TOWN OF VIEW ROYAL
PUBLIC HEARING REPORT

TO:	Council	**DATE:**	June 10, 2020
FROM:	J. Davison, MCIP Community Planner	**MEETING DATE:**	June 16, 2020
		FILE NO.:	3360-20-2020-01

REZONING – 3, 5 and 9 Helmcken Road and 1449 Burnside Road West (Eagles Nest)

RECOMMENDATION

THAT the report from the Community Planner dated June 10, 2020 titled "Rezoning – 3, 5 and 9 Helmcken Road and 1449 Burnside Road West (Eagles Nest)" be received for information.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS

I concur with the recommendation.

DIRECTOR OF ENGINEERING'S COMMENTS

I concur with the recommendation.

DIRECTOR OF PROTECTIVE SERVICES' COMMENTS

I concur with the recommendation.

PURPOSE OF REPORT

The purpose of this report is to support the Public Hearing for Bylaw No. 900, 2014 Amendment Bylaw No. 1050, 2020 to rezone the Burnside Helmcken properties at 3, 5 and 9 Helmcken Road and 1449 Burnside Road West (henceforward known as the 'Eagles Nest' property) to an attached 3-building apartment configuration with a proposed 247 units.

BACKGROUND

This application follows an earlier application made in 2018. Committee of the Whole recommended against moving that application to bylaw readings despite several iterations of the design during 2018-2019.

PROJECT INFORMATION

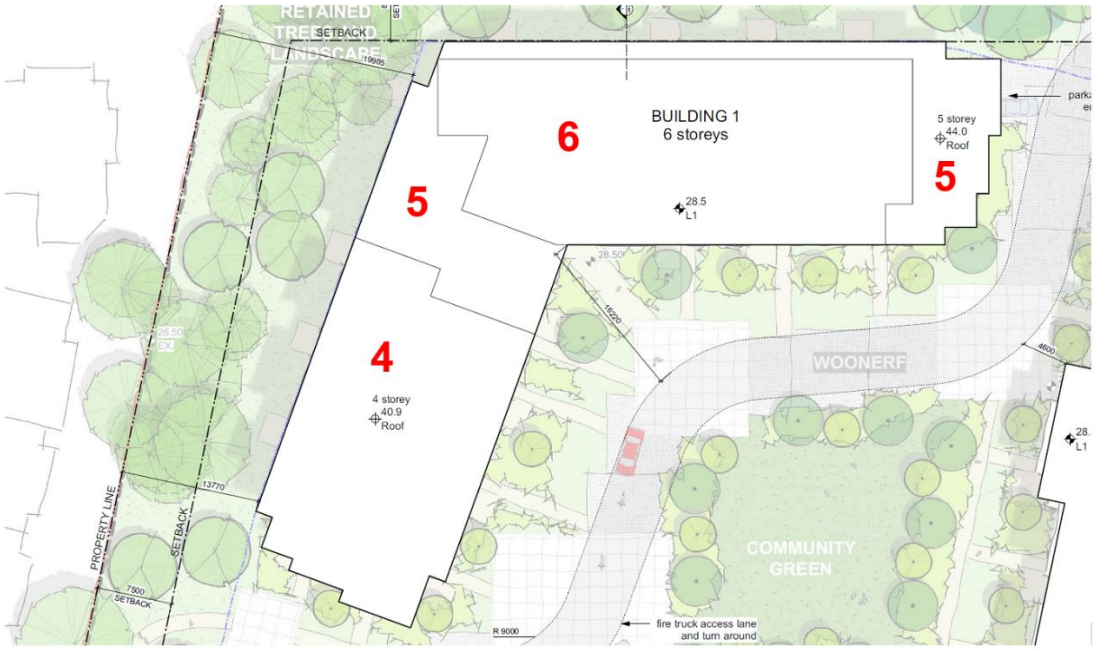
NOTE: CORRECTION TO INFORMATION PROVIDED (Friday June 12, 2020).

Please note that it has come to Staff's attention that the information presented in the submitted drawings and staff report is different to that provided in Zoning Bylaw No. 900, Amendment Bylaw No. 1050 regarding Building 1 storeys.

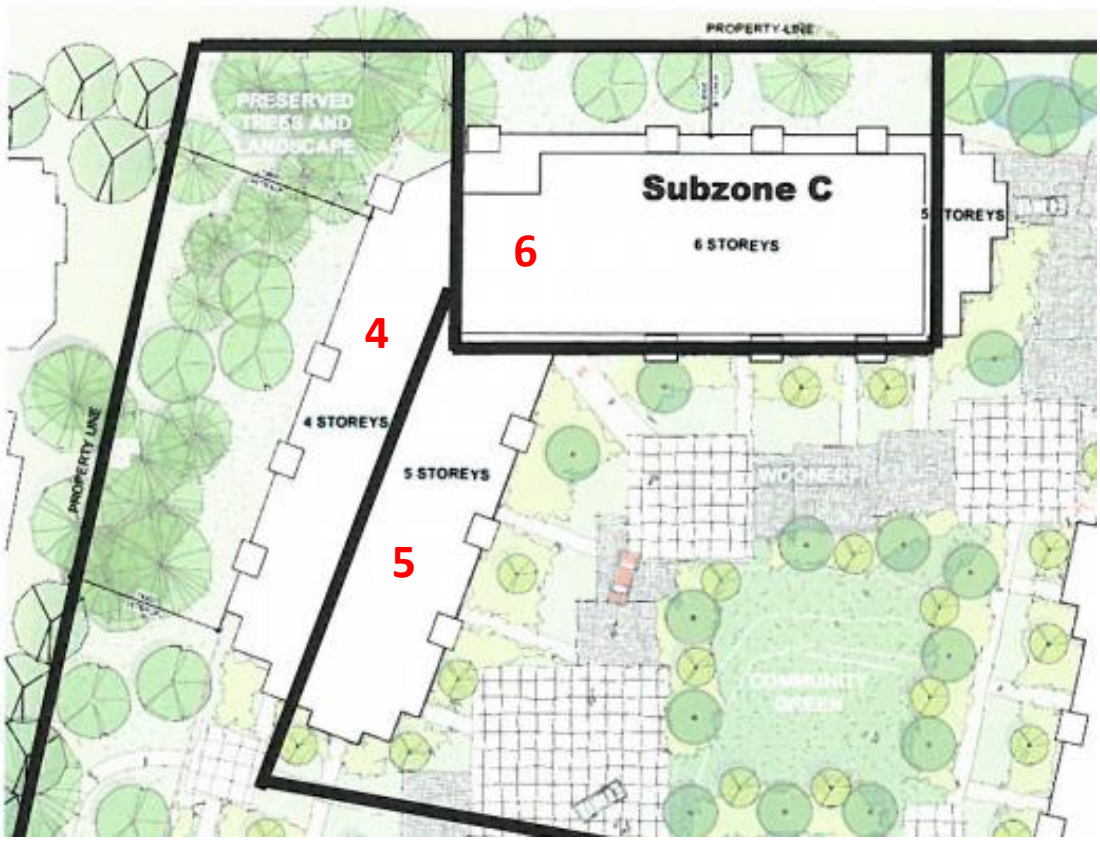
The information in the bylaw is the correct information and will stand.

The applicant has provided updated architectural drawing files which are listed in the correspondence section of the Town's Public Hearing web page. The applicant has also updated their presentation to reflect this.

Incorrect Staff Report version (with the storeys in red numbers)



Correct Bylaw version (with the storeys in red numbers):



The application re-configures the site in response to Council's concerns regarding the previous design's density, height, siting, and site circulation. In general terms the revised proposal is supportable by staff. The determining factor for this project will be Council's appetite for the revised design and slightly reduced FSR in the context of this property within the Town's Official Community Plan's Northern Gateway Community Corridor that is also identified as one of the Change Areas within the bylaw.

The previous four-building proposal has been re-configured into three separate structures in a more contextually appropriate design.

Site Data Summary

	Current Proposal	Previous Proposal
Density	1.50 FSR	1.57 FSR
Site Coverage	34%	33%
Units Proposed	247	262
Vehicle Parking	340	356
Bicycle Parking	246 Class 1 and 18 Class 2	262 Class 1 and 6 Class 2

The parking as proposed meets the bylaw requirements; no variances are required.

Unit Mix

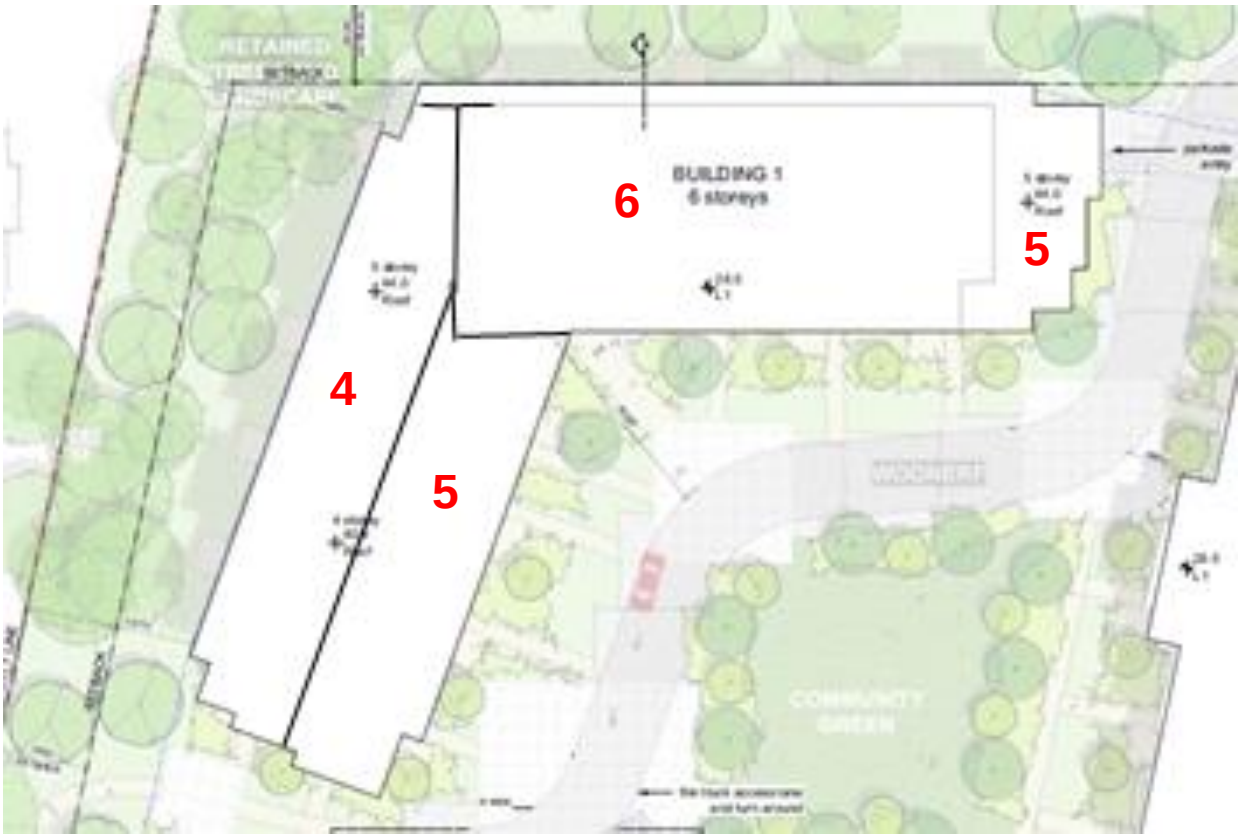
The proposal is currently for strata condos in the following configuration:

- 85 one-bedroom units
- 140 two-bedroom units
- 22 three-bedroom units

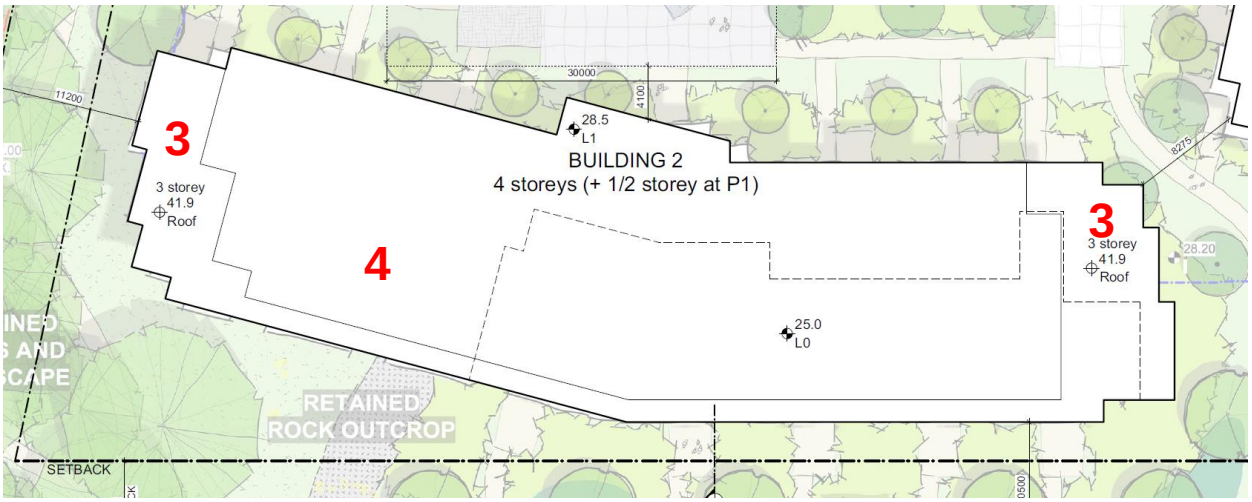
The unit mix can change as the project moves through the Development Permit process if parking requirements are met and FSR is not exceeded.

Building Height

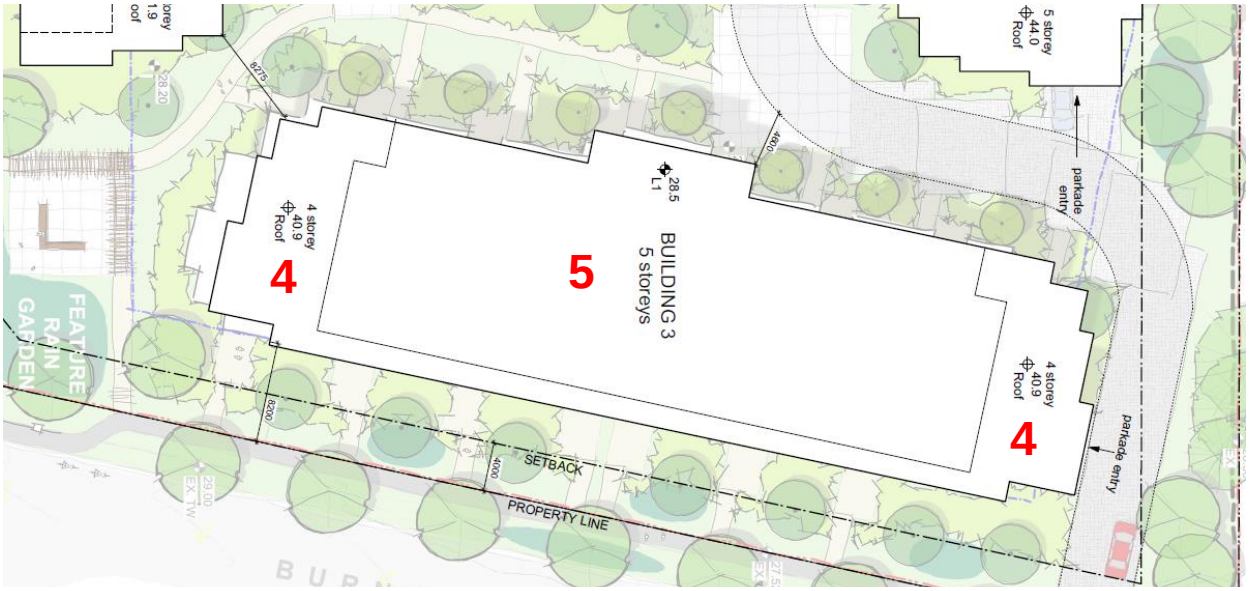
The proposal ranges from three storeys at the lowest points of the buildings, stepping up to a portion of Building 1 at six storeys on the north side adjacent to the ALR land. The buildings have been stepped and pulled back from strategic points to minimize neighbouring visual impact. Building 1 is 19.2m high and ranging from 4 to 6 storeys, strategically stepped to address the Hidden Oaks views.



Building 2 is 14.8m high and ranging from 3 to 4 storeys (plus ½ storey at P1), again stepped from 3 to 4 storeys to address the Hidden Oaks interface.



Building 3 is 16.9m high and ranging from 4 to 5 storeys.



In support of the application the following has been submitted:

- Rezoning Application Submission Summary Document – Applicant – January 17, 2020
- Architectural Drawings – de Hoog & Kierulf architects – January 22, 2020
- Civil Engineering Drawings – McElhanney Consulting Services Ltd. – January 23, 2020
- Landscape Drawings – Murdoch DeGreeff – January 22, 2020
- Survey Plan – McElhanney Consulting Services Ltd. – February 23, 2018
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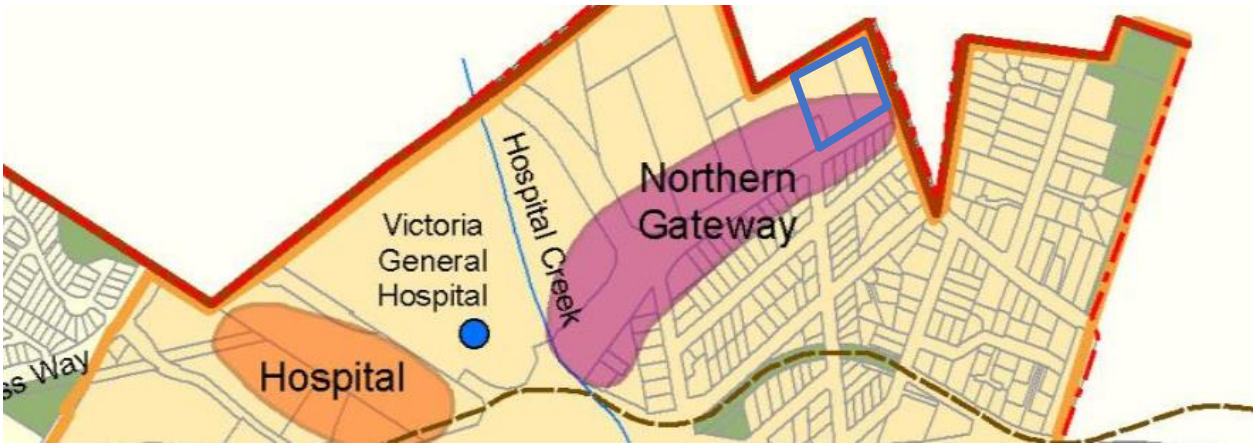
- Helmcken & Burnside Tenant Relocation Matrix – Applicant - January 22, 2020
- Eagle's Nest Development Data – Applicant - February 4, 2020
- Relative Height Illustration with Eagle Creek – Applicant – Undated

Official Community Plan Context

The subject property (on the map below in blue) is an important gateway site for the Town of View Royal. The design of the Northern Gateway Community Corridor requires the creation of "…a strong sense of place in the area surrounding the hospital and leading into the southern areas of the Town".



The Northern Gateway Community Corridor includes the lots fronting Helmcken Road between Burnside Road and the Trans-Canada Highway, and a few lots on Watkiss Way on the east side of the Helmcken intersection. The corridor has experienced incremental infill development in the form of higher density housing. A continuation of residential infill that will bring more housing closer to the hospital and revitalize underutilized land is envisioned for the Northern Gateway Community Corridor. Ancillary commercial and hospital-related uses will also be encouraged as part of mixed-use projects closer to the Trans-Canada Highway and the larger parcels near Watkiss Way.

Development in the Northern Gateway Community Corridor should be carefully reviewed to consider the following:

- *Uses and densities that benefit from the Corridor's proximity to the Victoria General Hospital and the planned regional rapid transit stop. Attached housing, including townhomes and apartments, should be encouraged throughout the Corridor.*

- *Access and circulation.*

- *Quality of the built environment.*

- *Wayfinding and placemaking elements that reinforce the Hospital Neighbourhood as the northern gateway to View Royal and create a strong sense of place in the area surrounding the hospital and leading into the southern areas of the Town.*

- *Connections to the planned hospital rapid transit stop, Galloping Goose Regional Trail, Trans-Canada Highway and established residential area east of Helmcken Road.*

This is the current proposal for the Burnside/Helmcken intersection interface. It provides an attractive entry feature that is much improved over the existing condition with fully realized building facades that address the street corner in an attractive fashion.

While detailed design is addressed at the Form and Character Development Permit stage, the application provides a level of detail that establishes those expectations along with the rezoning. Council will have full control over the form and character of the project when considering the Development Permit at a later date.

Design

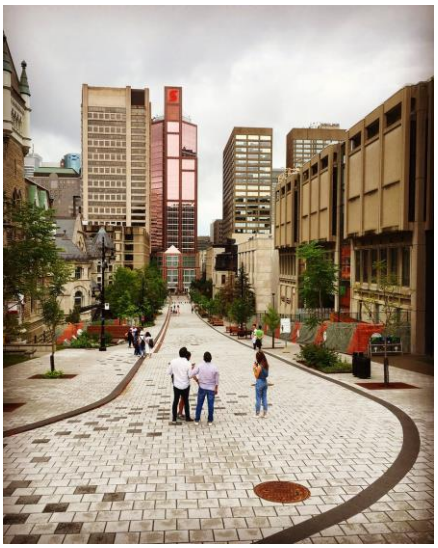
With the new proposal, the applicant has reduced the number of buildings from four to three, stepped the top floors back from the building facades, and pulled the buildings back from the Hidden Oaks boundary. There is much more visual interest in the building articulations from all external angles. The western interface between the Hidden Oaks development, especially, has been reconfigured in a positive manner.

1. There is a focus on reducing visual and physical impact on the Hidden Oaks townhouses to the west. The terracing of the building, partial storeys and the open space between the two buildings provides more relief than the previous uniform building wall. The buildings are also pulled back from the shared property line, providing varied, treed open space for screening between the two developments.

2. The new proposal provides a more multi-use feel in the courtyard with a proposed 'woonerf' (literally: 'living street' in Dutch) which emphasizes shared space and traffic calming while still permitting traffic flow. Protective Services requires that the woonerf meet BC Building Code (BCBC) for Fire Truck Access. While the applicant has assured staff that it meets minimum BCBC requirements, additional consideration will need to be made regarding design details to accommodate the Town's ladder truck and an acceptable turnaround or loop design.

   A large element of the concept is to design a functional roadway with non-traditional road surfaces that resemble pedestrian-friendly squares and plazas. This invites pedestrian and bicycle traffic and indicates to drivers that it is a shared space and not a dedicated roadway. This project's space is in a conceptual stage which may be refined at the Form and Character Development Permit stage.

Woonerf examples are below:



Community Amenity Contribution

The applicant has agreed to the community amenity contribution (CAC) target set out by the Town's CAC policy's standard rate of $3,500 per additional detached residential unit to be provided prior to building permit issuance. For this proposal, the contribution would be $864,500 based on the per-unit rate. Note that the number of units can change in the future.

The applicant has offered to pay the $3,500 per unit fee. The community amenity contribution rate and provision will be secured in a covenant.

OCP Policy HS1.4 Housing Amenity Contributions supports a housing amenity contribution to the Town, which could be directed to the CRD Regional Housing Trust Fund. A portion of the cash community amenity contributions could be used for this purpose.

Transportation Impact

The Town's Engineering Department (with assistance from Bunt & Associates Transportation Planning & Engineering's peer review) has completed the following initial review of the provided transportation impact assessment (TIA):

- It appears that waiting to see how McKenzie Interchange impacts traffic flow would be prudent. We note the Town is doing the same for several other traffic issues.

- Both the southbound traffic on Helmcken and the westbound and perhaps eastbound traffic on Burnside may require alteration of the intersection. (the applicant had suggested originally that they would vastly improve traffic flow with their suggested improvements)

- The TIA suggests that they do not have an impact on traffic volumes (section 4.8) and all issues are a result of the background (existing) traffic:

    - "It is important to highlight that future failing conditions are due to background traffic, not site generated traffic. When site traffic is added to the study area intersections at buildout and 10 years beyond buildout, site traffic has minimal impact on level of service, delay and queuing at both intersections."

- Alternatively, they speak to the impacts of even small amounts of traffic (section 4.7):
    - "As noted, small volume increases to an already failing movement can exponentially increase delay and/or queuing".

- Bunt points out that additional right-of-way may be required on the Burnside frontage which suggests alteration of the eastbound leg of Burnside and a sidewalk on the frontage.

- Once the McKenzie Interchange is complete an agreed upon assessment should be completed to determine mitigation expectations of the Town of View Royal.

Site Servicing

The applicant is working on a detailed conceptual site servicing plan which would indicate water and wastewater capacities, as well as shallow servicing plans. Staff does not anticipate issues in this regard.

