located in the Edgemont Village area, which is designed with the pedestrian in mind, there is a network of low-volume and low-speed traffic streets which connect to the site and can function as cycling routes. The District of North Vancouver has identified proposed improvements to the bicycle network near the site in its Bicycle Master Plan. Proposed bicycle connections near the site are shown in **Exhibit 3.1**.

3.3.2 DNV Bicycle Network Plan

The District of North Vancouver developed a Bicycle Network Plan as part of the overall Transportation Plan update as a means of identifying and addressing deficiencies in the bicycle network throughout the District and improve accessibility to key destinations and connectivity through the network for cyclists. As mentioned, there are currently no bicycle routes adjacent to the development site which indicates that this area is deficient of basic bicycle provisions.

Within and near to the study area, the Bicycle Master Plan indicates proposed on-street bicycle routes along Capilano Road (from Marine Drive) connecting to routes on both Ridgewood Drive and Paisley Road (a loop which connects to Ridgewood Drive). The Ridgewood Drive bicycle route would continue north

onto Highland Boulevard and south onto Edgemont Boulevard then east onto Queens Road. There is also a route proposed for Delbrook Avenue/Westview Drive which would connect with the Queens Road Route.

The proposed routes would provide both north-south and east-west bicycle connections along key routes and to key destinations throughout the District.

3.3.3 Proposed Improvements

As indicated in the Bicycle Master Plan, the majority of the proposed routes in or near to the study area have been identified as low-priority improvements (except for along Capilano Road, identified as a high-priority improvement) and as such, the timelines for their implementation have not yet been established. Once these new routes are established, the proposed development would be well connected, enabling viable commute by cycling for residents, visitors and employees.

As part of the Transportation Demand Management strategy for the development (discussed in more detail in section 3.5), both short-term and long-term bicycle parking facilities will be provided on-site to help facilitate bicycle use to/from the site. The short-term bicycle parking for visitors will be located at the Highland Boulevard access with convenient street-level access, and in a visible area near to the main building entrance. Long-term bicycle parking will be accessible from the street via the vehicle site access on Woodbine Drive and will include secure storage facilities, as well as end-of-trip facilities for staff.

In future, once bicycle routes are implemented through the study area as proposed in the DNV Bicycle Master Plan, there are other improvements that could enhance bicycle connections and facilitate bicycle use, such as the provision of “bike boxes” (painted areas for cyclists at the approaches to busy intersections) at intersections such as Edgemont Boulevard & Ridgewood Drive, Edgemont Boulevard & Queens Road, and Ridgewood Drive & Highland Boulevard. These would help signify bicycle priority and highlight the presence of cyclists at these intersections, while also providing a safe waiting area for cyclists.

3.4 Transit Connections

3.4.1 Existing Conditions

The development site is well situated adjacent to the Edgemont Village commercial centre, and as such benefits from this location with a number of nearby transit routes providing service across the North Shore and Vancouver and connections throughout the Lower Mainland. There are four (4) transit routes providing service near to the site, two of which have stops less than 100m from the site and two routes with stops approximately 1km from the site. **Table 3.1** highlights the existing transit services within walking distance of the site and where they connect to.

Table 3.1 – Existing Transit Services within Walking Distance of the Site

Route	Nearest Stop	Connections
232 – Grouse Mountain/Phibbs Exchange	(< 100m) Woodbine Dr at Highland Blvd	Grouse Mountain, Edgemont Village, Upper and Central Lonsdale, and Phibbs Exchange (providing connections to Vancouver and beyond)
236 – Pemberton Heights/Grouse Mountain/Lonsdale Quay	(~ 1km) Capilano Road at Ridgewood Dr	Grouse Mountain, Upper Capilano and Pemberton Heights neighbourhoods, Capilano Mall/Marine Drive, and Lonsdale Quay
246 – Vancouver/Highland	(< 100m) Highland Blvd at Woodbine Dr	Lonsdale Quay, Delbrook and Highlands neighbourhoods, Edgemont Village, Lower Capilano and Downtown Vancouver
247 – Vancouver/Upper Capilano	(~ 1km) Capilano Road at Ridgewood Dr	Grouse Mountain, Upper and Lower Capilano neighbourhoods, and Downtown Vancouver

As indicated, the various transit routes providing service near the development site offer connections to the local residential areas, as well as key destinations throughout the North Shore and Vancouver which provide further connections throughout the Lower Mainland. **Table 3.2** illustrates the frequency of service for these routes.

Table 3.2 – Existing Transit Service Frequency

Route	Service Headways (minutes)				
	AM Peak	Mid-Day Peak	PM Peak	Evening	Weekends
232 – Grouse Mountain/Phibbs Exchange	30	30	30	30	30
236 – Pemberton Heights/Grouse Mountain/Lonsdale Quay	15-60*	15	15	60	15-60**
246 – Vancouver/Highland	10-30	30	15	60	30-60
247 – Vancouver/Upper Capilano	30#	n/a	30*	n/a	n/a

* AM service for the 236 ranges between 15 minute headways in late morning to 60 minute headways during the peak

** Weekend service for the 236 ranges between 15 minute headways during peak times and 60 minutes headways during off-peak times

Service for the 247 is from Grouse Mountain to Downtown Vancouver during the AM period and from Downtown Vancouver to Grouse Mountain during the PM period. There is a single bus to Grouse Mountain in the AM period leaving from Capilano at Curling at 8:00am

As shown, the frequency of service on nearby routes is generally moderate at about 15 to 30 minutes (per direction) during peak times. The combination of these transit services indicates that the site is reasonably well accessed by transit.

3.4.2 North Shore Area Transit Plan (TransLink)

TransLink's North Shore Area Transit Plan (NSATP) outlines proposed future improvements to the transit network across the North Shore up to and beyond the year 2040. The NSATP indicates a proposed high-priority improvement for a frequent transit route (i.e. service every 15 minutes or better on corridors for a variety of trip types from early morning to late evening 7 days a week) between Park Royal and Lynn Valley Town Centre via Edgemont Village along Queens Road. This would improve internal mobility east-west through North Vancouver.

The addition of this proposed service would be expected to increase transit accessibility to the development site as it would operate near the site along Queens Road approximately 250m to the south.

3.4.3 Recommended Improvements

With several bus stops located within close proximity of the site, residents, visitors and employees have a reasonable number of transit options to choose from to reach key destinations. However, as noted in **Exhibit 3.2**, many of the nearby bus stops are lacking in sufficient amenities which provide comfort and safety for passengers such as shelters, benches or garbage/recycling bins. In time as funding is available, these upgrades would further enhance the transit experience.

The proposed improvements to pedestrian connections as noted in Section 3.2 such as corner bulges, crosswalks, wheelchair letdowns and tactile mats will help improve the transit passenger experience by creating a safer and more comfortable pedestrian environment in order to access transit.

3.5 Potential TDM Measures

The development site is well situated near Edgemont Village to take advantage of various sustainable transportation alternatives to the automobile. Walking, cycling and transit connections and their related improvements as discussed in previous sections, act as key TDM measures for the site. These and other TDM measures that could benefit the development are discussed in the following sections.

3.5.1 Walking

As discussed in Section 3.2, the close proximity of the development to Edgemont Village and its various shops, services and amenities makes walking a viable mode of transportation for the development. Proposed improvements near to the site such as new sidewalks along the site frontages complemented by corner bulges, wheelchair let downs and tactile mats, as well as crosswalks, will enhance the pedestrian environment and safety and will foster walking as a key sustainable transportation mode.

3.5.2 Cycling

There are no existing on-street bicycle routes in the vicinity of the site although there is a network of low-volume, low speed streets nearby which could be used for cycling. Plans to expand the bicycle network in the area by adding routes that run near to the site on Ridgewood Drive, Highland Boulevard, Edgemont Boulevard and Queens Road with connections to various destinations in North and West Vancouver, will serve to promote cycling as another useful transportation alternative to the automobile for the development.

Provision of both short and long-term bicycle parking facilities on site will give residents, visitors and employees secure and accessible bicycle parking, further encouraging the use of cycling.

3.5.3 Transit & Staff Transit Passes

Existing transit service near the site is generally good with four bus routes providing connections to several key destinations on the North Shore, Downtown Vancouver and throughout the Lower Mainland. A future route is proposed along Queens Road which will provide frequent transit service between Park Royal and Lynn Valley Town Centre via Edgemont Village, and would further improve transit connections and frequency for the development.

Existing transit stop facilities are generally very basic at many locations near to the site, with some stops lacking shelters, benches and garbage/recycling bins. In time with adequate funding and the upgrading of these local transit stops, and also taking into account the proposed pedestrian improvements, the environment for transit passengers will become safer, more comfortable, and user-friendly thereby further encouraging transit use.

The anticipated number of full time equivalent employees at the Edgemont seniors' residence is approximately 40. The TransLink Employer Pass Program offers discounts to companies that register 25 or more employees in a yearly transit pass program. It is possible that the Edgemont residence may have enough staff to register in this program and once it is open it is recommended to poll staff on their transit use to determine whether there is sufficient interest in the program.

3.5.4 Shuttle Service

The Edgemont residence will be providing a passenger shuttle service (self-owned passenger van), that all residents will be allowed to use for travel to/from medical appointments, shopping, recreational activities, etc.. This service provides a convenient mode of travel and provides residents with a viable alternative to having to own their own vehicle, thereby contributing to a lower vehicle ownership rate and fewer single person vehicle trips.

3.5.5 Car-Sharing

Currently there are three main car-sharing operators in the Vancouver area, Modo (formerly the Co-operative Auto Network), ZipCar, and Car2Go. Modo currently has a procedure in place to work with development companies to provide car-sharing vehicles for development projects. The process is

assessed on a case-by-case basis and involves the developer purchasing a vehicle and handing it over to the operator to maintain. The developer would also provide the initial enrolment fee for residents to join the car-sharing club.

The proponent has contacted all three companies, but has only received responses from Car2Go and Modo, and unfortunately there is currently a lack of interest in providing a vehicle for the Edgemont Village area. Car2Go requires surface parking with 24 hour access (which is not possible at this site), and Modo previously had a car in Edgemont Village but due to limited utilization it was removed.

Both Modo and ZipCar currently have car-share vehicles in North Vancouver in areas of higher density such as Lonsdale Avenue and Marine Drive. In time, if and when the Edgemont area becomes more densely redeveloped, it is anticipated that a car share vehicle may become a more likely option, albeit at a different site than the proposed development.

3.5.6 Electric Vehicle Plug-Ins

The Edgemont residence is considering the provision of electric vehicle plug-ins (240 volts) for its residents, visitors and staff. The District recommends that up to 10% of the parking stalls for residents and visitors (approximately 6 stalls) provide this feature, which would be expected to help foster the use of more sustainable automobiles.

3.5.7 Summary

Overall, TDM measures will help support sustainable travel options for residents, visitors and employees of the development and ensure the use of planned infrastructure improvements in the area. These measures will help promote sustainable travel choices to help reduce reliance on automobile trips for the development.

4. PARKING & LOADING

The proposed development will feature one level of underground parking accessed from Woodbine Drive, and a pick-up & drop-off porte-cochere loop on Highland Boulevard. The loading for the residence will be accessed directly from Woodbine Drive.

4.1 Parking

The proposed parking supply for the development, the bylaw parking supply requirement, and observed as well as provided parking supply rates at other similar facilities are summarized in **Table 4.1**. Note that this table has assumed 129 units, which is the number of units associated with the proposed residence, in order to provide a similar basis of parking supply comparison.

Table 4.1 – Parking Supply Rates at Other Facilities, Bylaw Requirements & Proposed Supply

Parking	# Units	Rate *	# Spaces	Notes
Bylaw	129	0.33	43	DNV Bylaw parking requirement
Observed Demand Mulberry Residence	129	0.34	44	Observed peak demand at a similar facility in Burnaby
Mt. Seymour Residence Provision	129	0.39	50	Recommended/provided rate at a similar facility on the North Shore
Proposed Supply	129	0.46	59	Proposed supply is well above the required

Notes: * Parking rate expressed as # spaces per unit.

As shown, the proposed parking supply within the underground parkade is 59 spaces and will more than meet the bylaw parking requirements. Based on counts conducted at other similar facilities, the proposed supply is also expected to more than accommodate the anticipated actual parking demands for the residence, including staff, resident and visitor parking.

Based on work at the Mulberry Residences in Burnaby and the Seymour Residences on Mount Seymour Parkway, the recommended minimum parking supply by use is as follows:

- Resident spaces = 25 to 30 +
- Visitor spaces = 15
- Staff spaces = 10 +

The parking stalls closest to the building elevators will be the most desirable for residents and for those with accessibility needs. Other similar facilities have indicated a demand for scooter parking and space for scooter parking has been allocated near to the main elevators. It is proposed that a minimum of 15 spaces be designated for visitor use, to be located near to the parkade ramp, along the southwest side of the parkade. It is proposed that staff parking would also be allocated to the southwest side of the parkade.

4.2 Bicycle Parking

The site is also required to provide bicycle parking. As per the bylaw, a residential facility for senior citizens is required to provide a minimum of 6 spaces for a facility with 20 or more units.

The proposed development will meet and exceed this demand, providing approximately 6 bicycle parking spaces at-grade at the Highland entrance for visitors and 20 secure bicycle parking spaces in the parkade for residents and staff. Staff will have access to end-of-trip facilities and lockers.

4.3 Porte-Cochere Pick-Up & Drop-Off

Data collection at the similar Mulberry Residences in Burnaby indicated that approximately 30% of site generated traffic is related to pick-up and drop-off. The proposed Edgemont residence will feature a porte-cochere styled pick-up & drop-off loop at the main entry on Highland Boulevard.

The loop will have two lanes and will operate in a one-way direction, with all entry at the north and exit at the south. At the front doors, there will be enough space for 2-3 vehicles to park, or one TransLink Handy Dart shuttle and one vehicle to park. As shown in **Exhibits 4.1 & 4.2**, the two-vehicle width would allow for vehicles to pass by a stopped HandyDart truck and vice versa.

The Edgemont residence will be offering a shuttle service (passenger van), available for taking residents to medical appointments, shopping, recreational activities, etc.. This vehicle would make use of the porte-cochere for pick-up and drop-off, and would remain parked on-site in the underground parkade when not in use.

In addition to accommodating all pick-up & drop-off activity, the porte-cochere will serve as the only at-grade level access for elderly residents.

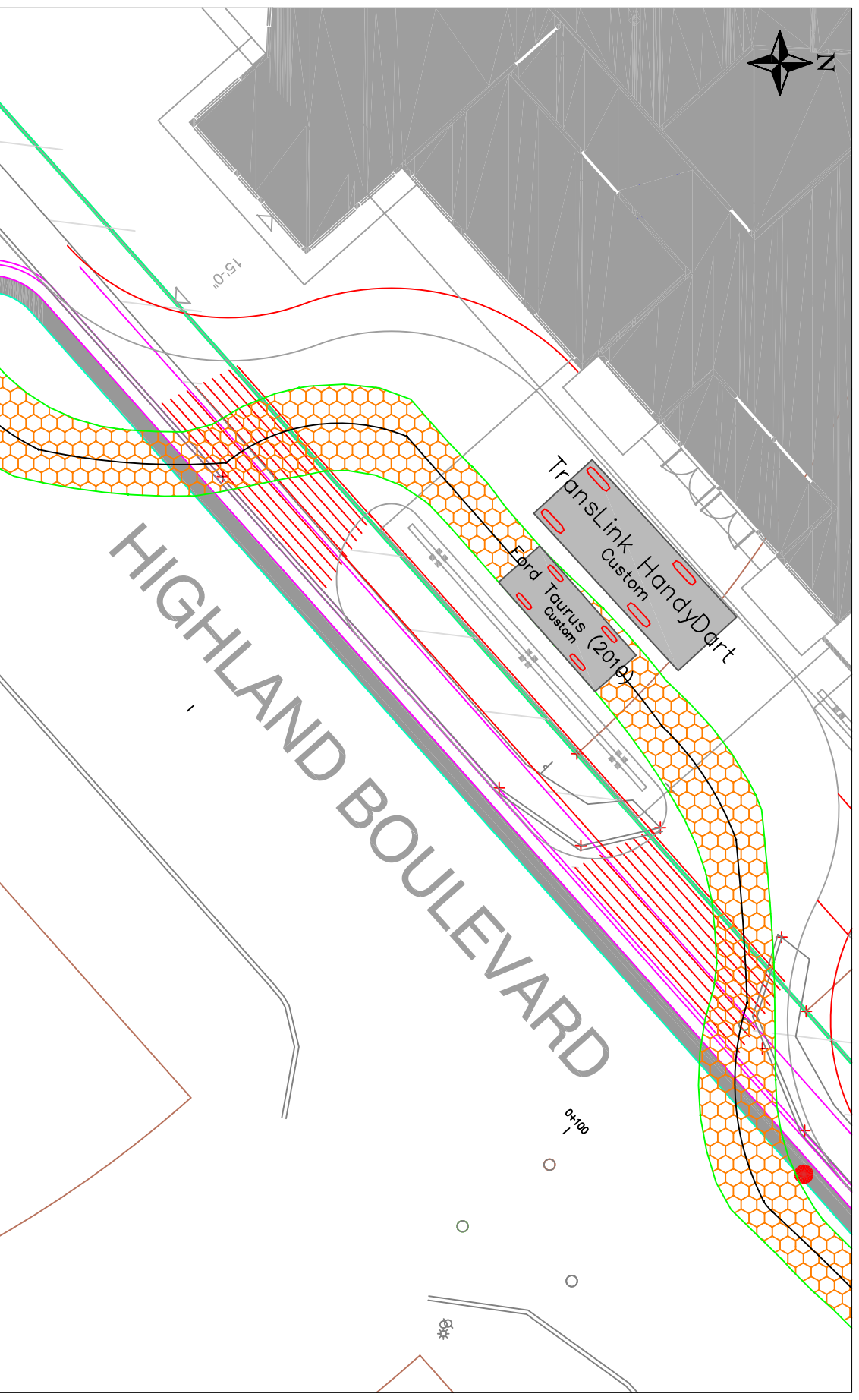


Exhibit 4.1 Port-Cochere Access



Exhibit 4.2 Port-Cochere Access

Edgemont Village Seniors Facility
4888.01
February 2013

Scale NTS

4.4 Loading

The proposed loading bay for the project will be able to accommodate one SU9 sized truck, as well as the garbage and recycling bins. The location of the loading bay is next to the parkade entrance on Woodbine Drive and a review of the required vehicle path for a SU9 to both enter and exit the loading area is provided in **Exhibits 4.3 & 4.4**. As shown, a SU9 truck will be able to access and leave the loading bay with no impact to nearby parked vehicles.

In a previous study for the Mulberry Residences in Burnaby, Bunt staff collected data of the detailed loading schedule associated with that seniors' facility. **Table 4.2** summarizes the typical weekly loading schedule and provides a good approximation of the loading demands at the proposed residence in Edgemont. As shown, there are approximately 2 to 4 truck deliveries per day, occurring Monday to Saturdays between 7am and 4pm. Most of the delivery vehicles are small SU9 trucks (similar to a garbage truck), with several food deliveries made by a larger tractor trailer WB17 truck. Also shown is that the schedule is arranged so that the demand is only one vehicle at a time at the loading bay.

It will be necessary that all deliveries to the Edgemont site are restricted to a SU9 or smaller vehicle, including the food deliveries. At the Seymour seniors' site, there were similar site design constraints that limited the size of delivery trucks to a SU9 or smaller vehicle and Sysco Foods has been able to make all food deliveries to that site in smaller SU9 vehicles, so it is anticipated that this will not pose a problem at the Edgemont residence.

Table 4.2 – The Mulberry Residences (Burnaby) Weekly Delivery Schedule

Time	Delivery Type						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
7 AM		Smithrite (SU9)		Smithrite (SU9)		Smithrite (SU9)	
8 AM		Central Foods (SU9)	Neptune Foods (SU9)	Neptune Foods (SU9)	Neptune Foods (SU9)		Neptune Foods (SU9)
9 AM			Tarson Foods (SU9)		Sysco Foods (SU9 – WB17)		Tarson Foods (SU9)
10 AM		Sysco Foods (SU9 – WB17)	Bargreen Ellison (SU9)		Tarson Foods (SU9)		
11 AM							
Noon							
1 PM		Recycling (SU9)					
2 PM							
3 PM						Gardeners (Lt. Truck)	

4.1 Emergency Vehicle Access

Experience at the Mulberry Residences in Burnaby indicates that emergency vehicles are expected at the site on average approximately once per week.

At the Edgemont residence, fire trucks will not be able to negotiate the covered porte-cochere, but are expected to stop on the adjacent roadways (Woodbine/Ayr, Highland) in the event of a fire, and/or emergency call. Other smaller emergency vehicles, such as ambulances, will be able to use the porte-cochere for resident pick-up.

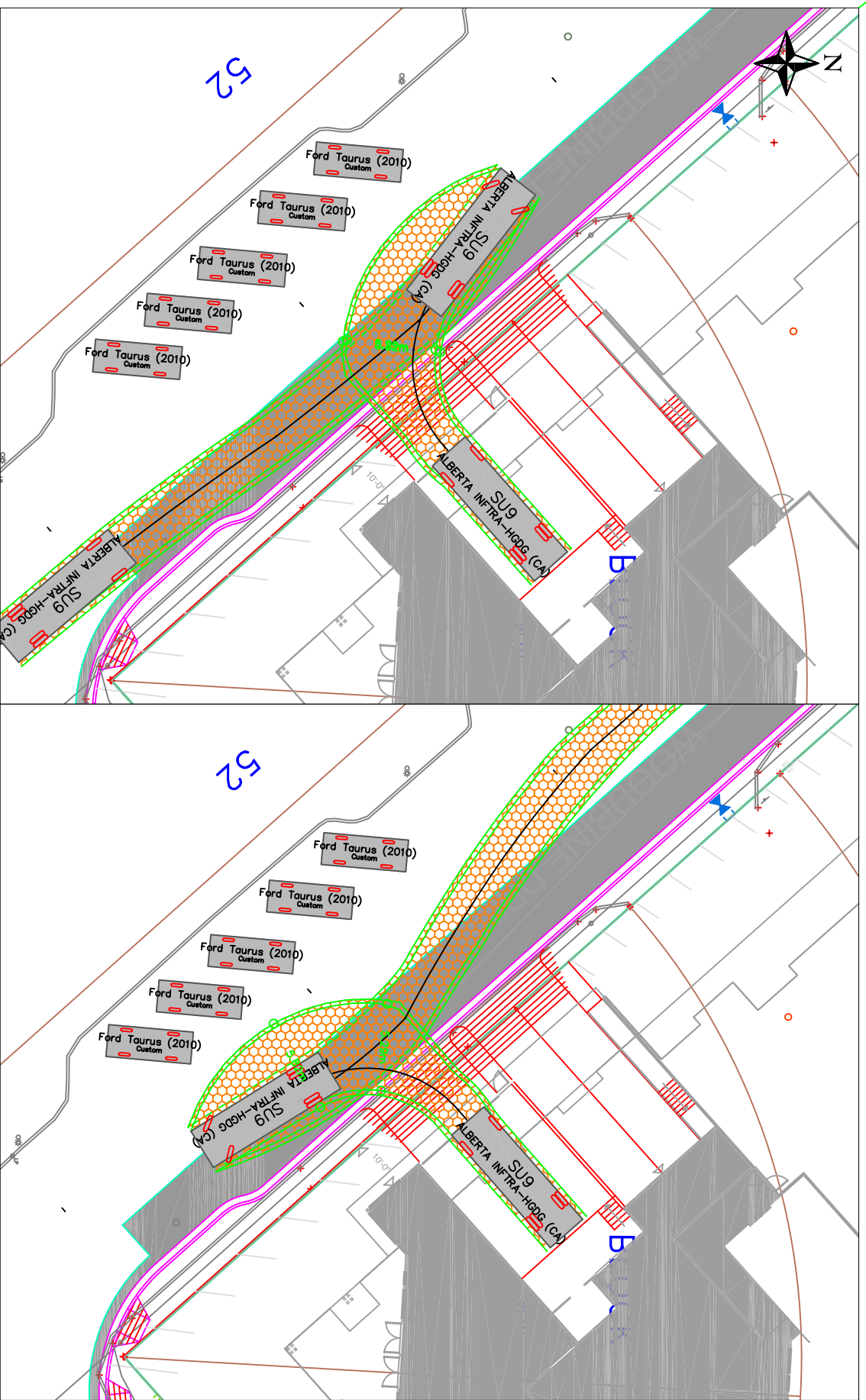


Exhibit 4.3

Loading Bay Access - Inbound

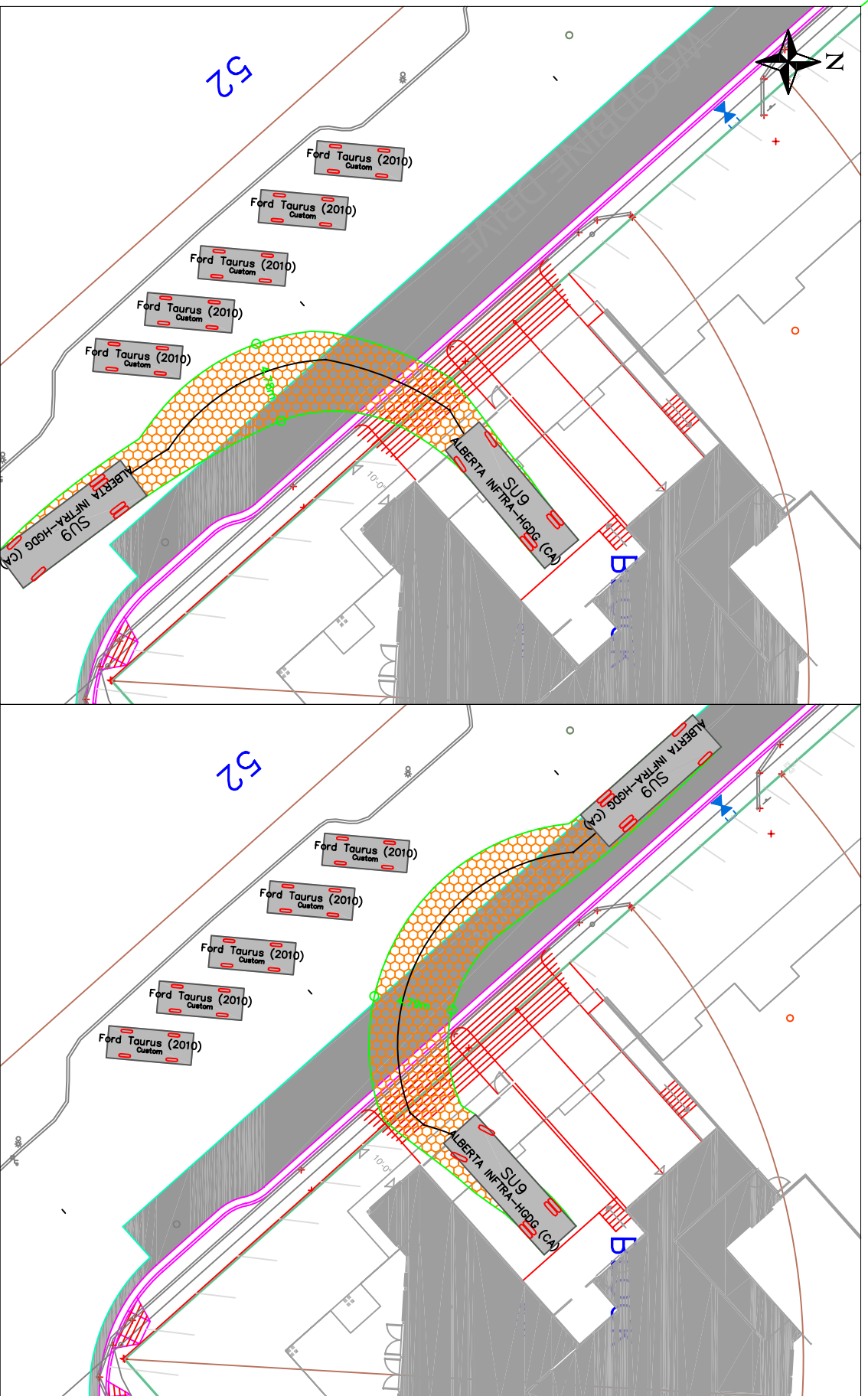


Exhibit 4.4 Loading Bay Access - Outbound

5. SITE GENERATED TRAFFIC

This section of the report summarizes the current traffic volumes in the study area and the anticipated level of traffic to be generated by the new residence, as well as presents the assumptions related to our future traffic volume forecasts.

5.1 Existing Site Generated Traffic

The development site is currently six separate single family homes and five of these have site accesses directly onto Canfield Crescent, with one having site access directly onto Highland Boulevard. The peak hour traffic generation associated with these homes (traffic on Canfield Crescent) is very low, approximately 3 trips during the PM peak hour and 9 trips during the Saturday peak hour, as illustrated in Exhibit 2.1.

5.2 Projected New Site Generated Traffic

The estimated site generated traffic associated with the proposed seniors' development is summarized in Table 5.1.

Table 5.1 – Estimated Site Generated Traffic Volumes

Time Period	# Units	Trip Rate *	In	Out	Total
PM Peak Hour	129	0.17	11	11	22
Saturday Peak Hour	129	0.20	12	14	26

Notes: * Trip generation rates based on counts conducted at the Mulberry Residences in Burnaby and as per assumptions in Bunt's Study for the Seymour Seniors' Residence in North Vancouver.

As shown, the anticipated peak hour site traffic generation is approximately 22 trips during the weekday PM peak hour and 26 trips during the Saturday peak hour period. These projections are based on counts conducted by Bunt staff at the similar Mulberry Residences in Burnaby and as per the assumed rates in Bunt's study for the similar Seymour Seniors' Residence in North Vancouver on Mount Seymour Parkway.

The site is expected to generate a very low volume of traffic, approximately 1 trip every 3 minutes during the PM peak hour, and approximately 1 trip every 2.5 minutes during the Saturday mid-day peak hour period. These estimates include resident, visitor, staff and delivery trips to and from the residence during the peak one hour periods.

5.3 Site Traffic Distribution & Assignment

The assumed distribution of site traffic to the study area intersections is summarized in Table 5.2, and is based upon several assumed key origin/destination points such as: the shops and services on Marine Drive, the shops and services on Lonsdale Avenue, the shops at Park Royal and in West Vancouver, as well as more general destinations such as Vancouver and the GVRD. The trip assignment assumed the most direct or least congested routing.

Table 5.2 – Assumed Site Traffic Distribution

Route	Percent	
	In From	Out To
Edgemont North	10%	10%
Ridgewood West	30%	30%
Highland South	0%	0%
Edgemont South	35%	35%
Woodbine South	15%	15%
Colwood South	0%	0%
Highland North	10%	10%
Total	100%	100%

Traffic counts by Bunt staff at other similar facilities indicated that approximately 30% of peak hour traffic is related to pick-up & drop-off. We have therefore assumed that approximately 30% of the site generated traffic will use the porte-cochere on Highland Boulevard.

The estimated peak hour site generated traffic volumes are illustrated in **Exhibit 5.1**.

5.4 Total Traffic Volume Projections

The projected site generated traffic volumes were added to the base background 2014 traffic volumes to determine the resulting total traffic volumes following development of the proposed seniors' residence. **Exhibit 5.2** illustrates the estimated traffic volumes.

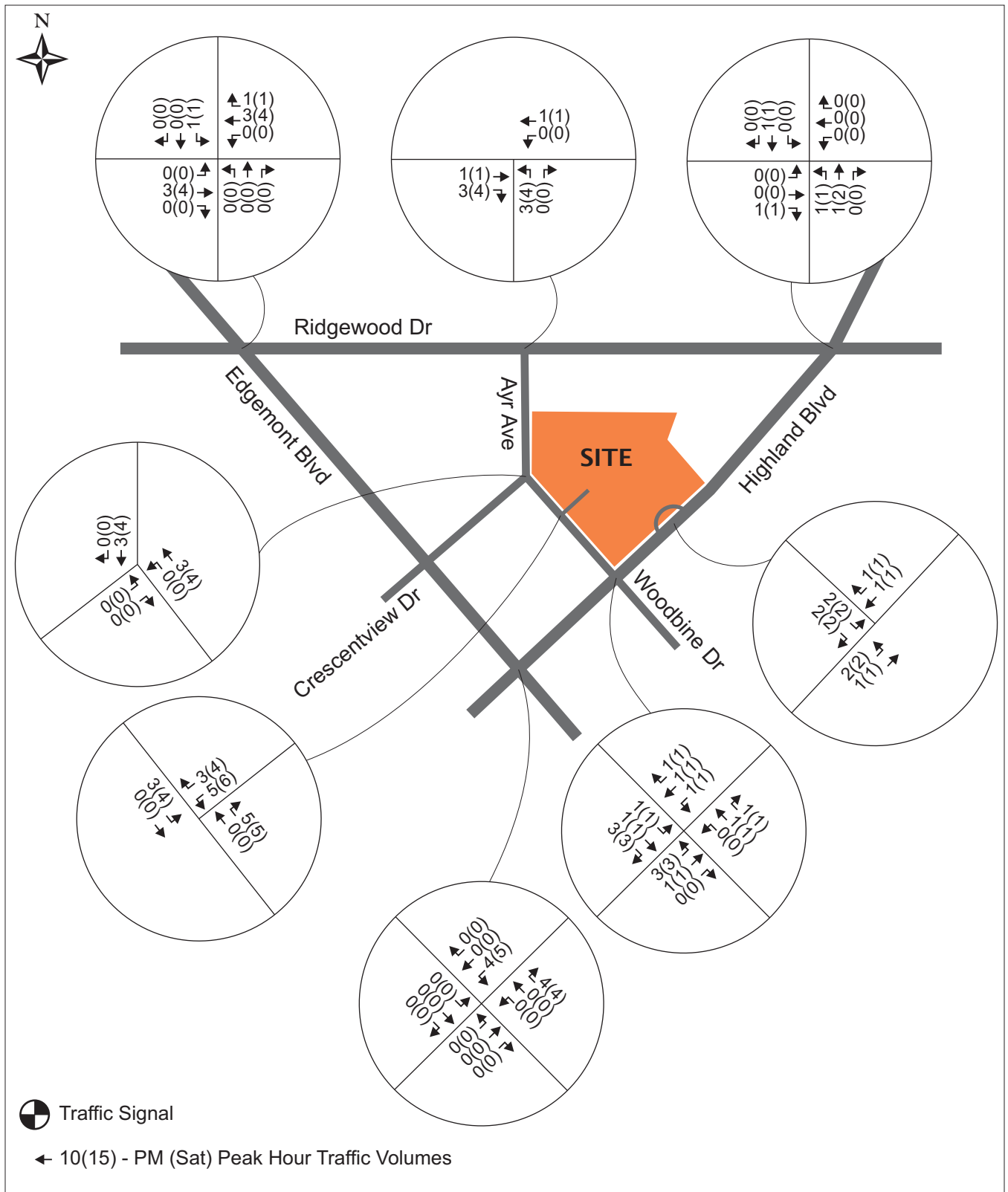


Exhibit 5.1
Estimated Site Generated Peak Hour Traffic Volumes

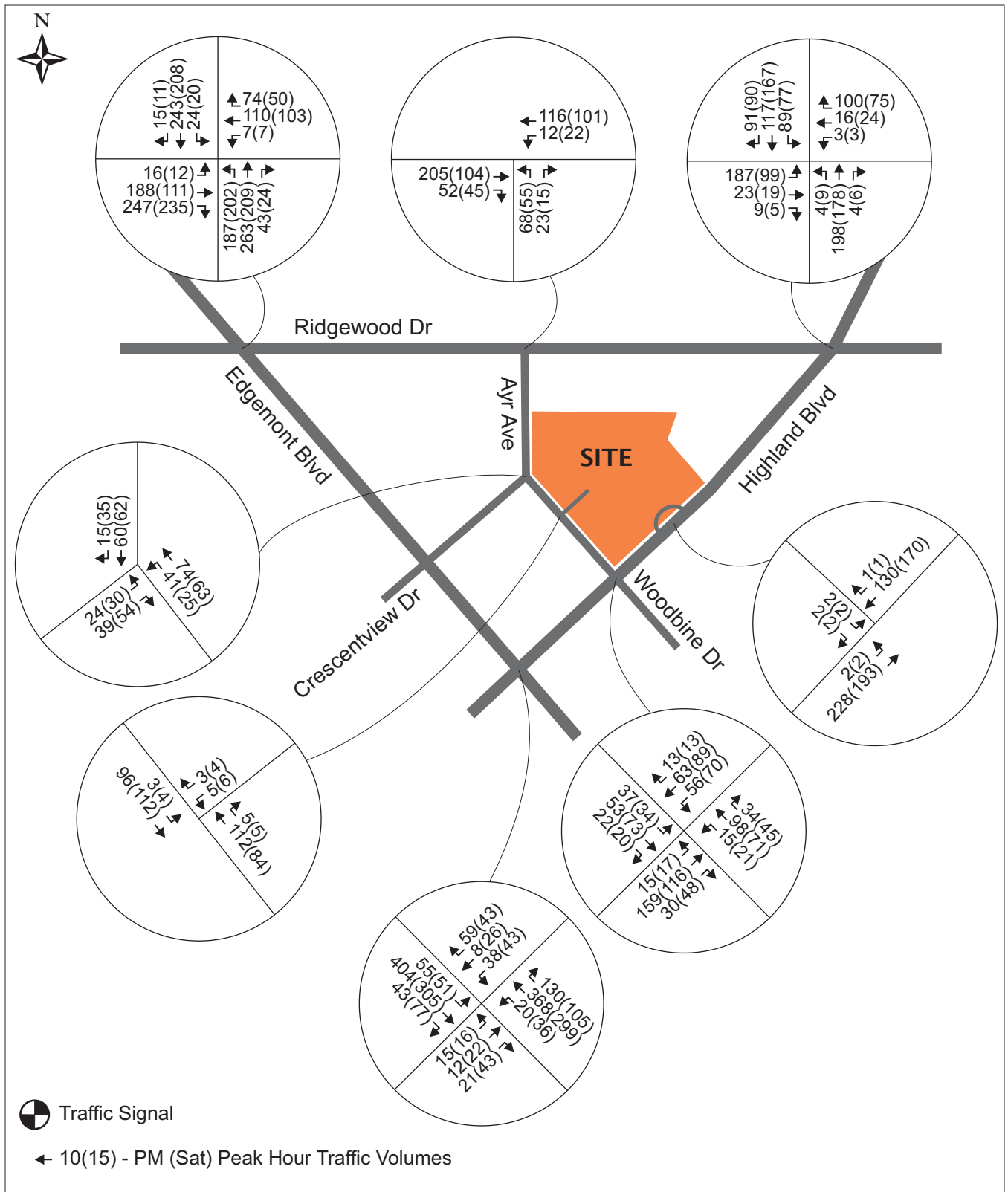


Exhibit 5.2
Estimated Total 2014 Peak Hour Traffic Volumes

6. TRAFFIC IMPACT ANALYSIS

The traffic impact analysis was carried out using Synchro Software version 8 and the HCM 2000 methodology, and the results are summarized in the tables provided in the following section. The SimTraffic traffic simulation program was also used to view traffic operations on the area streets as a further measure of traffic performance, and was used to report the anticipated queuing at the unsignalized intersections. The summary tables report the calculated Volume to Capacity (V/C) ratio and a corresponding delay-based traffic Level of Service (LOS) indicator ranging from ideal LOS A conditions with minimal delay through to LOS E 'near capacity' conditions and LOS F 'over-saturated' conditions when drivers may have to wait through several signal cycles to perform their desired movements through the intersection. The 95th percentile predicted average queue length for each lane group is also summarized, measured in metres.

In our summary tables, we have assumed the following performance thresholds:

- V/C = 0.90 or greater for the overall intersection operations;
- V/C = 0.95 or greater for individual movements;
- Levels of Service at E or F;
- 95th percentile queue lengths that are longer than the available storage length.

All situations where these performance thresholds were exceeded have been identified by **bold** text in the summary tables.

6.1 Capacity Analysis - Existing Conditions 2012

The existing conditions capacity analysis of the weekday PM and Saturday peak hour traffic operations is summarized in **Tables 6.1 & 6.2**. The full Synchro report printouts are provided in **Appendix A**.