Tenant Compensation

The applicant has provided a Tenant Relocation Plan:

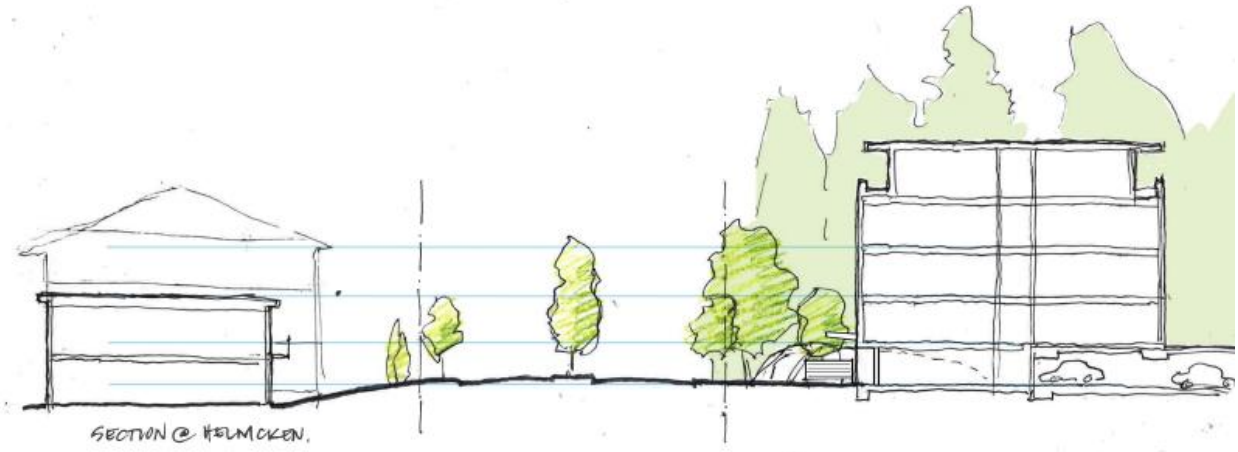
	City of Victoria	City of Vancouver	BC Residential Tenancy Act	Eagles Nest
Compensation for length of tenancy				
Up to 5 years	3 months	2 months	2 months	4 months
Between 5-10 years	4 months	3 months	3 months	5 months
over 10 years	5 months	4 months	4 months	6 months
over 20 years	6 months	6 months	6 months	8 months
Moving Expenses				
Bachelor and One Bedroom	$ 500.00	$ 750.00	$ 750.00	$ 1,000.00
Two or more bedrooms	$ 750.00	$ 1,000.00	$ 1,000.00	$ 1,250.00
Notice for Termination	4 months	4 months	4 months	4 months
Eligibility in all cases	minimum 1 year prior to rezoning application			
Exclusions in all cases	single family homes, duplexes, condos, secondary suites			

Staff is recommending that this be secured via covenant as a condition of the rezoning.

Public Engagement

The applicant has provided a Public Engagement Summary Report showing the engagement with affected neighbours, including the Hidden Oaks residents. The applicant has shown that they are listening to the residents, and the emergent design is more sensitive to those concerns regarding screening, height, and density. The supplied interface cross-sections show the treatment of the interface at Hidden Oaks which includes an increased setback and open space between the buildings, and the addition of a stepped building from 4 to 5 storeys to minimize the visual impact of the partial fifth storey.

For the residents across Helmcken Road, the change in height is modest.



ANALYSIS AND DISCUSSION

The 2018 proposal for the site was rejected by Committee of the Whole largely due to the expression of the density (1.57 FSR) on the site. The Committee felt the visual impact was not satisfactory at either the Burnside/Helmcken intersection, or the interface between the site and the Hidden Oaks townhouse complex to the southwest.

The applicant has responded with a proposal for 1.5 FSR in a three-building configuration which is the product of staff and Council's input, and the applicant's public engagement process.

Design Critique

The design is much improved over the previous four-building design. The stepped, terraced and articulated massing addresses the interfaces in a much more appealing and sensitive way, and in staff's opinion is as reasonable as can be expected while maintaining a density (1.5 FSR) close to the maximum indicated in the Official Community Plan's Mixed Residential Land Use Designation (1.6 FSR).

The proposal of 22 three-bedroom condominiums is particularly attractive in that there is a significant need for more affordable family-friendly attached units.

The proposed interior concept is also much improved, with a sense of shared space and a pedestrian-prioritized environment which will also accommodate surface traffic and, with some tweaking, the requirements of the Town's Protective Services Department.

Further design consideration will be available to Council at the Mixed Residential Form and Character Development Permit stage in the future.

Bylaw No. 900, 2014 Amendment Bylaw No. 1050, 2020

The bylaw to rezone the property divides the site into three sub-zones to ensure that the building heights proposed by the applicants are preserved in the bylaw.

CD-24: Burnside Helmcken Residential

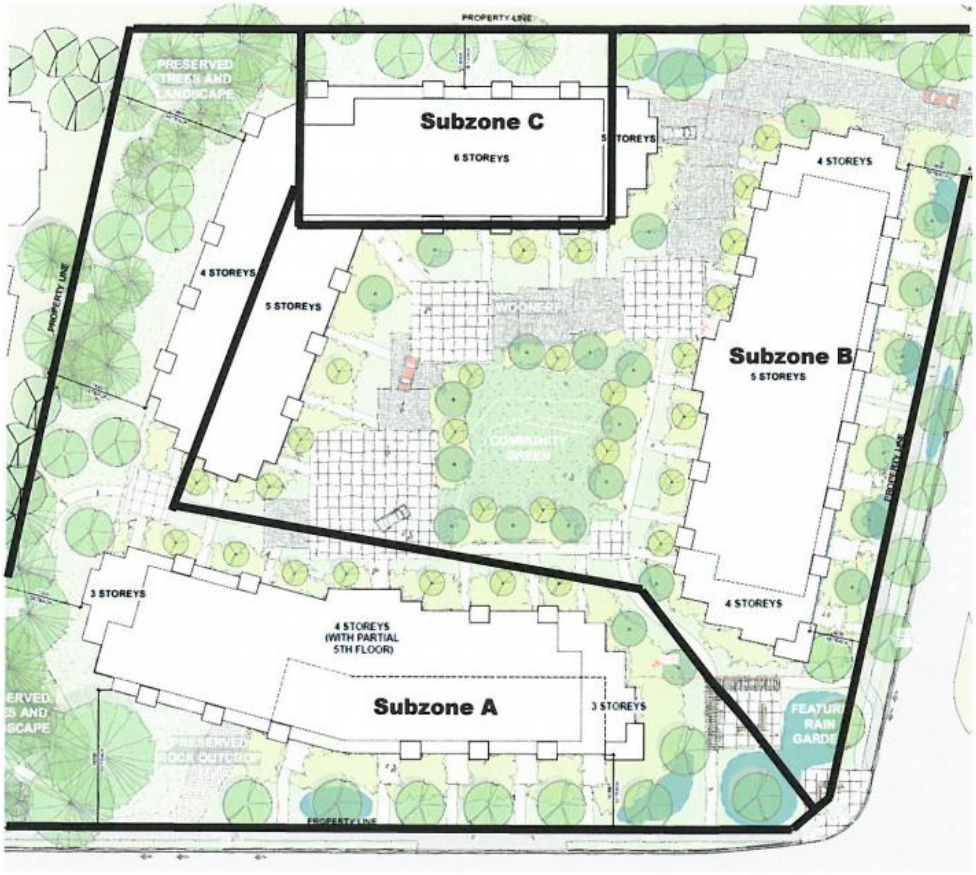
Principal Uses

- Residential, Apartment
- Residential, Townhouse

Accessory Uses

- Home Occupation

CD-24: Burnside Helmcken Residential	
Lot Size	
Lot Size, minimum	13,500m²
Lot Density	
Floor Space Ratio	1.5
Lot Coverage, maximum	35%
Impermeable Surface Coverage, maximum	60%
Size of Principal Buildings and Other Structures	
Building Height, maximum (Subzone A)	15m and 5 storeys
Building Height, maximum (Subzone B)	17m and 5 storeys
Building Height, maximum (Subzone C)	19.5m and 6 storeys
Building Width, minimum	6m
Siting of Buildings and Other Structures (Principal and Accessory)	
Western property line, setback	11m
Helmcken Rd property line, setback	10m
Burnside Rd property line, setback	8m
Northern property line, setback	8m



The applicant has also included a relative height illustration (included in the attachments) indicating building heights at Eagle Creek Village (which are higher than the proposed here).

Conditions of Rezoning

In advance of adoption of the bylaw to rezone the property (should Council approve the bylaw), the following must happen:

1. The Ministry of Transportation and Infrastructure must approve the bylaw as the property is within 800m of a controlled access intersection (Helmcken and Trans Canada).
2. A covenant between the Town and the applicant must be undertaken to ensure that the $3,500 Community Amenity Contribution per additional detached residential unit will be paid.
3. A covenant between the Town and the applicant must be undertaken to ensure that the tenant compensation as outlined in this report will be paid.
4. A covenant between the Town and the applicant must be undertaken to ensure that the four subject parcels be consolidated into one parcel.

CONCLUSION

This application is much improved over the previous and is supported by staff. The proposal addresses the Northern Gateway condition within the OCP by providing an attractive entry feature to View Royal, it addresses the need for housing close to the hospital, to the regional pathway system, and to amenities at Eagle Creek Village. It is sensitive to the residential and agricultural interfaces, it provides a range of housing suitable for individuals and families alike, and generally represents a balance between realizing the densities described within the Mixed Residential OCP Land Use Designation while being sensitive to the existing surrounding uses.

RECOMMENDATION

THAT the report from the Community Planner dated June 10, 2020 titled "Rezoning – 3, 5 and 9 Helmcken Road and 1449 Burnside Road West (Eagles Nest)" be received for information.

SUBMITTED BY: _____
J. Davison MCIP RPP, Community Planner

REVIEWED BY: _____ for
L. Chase MCIP RPP, Director of Development Services

ATTACHMENTS:

1. Subject Property Map
2. Subject Property Orthophoto
3. Rezoning Application Submission Summary Document – Applicant – January 17, 2020
4. Architectural Drawings – de Hoog & Kierulf architects – January 22, 2020
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19. Eagle's Nest Development Data – Applicant - February 4, 2020
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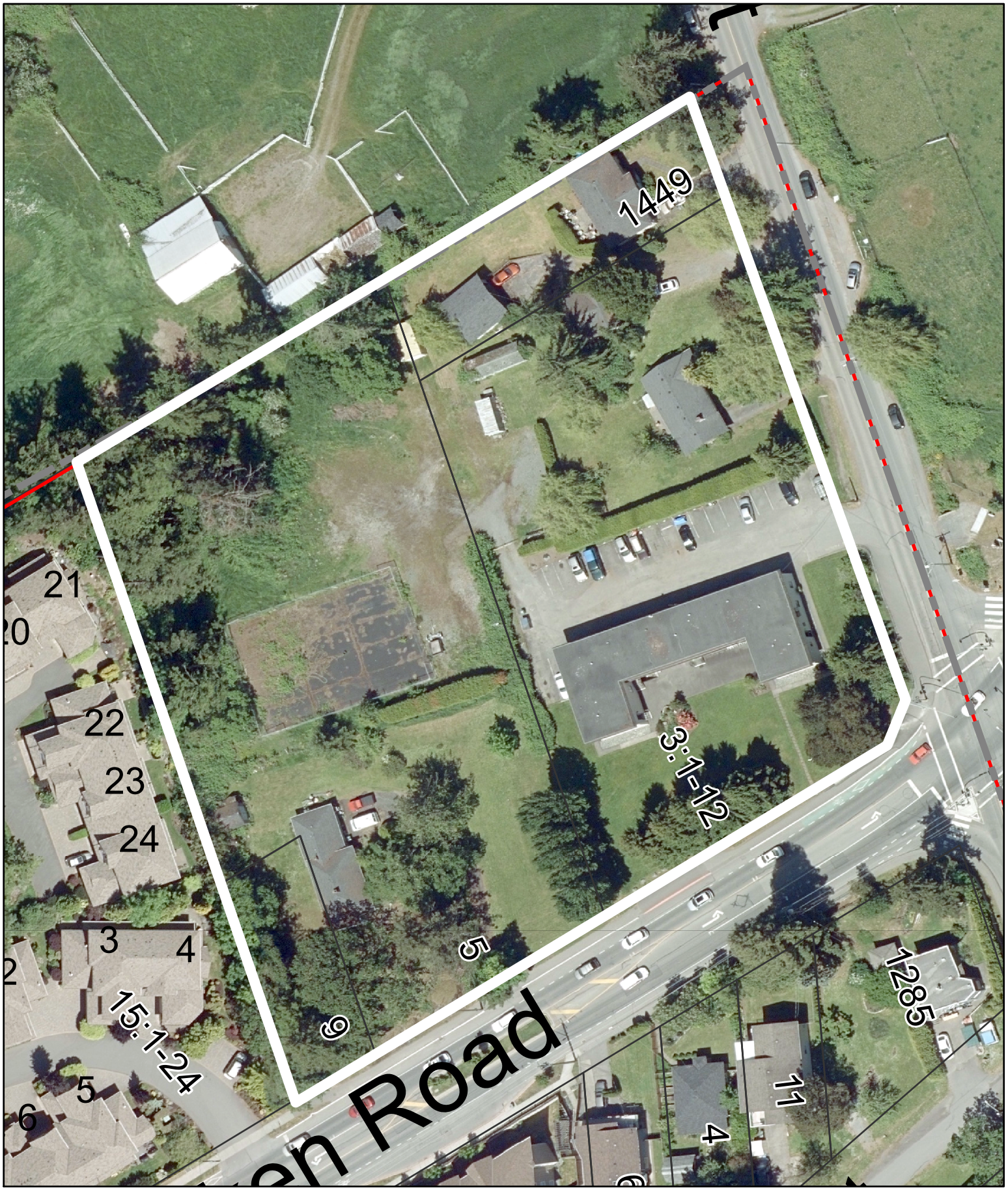
21. Bylaw No. 900, 2014 Amendment Bylaw No. 1050, 2020

Subject Property Map 3,5 & 9 Helmcken and 1499 Burnside Rd W

Subject Property Orthophoto **3, 5 & 9 Helmcken and 1499 Burnside Rd W**



0 12.5 25 50 75 100 Meters

EAGLES NEST

Rezoning Application

Submission Summary Document

17 January 2020

TownSquare

dHKa

ICIC

WATT Consulting Group

Murdoch de Greeff INC Landscape Architects

Rezoning Application

Submission Summary Document

CONTENTS

1.0 Introduction & Planning Context

2.0 Community Engagement & Site Planning

3.0 Proposed Development Plan

1.0 Introduction & Planning Context

The Eagles Nest site is located at the corner of Helmcken Road and Burnside Road West, in the Town of View Royal's 'Northern Gateway' area of the Hospital Neighbourhood. The site is designated in the Official Community Plan (OCP) for mixed residential development up to 1.6 Floor Space Ratio (FSR). With its close proximity to local shops, services and amenities at Eagle Creek Village and the regional employment centre of Victoria General Hospital, the site is well suited to redevelopment with multiple-residential development.

The planning framework within the OCP supports development of the Eagles Nest site and this section of the document summarizes the key planning policies and rationale. The proposed mixed-residential development is at a density below the maximum allowed in the OCP, but at a level that makes best use of land designated for mixed-residential development and that is required to ensure viability of the project.

In additional to providing much needed new housing that can support the viability of the mixed-use Hospital Neighbourhood, the Eagles Nest project will also be providing a Community Amenity Contribution that could fund additional important public amenities.

Development of this site will result in the contribution of approximately $850,000 to the Town of View Royal as a Community Amenity Contribution, and an additional $2.5 million in rezoning, DCC, building permit fees and off-site improvements. The Community Amenity Contribution funds could be used for a variety of amenities that serve the View Royal community as a whole.

Some ideas we have heard so far include:

- Playground improvements at Chancellor Park
- Pickle Ball Courts at Helmcken Centennial Park
- New fire truck

Regional housing crisis	Create more housing choices within growth centre
Replace aging housing stock	Build new, and support existing tenants to relocate
Help implement the Official Community Plan	Site is designated for higher density housing
Climate action and better use of land	Locate new housing near where people work, shop and play
Demand for walkable, attractive neighbourhoods	Design for pedestrians, and to contribute to a sense of place
Celebrate the gateway to View Royal	Create a gateway feature at the corner
Regional traffic congestion	Support compact growth and alternative transportation modes
Local traffic movements	Design access and vehicle circulation patterns to maximize function
Sensitive, thoughtful infill development	Consider setbacks, screening, and landscaping along edges
Respect neighbours during construction	Implement a construction management plan
Viable development	Achieve density required to deliver project and amenities
.....	.....
.....	.....
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How?

Strive to achieve objectives through a collaborative and iterative design process, including community input while balancing multiple interests.

Current Conditions:

- 3.41 acre (13,800 m^2) site, 4 legal lots
- 4 detached residential units
- 12-unit apartment building (Robilee Apartments)

Tenant Support:

The project will exceed the requirements of the BC Residential Tenancy Act to help support existing tenants in their relocation.

	City of Victoria	City of Vancouver	BC Residential Tenancy Act	Eagles Nest
Compensation for length of tenancy				
Up to 5 years	3 months	2 months	2 months	4 months
Between 5-10 years	4 months	3 months	3 months	5 months
over 10 years	5 months	4 months	4 months	6 months
over 20 years	6 months	6 months	6 months	8 months
Moving Expenses				
Bachelor and One Bedroom	$ 500.00	$ 750.00	$ 750.00	$ 1,000.00
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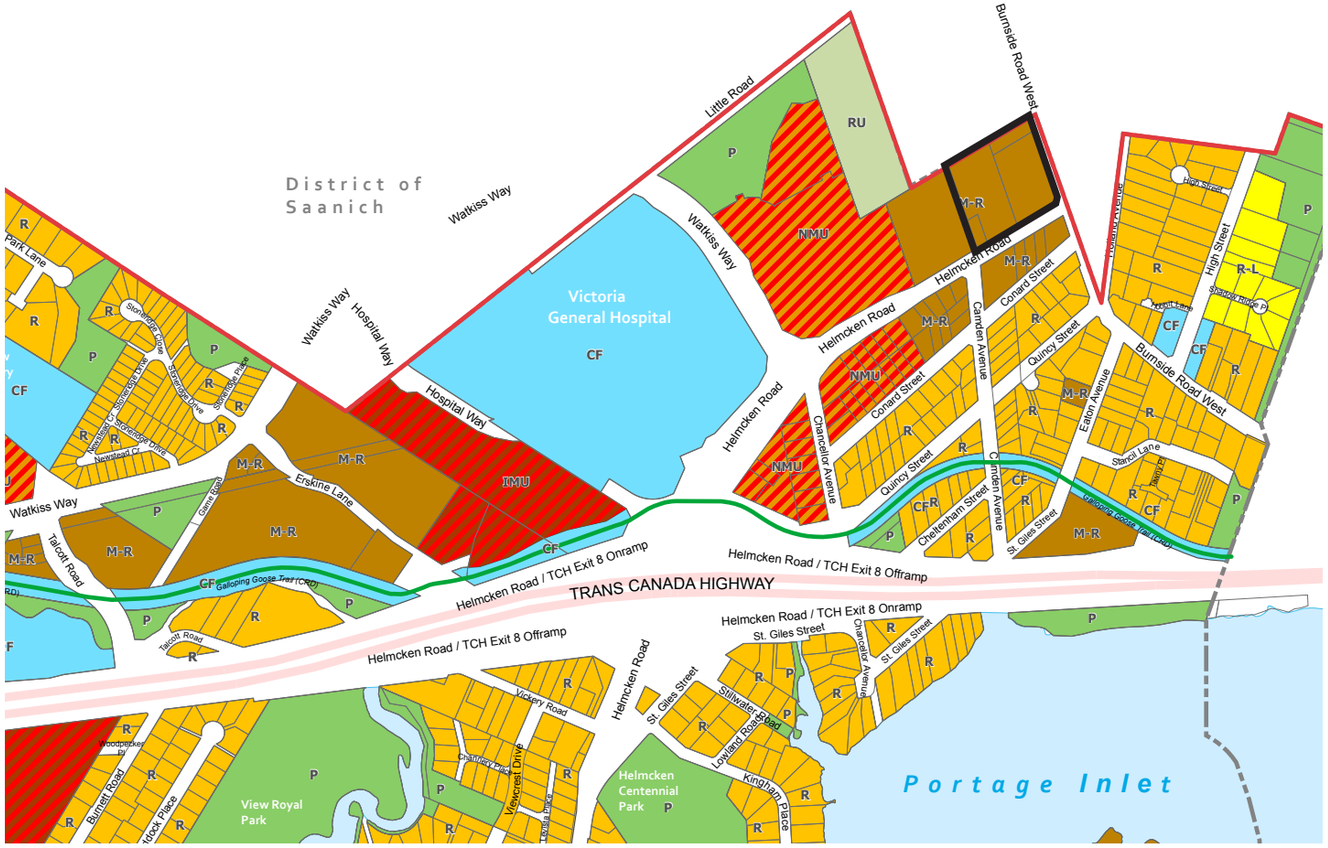
Notice for Termination	4 months	4 months	4 months	4 months
Eligibility in all cases	minimum 1 year prior to rezoning application			
Exclusions in all cases	single family homes, duplexes, condos, secondary suites			

Neighbourhood Context:

- ‘Northern Gateway’ area of the Hospital Neighbourhood
- Directly adjacent to existing multiple-unit residential to the west (Hidden Oaks townhouses).
- Multi-unit residential and detached residential uses to the south.
- Within the Urban Containment Boundary, with Agricultural Land Reserve (ALR) lands to the north and east.
- Close proximity to local shops, services and amenities at Eagle Creek Village.

Regional Context:

- Adjacent to regional draw of Victoria General Hospital, and identified regional ‘Node’.
- Close proximity to Galloping Goose Regional Trail.
- Affected by regional commuter traffic.



View Royal has set strong goals for shaping new growth and change.

"View Royal recognizes the impacts of climate change, and is responding by actively promoting energy-efficient, sustainable development, and environmental protection. Well-designed compact housing ensures choice, affordability and better use of land. Infill and redevelopment near neighbourhood centres and transit corridors provides jobs and services closer to where people live – minimizing the need for commuting, and creating pedestrian-friendly streets and destinations."

- excerpt from View Royal OCP Vision Statement

View Royal Official Community Plan

- Designated as M-R: Mixed Residential.
- Allows small lot detached houses, townhouses and low-rise apartments up to 3 storeys and 1.25 FSR, and up to 4 storeys and 1.6 FSR for apartment dwellings.
- Regulated by the Mixed Residential Form and Character Development Permit Area.
- Strategically-located around regional node (VGH) and local services.

New Housing in the Right Place

Development of single detached dwellings on small lots, new duplexes, townhouses and low-rise apartments in new and established neighbourhoods provides a variety of housing types, styles and costs.

This variety ensures people of different ages, income levels and stage of life can find homes in View Royal. Small lot infill and multi-unit housing also serves to:

- Transition between single detached housing and areas of higher density;
- Maintain character of existing neighbourhoods while accommodating population growth;
- Incrementally replace aging housing stock; and
- Efficiently use land in an unobtrusive manner.

Infill makes use of existing infrastructure and already disturbed land, reduces development pressure on natural areas, and can support increased walking, biking and transit use.

"The thrust of the plan is to provide additional capacity for alternative modes of transportation while making the existing road infrastructure work more effectively, but not at the expense of providing capacity for alternative modes of transportation. Rather, the Town has been consistently striving for a transportation network that reflects the desire of residents and businesses for increased travel choices. They see their roads as community resources for the benefit of all users and want to see additional infrastructure built to accommodate pedestrians as well as bicycle and transit users."

- excerpt from View Royal Transportation Master Plan

Regional Transportation & Traffic

- Helmcken Road is a vital connection for View Royal and the region providing access to educational and employment facilities such as Camosun College and Victoria General Hospital as well as direct access to Highway 1.
- Helmcken Road is also an important link for those who conduct business and travel between the Western Communities and the Saanich Peninsula.
- Helmcken Road near the site sees approximately 12,000 vehicles per day which is consistent with its function and classification as an arterial road.

- Burnside Road is an important connection for View Royal that provides access to residential neighbourhoods, a community center, parks and District of Saanich.
- Burnside Road parallels Highway 1 between Interurban Road and Helmcken Road and is used by some commuters as an alternative route to Highway 1, resulting in congested conditions during the AM and PM peak hours.

Local Transportation & Traffic

- Current traffic operations on Helmcken Road and Burnside Road near the site, particularly during the PM peak hour, are congested westbound on Helmcken Road from Watkiss Way to Wilkinson Road and northbound on Burnside Road from Helmcken Road to beyond High Street.
- There is potential for congestion to improve on Helmcken Road and Burnside Road near the site following the completion of the McKenzie Interchange. However, the impacts that the McKenzie Interchange may have on these roads can only be quantified once its construction is complete.
- New development should encourage alternate modes of transportation, including walking, cycling, car share and transit use.

Site Access

- The existing lots have access off of Helmcken Road and Burnside Road West.
- The most western property has a legal, shared access with the existing driveway for the Hidden Oaks townhouse development.
- The project is proposing to consolidate the access strategy to have only one access point, to be located off of Burnside Road West.
- This will provide access to the internal courtyard and underground parking garages.

Traffic Impact Assessment

WATT Consulting completed a Traffic Impact Assessment (TIA) for the project The following summarizes the key findings:

- Existing conditions at the Helmcken / Watkiss / Chancelor intersection indicate unstable conditions for the eastbound left turn movement during the AM peak and severe westbound queuing and delay that spills back ~1 km beyond Burnside Road during the PM peak.
- Existing conditions at the Helmcken / Burnside intersection indicate failing conditions for northbound and southbound movements on Burnside Rd during the AM peak and failing conditions for northbound movements on Burnside Rd during the PM peak.
- Site generated traffic will add one vehicle to the study area road network approximately every 45 seconds during the AM peak and every 35 seconds during the PM peak.
- Site generated traffic will have a negligible impact on traffic operations at the Helmcken / Watkiss / Chancelor and Helmcken / Burnside intersections at buildout (2023) and 10 years beyond buildout (2033).
- The site access will operate well 10 years beyond full buildout and does not require a northbound left turn lane.
-
- Transportation Demand Management strategies may reduce the development's impact on traffic operations at study area intersections.
- A sidewalk is recommended along the site's frontage on Helmcken Road and Burnside Road West.
- The installation of bus bay on Helmcken Rd fronting the site should be discussed with BC Transit.
- Since December 2019 when the McKenzie / Highway 1 underpass was opened, media estimates indicate commute times between Langford and Victoria have been reduced 10 – 15 minutes. The McKenzie interchange project may in turn improve conditions on Helmcken Road and Burnside Road which should be reassessed once the interchange project is complete.

2.0 Community Engagement & Site Planning

The site was the subject of a previous Rezoning Application, originally submitted in 2018 and withdrawn in 2019, to allow more community engagement and further site and technical analysis. This new application builds upon the input received during the original application process, and has benefited from collaborative consultation with the immediate neighbours to bring about a renewed and refined site plan.

At its core, however, the application remains committed to implementing the goals and objectives of the OCP and realizing a contribution to the regional housing needs with a site design that is respectful and responsive to its neighbourhood context.

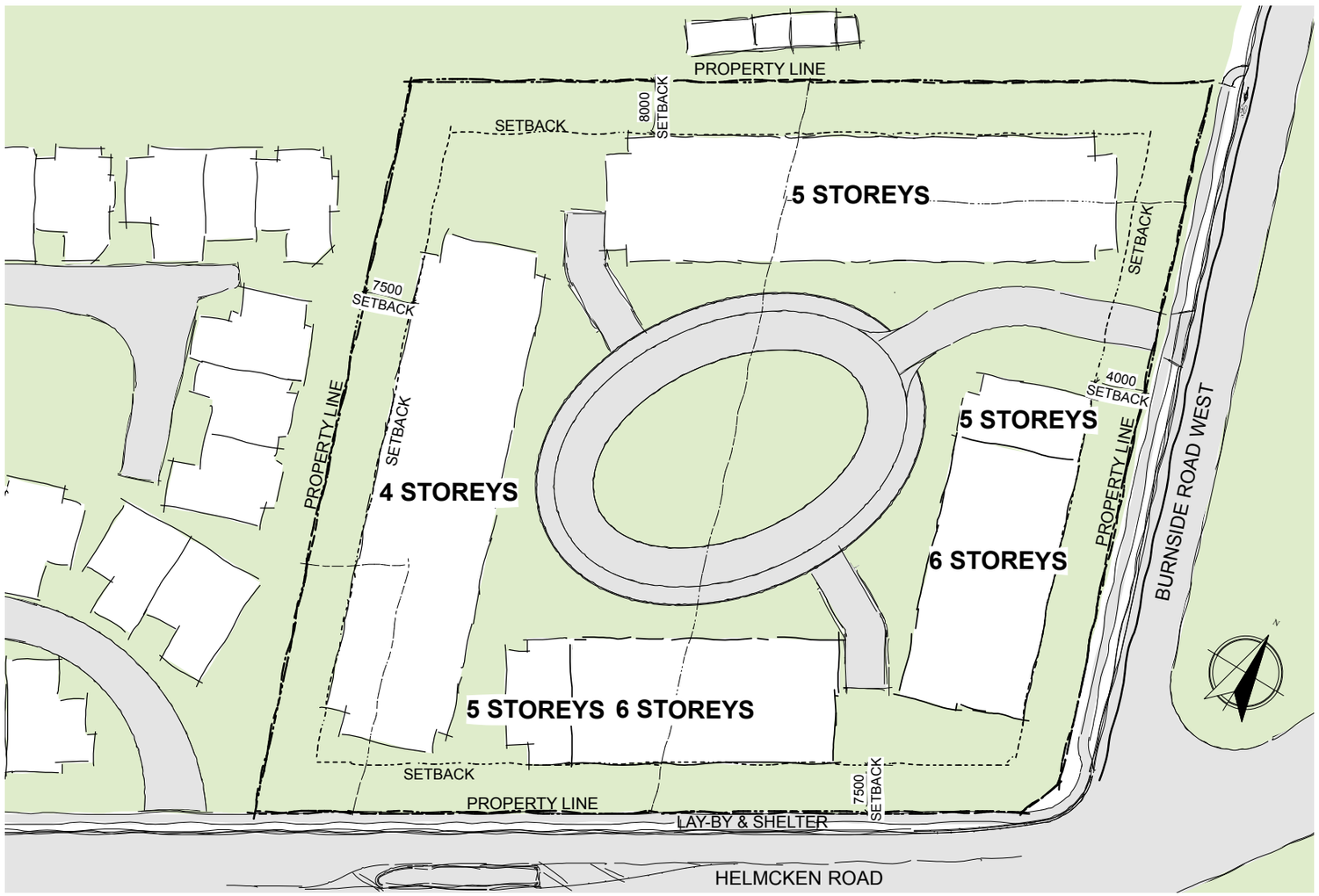
The development planning team hosted two workshops with neighbours in November and December of 2019. The purpose of the workshops was to invite the immediate neighbours to participate in the planning process as the project reset and worked toward a new application. The workshop sessions were designed to allow collaborative discussion and engagement around the site plan to gather input and ideas to help shape the proposed buildings. A review of the View Royal planning policies for the site was shared, highlighting the community goal of achieving a greater variety of housing choice, affordability and better use of land. The team listened to gather input on issues and opportunities to be addressed by the plan.

The topics of traffic, transportation, tree retention, privacy, and building heights and stepping were discussed at the workshops. Input received during the first session in November informed refinement to the site plan, which was then brought forward for review and discussion at the second session in December.

A Community Meeting was scheduled to be hosted on January 15, 2020 to present the new plan and proposal prior to submission of this new Rezoning Application. Due to winter weather conditions, the Community Meeting had to be postponed, and is now scheduled for Monday, February 3, 2020.

The planning and design team believes the plan has been positively shaped by the community input and now better responds to a number of key issues raised.

Site Plan Version 1



OCTOBER 23, 2018

Community Meeting
+/- 70 attendees (52 signed-in)

What we heard:

Traffic
- concern about commuter traffic on Helmcken and capacity to accommodate proposed growth given regional traffic issues
- challenge getting in and out of residential driveways
- turnaround traffic into Hidden Oaks' driveway

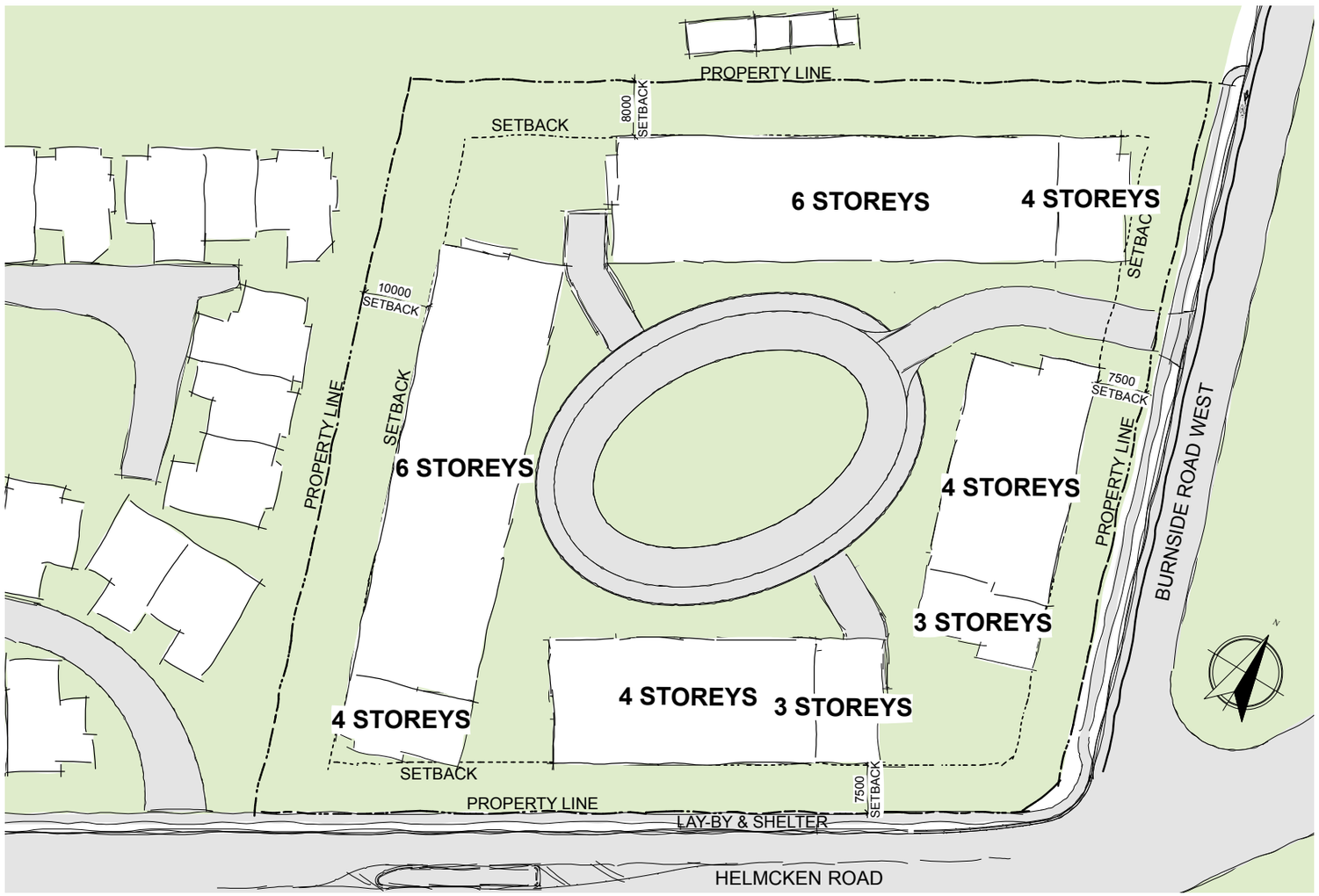
Building Height/Shadowing
- concern about potential overshadowing of Hidden Oaks townhouses
- question about the building massing/presence at the corner

Density
- some concern about density, particularly relative to traffic impacts

Streetscape
- questions about streetscape design - sidewalks?

Site Plan Evolution with Community Input

Site Plan Version 2



JANUARY 9, 2019

Hidden Oaks Resident Meeting
9 attendees

What we heard:

Traffic

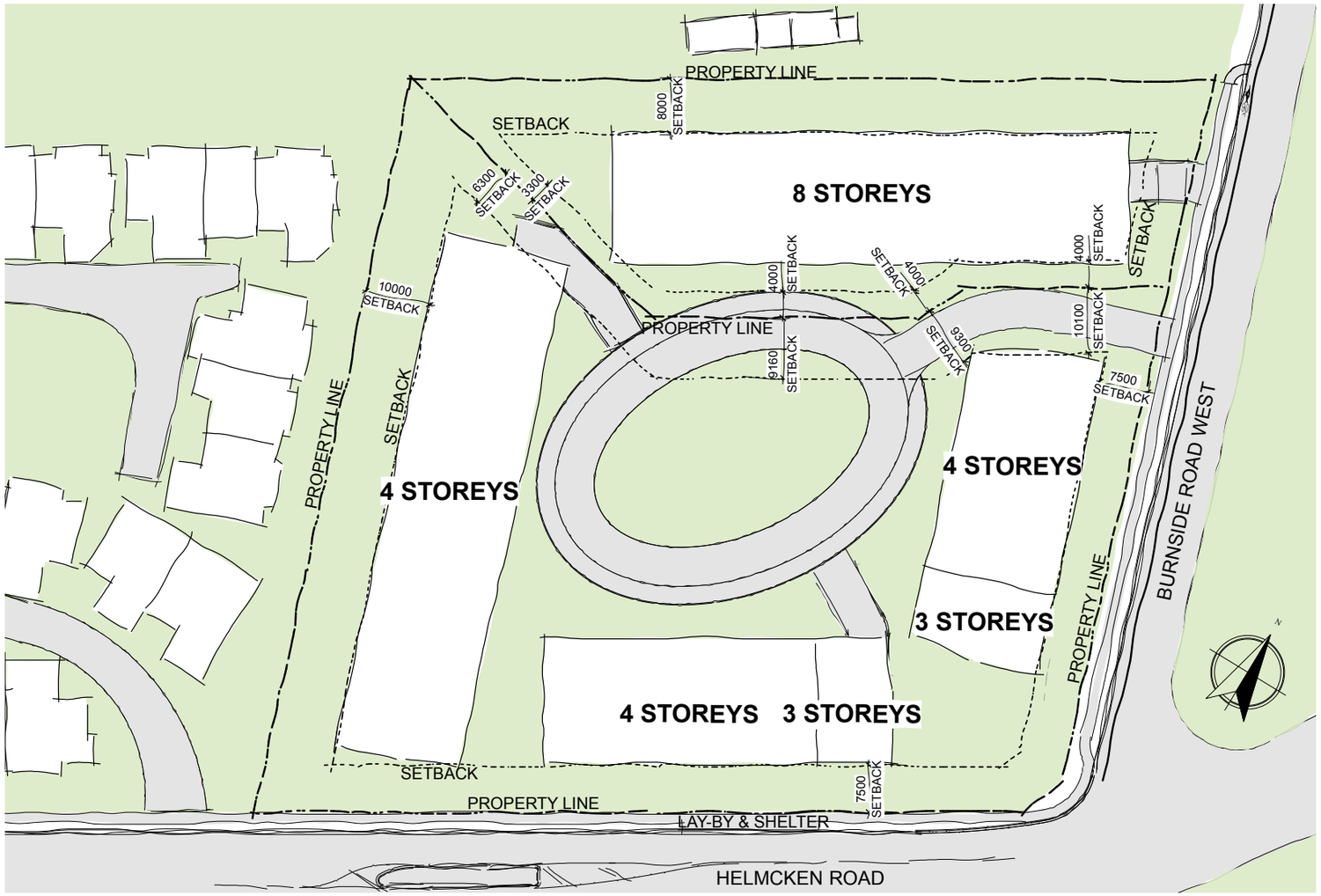
- concern about turn-around traffic into Hidden Oaks' driveway
- discussion on strategies to deter turn-around traffic (signage, dedicated left-hand turn lane into Eagle Creek Village off of Helmcken.

Building Height/Shadowing

- concern about 6-storey building being located adjacent to townhouses

Site Plan Evolution with Community Input

Site Plan Version 3



JULY 9, 2019

Community Meeting
50 attendees (all signed-in)

What we heard:

Traffic

- concern about traffic and impact of development on an already challenging traffic situation

Building Height/Shadowing

- concern about 8-storey building at the back of the site

Site Plan Evolution with Community Input

NOVEMBER 18, 2019

Neighbours' Workshop #1
13 attendees
Site & Landscape Design

Discussion Topics:

- Building heights & distribution
- Site access & circulation
- Edge conditions and screening / buffer
- Landscape design ideas
- Streetscape improvements
- Density, traffic impacts

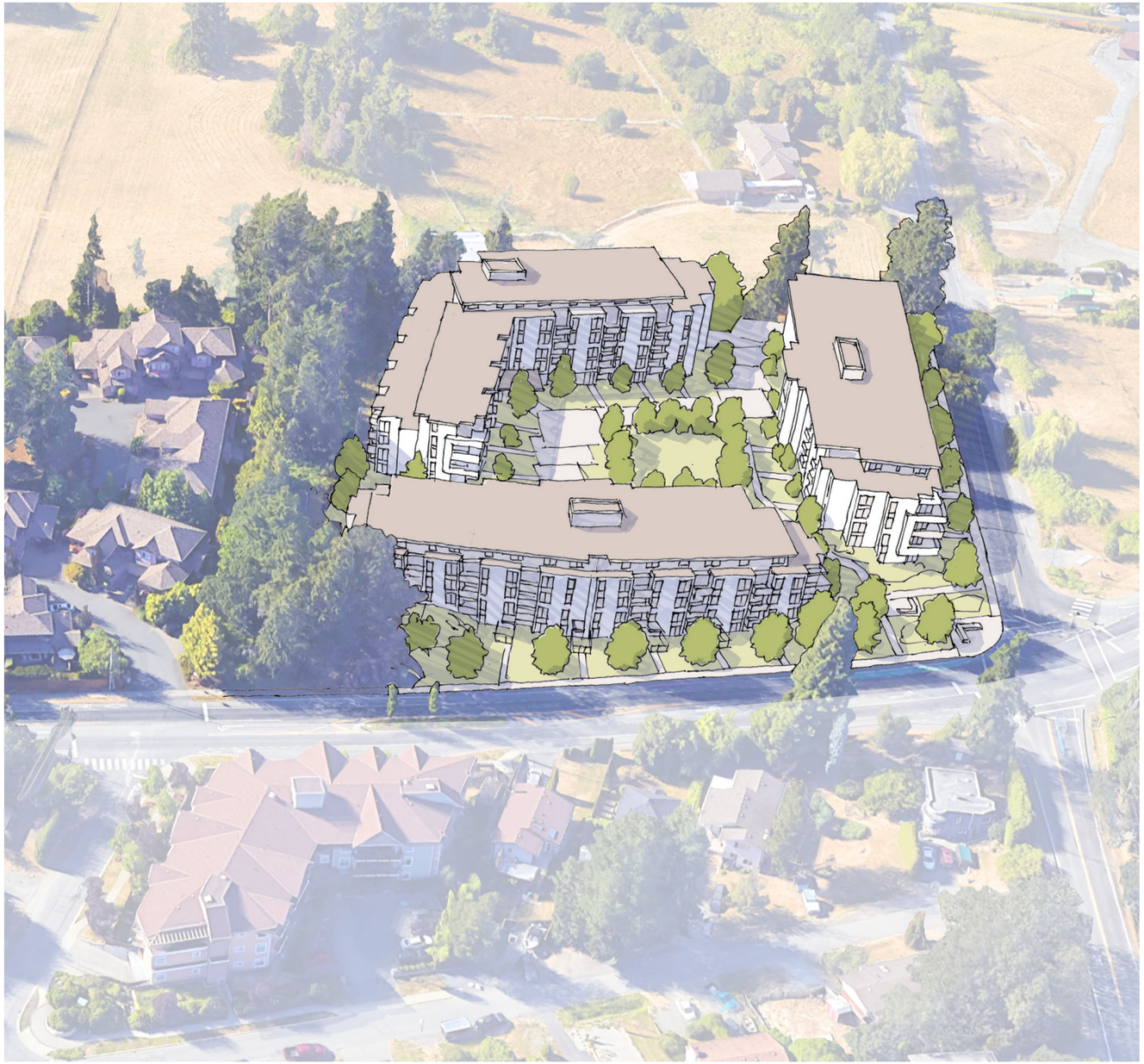
DECEMBER 2, 2019

Neighbours' Workshop #2
8 attendees
Site Plan Revisions

Discussion Topics:

- Building heights & distribution
- Traffic, speed and volume
- Density measurements and design
- Site access & circulation
- Edge conditions and screening / buffer
- Site grades and topography and stormwater management
- Potential to retain some existing trees for privacy
- Potential to retain rocky outcropping at western edge of site
- Design of internal courtyard, on-site circulation

Revised Conceptual Site Plans and Workshop Sessions



3.0 Proposed Development Plan

To reset the site planning process, the team revisited the site analysis in collaboration with the neighbours' planning workshops. This approach was informed by detailed site and tree surveys along with input from the neighbours with respect to building location, setbacks, height, stepping and privacy. Existing trees along the western property line were assessed and it was determined that setting the buildings back away from the property line would allow retention of important existing trees, and the rocky outcropping, that serve to provide privacy, screening and a natural setting for the neighbours.

The plan was also shaped by an urban planning objective to create strong pedestrian-oriented streetscapes along Helmcken Road and Burnside Road West. Buildings along these frontages are designed with ground-floor units that each have their own individual entry from the street. These units, and the daily activity of residents coming and going provide 'eyes on the street' and contribute to the place-making that can help encourage walking.

With all parking located underground, the internal courtyard is designed as a 'woonerf', a Dutch concept of a 'living street' with room for pedestrians, cyclists and cars. While the space allows for pick-up and drop-off vehicular use, it is intended as a social place for gathering, play, and interaction, rather than a space solely for vehicles. The adjacent central green space provides an additional amenity for residents and contributes to the overall greening of the site, with more landscaping and pervious surface than has been achieved within neighbouring developments that devote more space to paved vehicular use.

Building heights have been strategically stepped from three to six storeys, to maximize privacy for adjacent neighbours and to respond to site topography. The building massing and architecture contribute to creating a strong gateway at the important intersection of Burnside Road West and Helmcken Road, marking a welcome to View Royal. The landscape at the corner includes a feature rain garden and a small plaza space that contribute to the public realm.

The project proposes a development density of 1.5 FSR, with 247 units, including one-bedroom, two-bedroom, and family-friendly three-bedroom units. With close proximity to shopping and services at Eagle Creek Village, new residents will have access to daily needs within walking distance. A new bus bay on Helmcken supports access to transit and connectivity to the Galloping Goose Regional Trail further supports alternate transportation. The project is also investing in Transportation Demand Management (TDM) strategies, including an e-bike rebate and car share program.

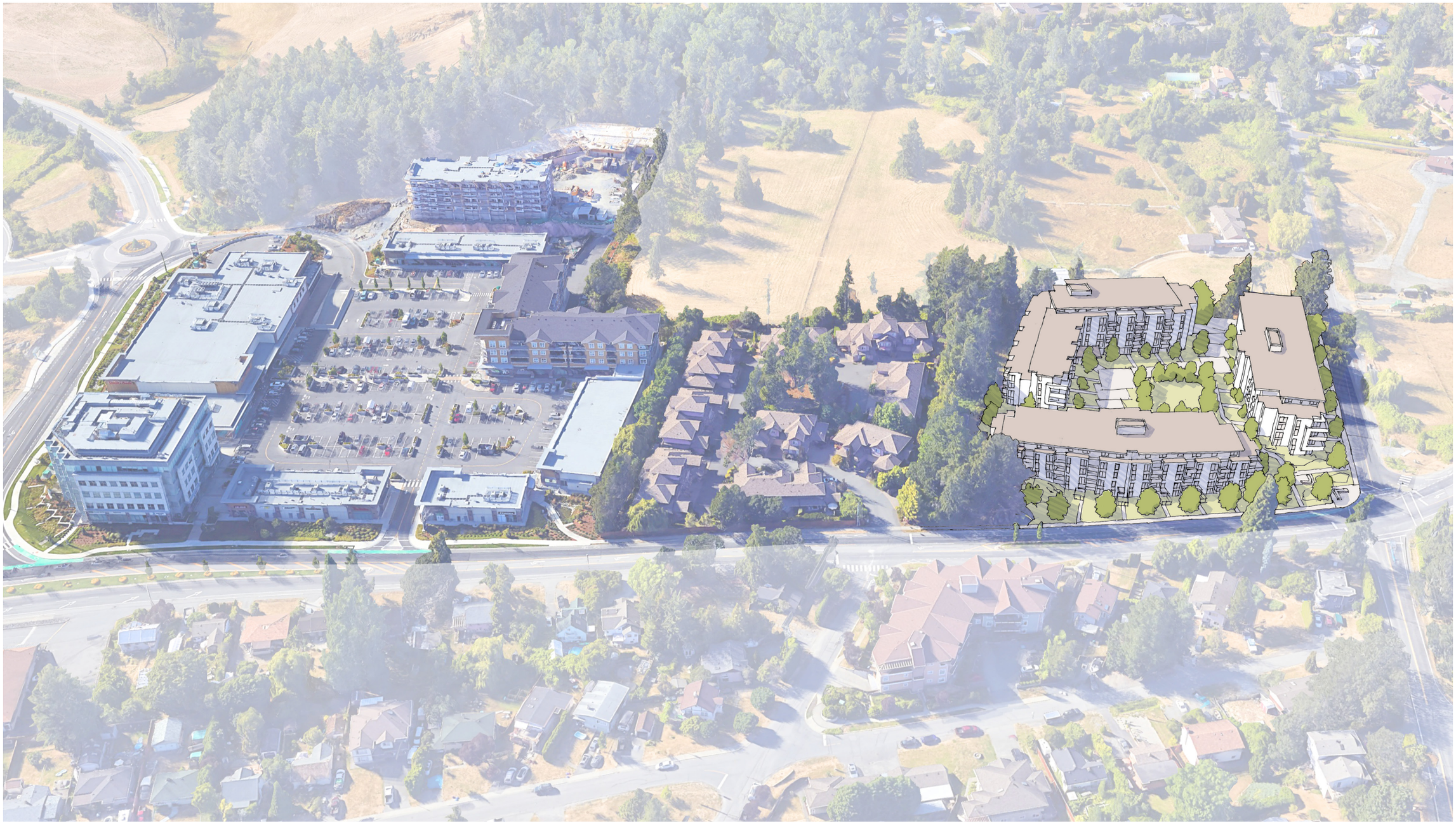
Development Data			
Site Area (sf)	148,120		
Total Units	247		
Units Per Hectare	179		
Gross Floor Area (sf)	228,750		
FAR	1.5		
Coverage	33%		
Height (ft)	64		
Height (storeys)	3 - 6		
Unit Type	Count	Percent	
1-Bed (587 sf)	97	39%	
2-Bed (878 sf)	138	56%	
3-Bed (1,050 sf)	12	5%	
Setbacks (m)	Required Minimum	Proposed Minimum	Proposed Average
Front (Helmcken)	7.5	10.5	16.2
Flanking (Burnside)	4.0	8.2	8.2
Side (West)	4.0	11.2	16.4
Side (North)	4.0	8.1	8.1

1

Proposed Site Plan & Development Statistics

Site Analysis: Impervious Surfaces vs. Green Space

Perspective Rendering of Corner Gateway & Site Sections



Aerial Perspective Rendering

COMMUNITY GREEN - OPEN SPACE

PRESERVED TREES AND LANDSCAPE.
INVASIVE SPECIES MANAGMENT.
GAPS FILLED WITH NATIVE TREES.
PEDESTRIAN PATH FOR RESIDENTS.