Table 6.1 – Capacity Analysis – Existing 2012 – Major Intersections

Intersection/Movement	PM Peak Hour			Saturday Peak Hour		
	V/C	LOS	Queue	V/C	LOS	Queue
Edgemont/Ridgewood						
EBTL	0.50	C	17	0.27	B	13
EBR	0.55	--	27	0.46	--	16
WBTLR	0.47	C	18	0.34	B	24
SBTLR	0.66	C	25	0.48	C	23
NBTL	0.99	F	61	0.79	D	37
NBR	0.04	--	17	0.02	--	18
Edgemont/Highland						
SBTLR	0.06	A	13	0.05	A	18
NBTLR	0.02	A	17	0.03	A	14
EBTLR	0.23	D	17	0.28	C	17
WBTLR	0.39	D	14	0.43	D	17
Ridgewood/Highland						
EBTLR	0.38	B	17	0.21	B	17
WBTLR	0.19	A	21	0.16	A	13
NBTLR	0.35	B	10	0.30	B	16
SBTL	0.38	B	18	0.41	B	15
SBR	0.14	--	6	0.13	--	11

Notes: V/C – Volume to Capacity Ratio, where 1.00 represents at-capacity

LOS – Level of Service, where A is best with minimal delays and E/F is worst with significant delays

Queue – 95th Percentile Queue Length in metres, where one vehicle is typically assumed to be 6-7metres

WBTL – West Bound shared Thru-Left lane, etc.

Table 6.2 – Capacity Analysis – Existing 2012 – Minor Intersections

Intersection/Movement	PM Peak Hour			Saturday Peak Hour		
	V/C	LOS	Queue	V/C	LOS	Queue
Woodbine/Highland						
SEBTLR	0.16	A	18	0.19	A	19
NWBTLR	0.21	A	16	0.20	A	10
NEBTLR	0.29	A	17	0.25	A	17
SWBTLR	0.19	A	9	0.25	A	14
Ayr/Ridgewood						
EBTR	0.16	--	--	0.09	--	--
WBTL	0.01	A	--	0.02	A	10
NBLR	0.15	B	9	0.10	B	10
Ayr/Woodbine						
NBTR	0.04	--	--	0.05	--	--
SBTL	0.04	A	--	0.04	A	13
NWLR	0.14	A	7	0.10	A	7

Notes: V/C – Volume to Capacity Ratio, where 1.00 represents at-capacity

LOS – Level of Service, where A is best with minimal delays and E/F is worst with significant delays

Queue – 95th Percentile Queue Length in metres, where one vehicle is typically assumed to be 6-7metres

WBTL – West Bound shared Thru-Left lane, etc.

As shown, the study area intersections are generally currently operating well within capacity thresholds, with relatively minimal delays and queuing in the range of 3 vehicles or less. The only exception to this is the Edgemont & Ridgewood intersection during the PM peak hour, where the shared northbound through and left lane is shown to operate at at-capacity conditions, with significant delays and queues of approximately 9 vehicles. The SimTraffic simulation did not routinely show queues this long though and neither did our field observations, but the analysis does indicate that the movement is pressured. It should be noted that pressured conditions such as these are not uncommon during peak hour periods and are usually shorted-lived conditions. It is noted that the Edgemont & Ridgewood intersection as a whole operates well under capacity, and at this time no improvements are recommended, but continued observation of this intersection is warranted and in future improvements may be required.

6.2 Capacity Analysis - Opening Day 2014

The Opening Day 2014 conditions capacity analysis of the study area intersections is summarized in **Tables 6.3 & 6.4**. The full Synchro report printouts are provided in **Appendix B**.

Table 6.3 – Capacity Analysis – Total 2014 – Major Intersections

Intersection/Movement	PM Peak Hour			Saturday Peak Hour		
	V/C	LOS	Queue	V/C	LOS	Queue
Edgemont/Ridgewood						
EBTL	0.51	C	17	0.27	B	9
EBR	0.56	--	15	0.47	--	14
WBTLR	0.48	C	25	0.35	B	14
SBTLR	0.66	C	42	0.49	C	27
NBTL	0.99	F	53	0.79	D	48
NBR	0.04	--	18	0.02	--	18
Edgemont/Highland						
SBTLR	0.06	A	20	0.05	A	15
NBTLR	0.02	A	23	0.03	A	23
EBTLR	0.23	D	10	0.28	C	21
WBTLR	0.42	D	22	0.46	D	26
Ridgewood/Highland						
EBTLR	0.38	B	18	0.21	B	9
WBTLR	0.19	A	18	0.16	A	12
NBTLR	0.35	B	18	0.30	B	11
SBTL	0.38	B	14	0.42	B	15
SBR	0.14	--	8	0.13	--	6

Notes: V/C – Volume to Capacity Ratio, where 1.00 represents at-capacity

LOS – Level of Service, where A is best with minimal delays and E/F is worst with significant delays

Queue – 95th Percentile Queue Length in metres, where one vehicle is typically assumed to be 6-7metres

WBTL – West Bound shared Thru-Left lane, etc.

Table 6.4 – Capacity Analysis – Total 2014 – Minor Intersections

Intersection/Movement	PM Peak Hour			Saturday Peak Hour		
	V/C	LOS	Queue	V/C	LOS	Queue
Woodbine/Highland						
SEBTLR	0.17	A	20	0.19	A	22
NWBTLR	0.22	A	13	0.20	A	9
NEBTLR	0.29	A	16	0.26	A	24
SWBTLR	0.20	A	13	0.26	A	15
Ayr/Ridgewood						
EBTR	0.16	--	--	0.09	--	--
WBTL	0.01	A	7	0.02	A	--
NBLR	0.16	B	15	0.11	B	9
Ayr/Woodbine						
NBTR	0.04	--	5	0.05	--	--
SBTL	0.04	A	--	0.04	A	7
NWLR	0.14	A	11	0.11	A	16

Notes: V/C – Volume to Capacity Ratio, where 1.00 represents at-capacity

LOS – Level of Service, where A is best with minimal delays and E/F is worst with significant delays

Queue – 95th Percentile Queue Length in metres, where one vehicle is typically assumed to be 6-7metres

WBTL – West Bound shared Thru-Left lane, etc.

As shown, traffic impact of the proposed development is expected to be very minimal. Following completion of the proposed development, all study area intersections are shown to operate well within capacity thresholds, with minimal to no increases reported in V/C, LOS and queues. Similar to the existing conditions analysis, the Edgemont & Ridgewood intersection analysis indicates that the northbound shared through and left lane is expected to operate at at-capacity conditions during the PM peak hour, with significant delay, however, overall the intersection would still be expected to operate within its capacity limits during the both the PM and Saturday peak periods and no improvements would be recommended at this time.

6.3 Site Accesses

Capacity analysis of the site access points is summarized in **Table 6.5**.

Table 6.5 – Capacity Analysis – Total 2014 – Site Accesses

Intersection/Movement	PM Peak Hour			Saturday Peak Hour		
	V/C	LOS	Queue	V/C	LOS	Queue
Woodbine Access						
SBTL	0.00	A	--	0.00	A	--
NBTR	0.07	--	--	0.06	--	--
WBLR	0.01	A	6	0.01	A	13
Highland Inbound						
NBTL	0.00	A	--	0.00	A	--
SBTR	0.08	--	--	0.11	--	--
Highland Outbound						
EBLR	0.01	A	8	0.01	B	--
NBT	0.15	--	--	0.12	--	--
SBT	0.08	--	--	0.11	--	--

Notes: V/C – Volume to Capacity Ratio, where 1.00 represents at-capacity

LOS – Level of Service, where A is best with minimal delays and E/F is worst with significant delays

Queue – 95th Percentile Queue Length in metres, where one vehicle is typically assumed to be 6-7metres

WBTL – West Bound shared Thru-Left lane, etc.

As shown, no operational concerns are identified, and each access is anticipated to operate well below capacity levels, with minimal delays and queues.

7. CONCLUSIONS & RECOMMENDATIONS

1. The proposed Edgemont Seniors' residence will provide 129 suites for independent supported living, on an 1.558 acre site adjacent to Edgemont Village, in an area currently developed with single family homes. The project is planned to be constructed in a single phase.
2. Located directly adjacent to Edgemont Village, the site is well located for resident/visitor/staff travel by bicycle, transit and walking. The proposed pedestrian improvements near to the site will serve to enhance the walkability for residents and others in the area, as well as will improve pedestrian connections to nearby Transit stops. Within and near to the study area, there are future plans for new bicycle routes and improved transit routes that will serve to increase resident/visitor/staff use of alternate modes to the single occupant vehicle. The residence will also be providing bicycle racks, storage lockers and end of trip facilities, a self-owned and operated resident shuttle service, and consideration will be given to providing electrical vehicle plug-ins and registration in the TransLink Employer Pass Program, which will all contribute the Transportation Demand Management for the site.
3. Parking for the residence will be provided in a one-level underground parkade accessed from Woodbine Drive. The proposed parking supply is 59 spaces, with 30 or more spaces allocated for resident use, 15 allocated for visitor use, and the remainder allocated for staff. The proposed supply more than meets the bylaw requirements and is anticipated to meet the actual demands associated with the residence.
4. The loading bay will be located adjacent to the parkade access ramp and will be accessed directly from Woodbine Drive. The loading bay will be able to accommodate one SU9 sized vehicles at a time and typical loading schedules for a similar facility indicate that the demand is expected only to be one vehicle at a time. It is recommended that the residence limit all delivery vehicles to a SU9 size or smaller.
5. The proposed Edgemont seniors' residence is expected to generate approximately 22 trips during the weekday PM peak hour and 26 trips during the Saturday peak hour period, or approximately 1 trip every 3 minutes during the PM peak hour, and approximately 1 trip every 2.5 minutes during the Saturday mid-day peak hour period. These estimates include resident, visitor, staff and delivery trips to and from the facility during the peak one hour periods.
6. The site will provide a one-way, two-lane Porte-Cochere pick-up & drop-off loop at the main entrance on Highland Boulevard that is anticipated to accommodate approximately 30% of the site's traffic, including visitors, TransLink HandyDart vehicles and the residence's own passenger shuttle, as well as smaller emergency vehicles such as ambulances.
7. The capacity analysis of study area intersections and site access points indicates that all are expected to operate within reasonable capacity limits. No geometric or capacity improvements are warranted at the study area intersections, and no improvements are recommended or needed to accommodate the proposed development.

APPENDIX A

Synchro Detailed Reports – Existing 2012 Conditions



HCM Unsignalized Intersection Capacity Analysis

3: Ayr Ave & Ridgewood Dr

Existing 2012 PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	204	49	12	115	67	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	222	53	13	125	73	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			275		399	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			275		399	248
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	97
cM capacity (veh/h)			1288		600	790
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	275	138	98			
Volume Left	0	13	73			
Volume Right	53	0	25			
cSH	1700	1288	639			
Volume to Capacity	0.16	0.01	0.15			
Queue Length 95th (m)	0.0	0.2	4.1			
Control Delay (s)	0.0	0.8	11.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	11.6			
Approach LOS			B			
Intersection Summary						
Average Delay		2.5				
Intersection Capacity Utilization		27.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: Crescentview Dr/Ayr Ave & Woodbine Dr

Existing 2012 PM

						
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	24	39	57	15	41	73
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	42	62	16	45	79
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			68		188	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			68		188	47
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		94	92
cM capacity (veh/h)			1533		769	1022
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	68	78	124			
Volume Left	0	62	45			
Volume Right	42	0	79			
cSH	1700	1533	914			
Volume to Capacity	0.04	0.04	0.14			
Queue Length 95th (m)	0.0	1.0	3.6			
Control Delay (s)	0.0	6.0	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	6.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			6.1			
Intersection Capacity Utilization			24.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

5: Edgemont Blvd & Ridgewood Dr

Existing 2012 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	16	185	247	7	109	73	23	243	15	187	263	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	201	268	8	118	79	25	264	16	203	286	47
Direction, Lane #	EB 1	EB 2	WB 1	SE 1	NW 1	NW 2						
Volume Total (vph)	218	268	205	305	489	47						
Volume Left (vph)	17	0	8	25	203	0						
Volume Right (vph)	0	268	79	16	0	47						
Hadj (s)	0.07	-0.67	-0.19	0.02	0.12	-0.57						
Departure Headway (s)	8.2	7.4	8.2	7.7	7.3	3.2						
Degree Utilization, x	0.50	0.55	0.47	0.66	0.99	0.04						
Capacity (veh/h)	436	481	414	453	489	1121						
Control Delay (s)	17.9	18.1	18.4	24.4	64.5	6.3						
Approach Delay (s)	18.0		18.4	24.4	59.4							
Approach LOS	C		C	C	F							
Intersection Summary												
Delay			33.8									
Level of Service			D									
Intersection Capacity Utilization			65.4%		ICU Level of Service				C			
Analysis Period (min)			15									

Existing 2012 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	187	23	8	3	16	100	3	197	4	89	116	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	203	25	9	3	17	109	3	214	4	97	126	99
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	237	129	222	223	99							
Volume Left (vph)	203	3	3	97	0							
Volume Right (vph)	9	109	4	0	99							
Hadj (s)	0.18	-0.47	0.03	0.25	-0.67							
Departure Headway (s)	5.8	5.4	5.6	6.1	5.2							
Degree Utilization, x	0.38	0.19	0.35	0.38	0.14							
Capacity (veh/h)	578	591	588	553	646							
Control Delay (s)	12.3	9.6	11.6	11.7	7.9							
Approach Delay (s)	12.3	9.6	11.6	10.5								
Approach LOS	B	A	B	B								
Intersection Summary												
Delay			11.1									
Level of Service			B									
Intersection Capacity Utilization			50.5%			ICU Level of Service			A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

12: Highland Blvd & Woodbine Dr

Existing 2012 PM

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	36	52	19	15	98	33	12	158	30	55	62	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	57	21	16	107	36	13	172	33	60	67	13
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total (vph)	116	159	217	140								
Volume Left (vph)	39	16	13	60								
Volume Right (vph)	21	36	33	13								
Hadj (s)	-0.01	-0.08	-0.04	0.06								
Departure Headway (s)	5.0	4.9	4.7	5.0								
Degree Utilization, x	0.16	0.21	0.29	0.19								
Capacity (veh/h)	656	682	709	675								
Control Delay (s)	9.0	9.2	9.6	9.1								
Approach Delay (s)	9.0	9.2	9.6	9.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.3								
Level of Service				A								
Intersection Capacity Utilization				41.6%	ICU Level of Service	A						
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

17: Highland Blvd & Edgemont Blvd

Existing 2012 PM

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	55	404	43	20	368	126	15	12	21	34	8	59
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	439	47	22	400	137	16	13	23	37	9	64
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	537			486			1162	1162	462	1123	1117	468
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537			486			1162	1162	462	1123	1117	468
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			98			88	93	96	76	95	89
cM capacity (veh/h)	1031			1077			139	180	599	156	191	595
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total	546	559	52	110								
Volume Left	60	22	16	37								
Volume Right	47	137	23	64								
cSH	1031	1077	229	282								
Volume to Capacity	0.06	0.02	0.23	0.39								
Queue Length 95th (m)	1.4	0.5	6.5	13.4								
Control Delay (s)	1.6	0.6	25.3	25.7								
Lane LOS	A	A	D	D								
Approach Delay (s)	1.6	0.6	25.3	25.7								
Approach LOS			D	D								
Intersection Summary												
Average Delay			4.2									
Intersection Capacity Utilization			61.4%	ICU Level of Service				B				
Analysis Period (min)			15									

Queuing and Blocking Report
Existing 2012 PM

11/28/2012

Intersection: 3: Ayr Ave & Ridgewood Dr

Movement	NB
Directions Served	LR
Maximum Queue (m)	15.2
Average Queue (m)	8.8
95th Queue (m)	9.0
Link Distance (m)	72.8
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Crescentview Dr/Ayr Ave & Woodbine Dr

Movement	NW
Directions Served	LR
Maximum Queue (m)	6.6
Average Queue (m)	6.5
95th Queue (m)	6.6
Link Distance (m)	26.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Edgemont Blvd & Ridgewood Dr

Movement	EB	EB	WB	SE	NW	NW
Directions Served	LT	R	LTR	LTR	LT	R
Maximum Queue (m)	16.8	29.5	15.4	26.4	67.8	12.5
Average Queue (m)	9.6	13.0	12.7	15.2	32.5	7.1
95th Queue (m)	16.6	27.2	17.6	24.9	61.0	17.2
Link Distance (m)	260.6		172.8	241.0	264.5	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		65.0				10.0
Storage Blk Time (%)					49	2
Queuing Penalty (veh)					21	7

Queuing and Blocking Report
Existing 2012 PM

11/28/2012

Intersection: 8: Highland Blvd & Ridgewood Dr/Colwood Dr

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	27.8	21.9	9.9	18.2	7.4
Average Queue (m)	11.2	11.7	5.2	9.7	2.4
95th Queue (m)	16.6	20.6	9.7	17.5	5.8
Link Distance (m)	188.2	39.7	46.8	262.0	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				85.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Highland Blvd & Woodbine Dr

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.1	15.6	16.4	9.3
Average Queue (m)	12.6	11.0	11.9	9.2
95th Queue (m)	18.2	15.6	17.1	9.3
Link Distance (m)	43.2	149.6	76.6	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Woodbine Dr & Canfield Cres

Movement
Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 16: Highland Blvd & Canfield Cres

Movement

Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Highland Blvd & Edgemont Blvd

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.5	21.7	15.8	15.7
Average Queue (m)	3.5	4.4	9.5	10.1
95th Queue (m)	13.1	17.1	17.4	13.9
Link Distance (m)	264.5	200.2	85.6	76.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 28

HCM Unsignalized Intersection Capacity Analysis

3: Ayr Ave & Ridgewood Dr

Existing 2012 Saturday

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↙	
Volume (veh/h)	103	42	22	100	54	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	112	46	24	109	59	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			158		291	135
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			158		291	135
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		91	98
cM capacity (veh/h)			1422		688	914
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	158	133	75			
Volume Left	0	24	59			
Volume Right	46	0	16			
cSH	1700	1422	727			
Volume to Capacity	0.09	0.02	0.10			
Queue Length 95th (m)	0.0	0.4	2.6			
Control Delay (s)	0.0	1.5	10.5			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.5	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay		2.7				
Intersection Capacity Utilization		28.4%	ICU Level of Service	A		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: Crescentview Dr/Ayr Ave & Woodbine Dr

Existing 2012 Saturday

						
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	30	54	59	35	25	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	59	64	38	27	67
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			91		228	62
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			91		228	62
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		96	93
cM capacity (veh/h)			1504		727	1003
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	91	102	95			
Volume Left	0	64	27			
Volume Right	59	0	67			
cSH	1700	1504	905			
Volume to Capacity	0.05	0.04	0.10			
Queue Length 95th (m)	0.0	1.0	2.7			
Control Delay (s)	0.0	4.8	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.8	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			23.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

5: Edgemont Blvd & Ridgewood Dr

Existing 2012 Saturday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	12	108	235	7	102	49	19	208	11	202	209	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	117	255	8	111	53	21	226	12	220	227	26
Direction, Lane #	EB 1	EB 2	WB 1	SE 1	NW 1	NW 2						
Volume Total (vph)	130	255	172	259	447	26						
Volume Left (vph)	13	0	8	21	220	0						
Volume Right (vph)	0	255	53	12	0	26						
Hadj (s)	0.08	-0.67	-0.14	0.02	0.13	-0.57						
Departure Headway (s)	7.3	6.5	7.1	6.7	6.4	3.2						
Degree Utilization, x	0.27	0.46	0.34	0.48	0.79	0.02						
Capacity (veh/h)	455	501	447	487	546	1121						
Control Delay (s)	11.7	13.9	13.7	15.8	29.3	6.3						
Approach Delay (s)	13.2		13.7	15.8	28.0							
Approach LOS	B		B	C	D							
Intersection Summary												
Delay			19.2									
Level of Service			C									
Intersection Capacity Utilization			59.1%	ICU Level of Service				B				
Analysis Period (min)			15									