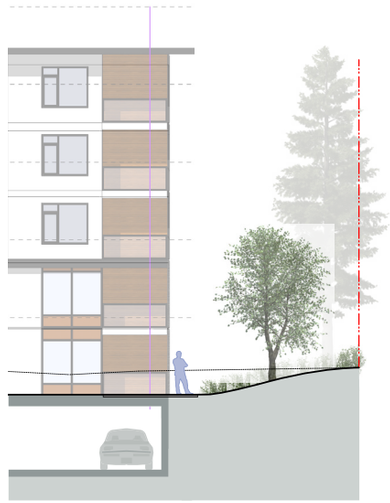
PRESERVED ROCK OUTCROP

WOONERF STYLE SHARED SPACE:
SLOW ZONE, INFORMAL SOCIALIZING,
GATHERING AND PLAY

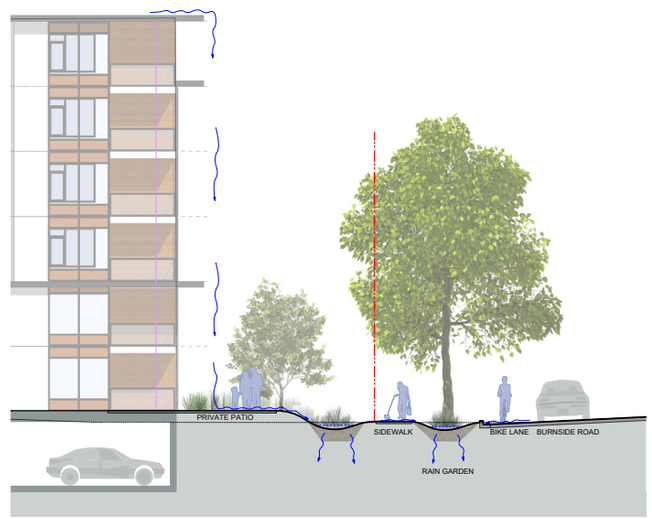
PLANTED BOULEVARD
WITH RAIN GARDENS

FEATURE RAIN GARDEN BETWEEN SMALL PLAZAS
WITH SEATING, RAILING AND PERGOLA

1 SECTION 1 THROUGH WESTERN LANDSCAPE
Scale: 1:100



2 SECTION 2 THROUGH NORTHERN LANDSCAPE
Scale: 1:100



3 SECTION 3 TROUGH BURNSIDE STREETSCAPE
Scale: 1:100

4 SECTION 4 THROUGH PEDESTRIAN PATH
Scale: 1:100

5 SECTION 5 THROUGH HELMCKEN ROAD
Scale: 1:100

Key Plan
Scale: 1:1000

SUMMER 2018

Pre-Application
- Site & Technical Analysis
- Review of Planning Regulations/OCP
- Initial Meetings with View Royal Staff
- Conceptual Design

FALL 2018

Rezoning Application
- Submission to View Royal
- Technical review and feedback
- Response to Staff comments

OCTOBER 23, 2018

Community Meeting
Site Plan Version 1

NOVEMBER 13, 2018

Committee of the Whole
- Concern about density
- Concern about massing at the corner

WINTER 2018/2019

Site Plan Revisions
- Site & Technical Analysis
- Response to community and COTW comments

JANUARY 9, 2019

Hidden Oaks Resident Meeting
Site Plan Version 2

SPRING/SUMMER 2019

Site Plan Revisions
- Site plan revisions, response to community input

Committee of the Whole
- Delegation, April 9, 2019

JULY 9, 2019

Community Meeting
Site Plan Version 3

SEPTEMBER 17, 2019

Committee of the Whole
- Withdrew application

NOVEMBER 18, 2019

Neighbours' Workshop #1
Site & Landscape Design

DECEMBER 2, 2019

Neighbours' Workshop #2
Site Plan Revisions

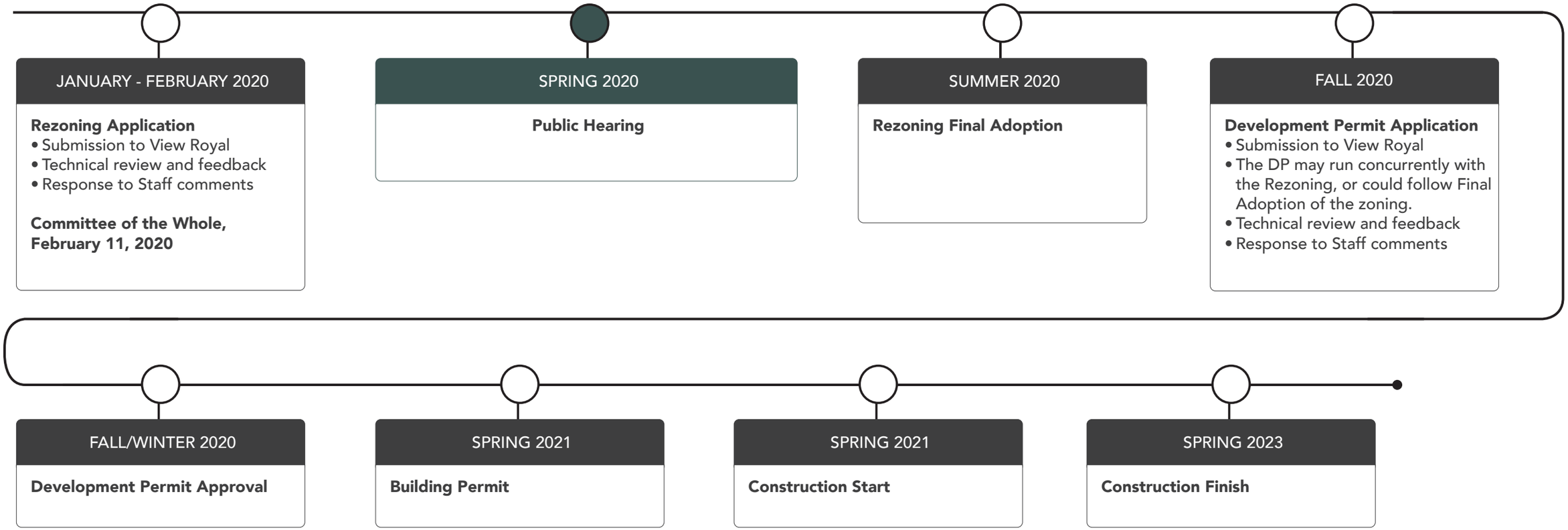
NOVEMBER/DECEMBER 2019

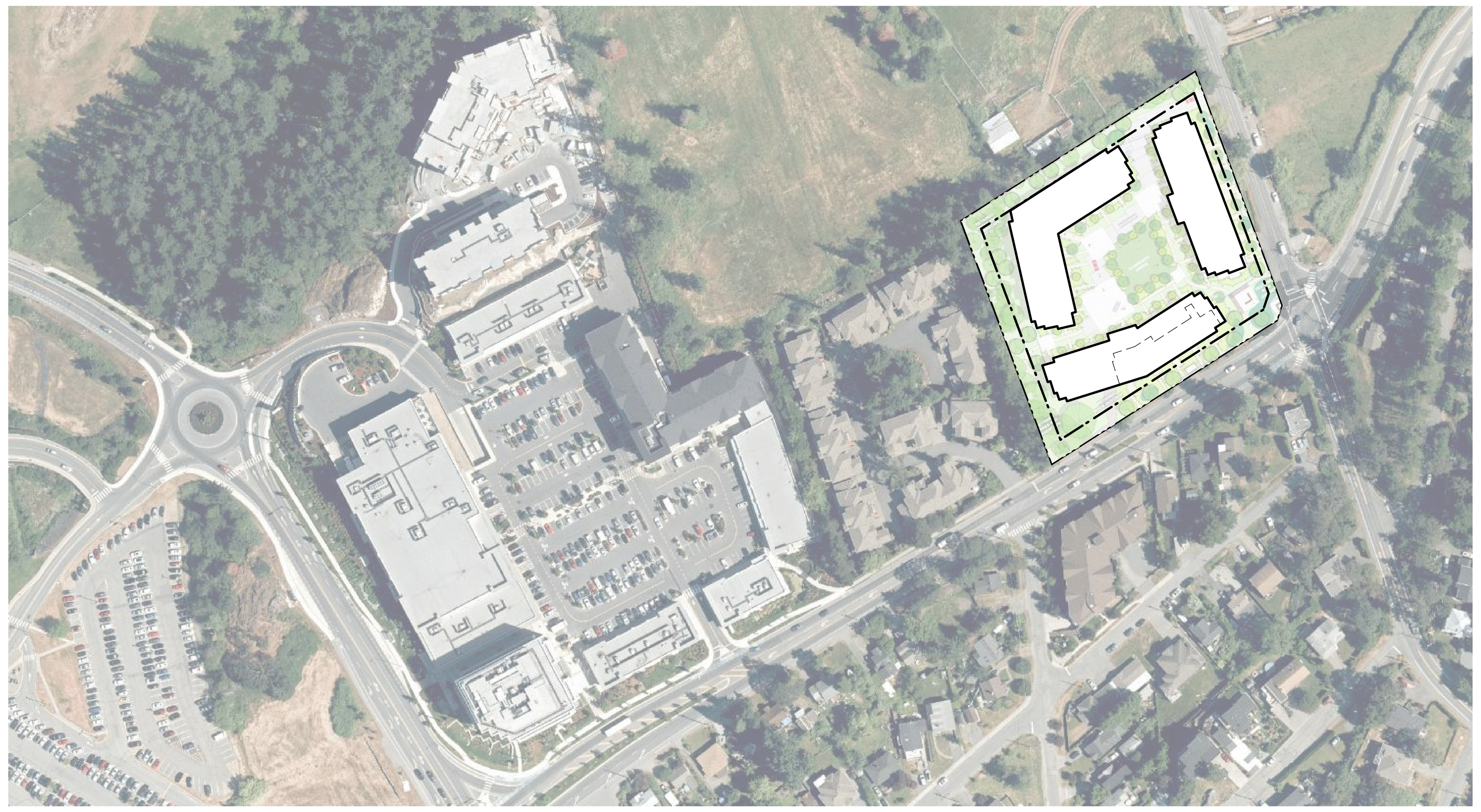
Site Plan Revisions
- Site plan revisions, response to neighbours' input
- Site analysis, technical analysis
- Preparation of new site plan

FEBRUARY 2, 2020

Community Meeting

Timeline


JANUARY - FEBRUARY 2020
Rezoning Application
• Submission to View Royal
• Technical review and feedback
• Response to Staff comments
Committee of the Whole, February 11, 2020
SPRING 2020
Public Hearing
SUMMER 2020
Rezoning Final Adoption
FALL 2020
Development Permit Application
• Submission to View Royal
• The DP may run concurrently with the Rezoning, or could follow Final Adoption of the zoning.
• Technical review and feedback
• Response to Staff comments
FALL/WINTER 2020
Development Permit Approval
SPRING 2021
Building Permit
SPRING 2021
Construction Start
SPRING 2023
Construction Finish



1 Context Plan
A001 Scale: 1:2000

N

SCOPE OF WORK

246 new strata units in three new buildings centered around a pedestrian-friendly plaza with two levels of underground parking.

BUILDING CODE SUMMARY

REFERENCED DOCUMENT: BRITISH COLUMBIA BUILDING CODE 2018 - PART 3

MAJOR OCCUPANCY CLASSIFICATION:
- Group C - Residential
- Group F3 - Parking Garage

BUILDING AREA
Building 1: 1,716 m^2
Building 2: 1,549 m^2
Building 3: 1,264 m^2

BUILDING HEIGHT:
Building 1: Six (6) storeys
Building 2: Four and a half (4.5) storeys
Building 3: Five (5) storeys

NUMBER OF STREETS FACING: Two (2)
SPRINKLERED: Yes

ACCESSIBLE FACILITIES:
- Accessible entrances
- Accessible parking stalls

CONSTRUCTION REQUIREMENTS:
- 3.2.2.50 Group C, Up to 6 Storeys, Sprinklered
- Combustible construction

PROJECT INFORMATION

CIVIC ADDRESS: 3 Helmcken Road, View Royal, BC

LEGAL DESCRIPTION:
- Lot 1, Section 9, Esquimalt District Plan 3963, Except Part 18753
- Lot 1, Section 9, Esquimalt District Plan 18753
- Lot 2, Section 9, Esquimalt District Plan 3963
- Lot 10, Block 5, Section 9, Esquimalt District Plan 1726

ZONE (EXISTING):
RM-1 Ground-Oriented Multi-Unit Residential
R-1 Detached Residential (Large Lot)

SITE AREA (m^2): 13,761 m^2

FLOOR SPACE RATIO:
PROPOSED: 1.49 : 1 F.S.R.

Building 1: 8,641 m^2
Building 2: 5,997 m^2
Building 3: 5,872 m^2
TOTAL: 20,510 m^2

SITE COVERAGE (%):
PROPOSED: 33%

OPEN SITE SPACE (%):
PROPOSED: 67%

AVERAGE GRADE (geodetic):
Building 1: 28.9 m
Building 2: 27.1 m
Building 3: 28.1 m

HEIGHT OF BUILDING:
Building 1: 19.2 m
Building 2: 14.8 m
Building 3: 16.9 m

NUMBER OF STOREYS:
Building 1: Six (6)
Building 2: Four and a half (4.5)
Building 3: Five (5)

UNIT MIX SUMMARY:

Building 1:
One Bed: 25
Two Bed: 68
Three Bed: 8
Total: 101

Building 2:
One Bed: 28
Two Bed: 38
Three Bed: 6
Total: 72

Building 3:
One Bed: 32
Two Bed: 34
Three Bed: 8
Total: 74

TOTAL
One Bed: 85 (34%)
Two Bed: 140 (57%)
Three Bed: 22 (9%)
Units: 247

RESIDENTIAL PARKING:
REQUIRED:

One Bed: 85 @ 1.0/unit = 85
Two Bed: 140 @ 1.5/unit = 210
Three Bed: 22 @ 2.0/unit = 44
Total: 339

BICYCLE PARKING:
REQUIRED: 1 per suite = 247 (100% Class 1) + 3 x 6 short term

BUILDING SETBACKS (m)
Front: 7.5 m (Helmcken Road)
Side: 4.0 m (Burnside Road West)
Side: 7.5 m (West)
Rear: 8.0 m (North)

DRAWING LIST

Architectural

A001	Project Information
A201	Architectural Site Plan
A202	P1/Level 0 Plan
A203	Level 1 Plan
A204	Level 2 & 3 Plan
A205	Level 4 Plan
A206	Level 5 Plan
A207	Level 6 Plan
A301	Unit Plans
A501	Section
A601	Site Analysis Diagram
A602	Perspectives
A603	Perspective Rendering

PROJECT INFORMATION

REGISTERED OWNER
J&R Construction
J.A. Henson — R.W. Henson
4548 Rocky Point Rd. — 1480 Burnside Rd
Victoria, BC V9L 4C4 — Victoria, BC V8Z 1N2

ARCHITECT
dHKarchitects — Charles Kierulf
977 Fort Street — tel: 250.658.3367
Victoria, BC V8V 3K3 — crk@dhk.ca

LANDSCAPE CONSULTANT
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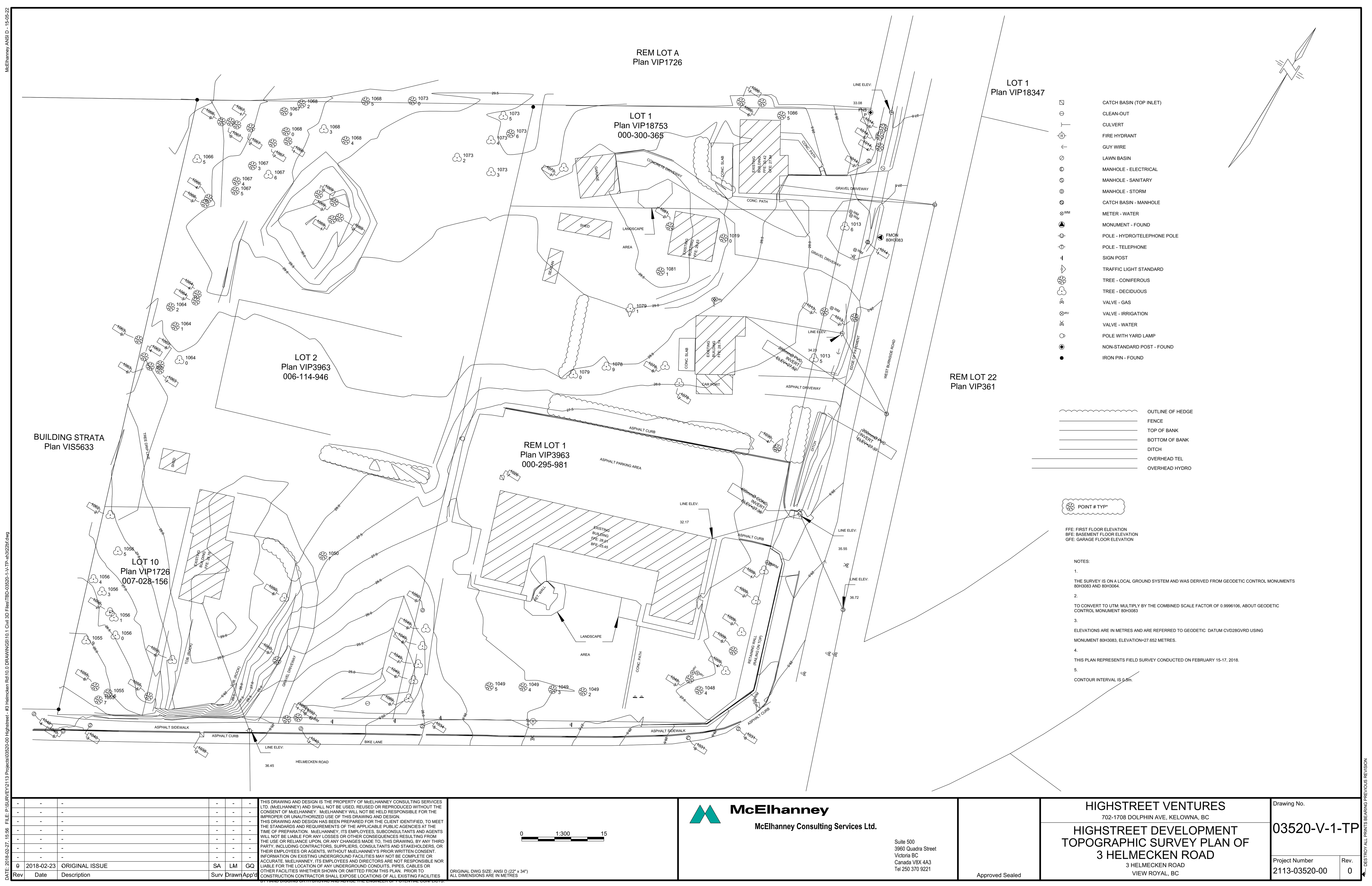
200-524 Culduthel Rd. — tel: 250.412.1891
Victoria, BC V8Z 1G1 — scott@mdidesign.com

CIVIL CONSULTANT
McElhanneyConsulting Services Ltd. — Nathan Dunlop
500-3960 Quadra St. — tel: 250.370.9221
Victoria, BC — ndunlop@mcelhanney.com
V8X 4A3



2 Survey Plan
A001 Scale: 1:500

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2	22 JAN 2020	ISSUED FOR REZONING
Rev 1	Date 17 SEP 2018	Description ISSUED FOR REZONING
plot date	27 FEB 2020	drawing file 1827 A100 Site Plan.vwx
drawn by	NLC	checked by RAW
scale	As Noted	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKarchitects

VICTORIA OFFICE
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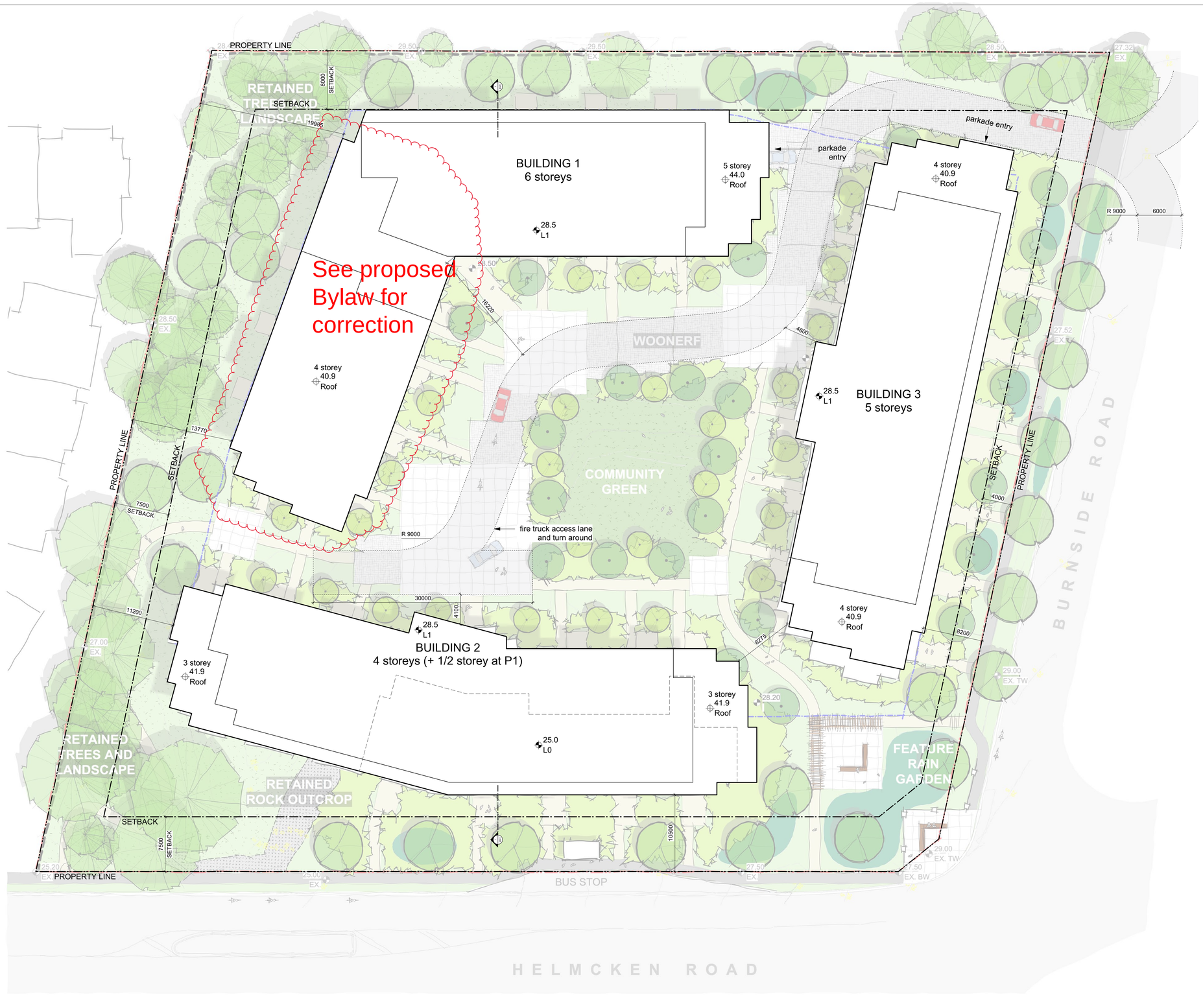
Victoria BC V8V 3K3
T 1•250•658•3367

NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1•250•585•5810

project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
Project Information

drawing no. A001
revision no. 2



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drawn by		NLC	checked by: RAW
scale		1:250	project number: 1827

NOTE: All dimensions are shown in millimeters.

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NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1-250-585-5810

project name

Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title

Architectural Site Plan

drawing no. A201

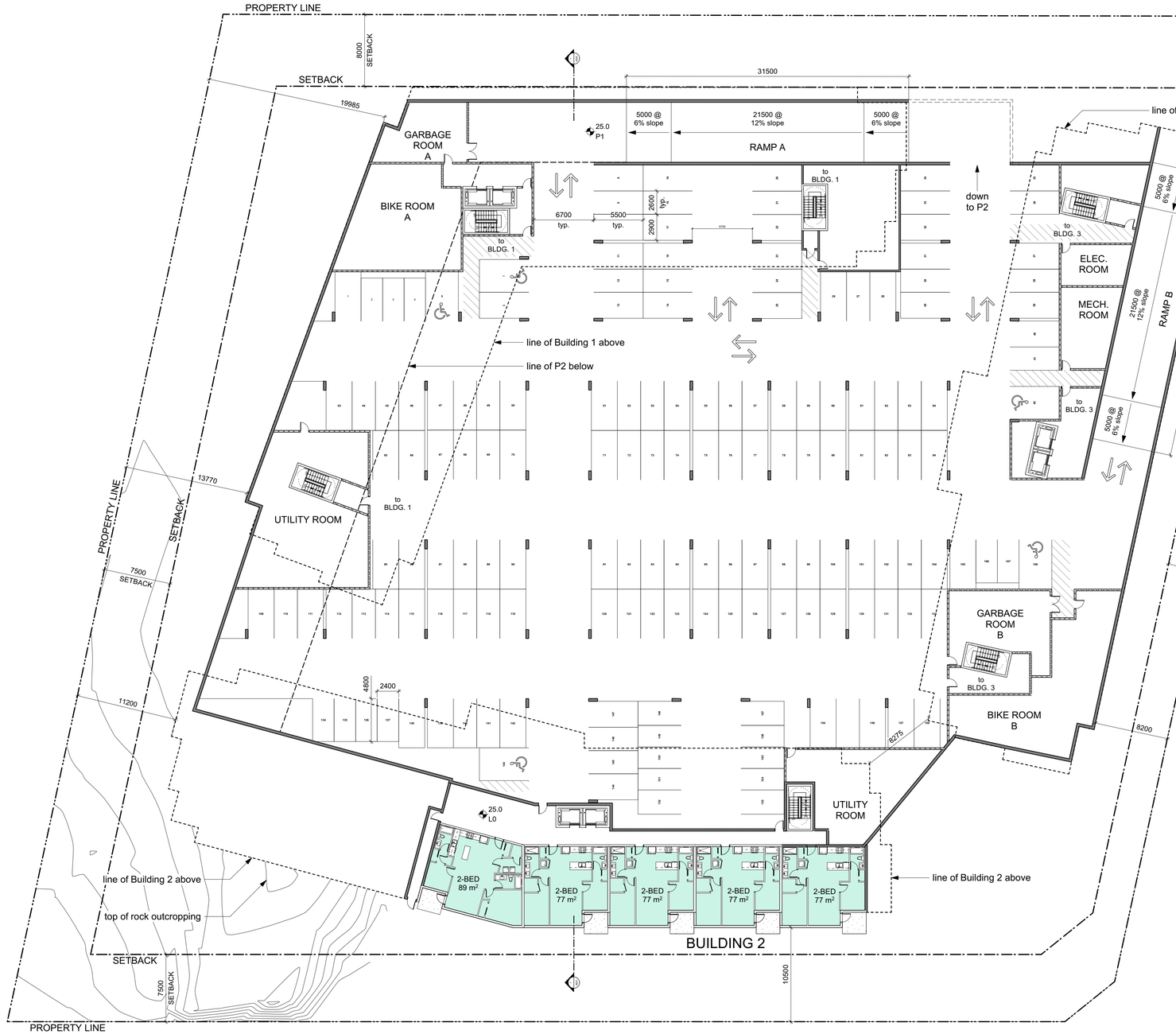
revision no. 2

UNIT LEGEND

1 Bed

2 Bed

3 Bed



UNIT MIX

Building 1

1 Bed - 0
2 Bed - 0
3 Bed - 0
0

Building 2

1 Bed - 0
2 Bed - 5
3 Bed - 0
5

Building 3

1 Bed - 0
2 Bed - 0
3 Bed - 0
0

Totals - Level 0

1 Bed - 0
2 Bed - 5
3 Bed - 0
5

LEVEL 0 - FLOOR AREAS

Gross: 597 m²
Net: 409 m²

0 5000 10000mm
1 : 250

Rev		
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2	22 JAN 2020	ISSUED FOR REZONING
1	17 SEP 2018	ISSUED FOR REZONING
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drawn by	NLC	RAW
scale	1:150	1827

NOTE: All dimensions are shown in millimeters.