Existing 2012 Saturday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	99	19	4	3	24	75	8	178	6	77	166	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	108	21	4	3	26	82	9	193	7	84	180	98
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	133	111	209	264	98							
Volume Left (vph)	108	3	9	84	0							
Volume Right (vph)	4	82	7	0	98							
Hadj (s)	0.18	-0.40	0.02	0.19	-0.67							
Departure Headway (s)	5.7	5.2	5.2	5.6	4.8							
Degree Utilization, x	0.21	0.16	0.30	0.41	0.13							
Capacity (veh/h)	576	622	654	615	721							
Control Delay (s)	10.2	9.1	10.4	11.3	7.3							
Approach Delay (s)	10.2	9.1	10.4	10.2								
Approach LOS	B	A	B	B								
Intersection Summary												
Delay			10.1									
Level of Service			B									
Intersection Capacity Utilization			46.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

12: Highland Blvd & Woodbine Dr

Existing 2012 Saturday

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	33	73	17	21	72	44	14	115	48	69	88	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	79	18	23	78	48	15	125	52	75	96	13
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total (vph)	134	149	192	184								
Volume Left (vph)	36	23	15	75								
Volume Right (vph)	18	48	52	13								
Hadj (s)	0.00	-0.13	-0.11	0.07								
Departure Headway (s)	5.1	4.9	4.8	5.0								
Degree Utilization, x	0.19	0.20	0.25	0.25								
Capacity (veh/h)	649	674	701	677								
Control Delay (s)	9.2	9.2	9.4	9.6								
Approach Delay (s)	9.2	9.2	9.4	9.6								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.4								
Level of Service				A								
Intersection Capacity Utilization				40.2%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

17: Highland Blvd & Edgemont Blvd

Existing 2012 Saturday

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	51	305	77	36	299	101	16	22	43	38	26	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	332	84	39	325	110	17	24	47	41	28	47
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	435			415			1003	997	373	1001	984	380
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	435			415			1003	997	373	1001	984	380
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			97			90	89	93	77	88	93
cM capacity (veh/h)	1125			1144			174	224	673	178	228	667
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total	471	474	88	116								
Volume Left	55	39	17	41								
Volume Right	84	110	47	47								
cSH	1125	1144	319	273								
Volume to Capacity	0.05	0.03	0.28	0.43								
Queue Length 95th (m)	1.2	0.8	8.4	15.4								
Control Delay (s)	1.5	1.0	20.5	27.7								
Lane LOS	A	A	C	D								
Approach Delay (s)	1.5	1.0	20.5	27.7								
Approach LOS			C	D								
Intersection Summary												
Average Delay			5.4									
Intersection Capacity Utilization			51.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Queuing and Blocking Report
Existing 2012 Saturday

11/28/2012

Intersection: 3: Ayr Ave & Ridgewood Dr

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	9.3	9.3
Average Queue (m)	2.6	9.1
95th Queue (m)	9.5	9.5
Link Distance (m)	188.0	72.2
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Crescentview Dr/Ayr Ave & Woodbine Dr

Movement	SB	NW
Directions Served	LT	LR
Maximum Queue (m)	9.3	6.9
Average Queue (m)	5.1	6.8
95th Queue (m)	12.5	7.0
Link Distance (m)	72.2	27.2
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Edgemont Blvd & Ridgewood Dr

Movement	EB	EB	WB	SE	NW	NW
Directions Served	LT	R	LTR	LTR	LT	R
Maximum Queue (m)	10.8	14.6	25.7	21.1	41.2	12.5
Average Queue (m)	7.3	10.5	16.0	15.3	24.8	8.8
95th Queue (m)	12.7	16.0	24.3	22.8	36.6	18.1
Link Distance (m)	260.6		173.2	241.0	264.5	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		65.0				10.0
Storage Blk Time (%)					44	1
Queuing Penalty (veh)					11	4

Queuing and Blocking Report
Existing 2012 Saturday

11/28/2012

Intersection: 8: Highland Blvd & Ridgewood Dr/Colwood Dr

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	15.8	15.4	17.4	12.6	12.9
Average Queue (m)	11.3	8.5	8.3	10.8	3.9
95th Queue (m)	16.7	13.1	16.2	15.1	10.9
Link Distance (m)	188.0	39.7	46.8	262.0	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				85.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Highland Blvd & Woodbine Dr

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.8	9.2	16.4	15.9
Average Queue (m)	12.9	9.1	11.9	10.2
95th Queue (m)	18.8	9.6	16.9	14.0
Link Distance (m)	43.2	149.6	76.6	45.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Woodbine Dr & Canfield Cres

Movement	SW
Directions Served	LR
Maximum Queue (m)	9.0
Average Queue (m)	2.6
95th Queue (m)	9.3
Link Distance (m)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Highland Blvd & Canfield Cres

Movement

Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Highland Blvd & Edgemont Blvd

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	15.6	15.0	17.3	15.7
Average Queue (m)	8.2	4.7	7.8	11.7
95th Queue (m)	17.8	14.2	17.0	16.9
Link Distance (m)	264.5	200.2	85.6	76.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 15

APPENDIX B

Synchro Detailed Reports – Total 2014 Conditions



HCM Unsignalized Intersection Capacity Analysis

3: Ayr Ave & Ridgewood Dr

Total 2012 PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	205	52	12	116	68	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	223	57	13	126	74	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			279		403	251
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			279		403	251
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	97
cM capacity (veh/h)			1283		597	788
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	279	139	99			
Volume Left	0	13	74			
Volume Right	57	0	25			
cSH	1700	1283	636			
Volume to Capacity	0.16	0.01	0.16			
Queue Length 95th (m)	0.0	0.2	4.2			
Control Delay (s)	0.0	0.8	11.7			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	11.7			
Approach LOS			B			
Intersection Summary						
Average Delay		2.5				
Intersection Capacity Utilization		27.9%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: Crescentview Dr/Ayr Ave & Woodbine Dr

Total 2012 PM

						
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	24	39	60	15	41	74
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	42	65	16	45	80
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			68		194	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			68		194	47
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		94	92
cM capacity (veh/h)			1533		761	1022
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	68	82	125			
Volume Left	0	65	45			
Volume Right	42	0	80			
cSH	1700	1533	911			
Volume to Capacity	0.04	0.04	0.14			
Queue Length 95th (m)	0.0	1.0	3.6			
Control Delay (s)	0.0	6.0	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	6.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			6.1			
Intersection Capacity Utilization			24.3%	ICU Level of Service		A
Analysis Period (min)			15			

Total 2012 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	16	188	247	7	110	74	24	243	15	187	263	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	204	268	8	120	80	26	264	16	203	286	47
Direction, Lane #	EB 1	EB 2	WB 1	SE 1	NW 1	NW 2						
Volume Total (vph)	222	268	208	307	489	47						
Volume Left (vph)	17	0	8	26	203	0						
Volume Right (vph)	0	268	80	16	0	47						
Hadj (s)	0.07	-0.67	-0.19	0.02	0.12	-0.57						
Departure Headway (s)	8.2	7.5	8.3	7.8	7.3	3.2						
Degree Utilization, x	0.51	0.56	0.48	0.66	0.99	0.04						
Capacity (veh/h)	435	480	414	451	489	1121						
Control Delay (s)	18.2	18.2	18.6	24.8	65.9	6.3						
Approach Delay (s)	18.2		18.6	24.8	60.7							
Approach LOS	C		C	C	F							
Intersection Summary												
Delay			34.4									
Level of Service			D									
Intersection Capacity Utilization			65.7%	ICU Level of Service					C			
Analysis Period (min)			15									

Total 2012 PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	187	23	9	3	16	100	4	198	4	89	117	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	203	25	10	3	17	109	4	215	4	97	127	99
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	238	129	224	224	99							
Volume Left (vph)	203	3	4	97	0							
Volume Right (vph)	10	109	4	0	99							
Hadj (s)	0.18	-0.47	0.03	0.25	-0.67							
Departure Headway (s)	5.8	5.4	5.6	6.2	5.2							
Degree Utilization, x	0.38	0.19	0.35	0.38	0.14							
Capacity (veh/h)	577	589	588	553	645							
Control Delay (s)	12.3	9.7	11.6	11.7	7.9							
Approach Delay (s)	12.3	9.7	11.6	10.6								
Approach LOS	B	A	B	B								
Intersection Summary												
Delay			11.1									
Level of Service			B									
Intersection Capacity Utilization			50.7%	ICU Level of Service						A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

12: Highland Blvd & Woodbine Dr

Total 2012 PM

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	37	53	22	15	98	33	14	159	30	55	63	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	58	24	16	107	36	15	173	33	60	68	14
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total (vph)	122	159	221	142								
Volume Left (vph)	40	16	15	60								
Volume Right (vph)	24	36	33	14								
Hadj (s)	-0.02	-0.08	-0.04	0.06								
Departure Headway (s)	5.0	4.9	4.8	5.0								
Degree Utilization, x	0.17	0.22	0.29	0.20								
Capacity (veh/h)	655	678	705	672								
Control Delay (s)	9.0	9.2	9.7	9.2								
Approach Delay (s)	9.0	9.2	9.7	9.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.4								
Level of Service				A								
Intersection Capacity Utilization				42.4%	ICU Level of Service	A						
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

14: Woodbine Dr & Parkade

Total 2012 PM



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	3	96	112	4	5	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	104	122	4	5	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	126				235	124
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126				235	124
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1460				752	927
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	108	126	9			
Volume Left	3	0	5			
Volume Right	0	4	3			
cSH	1460	1700	809			
Volume to Capacity	0.00	0.07	0.01			
Queue Length 95th (m)	0.1	0.0	0.2			
Control Delay (s)	0.2	0.0	9.5			
Lane LOS	A		A			
Approach Delay (s)	0.2	0.0	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			17.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Highland Blvd & Porte Cochere In

Total 2012 PM

						
Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	0	0	1	230	130	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1	250	141	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	395	142	143			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	395	142	143			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	610	905	1439			
Direction, Lane #	NE 1	SW 1				
Volume Total	251	143				
Volume Left	1	0				
Volume Right	0	2				
cSH	1439	1700				
Volume to Capacity	0.00	0.08				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS	A					
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		16.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

17: Highland Blvd & Edgemont Blvd

Total 2012 PM

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	55	404	43	20	368	129	15	12	21	38	8	59
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	439	47	22	400	140	16	13	23	41	9	64
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	540			486			1164	1166	462	1125	1119	470
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	540			486			1164	1166	462	1125	1119	470
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			98			88	93	96	74	95	89
cM capacity (veh/h)	1028			1077			139	179	599	156	191	593
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total	546	562	52	114								
Volume Left	60	22	16	41								
Volume Right	47	140	23	64								
cSH	1028	1077	228	273								
Volume to Capacity	0.06	0.02	0.23	0.42								
Queue Length 95th (m)	1.4	0.5	6.5	14.9								
Control Delay (s)	1.6	0.6	25.4	27.4								
Lane LOS	A	A	D	D								
Approach Delay (s)	1.6	0.6	25.4	27.4								
Approach LOS			D	D								
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Utilization			62.0%		ICU Level of Service				B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

18: Highland Blvd & Porte Cochere Out

Total 2012 PM

						
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	2	2	0	229	130	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	0	249	141	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	390	141	141			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	390	141	141			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	614	907	1442			
Direction, Lane #	SE 1	NE 1	SW 1			
Volume Total	4	249	141			
Volume Left	2	0	0			
Volume Right	2	0	0			
cSH	732	1700	1700			
Volume to Capacity	0.01	0.15	0.08			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	9.9	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.9	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		22.1%		ICU Level of Service		A
Analysis Period (min)		15				

Queuing and Blocking Report

Total 2012 PM

11/28/2012

Intersection: 3: Ayr Ave & Ridgewood Dr

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	9.2	14.7
Average Queue (m)	1.3	8.5
95th Queue (m)	6.6	15.1
Link Distance (m)	188.1	71.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Crescentview Dr/Ayr Ave & Woodbine Dr

Movement	NB	NW
Directions Served	TR	LR
Maximum Queue (m)	6.7	12.9
Average Queue (m)	1.0	8.0
95th Queue (m)	4.8	11.3
Link Distance (m)	59.8	27.2
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Edgemont Blvd & Ridgewood Dr

Movement	EB	EB	WB	SE	NW	NW
Directions Served	LT	R	LTR	LTR	LT	R
Maximum Queue (m)	17.4	14.8	27.0	48.6	57.0	12.5
Average Queue (m)	12.6	5.9	16.2	21.1	33.7	10.6
95th Queue (m)	17.3	15.4	25.3	42.0	52.5	17.8
Link Distance (m)	260.6		172.9	241.0	264.5	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		65.0				10.0
Storage Blk Time (%)					57	2
Queuing Penalty (veh)					25	8

Queuing and Blocking Report

Total 2012 PM

11/28/2012

Intersection: 8: Highland Blvd & Ridgewood Dr/Colwood Dr

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	16.4	14.8	16.6	12.2	8.3
Average Queue (m)	14.2	9.3	10.0	8.5	3.4
95th Queue (m)	18.2	17.6	18.1	14.2	8.0
Link Distance (m)	188.1	39.7	46.8	262.0	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				85.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Highland Blvd & Woodbine Dr

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	22.0	16.2	16.5	14.7
Average Queue (m)	11.7	10.0	11.3	9.8
95th Queue (m)	19.5	13.3	16.4	13.1
Link Distance (m)	43.7	149.4	76.6	18.5
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Woodbine Dr & Canfield Cres

Movement	SW
Directions Served	LR
Maximum Queue (m)	8.8
Average Queue (m)	1.3
95th Queue (m)	6.4
Link Distance (m)	24.7
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

Total 2012 PM

11/28/2012

Intersection: 16: Highland Blvd

Movement

Directions Served

Maximum Queue (m)

Average Queue (m)

95th Queue (m)

Link Distance (m)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (m)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 17: Highland Blvd & Edgemont Blvd

Movement

Directions Served

Maximum Queue (m)

Average Queue (m)

95th Queue (m)

Link Distance (m)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (m)

Storage Blk Time (%)

Queuing Penalty (veh)

Intersection: 18: Highland Blvd

Movement

Directions Served

Maximum Queue (m)

Average Queue (m)

95th Queue (m)

Link Distance (m)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (m)

Storage Blk Time (%)

Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 32

HCM Unsignalized Intersection Capacity Analysis

3: Ayr Ave & Ridgewood Dr

Total 2012 Saturday

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	104	44	22	102	55	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	48	24	111	60	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			161		296	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		296	137
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		91	98
cM capacity (veh/h)			1418		684	912
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	161	135	76			
Volume Left	0	24	60			
Volume Right	48	0	16			
cSH	1700	1418	722			
Volume to Capacity	0.09	0.02	0.11			
Queue Length 95th (m)	0.0	0.4	2.7			
Control Delay (s)	0.0	1.5	10.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.5	10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			28.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: Crescentview Dr/Ayr Ave & Woodbine Dr

Total 2012 Saturday

						
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	30	54	61	35	25	63
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	59	66	38	27	68
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			91		233	62
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			91		233	62
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		96	93
cM capacity (veh/h)			1504		722	1003
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	91	104	96			
Volume Left	0	66	27			
Volume Right	59	0	68			
cSH	1700	1504	903			
Volume to Capacity	0.05	0.04	0.11			
Queue Length 95th (m)	0.0	1.1	2.7			
Control Delay (s)	0.0	4.9	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.9	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			4.9			
Intersection Capacity Utilization			23.8%	ICU Level of Service		A
Analysis Period (min)			15			

Total 2012 Saturday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	12	110	235	7	103	51	20	208	11	202	209	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	120	255	8	112	55	22	226	12	220	227	26
Direction, Lane #	EB 1	EB 2	WB 1	SE 1	NW 1	NW 2						
Volume Total (vph)	133	255	175	260	447	26						
Volume Left (vph)	13	0	8	22	220	0						
Volume Right (vph)	0	255	55	12	0	26						
Hadj (s)	0.08	-0.67	-0.15	0.02	0.13	-0.57						
Departure Headway (s)	7.3	6.6	7.1	6.7	6.4	3.2						
Degree Utilization, x	0.27	0.47	0.35	0.49	0.79	0.02						
Capacity (veh/h)	454	499	448	485	544	1121						
Control Delay (s)	11.8	14.0	13.9	16.0	29.7	6.3						
Approach Delay (s)	13.2		13.9	16.0	28.4							
Approach LOS	B		B	C	D							
Intersection Summary												
Delay			19.4									
Level of Service			C									
Intersection Capacity Utilization			59.4%	ICU Level of Service				B				
Analysis Period (min)			15									

Total 2012 Saturday

																			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR							
Lane Configurations																			
Sign Control		Stop			Stop			Stop			Stop								
Volume (vph)	99	19	5	3	24	75	10	177	6	77	167	90							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92							
Hourly flow rate (vph)	108	21	5	3	26	82	11	192	7	84	182	98							
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2														
Volume Total (vph)	134	111	210	265	98														
Volume Left (vph)	108	3	11	84	0														
Volume Right (vph)	5	82	7	0	98														
Hadj (s)	0.17	-0.40	0.03	0.19	-0.67														
Departure Headway (s)	5.7	5.2	5.2	5.6	4.8														
Degree Utilization, x	0.21	0.16	0.30	0.42	0.13														
Capacity (veh/h)	576	620	653	614	720														
Control Delay (s)	10.2	9.2	10.5	11.4	7.3														
Approach Delay (s)	10.2	9.2	10.5	10.3															
Approach LOS	B	A	B	B															
Intersection Summary																			
Delay				10.2															
Level of Service				B															
Intersection Capacity Utilization				46.7%	ICU Level of Service	A													
Analysis Period (min)				15															

HCM Unsignalized Intersection Capacity Analysis

12: Highland Blvd & Woodbine Dr

Total 2012 Saturday

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	34	73	20	21	71	45	17	116	48	70	89	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	79	22	23	77	49	18	126	52	76	97	14
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total (vph)	138	149	197	187								
Volume Left (vph)	37	23	18	76								
Volume Right (vph)	22	49	52	14								
Hadj (s)	-0.01	-0.13	-0.11	0.07								
Departure Headway (s)	5.1	4.9	4.8	5.0								
Degree Utilization, x	0.19	0.20	0.26	0.26								
Capacity (veh/h)	647	668	698	675								
Control Delay (s)	9.3	9.2	9.5	9.7								
Approach Delay (s)	9.3	9.2	9.5	9.7								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.4								
Level of Service				A								
Intersection Capacity Utilization				41.0%	ICU Level of Service	A						
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

14: Woodbine Dr & Parkade

Total 2012 Saturday



Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (veh/h)	3	112	84	5	6	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	122	91	5	7	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	97				222	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				222	94
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1497				764	963
Direction, Lane #	SE 1	NW 1	SW 1			
Volume Total	125	97	11			
Volume Left	3	0	7			
Volume Right	0	5	4			
cSH	1497	1700	833			
Volume to Capacity	0.00	0.06	0.01			
Queue Length 95th (m)	0.0	0.0	0.3			
Control Delay (s)	0.2	0.0	9.4			
Lane LOS	A		A			
Approach Delay (s)	0.2	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			18.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Highland Blvd & Porte Cochere In

Total 2012 Saturday

						
Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	0	0	2	195	170	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	2	212	185	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	402	186	187			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	402	186	187			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	603	856	1387			
Direction, Lane #	NE 1	SW 1				
Volume Total	214	187				
Volume Left	2	0				
Volume Right	0	2				
cSH	1387	1700				
Volume to Capacity	0.00	0.11				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.1	0.0				
Lane LOS	A					
Approach Delay (s)	0.1	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		15.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

17: Highland Blvd & Edgemont Blvd

Total 2012 Saturday

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	51	305	77	36	299	105	16	22	43	43	26	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	332	84	39	325	114	17	24	47	47	28	47
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	439			415			1005	1002	373	1003	986	382
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	439			415			1005	1002	373	1003	986	382
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			97			90	89	93	74	88	93
cM capacity (veh/h)	1121			1144			174	223	673	177	227	665
Direction, Lane #	SE 1	NW 1	NE 1	SW 1								
Volume Total	471	478	88	122								
Volume Left	55	39	17	47								
Volume Right	84	114	47	47								
cSH	1121	1144	318	265								
Volume to Capacity	0.05	0.03	0.28	0.46								
Queue Length 95th (m)	1.2	0.8	8.4	17.2								
Control Delay (s)	1.5	1.0	20.6	29.6								
Lane LOS	A	A	C	D								
Approach Delay (s)	1.5	1.0	20.6	29.6								
Approach LOS			C	D								
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Utilization			52.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

22: Highland Blvd & Porte Cochere Out

Total 2012 Saturday



Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	2	2	0	195	170	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	0	212	185	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	397	185	185			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	397	185	185			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	608	857	1390			
Direction, Lane #	SE 1	NE 1	SW 1			
Volume Total	4	212	185			
Volume Left	2	0	0			
Volume Right	2	0	0			
cSH	712	1700	1700			
Volume to Capacity	0.01	0.12	0.11			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	10.1	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.1	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			20.3%	ICU Level of Service		A
Analysis Period (min)			15			

Queuing and Blocking Report
Total 2012 Saturday

11/28/2012

Intersection: 3: Ayr Ave & Ridgewood Dr

Movement	NB
Directions Served	LR
Maximum Queue (m)	8.8
Average Queue (m)	8.7
95th Queue (m)	8.8
Link Distance (m)	75.1
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Crescentview Dr/Ayr Ave & Woodbine Dr

Movement	SB	NW
Directions Served	LT	LR
Maximum Queue (m)	9.1	17.7
Average Queue (m)	1.3	8.8
95th Queue (m)	6.6	15.6
Link Distance (m)	75.1	30.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Edgemont Blvd & Ridgewood Dr

Movement	EB	EB	WB	SE	NW	NW
Directions Served	LT	R	LTR	LTR	LT	R
Maximum Queue (m)	10.8	12.4	14.6	27.0	49.0	12.5
Average Queue (m)	4.8	6.4	9.8	16.0	30.4	8.6
95th Queue (m)	8.9	14.1	14.4	27.2	48.4	17.7
Link Distance (m)	260.6		172.8	241.0	264.5	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		65.0				10.0
Storage Blk Time (%)					54	1
Queuing Penalty (veh)					13	3

Queuing and Blocking Report
Total 2012 Saturday

11/28/2012

Intersection: 8: Highland Blvd & Ridgewood Dr/Colwood Dr

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (m)	8.5	13.1	10.8	12.7	7.3
Average Queue (m)	8.4	8.1	6.2	10.8	2.2
95th Queue (m)	8.5	11.5	11.4	15.1	5.8
Link Distance (m)	188.2	39.7	46.8	262.0	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				85.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Highland Blvd & Woodbine Dr

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	23.7	9.3	23.5	15.7
Average Queue (m)	13.9	9.2	13.9	11.0
95th Queue (m)	22.2	9.3	24.4	15.4
Link Distance (m)	36.7	149.6	76.3	20.6
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Woodbine Dr & Canfield Cres

Movement	SW
Directions Served	LR
Maximum Queue (m)	8.9
Average Queue (m)	6.3
95th Queue (m)	12.8
Link Distance (m)	29.5
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

Total 2012 Saturday

11/28/2012

Intersection: 16: Highland Blvd

Movement

Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Highland Blvd & Edgemont Blvd

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.8	22.4	21.5	23.2
Average Queue (m)	6.0	10.1	12.8	16.7
95th Queue (m)	15.1	23.1	20.5	25.9
Link Distance (m)	264.5	200.2	85.6	76.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

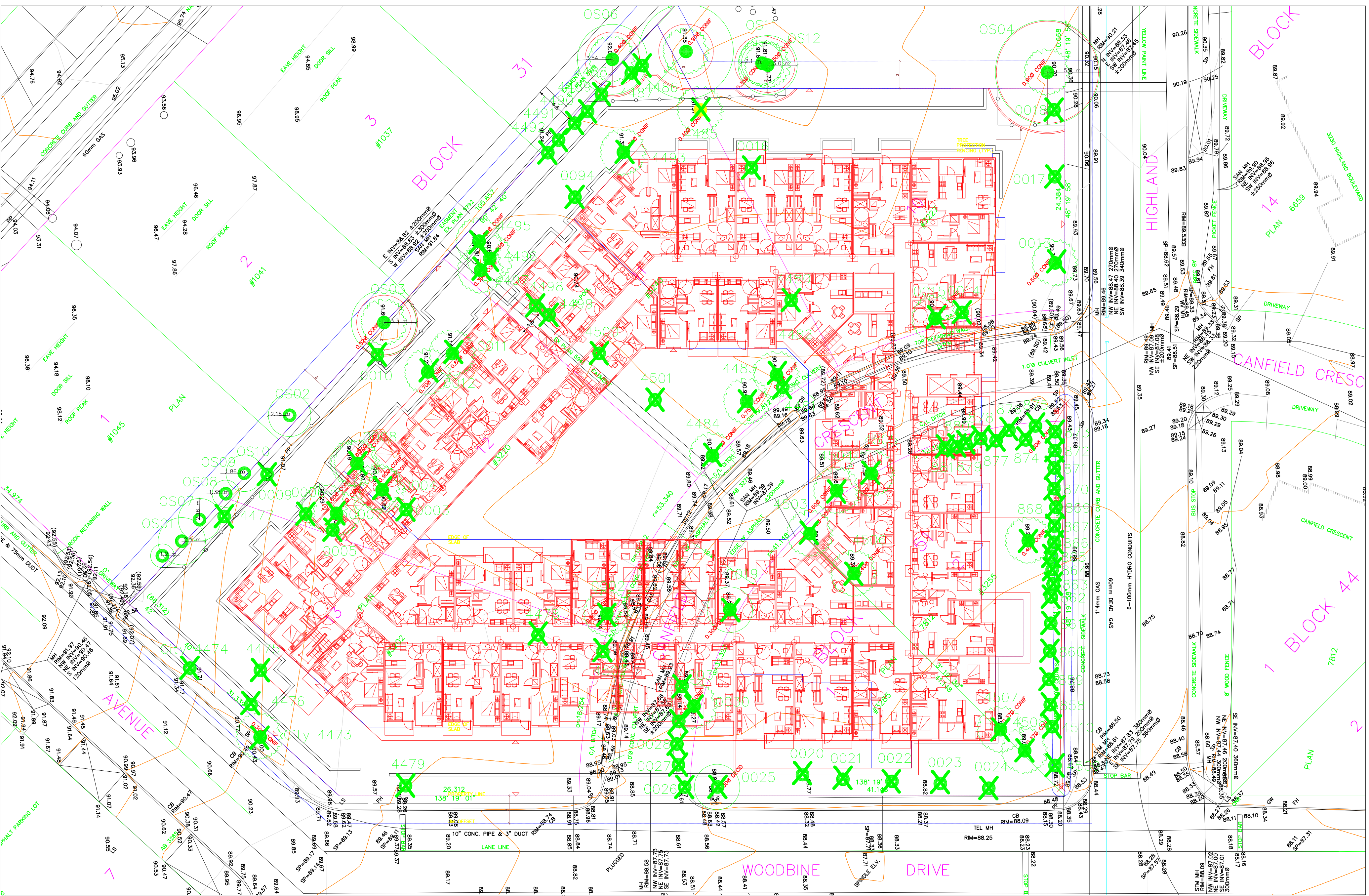
Intersection: 22: Highland Blvd

Movement

Directions Served
Maximum Queue (m)
Average Queue (m)
95th Queue (m)
Link Distance (m)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (m)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 16



LEGEND ● TREE TO BE RETAINED ✖ TREE TO BE REMOVED ○ UNSURVEYED TREE ○ ROOT PROTECTION ZONE — ROOT PROTECTION FENCING	DATE February 07/ 2013 DIAMOND HEAD CONSULTING LTD. 342 WEST 8TH AVENUE VANCOUVER, BC V5Y 3X2 PHONE 604.733.4886	CLIENT Edgemont Senior Living Inc. 928 Homer Street #2809 Vancouver, BC V6B 1T7 TITLE TREE PROTECTION AND REMOVAL PLAN Edgemont Retirement Home, North Vancouver, BC
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Urban Design Context Study

Edgemont Senior Living

Prepared for the District of North
Vancouver by Frank Ducote Urban Design

July 31, 2012



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Table of Contents

1. Terms of Reference
2. Policy Context
3. Urban Design Principles
4. Edgemont Village
5. The Site
6. Siting and Massing options
7. Conceptual Floor Plans
8. Conclusions and Recommendations

This study was commissioned to provide an urban design context in order to better situate a proposal for an independent seniors living development adjacent to Edgemont Village. The study's findings represent the independent views of the author and do not predetermine the District of North Vancouver's own review and position regarding the proposed development application or to land use planning in the wider Village area.

Terms of Reference

In order to prepare this independent urban design context study, the District of North Vancouver set out the following terms of reference.

- Examine the interface between the Canfield Development and the immediately adjacent areas; and
- Land use, built form and circulation patterns should reflect OCP policies for village centres and Edgemont Village Centre guidelines (i.e., Upper Capilano Local Plan is now a reference document with adoption of the OCP)
- To identify and preserve mountain views through view corridors and building massing
- To foster an interesting pedestrian environment and maintain a human scale in the relationship of buildings to the street
- For a consistent and coordinate approach to the design of the public realm
- For accessibility for persons with disabilities
- To avoid pedestrian realm overshadowing
- To create and protect a human scale at the street
- For an eclectic but co-ordinated mix of building styles, etc.
- For on-site parking to be hidden (underground or to the rear of street oriented buildings)

In addition the study should look at the following:

- Relationship to the single family housing across Highland
- Character of Highland at this development site
- Relationship to Woodbine and the mixed use development opposite (how does this present at grade?) character / feel of this transitional area

- Examine the viability of future development of the adjoining single family lots on Ridgewood (what allowances are needed for access, parking, a shared sunny courtyard, etc.)
- Potential for an east/west mid block pedestrian passage to replace the loss of Canfield Crescent
- The relationship/transition to single family on the north side of Ridgewood
- Relationship and massing compared to future development of Super Valu site including pedestrian connectivity and service access point(s) Given proximity study should provide urban design guidance for Super Valu site, particularly the Ayr Street elevation
- Given the senior living concept are there more specific public realm elements that complement demographics
- The unique street layout in Edgemont. The assembly would remove a portion of Canfield Crescent. Is there any merit in retaining this unique street pattern or, at least, reflecting it in the proposed scheme?
- How to integrate the change in grade across the study area to retain views, light, privacy and facilitate pedestrian movements
- The transition from single family neighbourhood at the intersection of Colwood/Highland and Ridgewood to a higher density –residential/commercial village (Edgemont Village north-eastern gateway or subtle entrance?)

Community consultation by the Edgemont Senior Living proponent has been ongoing during the preparation of this study. Accordingly, certain aspects of the site and floor plans included in this study may differ from those currently being discussed in that consultation process. These differences are presumed to include changes in the site configuration, off-street parking supply, and number of storeys.

Policy Context

- The subject site is zoned and designated for detached residential
- General District-wide OCP “Network of Centres” support for providing greater housing diversity
- Edgemont Village is identified as a Village in the Official Community Plan
- Specific OCP target to increase rental options
- Local Plan interest in exploring seniors housing “on suitable sites should they become available”
- Local Plan refresh for Edgemont Village anticipated to begin Fall 2012

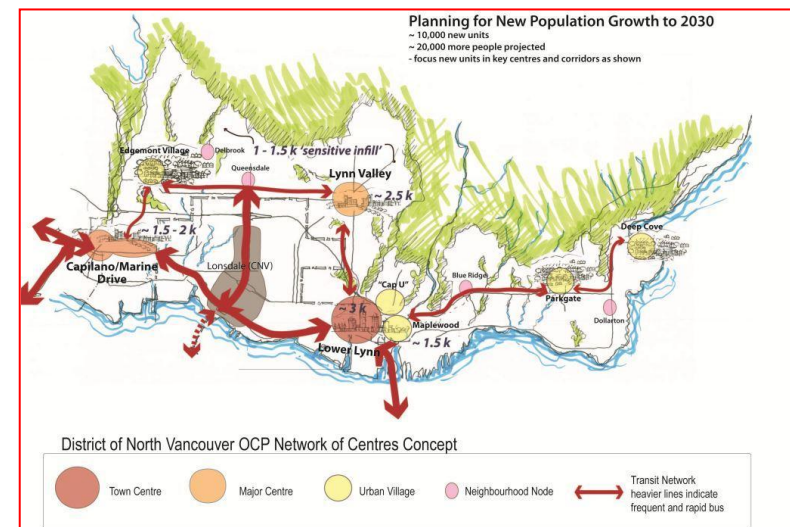
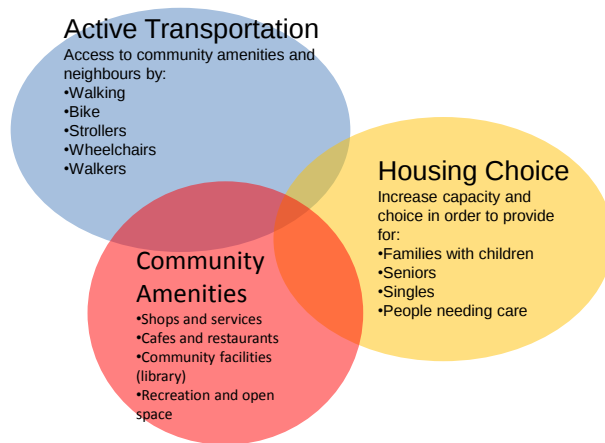


Figure 1: OCP Network of Centres Concept

Urban Design Principles

Key Healthy Living Principles

in addition to safety, environmental health and social equity



Livability – safe, secure and comfortable housing for seniors, with high amenity

- Safe, secure and enjoyable residential environment: discreet fences, hedges, etc.
- High amenity indoor and garden spaces for residents

Neighbourliness – responding to adjacent conditions

- Integrate into Village context on Woodbine frontage
- Protect public views to mountains especially along streets and street ends

- Create a pedestrian-friendly public realm, with main entrances close to streets
- Encourage walking to and through the Village
- Create a positive relationship with existing and potential future nearby development

Sustainability – social, economic and physical

- Socio-economic: Enhance the vitality of Edgemont Village with added residents and visitors
- Social: Cater to North Shore and Upper Capilano community residents
- Economic: Critical mass to provide economic viability for seniors living
- Physical: Respond to and protect treed and sloping site character wherever possible, especially at the northerly interface with residential properties
- Physical: Optimize access to light and air to all units and common spaces
- Physical: Optimize southerly orientation for usable outdoor spaces
- Physical: Build to a high level of green design

Character

- Enhance Edgemont Village's eclectic character
- Use natural and local materials
- Employ low pitched or flat roofs
- Provide generous window sizes for access to natural light, air and outlook

Edgemont Village

Village Structure and Elements

The high street – Edgemont Boulevard.

Crossroad – Highland Boulevard.

Transitional streets – bound the heart of the commercial core, with the northerly edge being less defined at this time. Redevelopment of the SuperValu site at a future date will likely provide a stronger sense of entry to the Village.

Gateways – Major entry points located on Edgemont Boulevard at Queens and Connaught Crescent, with minor entry points on Highland at Woodbine and Newmarket Drive.

Public views to mountains– As shown in Figure 4, these view corridors provide a rich sense of place to the Village, and are generally viewed along street ends. Some views are presently located over lower buildings as well.

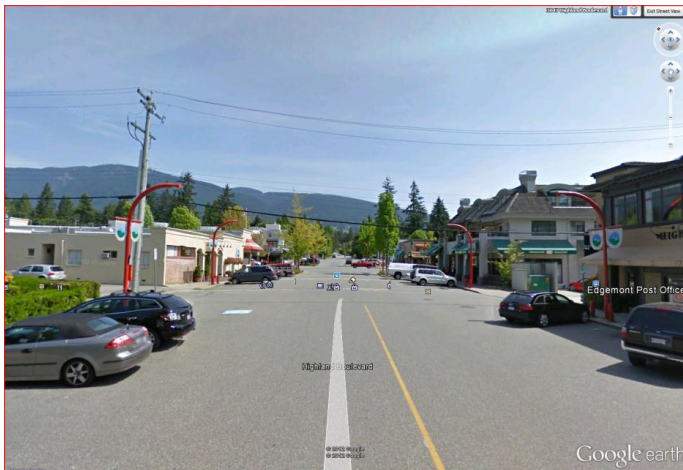


Figure 2: Looking south-easterly on Edgemont Boulevard, the Village's high street

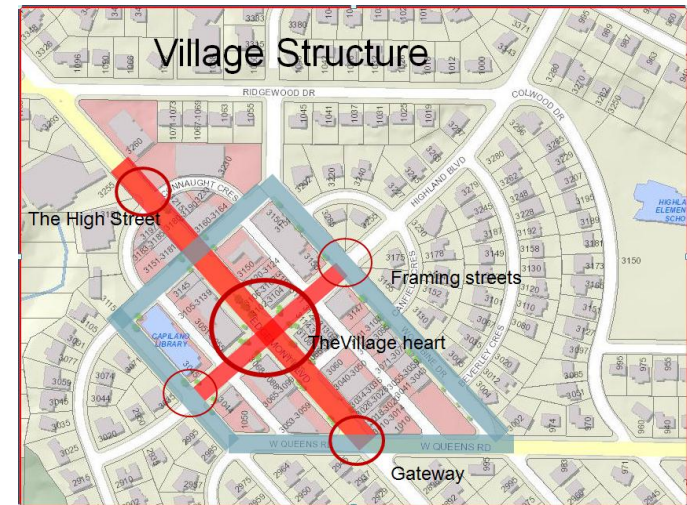


Figure 3: Key elements of Village Structure

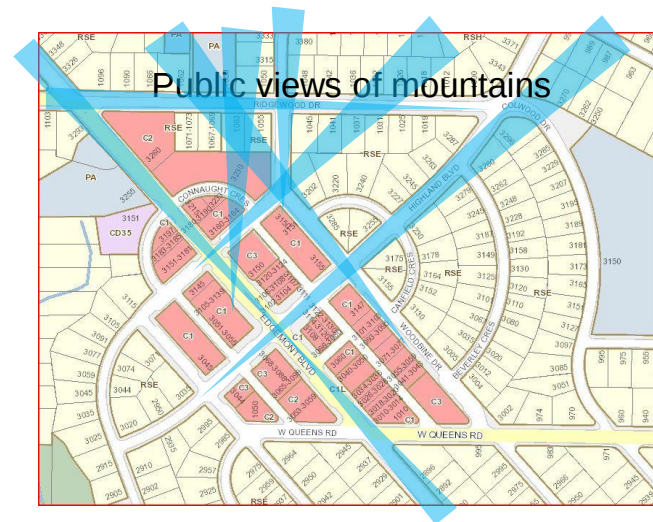


Figure 4: Public view corridors to mountains

The Site and its Context

Location

The site is located immediately north of Edgemont Village, at the intersection of Highland Boulevard and Woodbine Drive, with Ayr Avenue on the west. All properties across Woodbine and Ayr are zoned commercial, while those to the north and east are zoned single-family residential.

Topography

The Village itself is on flat terrain, as is the Woodbine frontage of the subject site. There is a noticeable increase in elevation toward the northerly boundaries of the site, toward properties located in Ridgewood Drive.

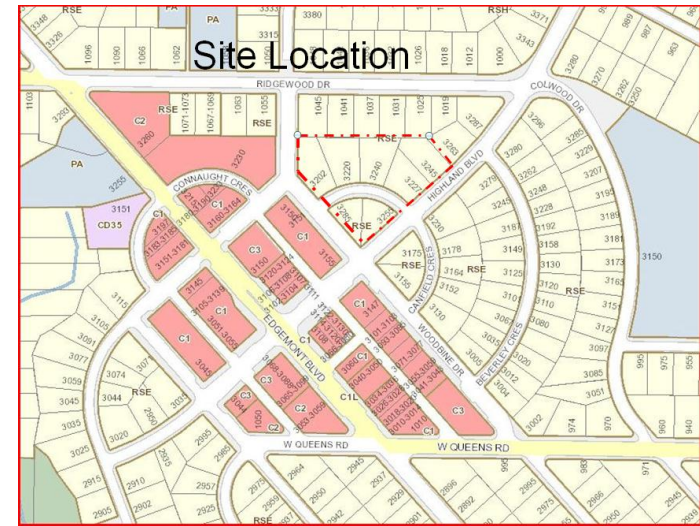


Figure 5: Site location adjacent to Village core



Figure 6: Contours. Note steeper slopes at northerly side of subject site.