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NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1-250-585-5810

project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
P1/Level 0 Plan

drawing no. A202

revision no. 2

UNIT LEGEND

1 Bed

2 Bed

3 Bed

UNIT MIX

Building 1

1 Bed -	8
2 Bed -	10
3 Bed -	1
	19

Gross : 1,716 m²
Net: 1,339 m²

Building 2

1 Bed -	8
2 Bed -	7
3 Bed -	2
	17

Gross: 1,549 m²
Net: 1,252 m²

Building 3

1 Bed -	7
2 Bed -	6
3 Bed -	1
	14

Gross : 1,264 m²
Net: 987 m²

Totals - Level 1

1 Bed -	22
2 Bed -	24
3 Bed -	4
	50

LEVEL 1 - FLOOR AREAS

0 5000 10000mm

1 : 250

Rev		Date	Description
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2		22 JAN 2020	ISSUED FOR REZONING
1		17 SEP 2018	ISSUED FOR REZONING
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drawn by		NLC	checked by: RAW
scale		1:150	project number: 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

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NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo, BC V9T 0H2
T 1-250-585-5810

project name

Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title

Level 1 Plan

drawing no. A203

revision no. 2

UNIT LEGEND

1 Bed

2 Bed

3 Bed

UNIT MIX

Building 1 (each floor)

1 Bed - 4
2 Bed - 14
3 Bed - 2
20

Building 2 (each floor)

1 Bed - 7
2 Bed - 9
3 Bed - 2
18

Building 3 (each floor)

1 Bed - 6
2 Bed - 8
3 Bed - 2
16

Totals - each floor

1 Bed - 17
2 Bed - 31
3 Bed - 6
54

Totals - Levels 2 & 3 (combined)

54 x 2 = 108

LEVEL 2 & 3 - FLOOR AREAS (each floor)

Gross: 1,812 m²
Net: 1,527 m²

Gross: 1,549 m²
Net: 1,298 m²

Gross: 1,365 m²
Net: 1,151 m²

0 5000 10000mm
1 : 250

2		27 FEB 2020	ISSUED FOR REZONING
2		22 JAN 2020	ISSUED FOR REZONING
Rev	1	Date 17 SEP 2018	Description ISSUED FOR REZONING
plot date		27 FEB 2020	drawing file 1827 A200 Floor Plan.vwx
drawn by		NLC	checked by RAW
scale		1:150	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKarchitects

VICTORIA OFFICE
977 Fort Street
Victoria BC V8V 3K3
T 1-250-658-3367

NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1-250-585-5810

project name

Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title

Level 2 & 3 Plan

drawing no. A204

revision no. 2

UNIT LEGEND

1 Bed

2 Bed

3 Bed

UNIT MIX

Building 1

1 Bed -	5
2 Bed -	13
3 Bed -	2
	20

Building 2

1 Bed -	6
2 Bed -	8
3 Bed -	0
	14

Building 3

1 Bed -	6
2 Bed -	8
3 Bed -	2
	16

Totals - Level 4

1 Bed -	17
2 Bed -	29
3 Bed -	4
	50

LEVEL 4 - FLOOR AREAS

Building 1

Gross: 1,812 m²
Net: 1,527 m²

Building 2

Gross: 1,193 m²
Net: 956 m²

Building 3

Gross: 1,365 m²
Net: 1,151 m²

0 5000 10000mm
1 : 250

Rev		Date	Description
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2		22 JAN 2020	ISSUED FOR REZONING
1		17 SEP 2018	ISSUED FOR REZONING
plot date		27 FEB 2020	drawing file: 1827 A200 Floor Plan.vwx
drawn by		NLC	checked by: RAW
scale		1:150	project number: 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKa **dHK**architects

VICTORIA OFFICE
977 Fort Street
Victoria BC V8V 3K3
T 1-250-658-3367

NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1-250-585-5810

project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
Level 4 Plan

drawing no. A205

revision no. 2

UNIT LEGEND

1 Bed

2 Bed

3 Bed

UNIT MIX

Building 1

1 Bed -	2
2 Bed -	10
3 Bed -	1
	13

Building 2

1 Bed -	0
2 Bed -	0
3 Bed -	0
	0

Building 3

1 Bed -	7
2 Bed -	4
3 Bed -	1
	12

Totals - Level 5

1 Bed -	9
2 Bed -	14
3 Bed -	2
	25

LEVEL 5 - FLOOR AREAS

Gross: 1,215 m²
Net: 1,004 m²

Gross: 986 m²
Net: 789 m²

0 5000 10000mm

1 : 250

2	27 FEB 2020	ISSUED FOR REZONING
2	22 JAN 2020	ISSUED FOR REZONING
Rev. 1	Date 17 SEP 2018	Description ISSUED FOR REZONING
plot date	27 FEB 2020	drawing file 1827 A200 Floor Plan.vwx
drawn by	NLC	checked by RAW
scale	1:150	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

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NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1-250-585-5810

project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
Level 5 Plan

drawing no. A206

revision no. 2

UNIT LEGEND

1 Bed

2 Bed

3 Bed

UNIT MIX

Building 1
1 Bed - 2
2 Bed - 7
3 Bed - 0
9

Building 2
1 Bed - 0
2 Bed - 0
3 Bed - 0
0

Building 3
1 Bed - 0
2 Bed - 0
3 Bed - 0
0

Totals - Level 6
1 Bed - 2
2 Bed - 6
3 Bed - 0
8

LEVEL 6 - FLOOR AREAS

Gross : 779 m²
Net: 599 m²

0 5000 10000mm
1 : 250

2		27 FEB 2020	ISSUED FOR REZONING
2		22 JAN 2020	ISSUED FOR REZONING
Rev. 1	Date	17 SEP 2018	Description ISSUED FOR REZONING
plot date		27 FEB 2020	drawing file 1827 A200 Floor Plan.vwx
drawn by		NLC	checked by RAW
scale		1:150	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKarchitects

VICTORIA OFFICE
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T 1-250-658-3367

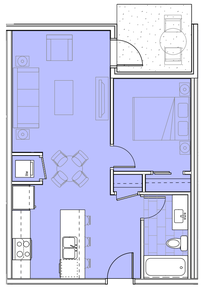
NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1-250-585-5810

project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

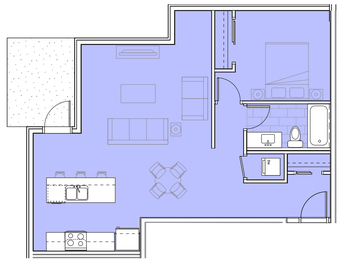
drawing title
Level 6 Plan

drawing no. A207

revision no. 2

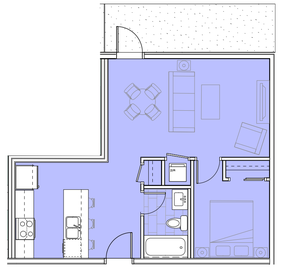


1 / A301 1 Bed/1 Bath 51 sq.m - Type 1A
Scale: 1:100

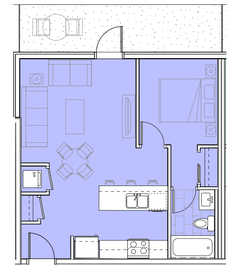


2 / A301 1 Bed/1 Bath 70 sq.m - Type 1B
Scale: 1:100

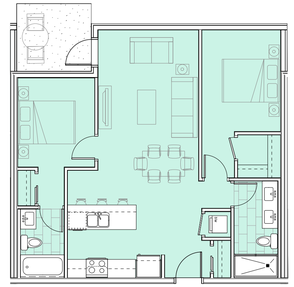
3 / A301 1 Bed/1 Bath 51 sq.m - Type 1C
Scale: 1:100



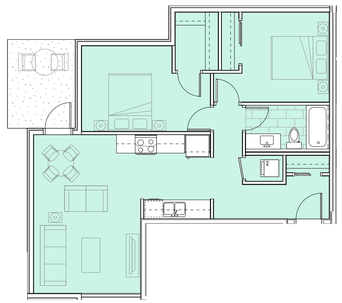
4 / A301 1 Bed/1 Bath 51 sq.m - Type 1D
Scale: 1:100



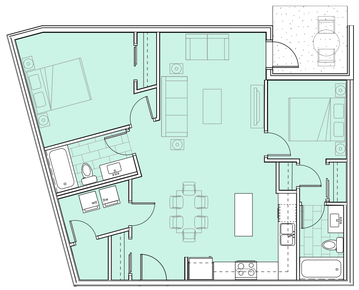
5 / A301 1 Bed/1 Bath 49 sq.m - Type 1E
Scale: 1:100



6 / A301 2 Bed/2 Bath 77 sq.m - Type 2A
Scale: 1:100

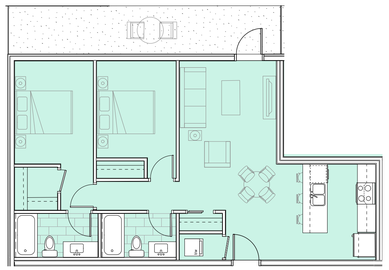


7 / A301 2 Bed/2 Bath 75 sq.m - Type 2B
Scale: 1:100

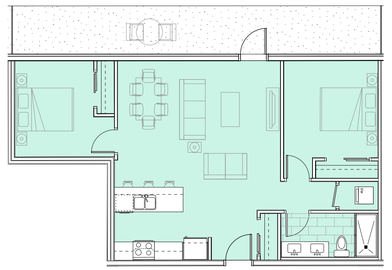


8 / A301 2 Bed/2 Bath 89 sq.m - Type 2C
Scale: 1:100

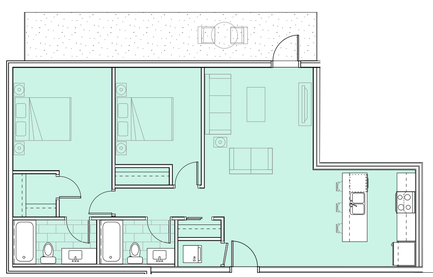
9 / A301 2 Bed/2 Bath 83 sq.m - Type 2D
Scale: 1:100



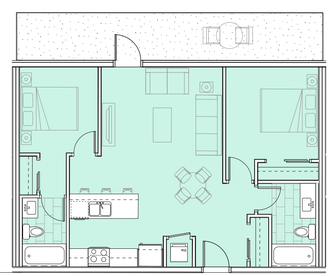
10 / A301 2 Bed/2 Bath 78 sq.m - Type 2E
Scale: 1:100



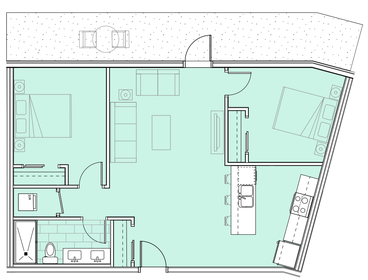
11 / A301 2 Bed/1 Bath 78 sq.m - Type 2F
Scale: 1:100



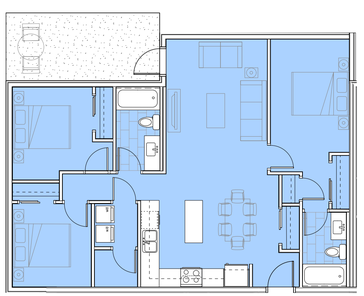
12 / A301 2 Bed/2 Bath 90 sq.m - Type 2G
Scale: 1:100



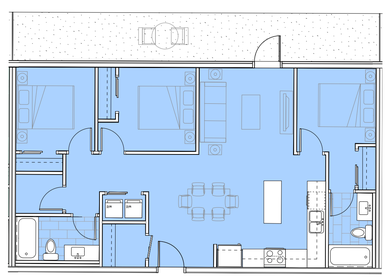
13 / A301 2 Bed/2 Bath 70 sq.m - Type 2H
Scale: 1:100



14 / A301 2 Bed/1 Bath 77 sq.m - Type 2J
Scale: 1:100



15 / A301 3 Bed/2 Bath 96 sq.m - Type 3A
Scale: 1:100



16 / A301 3 Bed/2 Bath 90 sq.m - Type 3B
Scale: 1:100

0 2500 5000mm
1 : 100

2	27 FEB 2020	ISSUED FOR REZONING
2	22 JAN 2020	ISSUED FOR REZONING
Rev. 1	Date 17 SEP 2018	Description ISSUED FOR REZONING
plot date	27 FEB 2020	drawing file 1827 A301 Unit Plans.vwx
drawn by	JJW/NRD/NLC	checked by RAW
scale	1:100	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKa **dHK**architects

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NANAIMO OFFICE
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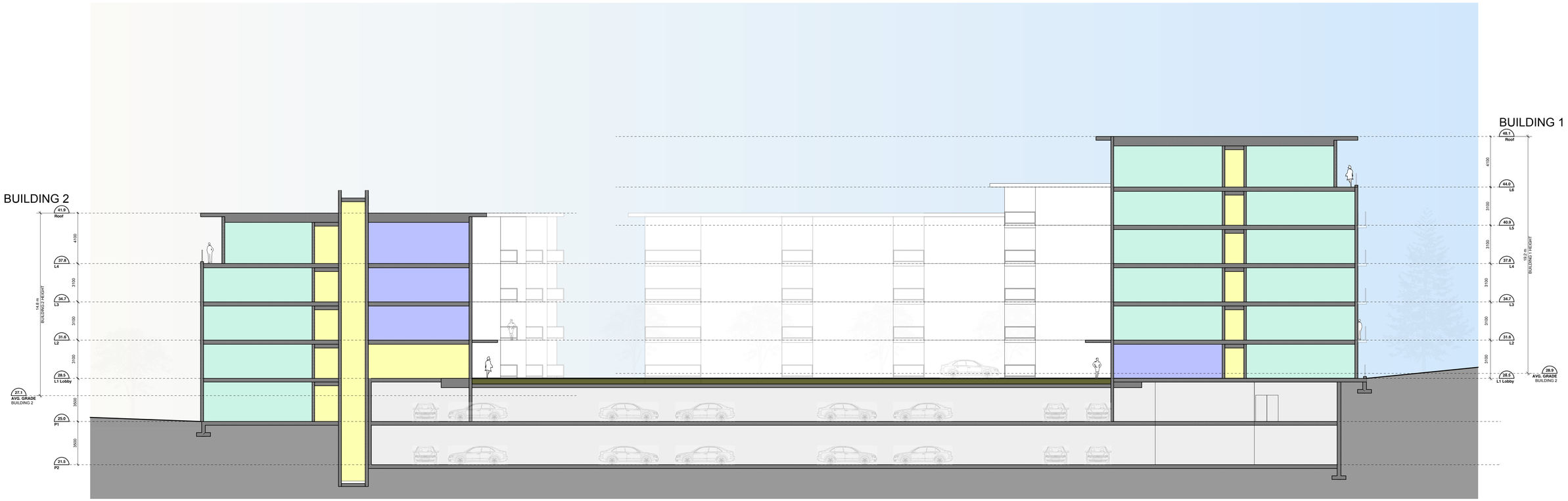
project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
Unit Plans

drawing no. A301

revision no. 2



LEGEND

1 Bed

2 Bed

Common Areas

Parkade

2	27 FEB 2020	ISSUED FOR REZONING
2	22 JAN 2020	ISSUED FOR REZONING
Rev 1	Date 17 SEP 2018	Description ISSUED FOR REZONING
plot date	27 FEB 2020	drawing file 1827 A501 Site Section.vwx
drawn by	NLC	checked by RAW
scale	1:150	project number 1827

NOTE: All dimensions are shown in millimeters.

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NANAIMO OFFICE
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T 1-250-585-5810

project name
Eagle Nest Residences
3 Heimcken Road
Victoria, BC

drawing title
Section

drawing no. A501

revision no. 2

1 / A601 Site Analysis Diagram
1:600

2	27 FEB 2020	ISSUED FOR REZONING
2	22 JAN 2020	ISSUED FOR REZONING
Rev 1	Date 17 SEP 2018	Description ISSUED FOR REZONING
plot date	27 FEB 2020	drawing file 1827 A100 Site Plan.vwx
drawn by	EDS	checked by RAW
scale	1:600	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

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NANAIMO OFFICE
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Nanaimo BC V9T 0H2
T 1•250•585•5810

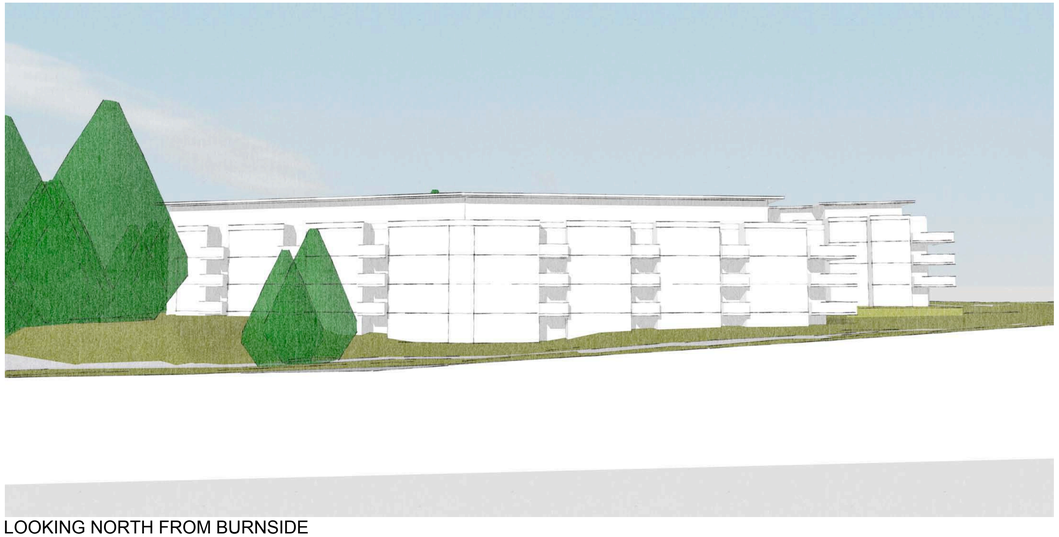
project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
Site Analysis Diagram

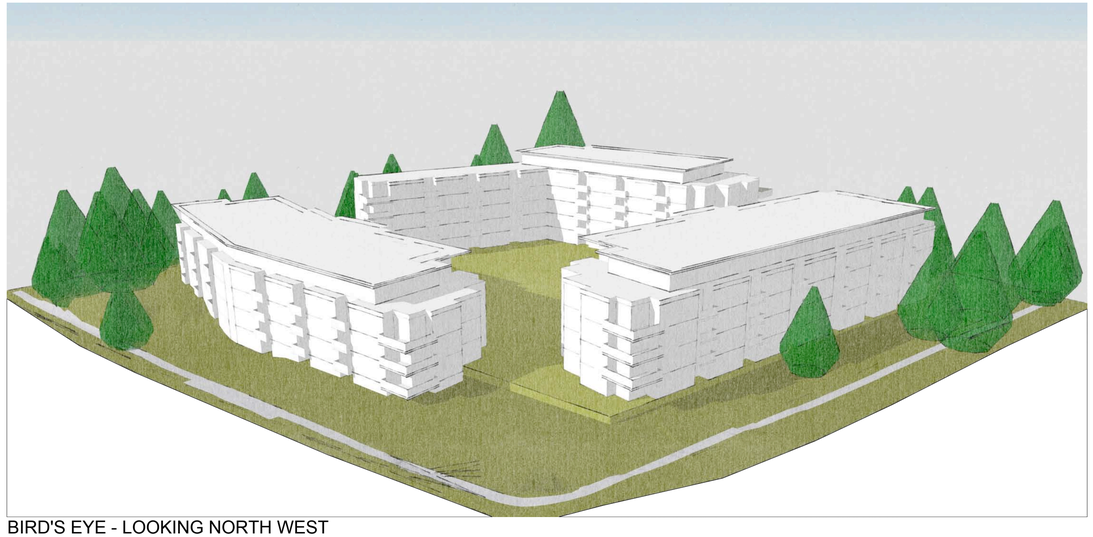
drawing no. A601
revision no. 2

AT BURNSIDE AND HELMCKEN

BIRD'S EYE - LOOKING NORTH EAST



LOOKING NORTH FROM BURNSIDE



BIRD'S EYE - LOOKING NORTH WEST

2	27 FEB 2020	ISSUED FOR REZONING
2	22 JAN 2020	ISSUED FOR REZONING
Rev 1	Date 17 SEP 2018	Description ISSUED FOR REZONING
plot date	27 FEB 2020	drawing file 1827 A100 Site Plan.vwx
drawn by	EDS	checked by RAW
scale	N.T.S.	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKarchitects

VICTORIA OFFICE
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NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1•250•585•0810

project name

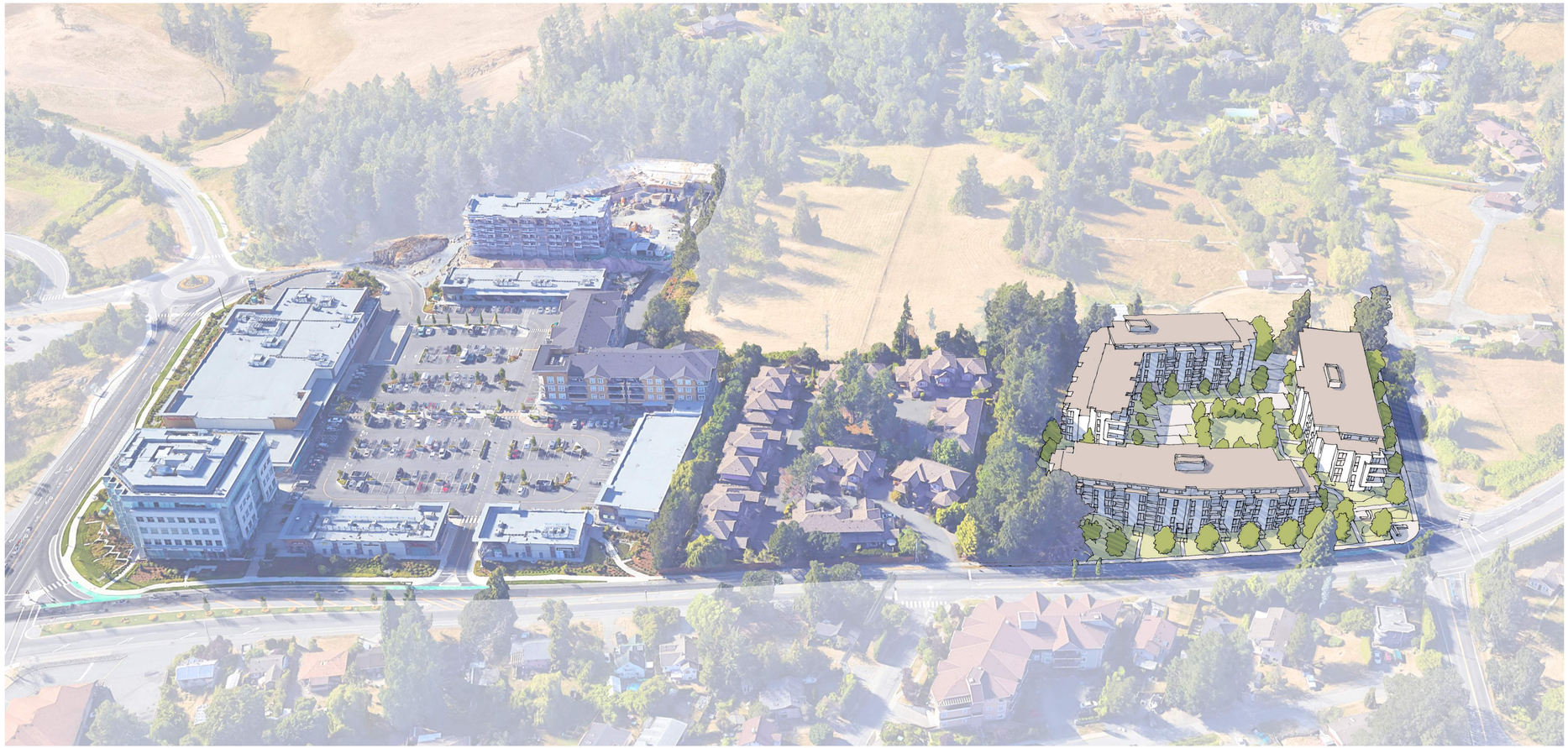
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title

Perspectives

drawing no. A602

revision no. 2



BIRD'S EYE - LOOKING WEST

AT BURNSIDE AND HELMCKEN

2		27 FEB 2020	ISSUED FOR REZONING
2		22 JAN 2020	ISSUED FOR REZONING
Rev.	1	Date	17 SEP 2018	Description	ISSUED FOR REZONING
plot date	27 FEB 2020	drawing file	1827 A100 Site Plan.vwx
drawn by	EDS	checked by	RAW
scale	N.T.S.	project number	1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKarchitects

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project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
Perspective Rendering

drawing no. A603

revision no. 2

SEE LANDSCAPE FOR RAIN GARDENS / BIOSWALES (APPROX 21 CU.M. OF TOTAL STORAGE REQUIRED)

RAIN GARDEN

RAMP TO PARKADE

PROPOSED LEGAL (SEE ARCHITECT DRAWINGS)

SITE BOUNDARY

PROPOSED BUILDING #1
(SEE ARCHITECTURAL)

WOONERF
(SEE LANDSCAPING)

COMMUNITY GREEN
(SEE LANDSCAPING)

PROPOSED BUILDING #3
(SEE ARCHITECTURAL)

PROPOSED BUILDING #2
(SEE ARCHITECTURAL)

APPROX EXTENT OF UNDERGROUND PARKADE

SIDEWALK TRANSITION

TRANSITION TO EXISTING EDGE OF PAVEMENT

DMH

PROPOSED 6.0m WIDE DRIVEWAY DROP AS PER MMCD STD. DWG. C7

BC HYDRO TRANSFORMER (LOCATION TO BE CONFIRMED DURING DETAILED DESIGN)

RAIN GARDEN

PROPOSED 1.50m CONC. S/W

PROPOSED 1.50m BIKE LANE

BURNSIDE ROAD WEST

CBMH

FCMH

PROPOSED MANHOLE TO BE INSTALLED ON EXISTING CULVERT

PRESERVED ROCK OUTCROP

150ø DOUBLE CHECK VALVE ASSEMBLY IN PRECAST CHAMBER c/w LID ASSEMBLY

PW 150ø

DW 50ø

WATER FEATURE (SEE LANDSCAPE DRAWINGS)

2.5m X 5.0m BUS SHELTER PAD. SHELTER TO BE SUPPLIED AND INSTALLED BY OTHERS (ACTUAL SIZE TO BE CONFIRMED)

3.00m BUS PULLOUT

PROPOSED 1.50m CONC. S/W

INSTALL SIDEWALK AT BACK OF CURB ALONG EXISTING RETAINING WALL (TO UTILIZE EXISTING RETAINING WALL). EXTENT AND DETAILS TO BE CONFIRMED DURING DETAILED DESIGN.