The subject site abuts three streets and other streets provide views to and across the property, which calls for a design response in terms of height to protect public view corridors to mountains.

Future redevelopment of the SuperValu site to the west on Ayr Avenue will likely result in a mixed-use development, either 3 or potentially 4 storeys in height, with residential or commercial or both, above commercial uses. This site should continue to provide a grocery store in any redevelopment.



Figure 7: View northerly on Crescentview.



Figure 8: Canfield Crescent looks, feels and functions like private property

Design responses to site location, orientation, topography and 3 different edge conditions

Solar orientation: The broad aspect of the subject site faces south, which provides an opportunity for orienting decks and other amenities toward that direction, which is also the direction to the heart of the Village and its many services. See Figure 9.

The three different edge or adjacency conditions shown in Figure 10 call for different design responses. As shown in Figure 11, the key design responses include an urban edge or streetwall toward Woodbine, a landscape buffer to adjacent properties to the north, vehicular access and drop-off locations at either end of Canfield Crescent. Alternate lobby entrances can be on Highland, which is preferable due to the drop-off location, and/or on the Ayr Avenue frontage.

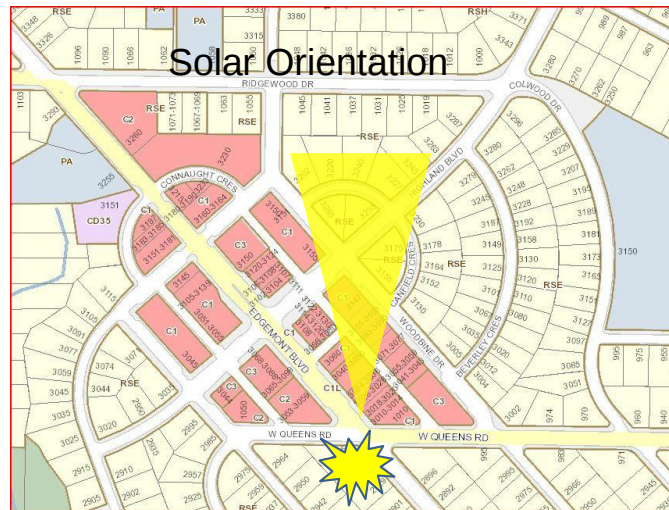


Figure 9: Optimum solar orientation coincides with proximity to the Village.

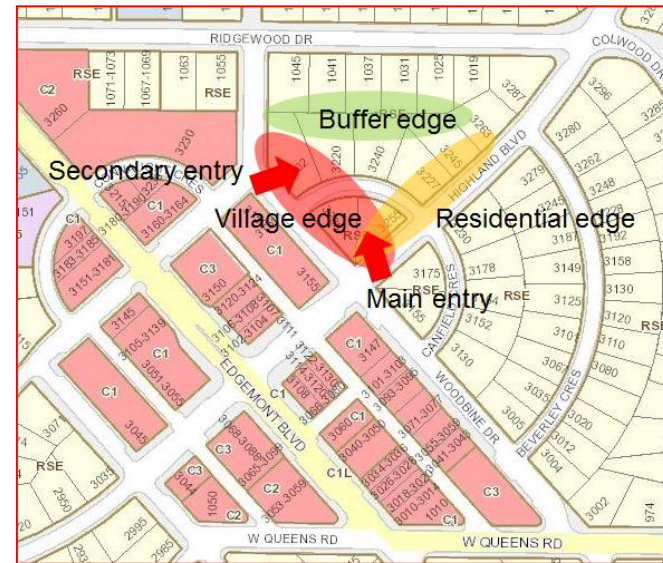


Figure 10: Key site responses



Figure 11: Design responses at key site locations



Figure 12: Woodbine Drive, looking northwesterly



Figure 14: SuperValu site across Ayr Avenue

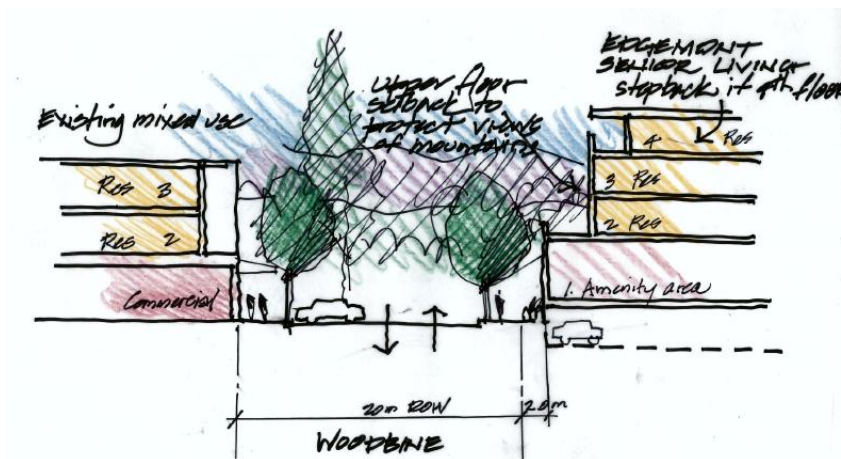


Figure 13: Proposed Woodbine Drive Streetscape

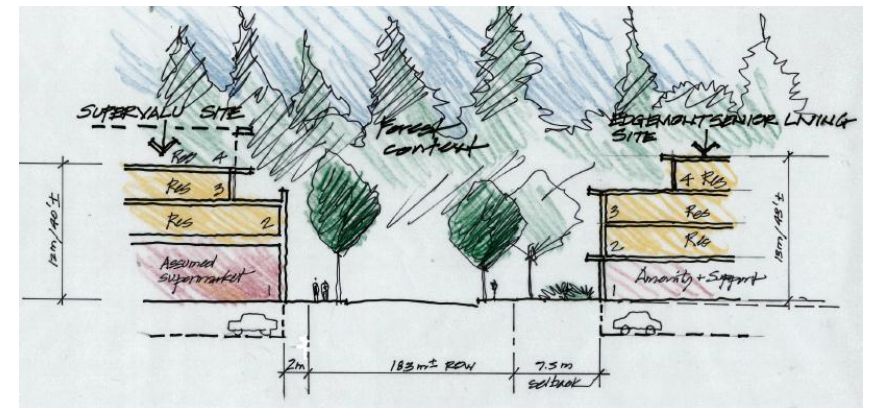


Figure 15: Proposed Ayr Drive Streetscape

Edgemont Senior Living Options

Program (provided by Edgemont Senior Living)

Approximately 120-140 units

- 75% one bedroom
- 25% studio and two bedroom

Parking at 0.5 spaces/unit = 60 spaces (underground)

Note: DNV standard for seniors housing is 0.33 spaces per unit, which would generate 40 off-street parking spaces

Floor Space Ratio: approx. 1.25-1.5 FSR

Height: 3 -1/2 storeys (3 storeys at ends, potentially 4 storeys in centre, with stepback at top floor)

Conceptual Site Plan Options

The following three drawings were prepared by Ray Letkeman Architects for the ESL proponent. They show different massing possibilities. The numbers signify suggested building heights in storeys.

The generally preferable concept is shown at the top, where the higher massing is located toward the Village itself, on Woodbine.

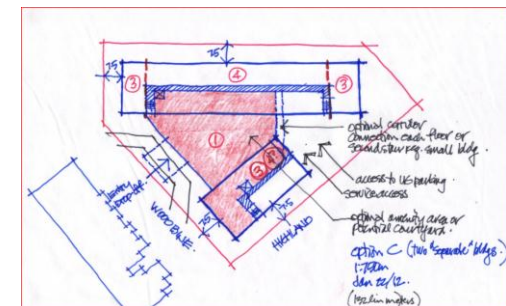
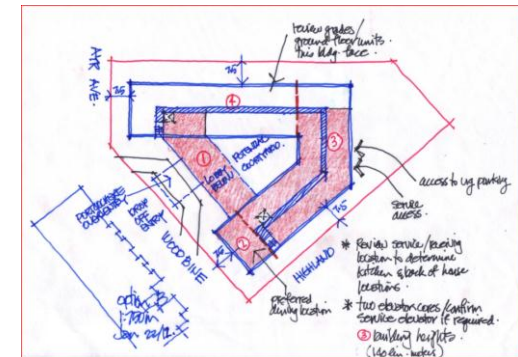
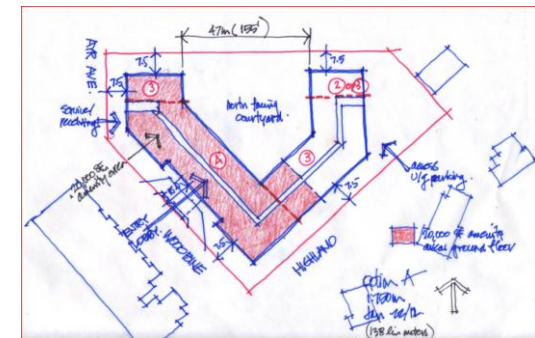


Figure 16: Site planning and massing options

Floor Plans

These schematic plans were prepared by Ray Letkeman Architects on behalf of the ESL proponent. The consultation process has likely resulted in some changes, which are not known at this time.

The two sections shown in Figure 17 below are based on the preferred direction noted previously, and show design responses in proposed height and massing to adjacent conditions.

As requested by the District of North Vancouver in the Terms of Reference, the plans also indicate the footprint of hypothetical future transitional housing forms on adjacent lots fronting on Ridgewood Drive. It should be noted that this component is not intended as anything other than a hypothetical possibility and is not part of the current ESL proposal.

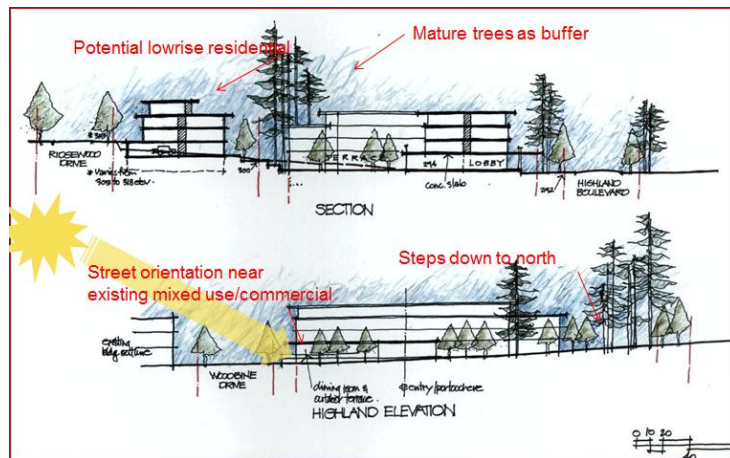


Figure 17: Site section (top) and Highland Boulevard Elevation (bottom).

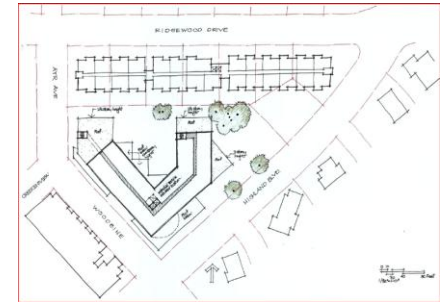


Figure 18: 4th floor (top), 2nd and 3rd floors (middle), ground floor (bottom).

Conclusions and Recommendations

The urban design principles and directions from this contextual review of the Edgemont Senior Living proposal have been subject to public consultation, including a workshop, an open house, as well as additional smaller meetings with a steering committee, and which has provided the proponents with feedback on options regarding the potential form of development. Ongoing consultation on the proposal and development application is recommended.

1. Use: The local area plan, which serves a reference document in the OCP, identifies seniors living as a potentially desirable use “on suitable sites as they become available.” Further, the OCP recognizes the need for more diverse housing forms including seniors housing.
2. Location: The subject site is probably the most opportune site for land assembly in order to provide multi-family and seniors housing in the immediate Edgemont Village setting.
3. Vehicular access: The absence of a rear lane and also curb side parking requires access for the three required vehicular functions to the ESL site to be located via perimeter streets:
 - Drop-off: While either Woodbine or Highland offers reasonable opportunity for pickup and drop-off, Highland is the preferred location, as it meets proposed finished floor level of ESL without the need for stairs. Also that combining drop-off with off-street parking and loading access will not be a good adjacency.
 - Off-street parking and loading is best accessed from Woodbine, with its lower elevation, urban interface and long property line.
4. Midblock pedestrian links: Existing Canfield Crescent currently functions as a semi-private driveway access across the site, with terminations at midblock locations on

Highland and Woodbine. Given both the low level of present use and the implicit risk of promoting pedestrian crossings that are essentially jaywalking of these two streets, plus the close proximity to two controlled intersections, this study foresees no important future need for such links.

5. Density: In a transitional site location, a reasonable density for such a proposed use should be in the 1.25- 1.5FSR range. This density range is considered to be required to trigger redevelopment of expensive single-family zoned properties. Further, this density range can provide a form that serves to sensitively transition between the Village Centre and peripheral residential areas.
6. Building siting: The roughly triangular site has three different edge conditions that should be responded to, each in a different way.
 - The Woodbine edge should have an urban character, that is, with active amenity and service uses facing the street.
 - This is also the preferred location for service and parking access. The setback here should be minimal, but sufficient for provision of an adequate sidewalk and street trees.
 - The northerly edge shares a property line with a number of single family houses, which may be converted over time into medium density residential forms. A reasonable “suburban” level of rear yard landscaped setback should be provided here.
 - The Highland Boulevard edge is the preferred location for drop-off and the ESL lobby. The existing Canfield Crescent provides reasonable vicinity for this purpose, as it already functions as a drive.

- A deep landscaped “front yard” setback character should be employed to provide adequate buffering from the two single family residences on the other side of Highland Boulevard from the subject site.
7. Massing and Height: Given the development program and a suitable site in this transitional location between the evolving mixed-use Village and peripheral residential areas, building heights of 3 or even 4 storeys with a stepback at the top floor, seem supportable from strictly an urban design perspective. This includes tucking some massing into the northerly slope to reduce the effective height at this interface with adjacent residential properties.

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WORKING GROUP MAJORITY REPORT ON EDMONTON SENIOR LIVING DETAILED APPLICATION

Summary

- A. It would be inappropriate for the Edgemont Village Local Area Plan Refresh to be pre-empted by spot rezoning for a project of this magnitude.
- B. Details of a proposed operating model and adequate particulars of the Developer's experience and financial viability have not been provided as requested in the Working Group's first Report.
- C. Important concerns remain about building size, height, use, and impact on the adjacent residential neighbourhood.

Report

On 17 August 2012, the Working Group struck by the Edgemont and Upper Capilano Community Association (as the Plan Monitoring Group) in coordination with the District of North Vancouver to provide input on the Preliminary Application for the Edgemont Seniors' Living project made its Report. The Developer having recently filed its Detailed Application, it is appropriate for the Group to provide a further Report, discussing what has changed in the proposal and how it has addressed or failed to address the community's issues and concerns as elucidated in the first Report.

This Report on the Detailed Application should be read in conjunction with the Working Group's earlier Report on the Preliminary Application, since many of the issues raised in the first Report remain outstanding and may not be restated here.

Unfortunately, members of the Group were not unanimous in their views about the project and the form of the Report. This Report represents the views of seven of the group's eleven members. Appendix C lists the names of those who approve it and those who do not.

A. Process, Planning, and Social Policy Issues

There is support in the community for a seniors' living facility in the vicinity of Edgemont Village, and the proposed location is generally seen as being appropriate, given its proximity to the Village core. There are real concerns, however, about the proposed building's size and the fact that it will cater only to seniors who are capable of independent living and are wealthy enough to afford the not-inconsiderable rents. The community should be heard on these issues.

The Edgemont Village Local Area Plan ("LAP") Refresh process has commenced. The Refresh will deal with the policy direction for future developments in the Village core and adjacent areas. It provides an ideal opportunity for the community to consider this proposed project in the context of the future of the Village as a whole. While the Developer is doubtless anxious to secure Council's approval of its application as soon as possible, and certainly before the conclusion of the Refresh, the majority of members of the Working Group feel strongly that it would be altogether inappropriate for individual

proposals of this magnitude and significance to be dealt with on a piecemeal basis. The first Report stated that it is **“imperative that the District move forward with the “Refresh” of the LAP in order that the LAP refresh process and the ESL application approval process ultimately synchronize the regulation of use and density on the Canfield site.”** *[emphasis in original]* This view has not changed.

Appendix B contains a detailed discussion of relevant portions of the District’s Official Community Plan (“OCP”) of 2011 and the Upper Capilano Plan of 1999 (this latter document is generally referred to in this Report by its more common name of “Local Area Plan” or “LAP”). The OCP requires that until a Refresh takes place for a new LAP, land use decisions will be “informed” by the existing LAP. Details of a number of apparent problems the proposed project causes with the OCP and the existing LAP are provided in Appendix B. A couple are highlighted here.

Both the OCP and the LAP designate the subject site as “detached residential”. Although the LAP gave direction to “explore alternative forms of seniors’ housing that bridge the gap between independent living and long term care . . . on suitable sites, should they become available”, this should only happen with the concurrence of the community. The ongoing Refresh provides an ideal opportunity for such discussions.

The view of the majority in the Working Group is that the proposed development is too large and flies in the face of the OCP “transitional guidelines” (2.2.5) policy, which is to “concentrate development in the Village core *[the proposed facility is outside the Village core]* and transition sensitively outwards with appropriate ground-oriented housing forms (such as duplexes and townhouses) to adjacent residential neighbourhoods”. The community must be heard. The Refresh currently under way is perfectly timed for taking the community’s views on this issue not just in isolation, as would be the case with a public hearing on the Detailed Application, but more importantly, in the context of the community’s vision for the future of the Village as a whole.

A key element of the OCP is to accommodate the needs of people at different lifecycle stages, with an emphasis on affordability. There was discussion in the Working Group about the fact that the facility will cater only to seniors who are capable of “independent living” and are from the wealthier segment of the population. No provision is made either for “assisted living” accommodation or for less wealthy seniors. The proposed facility would not “bridge the gap between independent living and long term care” as called for in the LAP; tenants must vacate as soon as they become incapable of independent living and require assistance. As to the OCP’s emphasis on affordability, there are no units, for example, which would be available under the auspices of Vancouver Coastal Health to tenants on condition that they pay rent amounting to 70% of their after-tax income, as is the case with other seniors’ living facilities. The community must be heard on this issue. The Refresh is the appropriate vehicle.

B. Developer Credentials and Financial Viability

During the Working Group’s consideration of the preliminary application last summer, the Developer advised that it was negotiating with an experienced operating entity on an agreement which would see that entity assume responsibility for the operation and administration of the facility. The Group’s view

was that a successful conclusion to this negotiation may address some of the concerns listed in the first Report.

Since then, nothing has been heard from the Developer on the matter of an operating model for the facility other than an assurance that negotiations are ongoing with several parties for joint-venture partnerships or operator agreements. This and the other specific concerns enumerated in the first Report have yet to be addressed. Indeed, rumors are circulating about the Developer selling the project. In response, the Developer says that it has no plans to sell, will stay involved in the operation of the facility, and will uphold its obligations to the community.

The Working Group stresses that the Developer must go beyond unsupported assurances, not only to demonstrate that it has concluded negotiations for the ownership, operation and administration of the facility with an experienced and reputable operating entity but also to address the other concerns enumerated in its first Report.

C. Physical Impact and Liveability Issues with the ESL Proposal

The Working Group's first Report incorporated a table to list community concerns and issues, the Developer's response, and the Group's perspective on that response. The table has been updated to add two more columns, one summarizing the Detailed Application's handling of the issue and the other giving a brief statement of the Working Group's perspective on that response. Appendix A to this Report contains important footnotes which expand significantly on many of these points.