SIGNAL TO BE RELOCATED

DOUBLE BACKFLOW PREVENTER AS PER CRD STD. DWG. 2.2 OR APPROVED EQUAL

CURB TO WRAP AROUND EXISTING STORM MANHOLE

CONNECT TO EXISTING SIDEWALK

HELMCKEN ROAD

SHEET NOTES	
No.	DESCRIPTION
1	EXISTING WATER SERVICE TO BE CAPPED & ABANDONED BY CRD FORCES AT DEVELOPER'S EXPENSE OR BE UTILIZED FOR BOULEVARD IRRIGATION.
2	UTILITY POLE TO BE REMOVED / RELOATED. DETAILS TO BE CONFIRMED WITH BC HYDRO/TELUS/SHAW.

NOTES:

1. FOR BUILDING INFORMATION, SEE SRAWINGS BY de HOOG KIERULF ARCHITECTS.
2. FOR LANDSCAPING INCLUDING TREES (PROPOSED, TO BE REMOVED AND TO REMAIN), SEE DRAWINGS BY MURDOCH de GREEFF INC. LANDSCAPING PLANNING & DESIGN.
3. FOR GEOTECHNICAL ASSESSMENT, SEE REPORT BY RYZUK GEOTECHNICAL ENGINEERING & MATERIALS TESTING.
4. UTILITY SIZES AND LOCATIONS TO BE CONFIRMED DURING DETAILED DESIGN AND ARE SUBJECT TO CHANGE.
5. ALL RAINWATER LEADERS TO OUTLET TO RAIN GARDENS. RAIN GARDENS TO BE INTERCONNECTED AND OUTLET TO BE TIED INTO MUNICIPAL SYSTEM.
6. RAIN GARDEN SIZE, CONFIGURATION DEPTH, ETC. TO BE DETERMINED DURING DETAILED DESIGN..
7. SEE LANDSCAPE DRAWINGS FOR RAIN GARDEN DETAILS.
8. OFFSITE WATERMAIN UPGRADES, IF REQUIRED, TO BE DETERMINED DURING DETAILED DESIGN.
9. FIRE DEPARTMENT CONNECTION LOCATIONS TO BE CONFIRMED.
10. CONNECTION TO EXISTING OFFSITE STORM DRAINAGE TO BE CONFIRMED.
11. MAIN FLOOR ELEVATIONS SUBJECT TO CHANGE DURING DETAILED DESIGN.
12. ALL EXISTING HOUSES, DRIVEWAYS, RETAINING WALLS, SHEDS, ETC. TO BE REMOVED AND DISPOSED OFF-SITE.
13. INSTALLATION OF GAS, IF REQUIRED, TO BE COORDINATED WITH FORTISBC DURING DETAILED DESIGN.
14. LOCATION OF BUS BAY TO BE CONFIRMED DURING DETAILED DESIGN WITH BC TRANSIT AND TOWN OF VIEW ROYAL.

JANUARY 23, 2020

ISSUED FOR REZONING

1:250 (0, 5, 15m)

BENCHMARK

DRAWING COORDINATES ARE LOCAL BASED ON UTM NAD 83 REFERENCE MONUMENT MON No. 80H3083
NORTHING: 5368555.603
EASTING: 468628.035
ELEVATION: 27.652m
MEAN C.S.F. = 0.9996106
ALL DISTANCES ARE GROUND LEVEL DISTANCES AND ELEVATIONS ARE GEODETIC ELEVATIONS

NO.	DATE	BY	ISSUED
3	2020-01-23	ND	ISSUED FOR REZONING
2	2019-06-25	ND	ISSUED FOR REZONING
1	2018-09-14	ND	ISSUED FOR REZONING

NO.	DATE	BY	REVISIONS

McElhanney
500 - 3960 QUADRA STREET
VICTORIA, BC V8X 4A3 PH (250) 370-9221

SEAL

PROJECT:
EAGLES NEST RESIDENCES
VIEW ROYAL, B.C.

TITLE:
SITE PLAN

SCALE
HORIZ: 1:250 VERT: N/A

PROJECT NO. 18-095
ISSUED/REVISION 3

APPROVING AUTHORITY FILE NO.

DRAWING NO.
18-095-SK.1

LEGEND

- PROPERTY LINE
- EXTENT OF PARKADE (BELOW GRADE)
- EXISTING CONTOUR LINE
- 25.20 EX — EXISTING GRADE
- 28.50 — PROPOSED GRADE

LANDSCAPE MATERIALS

- SOLID WOOD FENCE, 1800 MM HEIGHT , SHOWN OFFSET FROM PROPERTY LINE FOR CLARITY
- MIXED UNIT PAVING FORMING WOONERF STYLE SHARED SPACE AND/OR SMALL PLAZA SPACE
- PEDESTRIAN PATH / PATIO
- MUNICIPAL CONCRETE SIDEWALK
- COMMUNITY GREEN, GRASSED OPEN SPACE
- RETAINED LANDSCAPE ZONE
- **SHRUB PLANTING AREA** ORNAMENTAL AND AMENITY PLANTINGS. SPECIES TO INCLUDE NATIVE AND APPROPRIATE NON-NATIVE SPECIES THAT ARE ADAPTED TO SITE CONDITIONS, CLIMATE AND DESIGN INTENT.
- **RAIN GARDEN AREA** CAPTURES, SLOWS AND TREATS (CLEAN) STORMWATER RUNOFF FROM BUILDING ROOFS AND HARD SURFACES.

TREE SUMMARY

- PROPOSED TREES
- EXISTING TREES

NOTE
RETAINED TREES ARE SUBJECT TO A FULL ARBORICULTURAL ASSESSMENT TO DETERMINE THEIR RETENTION STATUS. EXISTING TREES SHOWN ON THIS PLAN ARE BASED OF PRELIMINARY FIELD OBSERVATIONS AND REVIEW OF THE ARBORISTS REPORT PREPARED FOR A EARILER DEVELOPMENT SCHEME.

RAIN WATER MANAGMENT NOTES

WATER COLLECTED FROM BUILDING ROOFS FLOW TO THE RAIN GARDENS LOCATED THROUGHOUT THE SITE.

RAIN GARDENS WILL BE DESIGNED WITH UNDERDRAINS AND A HIGH CAPACITY OVERFLOW DRAIN THAT WILL BE CONNECTED TO THE ONSITE PIPED DRAINAGE SYSTEM.

ONSITE HARD SURFACES, WHERE POSSIBLE, WILL BE DRAINED TOWARDS ABSORBENT LANDSCAPE AREAS OR RAIN GARDENS.

STREETSCAPE RAIN GARDENS ARE PROPOSED ON BURNSIDE ROAD. THESE WILL CAPTURE, SLOW AND TREAT (CLEAN) RUNOFF FROM THE MUNICIPAL ROAD AND SIDEWALK MIMICKING THE PRE-DEVELOPMENT DRAINAGE SYSTEM.

DRAWING NOTES

1. DO NOT SCALE DRAWING: Verify all property lines and existing structures/vegetation to remain, prior to commencing work.
2. All plan dimensions in metres and all detail dimensions in millimetres.
3. Plant quantities on Plans shall take precedence over plant list quantities.
4. Contractor to confirm location and elevation of all existing services and utilities prior to start of construction.
5. Provide layout of all work for approval by Landscape Architect prior to proceeding with work.
6. Contractor to provide irrigation system for all planters to current IIABC Standards and Contract Specifications.
7. Landscape installation to carry a 1 year warranty from date of acceptance.
8. Plant material, installation and maintenance to conform to the current edition of the Canadian Landscape Standard.
9. General Contractor and/or sub-contractors are responsible for all costs related to production and submission to consultant of all landscape as-built information including irrigation.
10. Tree protection fencing, for existing trees, to be installed prior to commencement of all site work

NOT FOR CONSTRUCTION

rev no	description	date
3	REZONING REV.2	JAN. 22, 2020
2	REZONING REV.1	JUN. 25, 2019
1	REZONING	SEPT. 14, 2018

Murdoch de Greeff INC
Landscape Planning & Design
200 - 524 Culduthel Road
Victoria, BC V8Z 1G1
Phone: 250.412-2891
Fax: 250.412-2892

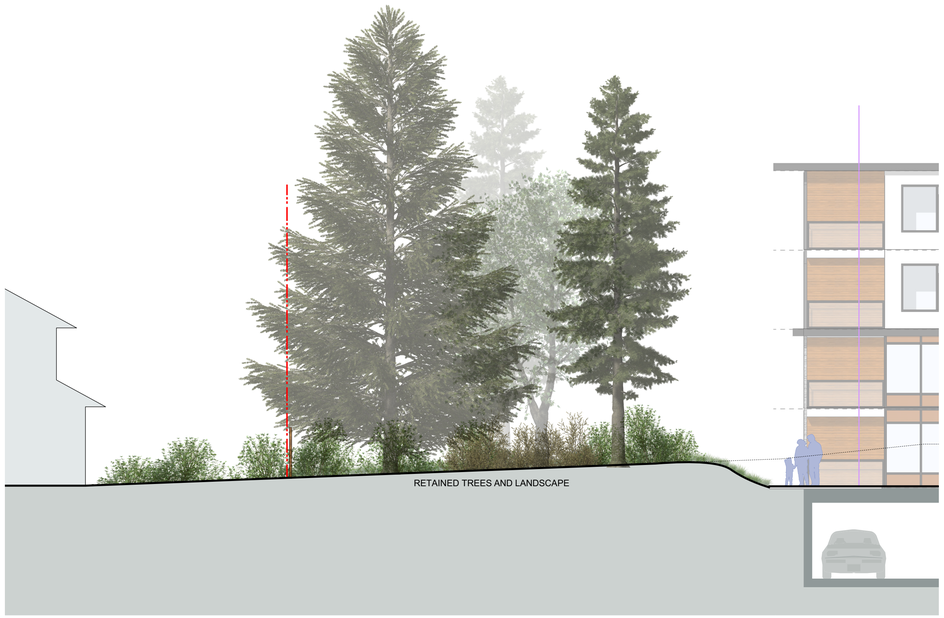
Jan. 22, 2020

client
INVICTUS COMMERCIAL INVESTMENT CORP (ICIC)
605 DOUGLAS STREET, SUITE 204
VICTORIA, BC

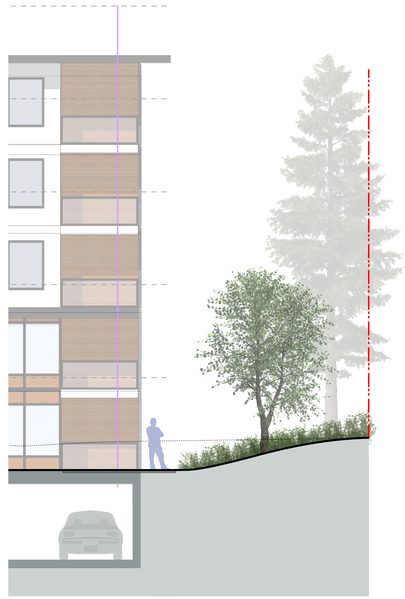
project
EAGLES NEST RESIDENCES
HELMCKEN & WEST
BURNSIDE ROADS
VIEW ROYAL, BC

sheet title
Landscape Materials

project no.	118.29
scale	1: 250 @ 24"x36"
drawn by	JD
checked by	SM/PdG
revison no.	3
sheet no.	**L1.01**



1 SECTION 1 THROUGH WESTERN LANDSCAPE
Scale: 1:100



2 SECTION 2 THROUGH NORTHERN LANDSCAPE
Scale: 1:100

3 SECTION 3 TROUGH BURNSIDE STREETSCAPE
Scale: 1:100

4 SECTION 4 THROUGH PEDESTRIAN PATH
Scale: 1:100

5 SECTION 5 THROUGH HELMCKEN ROAD
Scale: 1:100

KEY PLAN
Scale: 1:1000

NOT FOR CONSTRUCTION

rev no	description	date
3	REZONING REV.2	JAN. 22, 2020
2	REZONING REV.1	JUN. 25, 2019
1	REZONING	SEPT. 14, 2018

Murdoch de Greeff INC
Landscape Planning & Design
200 - 524 Culduthel Road
Victoria, BC V8Z 1G1
Phone: 250.412-2891
Fax: 250.412-2892

Jan. 22, 2020

client
INVICTUS COMMERCIAL INVESTMENT CORP (ICIC)
605 DOUGLAS STREET, SUITE 204
VICTORIA, BC

project
EAGLES NEST RESIDENCES
HELMCKEN & WEST BURNSIDE ROADS
VIEW ROYAL, BC

sheet title
Landscape Sections

project no.		118.29
scale	AS SHOWN	@ 24"x36"
drawn by		JD
checked by		SM/PdG
revison no.	3	
sheet no.		**L1.02**

REM LOT A
Plan VIP1726

LOT 1
Plan VIP18753
000-300-365

LOT 1
Plan VIP18347

REM LOT 22
Plan VIP361

LOT 2
Plan VIP3963
006-114-946

BUILDING STRATA
Plan VIS5633

REM LOT 1
Plan VIP3963
000-295-981

LOT 10
Plan VIP1726
007-028-156

WEST BURNSIDE ROAD

HELMECKEN ROAD

CONCRETE DRIVEWAY
GRAVEL DRIVEWAY
CONC. PATH
CONC. SLAB
GARAGE
SHED
LANDSCAPE AREA
EXISTING BUILDING FFE: 29.83
EXISTING BUILDING FFE: 28.74
EXISTING BUILDING FFE: 28.16
EXISTING BUILDING FFE: 28.01 BFE: 25.45
SEACAN
CAR PORT
ASPHALT DRIVEWAY
ASPHALT CURB
ASPHALT PARKING AREA
ASPHALT SIDEWALK
BIKE LANE
RET. WALL
RETAINING WALL (RAILING ON TOP)
TOB (ROCK)
TOP (ROCK)
GRAVEL DRIVEWAY
TREE DRIP LINE
EDGE OF PAVEMENT
DITCH
LANDSCAPE AREA

LINE ELEV: 33.08
LINE ELEV: 34.23
LINE ELEV: 32.17
LINE ELEV: 35.55
LINE ELEV: 36.72
LINE ELEV: 36.45

200mmØ PVC INVERT ELEV=27.52
200mmØ PVC INVERT ELEV=27.37
400mmØ CONC INVERT ELEV=27.36

FMON 80H3083

- CATCH BASIN (TOP INLET)
- CLEAN-OUT
- CULVERT
- FIRE HYDRANT
- GUY WIRE
- LAWN BASIN
- MANHOLE - ELECTRICAL
- MANHOLE - SANITARY
- MANHOLE - STORM
- CATCH BASIN - MANHOLE
- METER - WATER
- MONUMENT - FOUND
- POLE - HYDRO/TELEPHONE POLE
- POLE - TELEPHONE
- SIGN POST
- TRAFFIC LIGHT STANDARD
- TREE - CONIFEROUS
- TREE - DECIDUOUS
- VALVE - GAS
- VALVE - IRRIGATION
- VALVE - WATER
- POLE WITH YARD LAMP
- NON-STANDARD POST - FOUND
- IRON PIN - FOUND

- OUTLINE OF HEDGE
- FENCE
- TOP OF BANK
- BOTTOM OF BANK
- DITCH
- T — OVERHEAD TEL
- E — OVERHEAD HYDRO

POINT # TYP*

FFE: FIRST FLOOR ELEVATION
BFE: BASEMENT FLOOR ELEVATION
GFE: GARAGE FLOOR ELEVATION

NOTES:

1. THE SURVEY IS ON A LOCAL GROUND SYSTEM AND WAS DERIVED FROM GEODETIC CONTROL MONUMENTS 80H3083 AND 80H3064.
2. TO CONVERT TO UTM: MULTIPLY BY THE COMBINED SCALE FACTOR OF 0.9996106, ABOUT GEODETIC CONTROL MONUMENT 80H3083
3. ELEVATIONS ARE IN METRES AND ARE REFERRED TO GEODETIC DATUM CVD28GVRD USING MONUMENT 80H3083, ELEVATION=27.652 METRES.
4. THIS PLAN REPRESENTS FIELD SURVEY CONDUCTED ON FEBRUARY 15-17, 2018.
5. CONTOUR INTERVAL IS 0.5m.

Rev	Date	Description	Surv	Drawn	App'd
0	2018-02-23	ORIGINAL ISSUE	SA	LM	GQ

0 1:300 15

ORIGINAL DWG SIZE: ANSI D (22" x 34")
ALL DIMENSIONS ARE IN METRES

McElhanney
McElhanney Consulting Services Ltd.
Suite 500
3960 Quadra Street
Victoria BC
Canada V8X 4A3
Tel 250 370 9221

Approved Sealed

HIGHSTREET VENTURES
702-1708 DOLPHIN AVE, KELOWNA, BC

HIGHSTREET DEVELOPMENT TOPOGRAPHIC SURVEY PLAN OF 3 HELMECKEN ROAD

3 HELMECKEN ROAD
VIEW ROYAL, BC

Drawing No.
03520-V-1-TP

Project Number
2113-03520-00

Rev.
0

January 19, 2020

Mayor and Council
Town of View Royal
45 View Royal Avenue
Victoria, BC V9B 1A6

977 Fort Street
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www.dhk.ca

RE: Helmcken Road Rezoning Application (#3, #5, Lot 10, and 1449 Burnside Rd W.)

Dear Mayor Screech and Council:

On behalf of our client Invictus Commercial Investment Corp we are pleased to present the fully redesigned redevelopment proposal for the above-noted properties.

Our application is for the consolidated 3.4 Acre site to house 247 new apartment units in three buildings ranging in height from four to six storeys. The proposed density is 1.4 plus 0.1 bonus for 100% underground parking. This is 0.1 lower than the Mixed Residential zone base density. The lowest building fronts Helmcken, stepping down to three-storeys at each end. The east and west buildings step up from four to six storeys towards the north. A range of unit sizes will provide a variety of housing options. Family-oriented two-bedroom and three-bedroom units are concentrated at grade, adjacent to private and public outdoor space.

In recent months, we have worked with the site's immediate neighbours in the development of the proposed plan. We held workshop sessions in November and December to discuss key site planning issues and ideas, including traffic volume and speed, privacy, tree preservation, construction impact management, design and building massing and stepping. These working sessions helped us shape the revised plan, which we believe best balances OCP policy directions, physical site opportunities and constraints and community inputs to arrive at a viable plan.

Most importantly, we have worked to shape the plan to allow preservation of existing trees along the western boundary of the site that will add greatly to the privacy and screening for our neighbours in the Hidden Oaks townhouse development. The rocky outcropping at the southwest corner of our site is also preserved to maintain the natural character of the property, reflectively of View Royal's unique sense of place.

The design has evolved in consultation with senior planning staff for conformance with the applicable “Mixed Residential” Development Permit Area Guide-

lines. The design character, public and pedestrian realm, siting, height, massing, and landscaping all reflect the intents and guidelines of the Official Community Plan.

Please note the following key aspects of the proposal:

1. **Tree Retention** - Arborists and landscape architects have re-assessed all existing trees for health & resilience, and the building footprints have been carefully realigned to avoid critical root zones of all trees to be retained. Significant stands of trees will be kept at the south and southwest edges of the site, buffering the project from neighbours and creating an important character-defining aspect of the project.

2. **Stepped Building Forms** - The upper floors of each building will be significantly set back from lower floors to break down the scale of the project and improve daylighting and sky views throughout. Variations in building setbacks and exterior wall articulation will help bring a human-scaled character to the development.

3. **Townhouse Entries** - In contrast to typical apartments, all street-facing ground floor units will have prominent townhouse-style entries with individual paths to the public sidewalk. This street interface helps improve neighbourhood connectivity and strengthen community character.

4. **Central Courtyard** - A central green space forms the heart of the site. Instead of a conventional driveway providing lobby access to the three buildings, a multi-modal “Woonerf” is proposed, where the geometry, surfacing, and edge conditions are tailored as much to pedestrians as vehicles, greatly reducing speeds and creating a welcoming, flexible courtyard space.

5. **Green Space** - With all parking underground and minimal on-site drive surfaces the vast majority of outdoor space can be green space, which will be a diverse combination of manicured lawn, planted rain gardens, indigenous wooded areas, and drought-resistant ground cover and shrubs. Added on-site and street trees will more than offset the number of removed trees.

6. **Corner Feature** - The two buildings facing the intersection are set back to frame a breezeway through the site. The west corner of the Helmcken / Burnside intersection will be transformed from a narrow sidewalk above a retaining wall to a large at-grade plaza with seating, landscaped rain gardens, new ornamental trees, and views and pathway connections into the main courtyard of the site.

The site access is designed for minimal impact on neighbourhood traffic patterns. The sole vehicle entry point is located on Burnside, as far from the Helmcken intersection as possible, with no direct traffic flows or turning movements on

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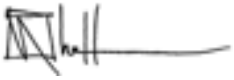
Helmcken and no possible intersection blockage. Although the subject property has an access easement / right-of-way on 15 Helmcken Road (Hidden Oaks) there is no intention to use this access point.

I hope this proposal meets with your approval, and I look forward to working in View Royal.

Sincerely,



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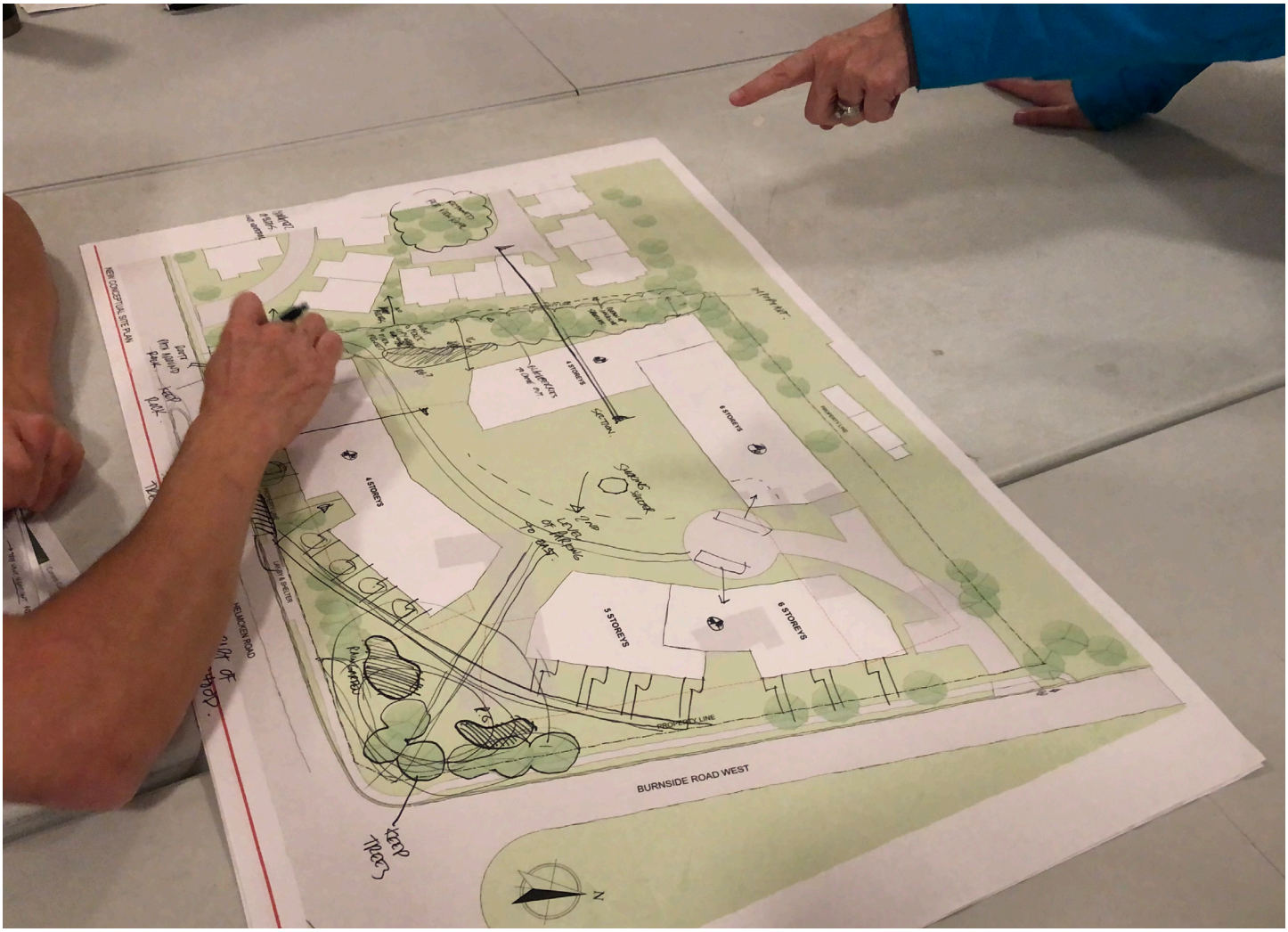
Rob Whetter, Architect AIBC, LEED™ AP
de Hoog & Kierulf architects



EAGLES NEST

Rezoning Application

Community Engagement Summary

04 March 2020

TownSquare

dHKa

ICIC

WATT Consulting Group

Murdoch de Greeff INC Landscape Architects

Introduction

The Eagles Nest site is located at the corner of Helmcken Road and Burnside Road West, in the Town of View Royal's 'Northern Gateway' area of the Hospital Neighbourhood. The site is designated in the Official Community Plan (OCP) for mixed residential development up to 1.6 Floor Space Ratio (FSR). With its close proximity to local shops, services and amenities at Eagle Creek Village and the regional employment centre of Victoria General Hospital, the site is well suited to redevelopment with multiple-residential development.

The planning framework within the OCP supports development of the Eagles Nest site and the *Rezoning Application Submission Summary Document, 17 January 2020*, provides a detailed overview of the proposal and how it responds to these guiding policies. The proposed mixed-residential development is at a density below the maximum allowed in the OCP, but at a level that makes best use of land designated for mixed-residential development and that is required to ensure viability of the project. The proposal reflects a balancing of policy directions, site analysis, market conditions, and, importantly, community input.

Community Engagement & Site Planning

The site was the subject of a previous Rezoning Application, originally submitted in 2018 and withdrawn in 2019, to allow more community engagement and further site and technical analysis. This new application builds upon the input received during the original application process, and has benefited from collaborative consultation with the immediate neighbours to bring about a renewed and refined site plan. At its core, however, the application remains committed to implementing the goals and objectives of the OCP and realizing a contribution to the regional housing needs with a site design that is respectful and responsive to its neighbourhood context.

The development planning team hosted two workshops with neighbours in November and December of 2019. The purpose of the workshops was to invite the immediate neighbours to participate in the planning process as the project reset and worked toward a new application. The workshop sessions were designed to allow collaborative discussion and engagement around the site plan to gather input and ideas to help shape the proposed buildings. A review of the View Royal planning policies for the site was shared, highlighting the community goal of achieving a greater variety of housing choice, affordability and better use of land. The team listened to gather input on issues and opportunities to be addressed by the plan.

The topics of traffic, transportation, tree retention, privacy, and building heights and stepping were discussed at the workshops. Input received during the first session in November informed refinement to the site plan, which was then brought forward for review and discussion at the second session in December. A Community Meeting was scheduled to be hosted on January 15, 2020 to present the new plan and proposal prior to submission of this new Rezoning Application. Due to winter weather conditions, the Community Meeting had to be postponed, and was subsequently held on Monday, February 3, 2020.

The planning and design team believes the plan has been positively shaped by the community input and now better responds to a number of key issues raised. We acknowledge the challenge of achieving consensus, but worked through a collaborative process to listen to the concerns raised, to receive new ideas and input from neighbours, and to shape the plan where possible to reflect the results of engagement.

The following sections summarize the community engagement that has informed the current rezoning application, including an overview of how the site plan has evolved with community input since project initiation in 2018. Detailed meeting discussion notes are also included for reference.

OCTOBER 23, 2018

Community Meeting
+/- 70 attendees (52 signed-in)

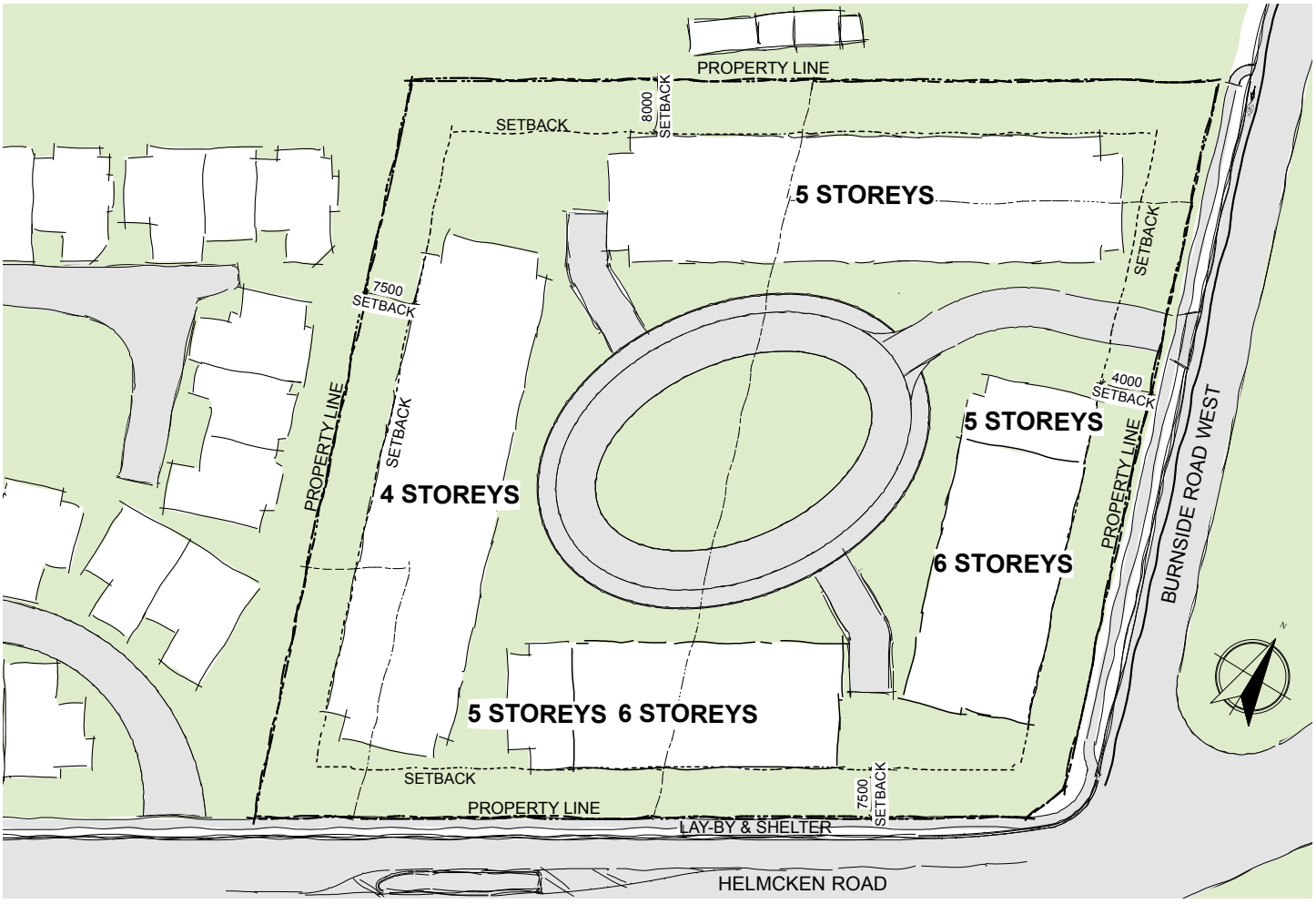
Traffic
- concern about commuter traffic on Helmcken and capacity to accommodate proposed growth given regional traffic issues
- challenge getting in and out of residential driveways
- turnaround traffic into Hidden Oaks' driveway

Building Height/Shadowing
- concern about potential overshadowing of Hidden Oaks townhouses
- question about the building massing/presence at the corner

Density
- some concern about density, particularly relative to traffic impacts

Streetscape
- questions about streetscape design - sidewalks?

Site Plan Version 1



JANUARY 9, 2019

Hidden Oaks Resident Meeting
9 attendees

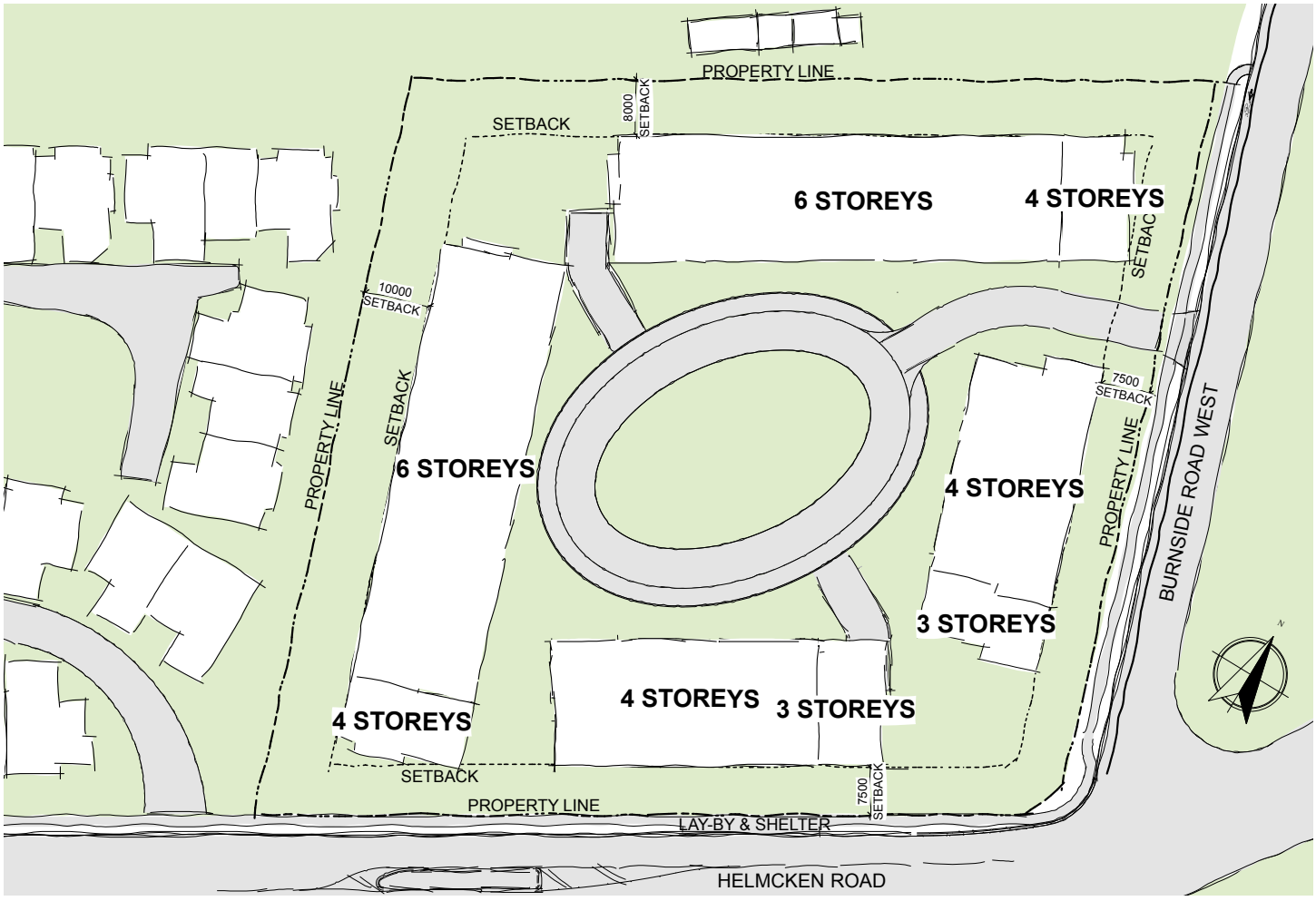
Traffic

- concern about turn-around traffic into Hidden Oaks' driveway
- discussion on strategies to deter turn-around traffic (signage, dedicated left-hand turn lane into Eagle Creek Village off of Helmcken.

Building Height/Shadowing

- concern about 6-storey building being located adjacent to townhouses

Site Plan Version 2



JULY 9, 2019

Community Meeting
50 attendees (all signed-in)

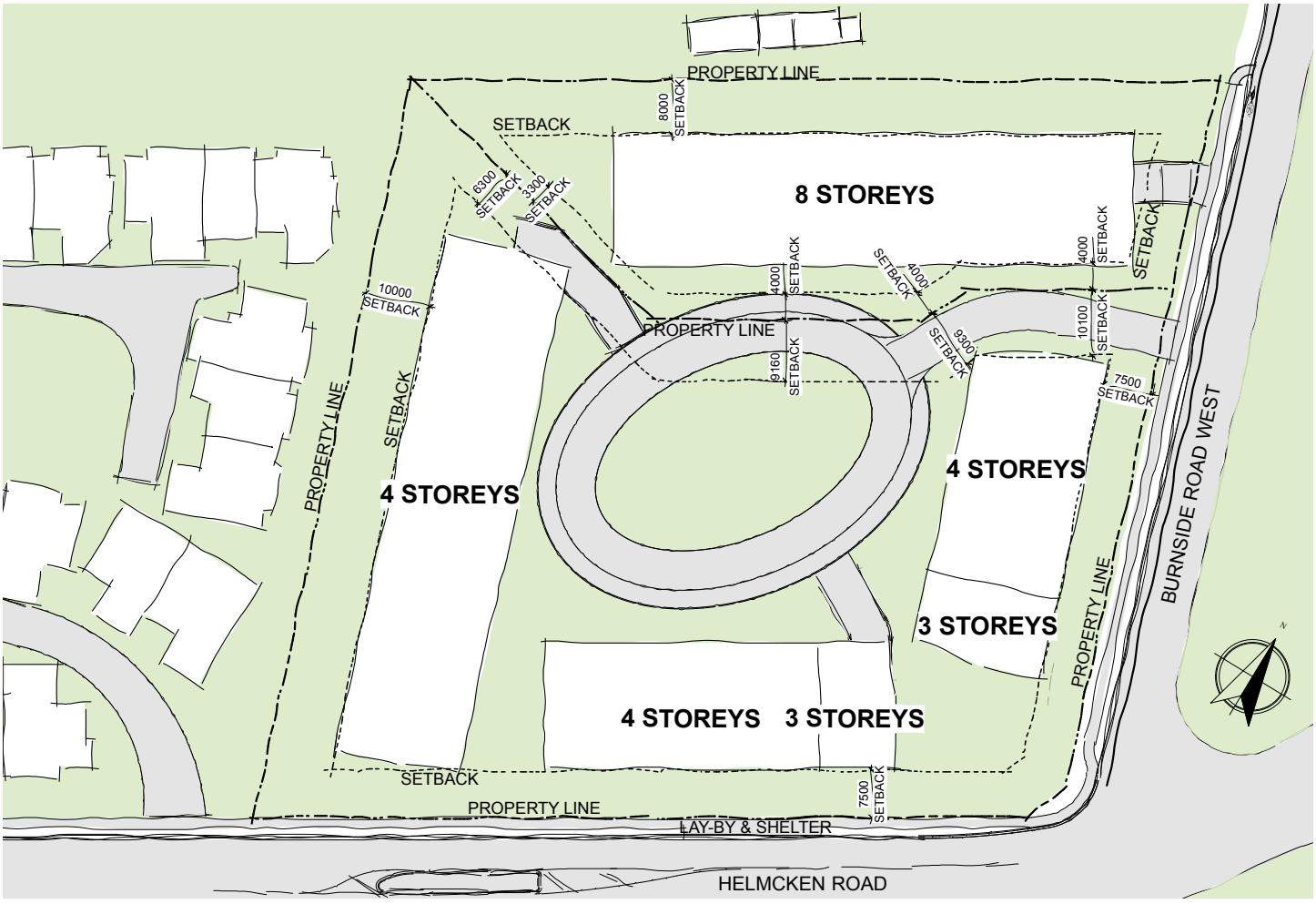
Traffic

- concern about traffic and impact of development on an already challenging traffic situation

Building Height/Shadowing

- concern about 8-storey building at the back of the site

Site Plan Version 3



NOVEMBER 18, 2019

Neighbours' Workshop #1
13 attendees
Site & Landscape Design

Discussion Topics:

- Building heights & distribution
- Site access & circulation
- Edge conditions and screening / buffer
- Landscape design ideas
- Streetscape improvements
- Density, traffic impacts

DECEMBER 2, 2019

Neighbours' Workshop #2
8 attendees
Site Plan Revisions

Discussion Topics:

- Building heights & distribution
- Traffic, speed and volume
- Density measurements and design
- Site access & circulation
- Edge conditions and screening / buffer
- Site grades and topography and stormwater management
- Potential to retain some existing trees for privacy
- Potential to retain rocky outcropping at western edge of site
- Design of internal courtyard, on-site circulation

Revised Conceptual Site Plans and Workshop Sessions

FEBRUARY 3, 2020

Community Meeting Open House
39 attendees signed in (+/- 6 more attended)

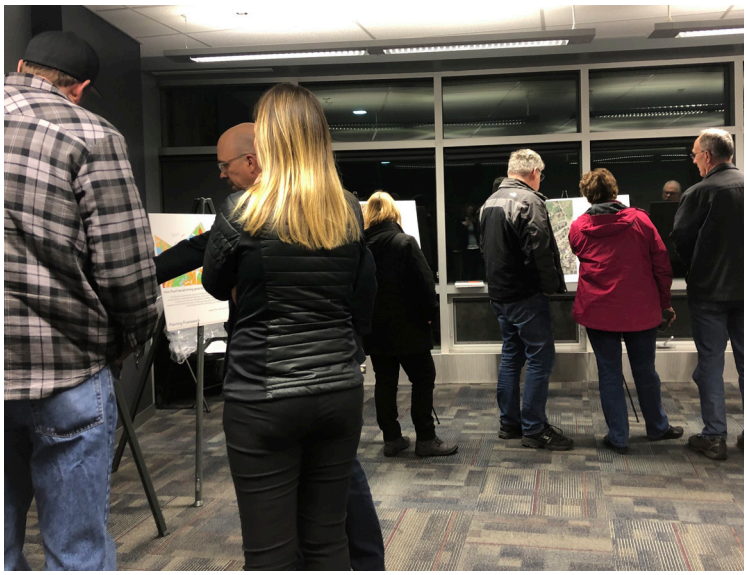
Site Planning & Design

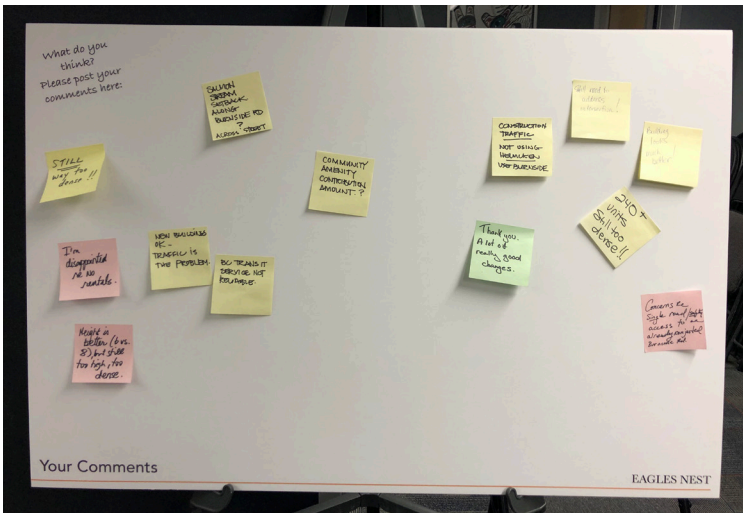
- Some concern about density and height, given the adjacent townhouses and ALR lands.
- Some support for revised heights (6 storey maximum vs. 8 storeys in previous plan).
- Support for new plan and building layout, noting that it looks much better than in previous iterations of the plan.
- Support for ground-floor units with individual entries.
- Support for tree retention.
- Support for stormwater management strategies and interior courtyard design.

Transportation & Traffic

- Support for new housing at this location - good for the local shops at Eagle Creek Village and for employees of VGH - walkable to local services and work.
- Continued concern about traffic speed and volume.

Further Revised Plans





MEETING SUMMARY NOTES

Neighbours' Workshop #1, November 18, 2019

13 Neighbour Attendees

Eagles Nest Team Attendees:

Doug Foord, ICIC
Rob Whetter, dHK Architects
Paul deGreeff, Murdoch deGreeff Landscape Architects
Dylan Ridsdale, Watt Consulting
Jennifer Kay, TownSquare Planning

The purpose of the workshop was to invite the immediate neighbours to participate in the planning process as the project resets and works toward a new application. A community meeting will be held in the future to share a similar update on the plan with the broader community.

Planning Discussion

Jennifer from TownSquare presented the planning framework and development drivers guiding the plan. A review of the View Royal planning policies for the site was shared, highlighting the community goal of achieving a greater variety of housing choice, affordability and better use of land. The team listened to gather input on issues and opportunities to be addressed by the plan.

Traffic Discussion

Dylan from Watt Consulting presented an overview of the regional and local transportation issues.
Neighbours shared their frustration with the heavy traffic along Helmcken Road and Burnside Road West, and the daily difficulty they experience when traveling to and from their homes. Concerns about noise, congestion, safety/accidents, truck noise and access were discussed.

Neighbours asked how the project could make the situation better. The team noted that the region anticipates some alleviation of traffic congestion once the McKenzie overpass project is complete. Incremental change through development that locates higher-density housing closer to place of employment/work and shops/services will help change regional transportation patterns.

In the interim, the project proposes mixed residential use and density in line with the View Royal OCP and the Traffic Impact Analysis shows that the project will have minimal impact on traffic operations.

Doug discussed how the site has a legal, shared access from Helmcken Road with the existing driveway for the Hidden Oaks townhouse development, but that the project is working to avoid using that access in favour of a single access driveway off of Burnside Road West instead.

MEETING SUMMARY NOTES

Neighbours' Workshop #1, November 18, 2019

Site Plan Discussion

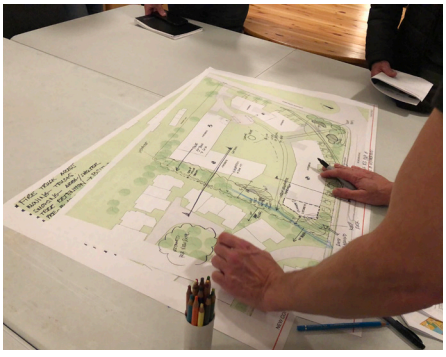
Rob from dHK Architects presented the site plan history of the project, reviewing the 3 previous iterations of the plan developed over the last year. The majority of the evening was spent discussing the new conceptual site plan with revised building footprints and building stepping from 3-6 storeys.

The working session was focused on identifying opportunities for further changes. Topics discussed included:

- Extent and depth of underground parking
- Extent of blasting and potential impacts on adjacent sites
- Confirmation of pre-blasting insurance inspections
- Tree protection and the opportunity to preserve trees along the western boundary of the site
- Potential for existing and new trees to form/reflect the View Royal character
- Potential to preserve a portion of the rocky outcropping at the western edge of the site
- Strategies for on-site stormwater management
- Concern about smoking on private property, with residents from non-smoking strata properties impacting residential neighbours
- Strategies for fire access and on-site circulation; moving van loading areas
- Phasing and blasting scheduling
- Strategies for on-site parking during construction to lessen impact on neighbourhood
- Opportunity for street-level entrances along Helmcken Road / Burnside Road West to add to streetscape and pedestrian character
- Potential for a fence along the western boundary to deter cut-through pedestrian traffic

The group had questions about the targeted density and unit count. The team is studying the site to try to lower the density below the OCP maximum of 1.6 FSR; the preliminary massing and footprint plans have not been developed enough to know where the number might land. However, it is unlikely to be significantly lower than 1.6 FSR as the project needs the density to remain viable. The team committed to further advancing the plans with the input received to bring back another iteration to the December 2, 2019 Neighbours' Workshop #2.

In general, the team heard appreciation for the opportunity to meet in this focused group setting and to discuss the site planning process together: "*I wish you had this meeting at the beginning - a year ago.*"



MEETING SUMMARY NOTES

Neighbours' Workshop #2, December 2, 2019

8 Neighbour Attendees

Eagles Nest Team Attendees

Doug Foord, ICIC
Rob Whetter, dHK Architects
Scott Murdoch, Murdoch deGreeff Landscape Architects
Dylan Ridsdale, Watt Consulting
Jennifer Kay, TownSquare Planning

The purpose of the second workshop was to continue the conversation and discussion with the immediate neighbours around the topics of planning, density, transportation, and site planning.

Workshop #1 Summary Notes

Jennifer from TownSquare presented the workshop summary notes from the November 18th, 2019 workshop.

Traffic Discussion

Dylan from Watt Consulting shared an update on questions / comments shared at the first workshop

- Helmcken is in fact not a truck route, but by bylaw, trucks are enabled to traverse Helmcken if they are making a delivery or where there is no alternative route to a driver's destination.
- The McKenzie overpass project is anticipated to reduce commute times by 17-22 minutes during the pm and am peak travel times.

Additional discussion took place on the following topics:

- Potential to reduce speeds along Helmcken.
- Safety at pedestrian crossings.
- Complexity of the connection to the Galloping Goose for cyclist at Watkiss.

Density Discussion

Jennifer from TownSquare presented a worksheet on the topic of density and the ways that density is calculated and visualized. There was good discussion on the design strategies for building form and massing that help create strong streetscapes and pedestrian-friendly environments.

MEETING SUMMARY NOTES

Neighbours' Workshop #2, December 2, 2019

Site Plan Discussion

Rob from dHK Architects presented the updated site plan based on the discussions and input received at the first workshop. Key changes and topics discussed:

- The plan is better responding to the site grades and topography.
- The ground floor of the buildings facing Helmcken and Burnside Road West include units with individual entries, ideally with a small step up or landscaping to help define private/semi-private open space as a transition area between the buildings and the public realm of the streetscape (sidewalk).
- The plan is working to protect important existing trees that help buffer the project from the adjacent neighbours.
- Tree health has been assessed to ensure the plan preserves trees with the highest value and the team is continuing to work with the arborist / tree survey to shape the site plan.
- The plan is stepping the building away from rocky outcropping at the southwest corner of the site, to minimize blasting and preserve the natural character of the site.
- An internal "woonerf" style space is proposed to accommodate the occasional vehicular traffic to front entries (pick-up and drop-off). The space will be designed with special paving to function as a multi-use space for people, activities and vehicles. There will not be any vehicular loading along Helmcken.
- There is potential for on-site stormwater management through detention ponds and rain gardens.

The group continues to have questions about the targeted density and unit count. The current approach to building siting was well received, and the team is further refining the plans and expects to have more of the issues resolved in time for a Community Meeting in January. Concerns about density, unit count and impact on traffic were still noted; however, it was also noted that the meeting discussions have been helpful.