Community Concern or Issue	ESL Response	Working Group Perspective August 2012	ESL Detailed Application Feb 2013	Working Group Perspective
1. Number of Units in the Proposal	Number of Units revised from 140 to 125, based on height reduction to 3 storeys and 6-lot configuration. <i>[This reduction in the number of units occurred when the Developer could only purchase 6 lots instead of 7]</i>	There is significant community sentiment that the proposed building form is too “big” and intrusive. Seniors accommodation has general support but not at this scale.	Number of units raised from 125 to 129	Number of units dictates a building of such a large size that it should not be approved unless the community's consent is secured during the LAP Refresh.
2. Height of the Building	On June 13, it was announced that the building height will be reduced from 4 floors to 3. 1 st story: 12 feet 2 nd & 3 rd stories: 9 feet	The community may be more receptive to a maximum height of 3 storeys, subject to acceptable building configuration and overall size.	Basic reduced building height of 3 storeys is 40 feet from the ground floor at the gables and wings. The ground floor is above grade at the Woodbine/Highland corner.	Visual impact of a building of this height should be considered in the LAP Refresh.
3. Stepping between floors	First floor 10 ft. from lot line Second floor set back 10-15 ft. from first floor	Stepping back of upper floors should be maximized to enhance human scale proportions.	No stepping back from ground floor to upper floors (see note in Appendix A).	Too much massing presented to street and neighbouring single family homes.

4. Overall site coverage	FSR 1.55 Site Coverage 52%	The FSR should be in the range of 0.80 to 1.20. Site coverage should remain in the 50% range. This will help address the concern over the “bigness” of the current proposal.	FSR 1.55 Building Site Coverage 50% plus balconies and porte cochère. Exact Site Coverage including enclosed interior courtyard unknown but well over 50%.	The concern expressed in the first Report that FSR should be in the range of 0.80 to 1.20 has not been addressed.
5. Massing and Building Orientation should be away from the Highland & Woodbine corner to reduce visual impact	Woodbine frontage has been set back and stepped between first & second floors. Now wholly enclosed configuration to suit 6 lot development	Building façades need careful articulation to provide visual relief and enhance a residential appearance. The enclosed interior courtyard presents an “institutional feel” to the building. The sentiment is that the building configuration should enable outdoor garden and leisure area(s) on the exterior of the building for connectivity to the community and to provide more sun exposure.	Building is not stepped between the first and second floors (see Appendix A, note 3). Interior courtyard still fully enclosed.	Articulation of walls provides little visual relief, given the building’s large mass. The concern about the courtyard which was expressed in first Report is not addressed.

6. Mitigation of impact on views and sightlines	Site topography (elevation difference) mitigates additional view impacts	Existing public views should be respected and mitigated to the greatest extent.	The promised reduction of base height to 3 storeys does not include wings and pitched roofs, which still exceed 3 storeys.	This issue of the impact on views and sightlines of a building of this size should be considered in the LAP Refresh.
7. Transition to the adjacent properties on Ridgewood as well as those across Highland and Woodbine	Topography mitigates impact for homes along Ridgewood	DNV Planning should review the context implications for the proposed development on adjacent properties and opportunities for enhancement of the Village ambience.	Details of proposals for streetscapes on Woodbine, Ayr, Ridgewood, Highlands provided. Details of mitigation approaches to adjacent properties outlined.	The sharp transition to the adjacent residential neighbourhood is not addressed.
8. Provision of public space at the corner of Woodbine and Highlands	Not provided in this proposal	Enhanced public spaces are an important community expectation and have been provided by all recent rezoned redevelopments in Edgemont Village. Could be achieved by locating garden and leisure areas external to the building as discussed above.	Details of a public plaza at the Woodbine/Highlands corner are included, and there is an adjacent semi-private dining terrace in the Residence.	The addition of a public plaza (partly using ESL property and partly publicly owned) together with its connection to the Residence dining terrace will create some linkage to Edgemont Village.

9. Architectural Style	Propose West Coast Contemporary; no Stucco; Flat Roof	Pitched roof may be preferable to achieve a more "residential feel", depending on the impact on the building height.	Pitched roofs and wings included.	Articulated walls and pitched roof and wing sections may be architecturally attractive, but building height and mass remain an overriding concern.
10. Tree Preservation and Landscaping	Significant trees will remain untouched on the adjacent north east property which is no longer included in this development	The Developer cannot guarantee the retention of existing trees not on its property. The on-site landscaping plan should reflect the residential character of the neighbourhood.	Landscape plans indicate the range of trees and planted areas.	Comprehensive landscaping plans are attractive.
11. Community Benefits accruing from the closure and sale of the Canfield Cr. road allowance and any uplift in density	Developer estimates about \$1.0 M from the sale of Canfield Cr. may be available for community benefits at DNV discretion	The local community should be consulted to identify benefits which could be provided from the sale of Canfield Cr. and any land value uplift.	Acknowledged, subject to agreement with DNV. Developer advises that value of Canfield road allowance has been agreed at \$1.9 M.	DNV policy requires that public land sales be used to purchase land, not amenities for local community. Uplift should be used to benefit the local community.

12. Traffic, Parking and Transportation Impacts	Bunt and Associates will be retained to undertake a Traffic Impact and Transportation Analysis Required parking: 41 stalls Proposed parking: 57 stalls	Study results awaited. Study scope should include mitigation opportunities for any identified impacts.	Bunt Traffic and Transportation Report completed and provided. 59 parking stalls and also charging stations and bike racks incorporated.	No significant impacts predicted.
13. Economic Impact Assessment	GP Rollo and Associates will be retained to undertake an economic impact analysis on Village Merchants and Businesses	Study results awaited. The Village Merchants have not taken a stand as yet on potential business impacts – positive or negative. Their feedback has been provided only from their perspective as Village denizens and they are equally concerned about the “bigness” of the development.	Rollo Economic Impact Study completed and provided.	Some contribution to business volume noted.
14. Project accessibility for local residents	An initial 90 day window for advanced registration will be provided for local residents in Upper Capilano Area	Eligibility should also be extended to adult children living in the area who may wish to have their senior parent(s) locate locally.	Advanced registration opportunities for local families confirmed.	Does not provide a long term solution to meet future needs of local residents. The legality of a geographic restriction on registration may be questionable.

Appendix A

Notes to Numbered Sections in Part C. Table:

1. A seniors' living facility seems to have general support in the community, and the Canfield site is ideally placed in proximity to the Village. However, with a total "Building Area" of over 34,000 sq. ft, the proposed building would be by far the most dominant structure in or near Edgemont Village.

To apprehend the true size of the building as viewed from the outside, the area of its enclosed internal courtyard must be included, which, at between 5,000 and 6,000 sq. ft, means that the total area covered by this three-storey building would be in the range of 40,000 sq. ft. For context, the next biggest building in the area, the new Highland Elementary School, is a two storey structure with a ground floor area of about just 23,000 sq. ft. The single-storey Village Market (formerly SuperValu) occupies 10,000 sq. ft. Even if the redevelopment of this supermarket results in a building footprint of as much as 30,000 sq. ft, as has been suggested, the ESL facility would occupy an area of land one third again as large.

The Developer maintains that a building of this size is necessary for the project to be economically viable. The community must decide whether the proposed use of the building justifies its size. This question should be addressed during the Refresh of the LAP.

2. Despite the reduction of the base height of the building from 4 storeys to 3, the pitched roofs and raised wings, one of which is on the corner which faces the Village (Woodbine and Highland), are still effectively 4 storeys high. As well, the main floor at that corner is raised above grade. The structure's apparent height there will be yet further accentuated when viewed from the Village core because of the fact that the elevation of the building site itself is about 1 storey higher than the main intersection in the Village (Edgemont and Highland).

At the north end of the building on Highland, the raised wing accentuates the height disparity between the proposed structure and the surrounding single family residences. The ESL facility would dwarf the homes in the adjacent neighbourhood

These issues should be addressed during the LAP Refresh

3. Despite the Developer's assurance at the time of the first Working Group Report, and contrary to its statement in the Detailed Application that the Woodbine frontage has been stepped between the first and second floors, the "Amenity Area" at the Highland/Woodbine corner is the only place where the main floor level protrudes from the upper floors. There is no stepping between floors anywhere in the building; the walls are straight from the ground to the roof.

4. According to the Detailed Application, site coverage is 50%, not including balconies and the porte cochère. Because the interior courtyard is completely enclosed, it makes the apparent site coverage when the building is viewed from outside larger still. While redevelopments in the Village core may range from 1.75 to 2.00 FSR with lot coverages of more than 50%, the proposed site is much larger than anything in the Village, comprising, as it does, 6 lots as well as the half of Canfield Crescent which runs between Highland Boulevard and Woodbine Drive. A building which, with balconies and porte cochère, therefore occupies well over half a site of this size would cover the largest ground area of any building in the vicinity even without the courtyard, the more so with it. The community must decide whether the proposed use of the building justifies its size. This question can be answered during the Refresh of the LAP.
5. Three sides of the proposed building are 200 feet long. The community must decide whether the proposed use of the building justifies its size. This question can be answered during the Refresh of the LAP.

As to the enclosed interior courtyard, the concern expressed in the Working Group's first Report was that the building configuration should allow for outdoor garden and leisure area(s) on the exterior of the building for connectivity to the community and to provide more sun exposure. The Developer has responded by adding a small public plaza at the corner of Woodbine and Highland. The Detailed Application otherwise provides no outdoor garden or leisure areas on the exterior of the building.

As to the interior courtyard's sun exposure, the "Shadow Analysis" in the Detailed Application makes it clear that, surrounded by high walls as it would be, the enclosed interior courtyard would receive little or no direct sunlight for much of the year.

6. The community must decide whether the architectural feature of wings and pitched roofs justifies view impacts. This question can be answered during the Refresh of the LAP.
7. There is no "sensitive transition" to the adjacent residential neighbourhoods as mandated in the OCP. The community must decide whether the proposed use of the building justifies the sharp drop to the surrounding single family residences. This question can be answered during the Refresh of the LAP.

No additional comments on Sections 8 to 14.

Appendix B

What do the 1999 UCP Upper Capilano Plan (in this report also referred to as the Local Area Plan) and the June 2011 OCP have to say which is relevant to the ESL proposal?

UCP [LAP] background report:

- P39 : *"Minimizing neighbourhood change was identified throughout the process"*
- P39: *"In order to minimize change, the initial premise was that change would not be permitted unless specifically determined in the plan"*
- P40: No support was provided for in-fill within single family areas, when it stated *"community's opinion did not support any relaxation of subdivision regulations or any accommodation of small-scale redevelopment on an in-fill basis within single family homes."*
- P41: After consideration of the need of the aging residents who wished to remain in Upper Capilano for accommodation other than single family homes, the *"public broadly recognized that some additional units are necessary to meet the changing needs of some seniors . . . The Steering Committee is basing the plan proposals on the continuing the historical rate of growth (ie approximately 150 net new multi-family units over a 10 year period 1997-2006) which was supported by the 1998 Open House result."* Subsequently, motions of Council on Dec 14/1998 and January 25/1999 changed this so: on page 45 Implementation 17.1.1 *"the sites designated to accommodate a total of approximately 170 net new multi-family units..."* Note that the proposed ESL at 129 units would consume about 7.5 years worth of historical growth.
- Since the ESL is proposed to abut the SuperValu site, some relevant quotations pertaining to the SuperValu future vision might prove useful: The Nov/98 Upper Capilano Plan – Background Planning Report stated on page 67: *Implementation 26.2.1 A comprehensive development zone for the Ridgewood/Edgemont entrance property will include provisions for medical/dental offices (8,000 - 12,000 square feet) and a supermarket (10,000 – 15,000) square feet)* . Further, on page 61, the supermarket parking was to be on grade with terraced apartments over the retail space, providing a mix of unit types and sizes. *"Limiting the height of building to two-storieds at the street maintains a pedestrian scale to the development and preserves the views of the mountains."* The ESL proposal is for a building area of 34,308 sq-ft, without the courtyard, with a total floor area of 101,775 sq-ft over three floors, which is over 3 times the building area and 10 times the floor area of the existing supermarket.
- Page 16 of the OCP – Growth Management, states *"importantly, the stability and character of residential neighbourhoods are sensitively preserved."*

OCP:

- Page 17, Policy 5: *“Respect residential neighbourhood character and limit growth in these areas”*
- Page 23: *“Significant changes to other Village Centres [Edgemont] are not proposed in this plan and pre-existing Local Area Plan land uses have been integrated. The OCP provides for the opportunity for more detailed Village Centre Implementation Plans to be prepared or reviewed where appropriate in the future. Note that such a review (“the Refresh”) is only just beginning for the Edgemont Village area. Readers are reminded that this aligns well with the UCP [LAP], as noted above, which designates only certain areas for multi-family and explicitly disallows any other single family areas from such future use.*
- Page 23, Policy 5: *“Concentrate development in the Village core and transition sensitively outwards with appropriate ground-oriented housing forms (such as duplex and townhouse) to adjacent residential neighbourhoods”.*
- Page 23, Policy 7: *“Ensure Village Centre Implementation Plans and their peripheral areas are consistent with the objectives and policies of the OCP and prepare or review Plans as necessary.”* Please note that the UCP [LAP] is consistent in this regard – that a public review process is required (i.e. need for an Edgemont Village Centre Implementation Plan before any spot-rezoning is considered).
- Page 24 “Neighbourhoods”: *“With a few exceptions, multifamily residences within neighbourhoods are ground-oriented (duplexes, triplexes or townhouses) . . . **Significant change is not anticipated in existing neighbourhood** . . . [emphasis added] Sensitive residential infill opportunities may be considered to provide greater housing diversity or transition to adjacent uses through Neighbourhood Infill Plans and/or Housing Action Plans. Prepare Housing Action Plan(s) to identify criteria for low intensity infill housing, such as coach and laneway housing and small lot subdivision as appropriate.*
- Page 26 “Land Use Designations”:

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 **0.80 FSR**.*

RESIDENTIAL LEVEL 4: TRANSITION MULTIFAMILY

*Areas designated for transitional multifamily are intended predominantly for multifamily uses within or in close proximity to centres and corridors, or as a transition between higher density sites and adjacent detached and attached residential areas. This designation typically allows for a mix of townhouse and apartment developments up to approximately **1.20 FSR**.*

The above sections have been previously noted in discussions about the ESL. Readers should be aware that no such designations have been stated in the OCP for the area under consideration. Thus the ESL proposal, at **FSR of 1.50**, falls well outside the bounds of even these two future possible designations – designations specifically designed for possible transition areas to Edgemont Village.

- Page 59 “Housing Diversity”: *“While growth will be restricted in detached residential areas, opportunities will exist to sensitively introduce appropriate housing choices such as coach houses, duplexes and small lot infill that respect and enhance neighbourhood character.”*
- Further, Policies on page 59 states:

POLICIES

1. *Encourage and facilitate a broad range of market, non-market and supportive housing.*
2. *Undertake Neighbourhood Infill plans and/or Housing Action Plans (described in Chapter12) where appropriate to:*
 - a. *identify potential townhouse, row house, triplex and duplex areas near designated Town and Village Centres, neighbourhood commercial uses and public schools*
 - b. *designate additional Small Lot Infill Areas*
 - c. *develop criteria and identify suitable areas to support detached accessory dwellings (such as coach houses, backyard cottages and laneway housing)*
3. *Develop design guidelines to assist in ensuring the form and character of new multifamily development contributes to the character of existing neighbourhoods and to ensure a high standard of design in the new Town and Village Centres*

NOTE: None of the plans and design guidelines have even been developed for the proposed ESL site, much less the dwelling designated above.

- Page 87, section 12.3.2 TRANSITIONING FROM LOCAL AREA PLANS: *"Until such time as more detailed sub-area planning occurs at the centres or neighbourhood level, existing Local Area Plans will be used as reference policy documents to inform land use decisions in their respective areas."*

Appendix C

Working Group members' endorsement or rejection of this Report:

Approve:

Brian Albinson

Adrian Chaster

Robin Delany

Susan Hingson

Corrie Kost

Lenora Moore

Louise Nagle

Oppose:

Grig Cameron

Bill Hayes

Susan Kimm-Jones

Peter Thomson

WORKING GROUP REPORT

Proposed Edgemont Seniors Living Project – Summary of Findings

Executive Summary

The original Working Group (WG) Report of August 2012 reflected the Preliminary Application submission by the Applicant for the proposed Edgemont Seniors Living Project. The Detailed Application has now been submitted and this report up-dates the information in the earlier report.

There were and remain three main categories of concern:

- 1) The 'process concern' is evolving. Although the Edgemont Village refresh has now begun, there is a pressing need to understand the proposal in the overall context of the Village and, in particular, the north-west quadrant.
- 2) The 'operator concern' is still there and while some information has been provided there remains no concrete arrangement in place.
- 3) Some of the 'building- level' concerns have been addressed with some success (e.g. the public plaza arrangement at Highlands/Woodbine being a more successful developer response). The Developer has prepared a model of the development which puts the size issue into perspective by showing the project in the context of the surrounding buildings and homes.

Background

When a proposal came forward to build a Senior's Living Complex in the Canfield residential area adjacent to Edgemont Village the EUCCA recognized that this would have significant implications for Edgemont Village and the adjacent residential areas. The District Official Community Plan (OCP) had recently been completed and an up-date or "re-fresh" of the Edgemont Village Development Permit Area was contemplated.

As the District was unable to commit to the timing of the "refresh" due to staffing constraints, in order to address this application in the absence of a refreshed plan, the District sought to create a framework under which there would be a greater level of community engagement in the review process than is typical for this type of proposal.

Accordingly, at the suggestion of the District, the Edgemont & Upper Capilano Community Association (EUCCA) canvassed the community for 12-14 volunteers to join a Working Group to participate in the planning process with the Developer, District Planning Staff and other stakeholders.

The group was tasked to engage in meaningful consultation with the Developer and Staff and to provide input and feedback from a community perspective. The Group would report back to the Community Association, Upper Capilano Local Area Plan (LAP) Monitoring Committee and key stakeholders such as the Edgemont Business Association.

A Working Group Report on the Preliminary Application was submitted in August 2012. A Detailed Application has now been submitted and this report is an update on this.

Summary of Activities Since the August 2012 Report

Feb 05, 2013	Working Group Meeting with DNV Planning Staff Refresher on planning process and review of DNV Response Letter to Preliminary Application package
Feb 21, 2013	Working Group Meeting with Proponent and Architect Presentation of ESL Feb 8, Detailed Application package
Feb 28, 2013	Working Group Meeting Discussion of the ESL Detailed Application
Mar 13, 2013	Public Information Meeting First presentation to the public of the Detailed Application
Mar 14, 2013	Advisory Design Panel (ADP) Meeting Presentation of the ESL Detailed Application. Separate report to be issued by the ADP.

Summary of Findings

The WG Report on the Preliminary Application established that the issues surrounding the proposal fell into the following 3 categories:

- A) Process, planning and social policy issues over which the Developer has no control as these fall under the purview of the District.
- B) The credentials and financial viability of the Developer as these are unknown at present
- C) The perceived impact that this specific proposal would have on the liveability and character of the Village

Following is an updated summary of the findings of the Working Group in each category:

A) Process/Planning/Social Policy Issues

The Edgemont Village Local Area Plan (EVLAP) Refresh began in February 2013. Three Public Ideas Forums were held (Feb 16, 19 and 25) and were well attended. An Edgemont Village Planning Working Group is being established. Web based information links for the EVLAP Refresh have been established on the DNV Website.

The August 2012 WG Report included recommendations regarding issues which should be addressed in the “refresh” process. These have been acknowledged by the Planning Department and are now included in the scope of work for the “refresh”.

With the EVLAP Refresh now underway, it is suggested that early priority be given to the Ayr/Woodbine/Highlands/Ridgewood triangle and the adjacent Super Valu site to allow this development application to be considered in that context.

B) Developer Credentials/Financial Viability

The August 2012 Report noted the importance of an agreement with an experienced and reputable operator to safeguard the community from the consequences of disruption or failure of the project.

The Developer has advised that negotiations are currently underway with an experienced operating entity on an agreement which would see that entity assume responsibility for operation and administration of the facility.

As of March, 2013, an operating entity has not been disclosed, however, the Developer has advised that several negotiations are underway and progressing well for either joint venture partnerships or operator agreements. The Developer has indicated that there is no plan to sell and ESL will remain involved and uphold its commitment to the community.

The Working Group nevertheless re-iterates its position stated in the August 2012 Report that the long term ownership and operation of the facility should be confirmed prior to Council's consideration of the project.

C) Physical Impact/Liveability Issues with the ESL Proposal

On January 24, 2013, DNV Planning provided a response to the ESL Preliminary Application outlining policy/planning requirements, Planning staff and initial community comments from the August 2012 Working Group Report.

In February, 2013, the Developer proceeded to the Detailed Application stage with some changes to project arrangement and greater architectural details incorporated into the proposal including:

- Confirming a three storey configuration with 129 units.
- Including Sloping and Gable architectural features to the roof lines
- Confirming provision of additional underground parking
- Incorporating a public plaza at the corner of Woodbine and Highlands and an adjacent semi-private dining terrace.
- Outlining the landscaping approach and detailed planting plans
- Detailing the proposals for streetscapes on Woodbine and Highlands and mitigation approaches to adjacent properties along Ridgewood/Woodbine/Ayr/Highlands.

The August 2012 Report identified specific issues and concerns with the ESL proposal as listed on the following table.

Based on increasing awareness from the Public Information Meeting and feedback from the community, the table has been updated to include the Developer's responses in the Detailed Application and the Working Group's assessment of each.

Community Concern or Issue	ESL Response	WG Perspective August 2012	Detailed Application Proposal Feb 2013	WG Perspective on the Detailed Application.
Number of Units in the Proposal	Number of Units revised from 140 to 125, based on height reduction to 3 storeys and 6-lot configuration.	There is significant community sentiment that the proposed building form is too "big" and intrusive. Senior's accommodation has general support but not at this scale.	Number of units increased to 129. Financial viability of the project is based on this number.	Proposed building would be the most dominant feature in Edgemont, pending imminent plans for redevelopment of the Super Valu site which is understood to be larger. Fewer units would be preferable although this needs to be considered carefully because it may well impact the "affordability" of the project rents. Senior's accommodation has general support . Size continues to remain an issue for some people.
Height of the Building	On June 13, it was announced that the building height will be reduced from 4 floors to 3. 1 st story: 12 feet 2 nd & 3 rd stories: 9 feet.	The community may be more receptive to a maximum height of 3 storeys, subject to acceptable building configuration and overall size.	3 Stories limit for accommodation. Variable roof lines of gables and shallow slope uplifts to enhance architectural features – increases height about 6' at the north and south peripheries.	Variable roof lines (gable & shallow upslopes) enhance the architecture and present a more varied elevation view from the adjacent streets. Results in an increased building height in some areas.

Community Concern or Issue	ESL Response	WG Perspective August 2012	Detailed Application Proposal Feb 2013	WG Perspective on the Detailed Application.
Stepping between floors	First floor 10 ft. from lot line Second floor set back 10 -15 ft. from first floor	Stepping back of upper floors should be maximized to enhance human scale proportions.	Step back between floors 1 and 2/3 has been reduced to along Woodbine in the amenities area only.	A continuous step back along Woodbine and also Highlands would contribute to a more human scale.
Overall site coverage	FSR 1.55 Site Coverage 52%	The FSR should be in the range of 0.80 to 1.20. Site coverage should remain in the 50% range. This will help address the concern over the "bigness" of the current proposal.	FSR now 1.50. Site coverage 50% (excluding balconies & porte cochere).	Slight decrease in FSR. Slight decrease in site coverage. Redevelopments in the Village are generally around 1.75 FSR with lot coverage generally greater than 50%. The topographic/building model provides clarity to the context of the development and this appears to have lessened the concern in the community for the building size and massing.

Community Concern or Issue	ESL Response	WG Perspective August 2012	Detailed Application Proposal Feb 2013	WG Perspective on the Detailed Application.
Massing and Building Orientation should be away from the Highland & Woodbine corner to reduce visual impact	Woodbine frontage has been set back and stepped between first & second floor. Now wholly enclosed configuration to suit 6 lot development	Building façades need careful articulation to provide visual relief and enhance a residential appearance. The enclosed interior courtyard presents an "institutional feel" to the building. The sentiment is that the building configuration should enable outdoor garden and leisure area(s) on the exterior of the building for connectivity to the community and to provide more sun exposure.	Articulation to building facades with patios, balconies, etc. have been incorporated to enhance a residential appearance. Central courtyard retained as a feature for residents & to enable natural light and ventilation to all interior units.	The frontages on Woodbine and Highland are quite long at 200' but an attempt has been made to break up the appearance with gables, balconies, articulation, etc. Retention of the central courtyard continues to result in the impression of a large dominant building mass. However, this has been mitigated somewhat by opening up a wide atrium from the entry foyer to the interior courtyard.
Mitigation of impact on views and sightlines	Site topography (elevation difference) mitigates additional view impacts	Existing public views should be respected and mitigated to the greatest extent.	Mitigation opportunities presented.	The roof elevation at the corner of Woodbine and Highland is approximately the same as the apartment building to the south so there should be no significant impact on the view from the main intersection at Edgemont and Highland.

Community Concern or Issue	ESL Response	WG Perspective August 2012	Detailed Application Proposal Feb 2013	WG Perspective on the Detailed Application.
Transition to the adjacent properties on Ridgewood as well as those across Highland and Woodbine	Topography mitigates impact for homes along Ridgewood	DNV Planning should review the context implications for the proposed development on adjacent properties and opportunities for enhancement of the Village ambience.	Details of proposals for streetscapes on Woodbine, Ayr, Ridgewood, Highlands provided. Details of mitigation approaches to adjacent properties outlined.	Streetscape improvements along Woodbine and Ayr noted and should enhance the ambience of the street. Topographic opportunities have been utilized to reduce impact on homes on Ridgewood. The mere presence of the building will still likely be a concern for some home owners in the vicinity as well as the height of the building when viewed from across neighbouring streets.
Provision of public space at the corner of Woodbine and Highlands	Not provided in this proposal	Enhanced public spaces are an important community expectation and have been provided by all recent re-zoned re-developments in Edgemont Village. Could be achieved by locating garden and leisure areas external to the building as discussed above.	Details of a public plaza at the Woodbine/Highlands corner are included and an adjacent semi-private dining terrace in the Residence.	The addition of the public "parkette" and linkage to the Residence dining terrace will create an attractive linkage to Edgemont Village and a needed public amenity.

Community Concern or Issue	ESL Response	WG Perspective August 2012	Detailed Application Proposal Feb 2013	WG Perspective on the Detailed Application.
Architectural Style	Propose West Coast Contemporary; no Stucco; Flat Roof	Pitched roof may be preferable to achieve a more "residential feel", depending on the impact on the building height.	Partial upslope & gable roof lines included.	The partial sloping & gable rooflines are an interesting architectural feature – appears to increase building height by about 6' in some areas.
Tree Preservation and Landscaping	Significant trees will remain untouched on the adjacent north east property which is no longer included in this development	The Developer cannot guarantee the retention of existing trees not on its property. The on-site landscaping plan should reflect the residential character of the neighbourhood.	Landscape plans indicate the range of trees and planted areas. Boulevard planting on Highlands restricted by underground utilities.	Comprehensive landscaping plans enhance the proposed project, public areas and linkage to Edgemont Village.
Community Benefits accruing from the closure and sale of the Canfield Cr. road allowance and any uplift in density	Developer estimates about \$1.0 M from the sale of Canfield Cr. may be available for community benefits at DNV discretion	The local community should be consulted to identify benefits which could be provided from the sale of Canfield Cr. and any land value uplift.	Acknowledged, subject to agreement with DNV. Developer advises that value of Canfield road allowance has been agreed at \$1.9 M.	No further comment.
Traffic, Parking and Transportation Impacts	Bunt and Associates will be retained to undertake a Traffic Impact and Transportation Analysis Required parking: 41 stalls Proposed parking: 57 stalls	Study results are awaited. Study scope should include mitigation opportunities for any identified impacts.	Bunt Traffic and Transportation Report completed and provided. 59 parking stalls and also charging stations and bike racks incorporated.	No significant impacts reported. Relocation of parking and commercial vehicle access away from Ayr/Woodbine should mitigate future conflicts with Super Valu site.

Community Concern or Issue	ESL Response	WG Perspective August 2012	Detailed Application Proposal Feb 2013	WG Perspective on the Detailed Application.
Economic Impact Assessment	GP Rollo and Associates will be retained to undertake an economic impact analysis on Village Merchants and Businesses	Study results are awaited. The Village Merchants have not taken a stand as yet on potential business impacts – positive or negative. Their feedback has been provided only from their perspective as Village denizens and they are equally concerned about the “bigness” of the development.	Rollo Economic Impact Study completed and provided.	Some contribution to business volume noted.
Project accessibility for local residents	An initial 90 day window for advanced registration will be provided for local residents in Upper Capilano Area	Eligibility should also be extended to adult children living in the area who may wish to have their senior parent(s) locate locally.	Advanced registration opportunities for local families confirmed.	Residents and family members in Upper Capilano and Delbrook may take advantage of this.

Note: This summary captures the key issues identified around the ESL proposal. As anticipated, members of the Working Group and the wider community have diverse views and are free to express their views as individuals during the planning review and public input processes.

APPENDIX A**Working Group Membership and Viewpoint on this Report**

<u>Member</u>	<u>Endorse</u>	<u>Reject</u>
Brian Albinson		X
Grig Cameron	X	
Adrian Chaster		X
Robin Delany		X
Bill Hayes	X	
Susan Hingson		X
Susan Kimm-Jones	X	
Corrie Kost		X
Lenora Moore		X
Louise Nagle		X
Peter Thompson	X	

Some members have chosen not to support the report as they do not agree with the fundamental premise that the Group's function was to participate in the planning process with the Developer and District Staff, primarily by engaging in meaningful consultation with the Developer and Staff so as to provide input and feedback from a community perspective in order to surface key issues and concerns around the proposal that needed to be addressed.

These members are generally of the opinion that the language used is not sufficiently strong enough to denounce the size and density of the development and believe that the Group is entitled to judge the proposal and advocate for its rejection at this-stage of the process.

WORKING GROUP REPORT

Proposed Edgemont Seniors Living Project – Summary of Findings

Executive Summary

To effectively evaluate the preliminary application for this proposal, DNV Staff and Council should consider the following:

An expeditious “refresh” of the Edgemont Village Local Area Plan to address the planning and social policy issues identified in Section A.

An investigation of the Developer’s experience and financial viability to assess the risk to the community as outlined in Section B.

Resolution of the issues and concerns identified by the community as listed in the table in Section C.

Background

When a proposal came forward to build a Senior’s Living Complex in the Canfield residential area adjacent to Edgemont Village the EUCCA recognized that this would have significant implications for Edgemont Village and the adjacent residential areas. The District Official Community Plan (OCP) has recently been completed and an update or ‘re-fresh’ of the Edgemont Village Development Permit Area was contemplated.

At the suggestion of the District, the Edgemont & Upper Capilano Community Association (EUCCA) canvassed the community for 12-14 volunteers to join a Working Group to participate in the planning process with the Developer, District Planning Staff and other stakeholders.

The group was tasked to engage in meaningful consultation with the Developer and Staff and to provide input and feedback from a community perspective. The Group would report back to the Community Association, Upper Capilano Local Area Plan (LAP) Monitoring Committee and key stakeholders such as the Edgemont Business Association

To be effective, it was expected that the Working Group would be composed of individuals with a variety of perspectives and from a broad demographic.

Summary of Activities

May, 2012	Working Group established from community volunteers
May 23, 2012	Working Group Meeting with Proponent

	Introductory meeting. Discussion of process. Arrange neighborhood walkabout to review issues and opportunities
May 29, 2012	Workshop held at Capilano Branch Library Consultant led examination of Edgemont Village and possible relationship with a seniors living proposal
June 7, 2012	Working Group meeting with the Proponent and Architect Review of Workshop and discussion of ESL proposal
June 12, 2012	Open House held at Highlands United Church Presentation of Edgemont Urban Design Study and ESL proposal
June 13, 2012	EUCCA general meeting at Capilano Branch Library Presentation and discussion with audience of the ESL proposal
June 14, 2012	Working Group Meeting 'Brainstorming' session to identify and develop community concerns/opportunities around ESL proposal
June 27, 2012	Working Group Meeting Review of community concerns/issues/opportunities. Consolidation into a three part Working Document: - Process/Planning/Social Policy Issues - Physical Impact/Liveability Issues with the ESL Proposal - Developer Credentials/Financial Viability
July 5, 2012	Working Group meeting with the Proponent and Architect Review of updated project design. Land assembly reduced from 7 to 6 lots. Building height reduced from 4 to 3 floors; additional parking spaces. Traffic and Transportation Analysis to be undertaken Review of input from Village Merchants Association rep. – Economic Impact analysis of ESL project on Village business to be undertaken
July 25, 2012	Working Group meeting Review and development of Working Group Report

Summary of Findings

At the initial meeting the Working Group confirmed its role to provide the Developer with a direct conduit to the larger community with the aim of acting as a funnel to the Developer and District Staff for issues and concerns raised in the community. The

primary objective was to ensure that all concerns were captured, acknowledged by and responded to by the Developer. The purpose of the Working Group was not to endorse or reject the proposal recognizing that role is reserved for Staff and Council.

During the review process, it became evident that the issues surrounding the proposal fell into the following 3 categories:

- A) Process, planning and social policy issues over which the Developer has no control as these fall under the purview of the District.
- B) The credentials and financial viability of the Developer as these are unknown at present
- C) The perceived impact that this specific proposal would have on the liveability and character of the Village

Following is a summary of the findings of the Working Group in each category:

A) Process/Planning/Social Policy Issues

This proposal reflects the intent of the new OCP policies with respect to Housing Diversity and Social Well-being, for example, but does not comply with the land use requirements of the “Legacy” Edgemont Village Local Area Plan. There is also the fundamental question of whether a Supported Seniors Independent Living complex is an appropriate facility for the Village or is some other care model more desirable to the community or some other land use.

The developer is assuming that the evaluation of its application will be carried out concurrently with the EVLAP Refresh process.

It is, therefore, imperative that the District move forward with the “Refresh” of the LAP in order that the LAP refresh process and the ESL application approval process ultimately synchronize the regulation of use and density on the Canfield site.

The “refresh” process should consider the following issues:

1. Include peripheral residential areas as well as the Village commercial core
2. Transitioning from the commercial zoning to single family areas
3. Identification of potential areas suitable for mixed population (singles, families with children, empty nesters, seniors) in multi-family residential (duplexes, triplexes, row houses, low-rise apartments)

4. Preferred use of the Canfield site if the ESL Project does not proceed
5. Identification of potential areas suitable for various levels of seniors accommodation (independent supported living, congregate care, end-of-life care)
6. Building heights, lot coverage, FSR's, set backs, etc. in the Village commercial core and the peripheral areas
7. Bonusing options for provision of social benefits such as higher levels of care for seniors and persons with disabilities or special needs (consider the Pacific Arbour model)
8. Benefits accruing to the Village of any uplift levies due to re-zoning
9. Design Guidelines to maintain the Village character

B) Developer Credentials/Financial Viability

Although the Developer is ultimately responsible for the viability of his/her own business plan, certain requirements should be met to safeguard the community from the consequences of disruption or failure. Some of these are:

1. Details of development companies' corporate structure
2. Details of the Developers' previous project development experience
3. Details of the Developers' previous facilities operation experience
4. Details of the Developers' financial strength
5. Details of the Business Plan for the Canfield ESL Project:
 - a. Living unit sizes and rental rates
 - b. Minimum services which will be included in the rent and what optional extra services will be available at what fees
6. Contingency plan if the business plan fails, for example, conversion to:
 - a. Strata title condominiums – all demographics or seniors only

- b. Market rental accommodation – all demographics or seniors only
- c. Provision of congregate care
- d. Provision of end-of-life care

The Developer has advised that negotiations are currently underway with an experienced operating entity on an agreement which would see that entity assume responsibility for operation and administration of the facility. Successful conclusion to this negotiation would enable some of the above concerns to be addressed.

C) Physical Impact/Liveability Issues with the ESL Proposal

Based on feedback from the community, specific issues and concerns with the ESL proposal which need to be addressed due to their potential impact on the liveability and character of the Village and adjacent areas are included in the following table, together with the response from the Developer and additional comment from the Working Group:

Community Concern or Issue	ESL Response	Working Group Perspective
Number of Units in the Proposal	Number of Units revised from 140 to 125, based on height reduction to 3 storeys and 6-lot configuration	There is significant community sentiment that the proposed building form is too “big” and intrusive. Senior’s accommodation has general support but not at this scale.
Height of the Building	On June 13, it was announced that the building height will be reduced from 4 floors to 3. 1 st story: 12 feet 2 nd & 3 rd stories: 9 feet	The community may be more receptive to a maximum height of 3 storeys, subject to acceptable building configuration and overall size.
Stepping between floors	First floor 10 ft. from lot line Second floor set back 10 - 15 ft. from first floor	Stepping back of upper floors should be maximized to enhance human scale proportions.

Overall site coverage	FSR 1.55 Site Coverage 52%	The FSR should be in the range of 0.80 to 1.20. Site coverage should remain in the 50% range. This will help address the concern over the “bigness” of the current proposal.
Massing and Building Orientation should be away from the Highland & Woodbine corner to reduce visual impact	Woodbine frontage has been set back and stepped between first & second floor. Now wholly enclosed configuration to suit 6 lot development	Building façades need careful articulation to provide visual relief and enhance a residential appearance. The enclosed interior courtyard presents an “institutional feel” to the building. The sentiment is that the building configuration should enable outdoor garden and leisure area(s) on the exterior of the building for connectivity to the community and to provide more sun exposure.
Mitigation of impact on views and sightlines	Site topography (elevation difference) mitigates additional view impacts	Existing public views should be respected and mitigated to the greatest extent.
Transition to the adjacent properties on Ridgewood as well as those across Highland and Woodbine	Topography mitigates impact for homes along Ridgewood	DNV Planning should review the context implications for the proposed development on adjacent properties and opportunities for enhancement of the Village ambience.
Provision of public space at the corner of Woodbine and Highlands	Not provided in this proposal	Enhanced public spaces are an important community expectation and have been provided by all recent re-zoned re-developments in Edgemont Village. Could be achieved by locating garden and leisure areas external to the building as discussed above.

Architectural Style	Propose West Coast Contemporary; no Stucco; Flat Roof	Pitched roof may be preferable to achieve a more “residential feel”, depending on the impact on the building height.
Tree Preservation and Landscaping	Significant trees will remain untouched on the adjacent north east property which is no longer included in this development	The Developer cannot guarantee the retention of existing trees not on its property. The on-site landscaping plan should reflect the residential character of the neighbourhood.
Community Benefits accruing from the closure and sale of the Canfield Cr. road allowance and any uplift in density	Developer estimates about \$1.0 M from the sale of Canfield Cr. may be available for community benefits at DNV discretion	The local community should be consulted to identify benefits which could be provided from the sale of Canfield Cr. and any land value uplift.
Traffic, Parking and Transportation Impacts	Bunt and Associates will be retained to undertake a Traffic Impact and Transportation Analysis Required parking: 41 stalls Proposed parking: 57 stalls	Study results awaited. Study scope should include mitigation opportunities for any identified impacts.
Economic Impact Assessment	GP Rollo and Associates will be retained to undertake an economic impact analysis on Village Merchants and Businesses	Study results awaited. The Village Merchants have not taken a stand as yet on potential business impacts – positive or negative. Their feedback has been provided only from their perspective as Village denizens and they are equally concerned about the “bigness” of the development.
Project accessibility for local residents	An initial 90 day window for advanced registration will be provided for local residents in Upper Capilano Area	Eligibility should also be extended to adult children living in the area who may wish to have their senior parent(s) locate locally.

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Note: This summary captures the key issues identified around the ESL proposal. As anticipated, members of the Working Group and the wider community have diverse views and are free to express their views as individuals during the planning review and public input processes.

APPENDIX A

Working Group Membership and Viewpoint on this Report

<u>Member</u>	<u>Endorse</u>	<u>Reject</u>
Brian Albinson		X
Grig Cameron	X	
Adrian Chaster	X	
Robin Delany	X	
Bill Hayes	X	
Susan Hingson		X
Susan Kimm-Jones	X	
Corrie Kost	X	
Lenora Moore	X	
Louise Nagle	X	
Peter Thompson	X	

NB. The members choosing not to support the report do not agree with the fundamental premise that the Group's function was to participate in the planning process with the Developer and District Staff, primarily by engaging in meaningful consultation with the Developer and Staff so as to provide input and feedback from a community perspective in order to surface key issues and concerns around the proposal that needed to be addressed.

These members are generally of the opinion that the language used is not sufficiently strong enough to denounce the size and density of the development and believe that the Group is entitled to judge the proposal and advocate for its rejection at this early stage of the process.

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