MEETING SUMMARY NOTES

Community Meeting, Monday, February 3, 2020

39 Attendees Signed In (+/- 6 more attended)

Eagles Nest Team Attendees:

Doug Foord, ICIC
Rob Whetter, dHK Architects
Scott Murdoch, Murdoch deGreeff Landscape Architects
Dylan Ridsdale, Watt Consulting
Jennifer Kay, TownSquare Planning

The project team hosted a Community Meeting on Monday, February 3, 2020 at the Songhees Wellness Centre. The meeting was formatted as an Open House between 6 and 8 pm, allowing members of the public to drop in at their convenience to view the project information boards and ask questions of the project team. Attendees were encouraged to share their comments on post-it notes, and through conversation with the project team. The following is a summary of the key themes from comments received:

Traffic and Transportation

- Some suggested that construction traffic should use Burnside Road to avoid disruptions to main traffic flow along Helmcken Road.
- It was suggested that a southbound right turn lane should be installed on Burnside Road at Helmcken / Burnside fronting the site; Dylan from Watt consulting conveyed that their analysis deemed this not necessary.
- It was noted that intersection improvements were still needed.
- Some attendees liked the TDM measures being considered
- Limited transit service and frequency is an issue for some residents
- Watt's previous ideas to improve operations were not popular with some attendees, who preferred the traffic calming effect of the current constraints in place on Helmcken Road.
- Some noted concern with the proposed driveway location and its potential for impact on the community mailboxes along Burnside Road West.
- It was suggested that a second driveway be added to the Helmcken frontage for safety reasons, although it was understood that the project is trying to avoid additional driveway connection on Helmcken to lessen traffic impacts.
- We heard support for the new sidewalks and bike lanes.
- Some commented that traffic has been less of a problem since the McKenzie interchange started to function, and remain hopeful that once completed, the Highway interchange will take more strain off of Helmcken Road.

MEETING SUMMARY NOTES

Community Meeting, Monday, February 3, 2020

Planning Regulations and Process

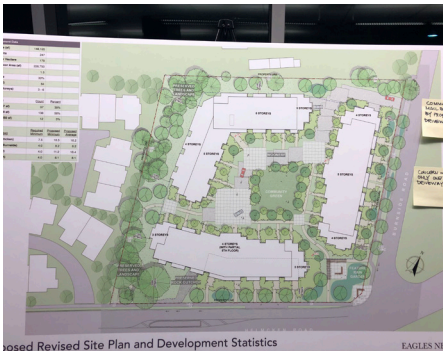
- Many felt that the addition of new housing at this location would be good for the local shops at Eagle Creek Village and for employees of VGH - walkable to local services and work.
- Some expressed confusion about the difference between existing zoning and OCP designation and discussion allowed clarification that the project is proposing a rezoning to be consistent with OCP policies for use and density (Mixed-Residential Designation and up to 1.6 FSR density)
- Some noted concern that the OCP indicates buildings up to 4 storeys, while the proposal is for buildings up to 6 storeys.
- Some were concerned about the scale of the proposal and its adjacency to the ALR.

Density and Height

- Some expressed concern that the project is still proposing too many units and that buildings over 4 storeys do not fit, given the adjacent townhouses and ALR lands.
- It was noted that the heights now proposed were better (6 storey maximum vs. 8 storeys in previous plan), but still felt that the project is too high and too dense.

Site Plan and Design

- Many noted that they felt the plan has been improved and liked the new building layout, noting that it looks much better than in previous iterations of the plan.
- We heard support for the idea of including ground-floor units with individual entries and creating a stronger streetscape relationship.
- A preference for rental units vs strata units was noted.
- There was reference made to a fish-bearing creek/ditch on the eastern side of Burnside Road West and whether it presented a development constraint for the site.
- Many expressed appreciation for the underground parking and considerable green space.

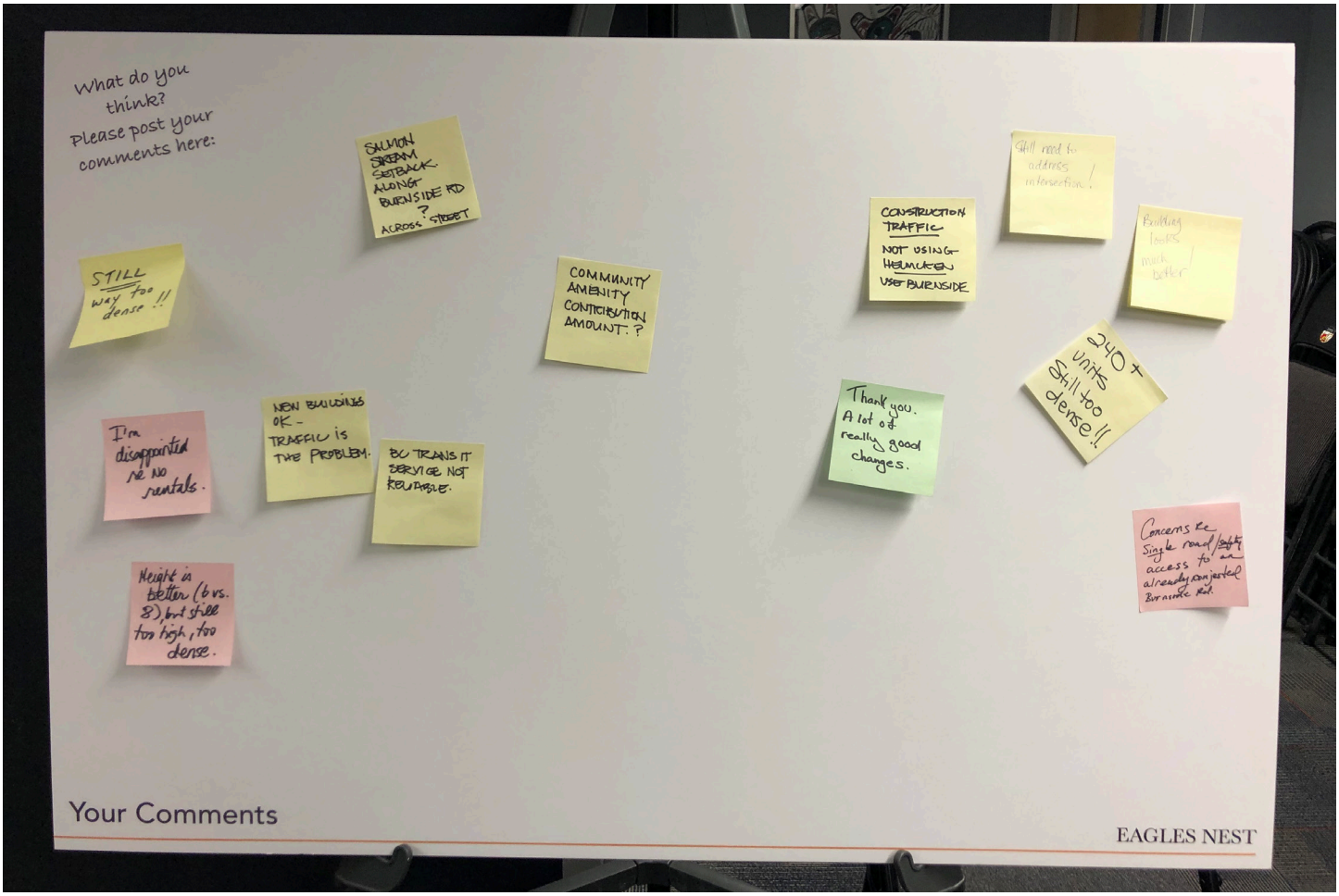


Landscape and Stormwater Management

- Some suggested more stormwater management to avoid impacts on the adjacent townhouse site and ALR lands to the north.
- One resident of the adjacent Hidden Oaks townhouse project noted a serious drainage problem resulting from overland flow from the project site and the ALR lands and would like to see the project address stormwater management.
- Many liked the design for the internal courtyard.
- Many liked how the plan has been revised to be able to preserve existing trees along the western property line.
- We heard support for a gateway feature at the corner to mark the arrival to View Royal.

Community Amenities

- There was interest in having the project help provide pickleball courts in a public park as part of the community amenity contribution.



STORM WATER MANAGEMENT PLAN

for

Eagle Nest Residences

(#3 & 5 Helmcken Road and #1449 Burnside Road, View Royal)

Prepared for:

Invictus Commercial Investment Corp.
#204 – 605 Douglas Street
Victoria, B.C.
VbV 2P9

Prepared by:

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#500 – 3960 Quadra Street
Victoria, BC
V8X 4A3

Date: September 13, 2018

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1. Introduction

McElhanney Consulting Services Ltd. (McElhanney) has been retained by Invictus Commercial Investment Corp. (Client) to provide a Storm Water Management Plan for the properties located at 3 and 5 Helmcken Road and 1449 Burnside Road in the Town of View Royal.

The purpose of this report is to support an application for a rezoning on the subject property.

The development combines the three existing lots into one 1.38-hectare property. The development will include:

- Three - three to six storey residential multi-unit buildings
- Under building parking
- Centralized children's playground, community garden

The site is bounded to the east and north with undeveloped land (farms). The lots to the south and west are residential townhomes and single-family dwellings.

This Storm Water Management Plan will:

- Review the existing surface drainage conditions.
- Consider the approach to be used for storm water management.
- Describe a proposed storm water management strategy.

2. Existing Conditions

The existing site includes a residential apartment building and a couple of single family dwellings, see Figure 1.

The terrain generally slopes to the south west, from 1 to 5%, away from Burnside Road. There is an existing rock knoll near the south west corner.

Surface drainage from adjacent properties do not appear to discharge onto the property. Road drainage along Burnside Road generally flows to roadside ditches which connect to a municipal drain system. There appear to be unrecorded storm drains in the area connecting drainage from Burnside Road to Helmcken Road. Additional investigation such as camera inspection or ground penetrating radar may be required to determine details of the existing municipal drainage system.

Figure 1: Project Site

3. General Storm Water Management Approach

The proposed developments' Storm Water Management Plan will be a collaboration between the design professionals (Civil Engineer, Arborist, Landscape Architect, Geotechnical Engineer) and the Town of View Royals staff (Engineering, Parks, Planning). The approach taken will address and promote the following;

- Detain post-development runoff to pre-development runoff rates
- Provide storm water systems that promote ground water recharge
- Minimize impacts to storm water quality
- Minimize sedimentation and erosion, stabilize and re-vegetate impacted areas
- Consider impacts of extreme rainfall (1 in 200 year) events

4. Storm Water Management Strategy

The proposed storm water management facilities will separate rainfall on the development into three general categories:

- Natural, Revegetated and Landscaped areas
- Building and Hardscaped (non-vehicular) areas
- Hardscaped (vehicular accessible) areas

4.1. Natural, Revegetated and Landscaped Areas

Rainfall runoff in these areas will be encouraged to follow the natural terrain of the area and infiltrate into the ground. No additional runoff from pre-development conditions anticipated for these areas.

4.2. Building and Hardscaped (Non-vehicular) Areas

Rainfall runoff in these areas will be directed to the storm water infiltration / detention facilities promoting groundwater recharge. Infiltration / detention facilities will be placed prior to discharge to the municipal drainage system with orifice-controlled outlets to limit flows to the 2 and 10-year existing (pre-development) rates. The intent is to utilize underground infiltration chambers, rock pits or storm ponds / rain gardens to promote infiltration and provide detention. Designed overflow facilities will be provided for events greater than 10-year return. Major storm events (200-year event) will be directed overland.

4.3. Hardscaped (Vehicular Accessible) Areas

Rainfall runoff from paved areas will be directed to an oil water interceptor prior to the infiltration / detention facilities. Infiltration / detention facilities will be placed prior to discharge to the municipal drainage system with orifice-controlled outlets to limit flows to the 2 and 10-year existing (pre-development) rates. The intent is to utilize underground infiltration chambers, rock pits or storm ponds / rain gardens to promote infiltration and

provide detention. Designed overflow facilities will be provided for events greater than 10-year return. Major storm events (200-year event) will be directed overland.

Existing culverts and ditches adjacent to Burnside Road will be intercepted and directed into the municipal drainage system.

5. Stormwater Quantity Control

5.1. Pre-development Runoff

Calculation of the pre-development runoff is contingent on the sites runoff coefficient value. As shown on Figure 1, the pre-development condition of the site was a mix of flat undeveloped areas, rock knoll, buildings, and gravel and asphalt driving surfaces.

Typical C Coefficients*

Description of Area	Runoff Coefficients Range	Runoff Coefficients Selected	Contributing Area (m^2)	C x A
Asphalt (d/w, parking)	0.70 - 0.95	0.95	1160	1102
Gravel (d/w, paths)	0.75	0.75	1200	900
Buildings	0.75 - 0.95	0.95	970	922
Lawns, Average 2-7%	0.18 – 0.20	0.20	9630	1926
Rock knoll, 10-30%, tree cover	0.75	0.75	800	600
		Contributing Area (ha) =	(13760 m^2) 1.38 ha	
			Pre-development C =	0.40

Based on the Rational Method, the resultant pre-development flows from the site are calculated based on the following:

Q=ciA/360

Where

- “i” 2-year 15 min = 13.4 mm/hr
- “i” 10-year 15 min = 20.9 mm/hr
- “c” = 0.40
- “A” = 1.38 ha

Pre-development Q_2 = 0.020 m^3/s (2.0 l/s)

Pre-development Q_{10} = 0.032 m^3/s (3.2 l/s)

5.2. Post Development Runoff

Following development, substantial portions of the site will have been excavated and regraded to provide level areas for the buildings (footprints), driveway, sidewalks, park and pavilion. Undeveloped areas will be graded to match the existing grade at property lines. Similar to the pre-development calculations above, the following table calculates the post-developed site's runoff coefficient.

Typical C Coefficients*

Description of Area	Runoff Coefficients Range	Runoff Coefficients Selected	Contributing Area (m^2)	C x A
*Asphaltic	0.70 - 0.95	0.95	1408	1338
*Concrete (d/w, s/w)	0.80 - 0.95	0.95	1163	1105
*Buildings	0.75 - 0.95	0.95	4748	4511
* Lawns, Average 2-7%	0.18 – 0.22	0.20	6441	1607
		Contributing Area (ha) =	(13760 m^2) 1.38ha	
			Post Development C =	0.60

Post-development Q_2 = 0.031 m^3/s (3.1 l/s) vs Pre-development Q_2 = 0.020 m^3/s (2.0 l/s)

Post-development Q_{10} = 0.048 m^3/s (4.8 l/s) vs Pre-development Q_{10} = 0.032 m^3/s (3.2 l/s)

As expected, with the post-development runoff coefficient greater than that of the pre-development, the resultant post-development flows are higher. As such, storm water detention with flow-controlled release is proposed to reduce the peak runoff rates to match pre-development levels.

5.3. Stormwater Detention

An orifice-controlled outlet from the storm water infiltration / detention system will restrict the post-development runoff to the peak pre-development runoff rates. The size of the orifice is to be determined with the detailed design of the storm water management system as it is directly related to the depth of the detained storm water.

The minimum required detention volumes, based on the controlled release rates and calculations above, are:

13.5 cu.m. for 1 in 2-year storm events

21.1 cu.m. for 1 in 10-year storm events

These volumes will be detained in storm water tanks, infiltration chambers, rock pits and / or storm water ponds / rain gardens. Overflow facilities will be provided for storm events exceeding than the 1 in 10-year return storm event.

6. Stormwater Quality (Treatment)

Storm water from the developments hardscaped (vehicular access) areas will be treated through oil / water separators prior to entering the storm water infiltration / detention system.

7. Erosion and Sediment Control During Construction

A key factor in erosion and sediment control is the interception and management of site runoff. Careful planning of construction site activities and phasing, to prevent the generation of erosion, is more effective and less expensive than downstream sediment control with sediment ponds only. Sediment ponds should be considered the last line of defense.

As outlined in the "Land Development Guidelines for Protection of Aquatic Habitat", the following general principles will be required at this site:

- Where possible, conduct earthworks activities during dry months of the year
- Stage activities to allow "green-up" or re-establishment of vegetation and minimize bare areas
- Halt construction during periods of significant precipitation and runoff
- Restrict vehicular/equipment access or provide working surfaces/roads. At each access point to the development site, a sediment pond or trap should be constructed to retain wash down water and sediments that may flow down the adjacent catchment to the access point.
- Retain existing vegetation until excavation commences, i.e. do not strip vegetation long before the following activities
- Minimize clearing and stripping areas

- Physically mark clearing boundaries on the construction site
- Seed or re-vegetate cut and fill slopes, and disturbed natural areas
- Cover temporary fills or stockpiles with sheeting or tarps and/or use silt fence surround
- Use mulches and other organic stabilizers to minimize erosion until
- Vegetation is established
- Plan seeding and planting to allow establishment before the end of the growing season

The following site-specific control measures are suggested to be included when the contractor produces the Erosion and Sediment control plan:

7.1. Silt Fences-Perimeter Ditching

Silt fences provide an effective filter for sediment laden runoff from bare soil slopes and surfaces. Silt fences are effective boundary control devices, trapping the sediment close to the erosion source and reducing the mobilization into runoff.

Silt fences should be installed along the downstream edges of activity, lower property lines and at the top of the slope to the foreshore. In temporary runoff control ditches and in proposed bio-swales, silt fences may be overwhelmed by the quantity of runoff and should be reconsidered, in favour of traps or rock berms, particularly where ditch slopes are steeper than approximately 3%.

Adequacy of the silt fence locations should be confirmed in the field, inspected and maintained on a regular basis as construction proceeds.

7.2. Sediment Control Ponds

Sediment control ponds are the last line of defense before runoff is discharged from the development site.

Sediment ponds should ideally be a minimum of 1% of the contributing catchment area and be as large as practical within the topographical constraints of the site. Catchment boundaries and proposed locations of the sediment ponds will be shown on the detailed design drawings. Adequacy of the proposed sediment ponds should be reviewed in the field.

7.3. Slope and Surface Protection

The required protection will be determined by the type of material, the grade of slope, and the expected exposure time, and shall be in accordance with the "Land Development Guidelines for Protection of Aquatic Habitat".

In dry conditions, all cut/fill and cleared natural slopes and surfaces should have erosion controls implemented within 14 days.

In wet conditions, erosion control should be implemented immediately on completion of the grading operations of the area.

Slopes exceeding 3.0 meters in height and steeper than 2H:1V should be reviewed by a Professional Engineer, to assess slope stability, erosion, and drainage control requirements.

This report has been prepared by:

McELHANNEY CONSULTING SERVICES LTD.

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EAGLE NEST DEVELOPMENT

Traffic Impact Assessment Update

Author: D. Ridsdale, BA, CTech.

Reviewer: N. King, P. Eng, PTOE

Prepared for: Invictus Commercial Investment Corp

Our File: 2497.B01

Date: January 10, 2019

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1.0 INTRODUCTION

Watt Consulting Group was retained by Invictus Commercial Investment to update the traffic impact assessment for the Eagle Nest development on the northwest corner of Helmcken Road/ Burnside Road West in the Town of View Royal, BC. This update assesses existing traffic conditions, post development traffic conditions for both short and long term horizon years, the proposed site access as well as Transportation Demand Management strategies for the site.

1.1 STUDY AREA

The study area for this project includes the Helmcken Road/ Burnside Road West and Helmcken Road/ Watkiss Way / Chancellor Avenue intersections. Burnside Road West within the study area is a municipal boundary between the Town of View Royal and District of Saanich. **Figure 1** shows the site's location and study area intersections.

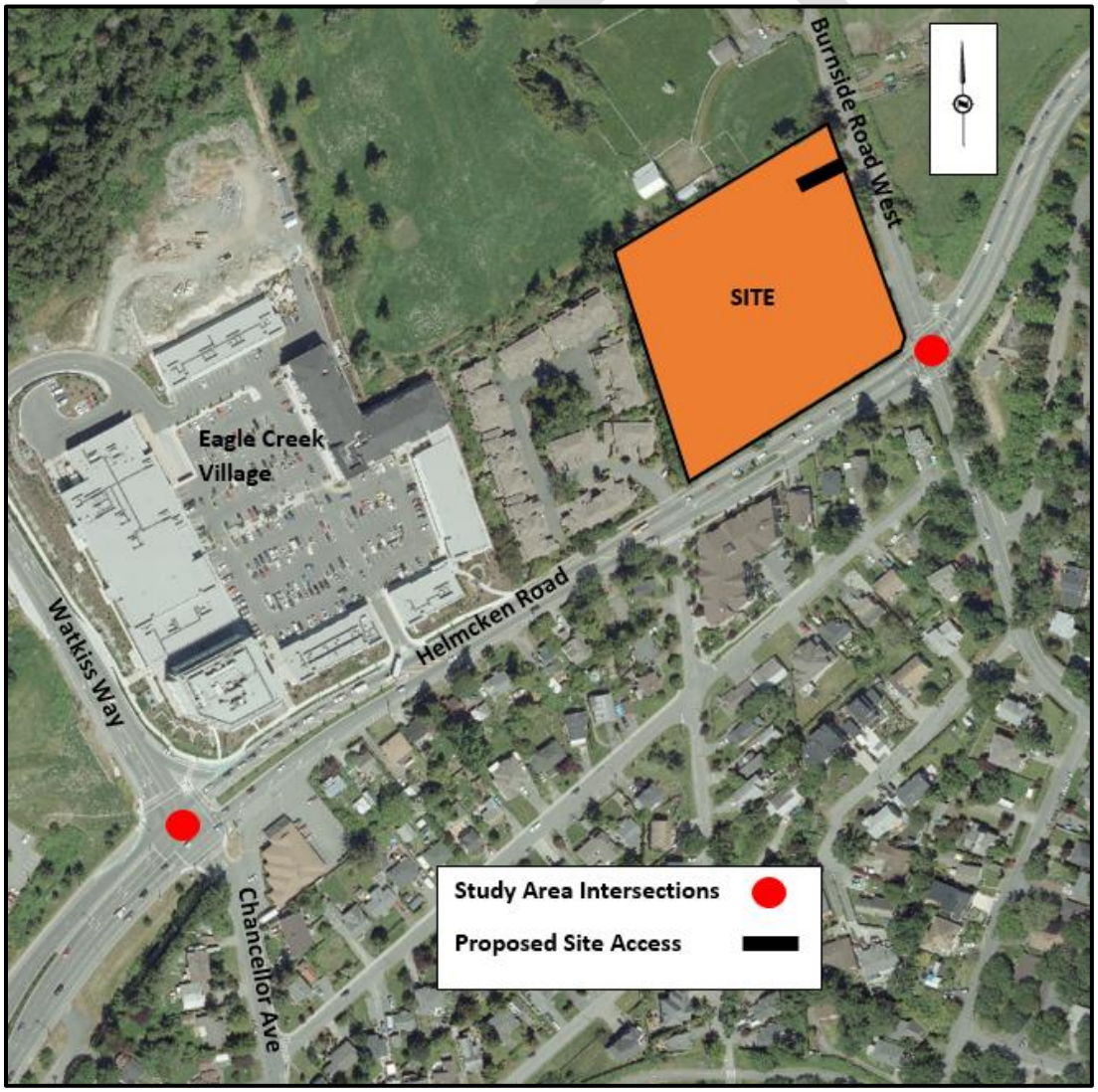

Figure 1: Study Area and Site Location

2.0 EXISTING CONDITIONS

2.1 LAND USE

The proposed site currently includes a 15 unit apartment building and three single-family homes. Eagle Creek Village is located approximately 200m west of the site and has become a retail, office and residential hub of the Helmcken neighborhood of View Royal. Eagle Creek Village and its amenities are within a five minute walk from the site. The Victoria General Hospital is located approximately 500m west of the site and is a major employer in View Royal and the Greater Victoria region. Victoria General Hospital is within a ten minute walk from the site.

2.2 ROAD NETWORK

The study area roads include Helmcken Road, Burnside Road West, Watkiss Way and Chancellor Avenue. Helmcken Road is a major road with a combination of raised center median, dedicated left turn lanes and a two way left turn lane that provides access to residential properties between Burnside Road and Watkiss Way / Chancellor Avenue. For analysis purposes, Helmcken Road is considered to run east-west within the study area road network. Burnside Road West and Watkiss Way are major roads and considered to run north-south within the study area road network. Chancellor Avenue is a local road and also considered to run north-south with the study area.

The intersection of Helmcken Rd / Burnside Rd West is a four legged signalized intersection that is operated by the District of Saanich. Dedicated left turn lanes and channelized right turn islands are provided on the Helmcken Road approaches to the intersection. The eastbound left turn movement on Helmcken Road provides protected/permitted left turn signal phasing. The northbound and southbound legs are shared left/through/right lanes.

The intersection of Helmcken Rd / Watkiss Way / Chancellor Ave is also a four legged signalized intersection. Dedicated left turn lanes are provided on all approaches to the intersection and the Helmcken Road westbound approach includes a channelized right turn island. The eastbound and westbound left turn movements on Helmcken Road provide fully protected left turn signal phasing. The southbound left turn movement provides protected/permitted left turn signal phasing.

Helmcken Road and Watkiss Way have a posted 50 km/h speed limit. Burnside Road West (north of Helmcken Road) has an unposted 50 km/h speed limit. Chancellor Avenue and Burnside Road West (south of Helmcken Road) have a posted 30 km/h speed limit.

2.3 TRAFFIC COUNTS

Updated traffic counts were collected at the intersection of Helmcken Road / Burnside Road West and Helmcken Rd / Watkiss Way / Chancellor Ave on December 10th, 2019 during the AM peak hour (8:00 to 9:00 AM) and PM peak hour (4:00 to 5:00 PM). At this time the McKenzie Interchange project remains under construction. On Dec 20th, 2019 traffic was allowed to free-

flow on Highway 1 at McKenzie Avenue; however, key elements such as the dual right turn from McKenzie to Highway 1 and the southbound cloverleaf have not been completed.

2.4 TRAFFIC MODELLING

Analysis of the traffic conditions at the intersections within the study area were undertaken using Synchro software. Synchro / SimTraffic is a two-part traffic modelling software that provides analysis of traffic conditions based on traffic control, geometry, volumes and traffic operations. Synchro software (Synchro 10) provides analysis using the Highway Capacity Manual (2010) methodology, while SimTraffic integrates established driver behaviors and characteristics to simulate actual conditions by randomly "seeding" or positioning vehicles travelling throughout the network. The software generates measures of effectiveness that include level of service (LOS), delay and 95th percentile queue length.

Intersections are analyzed to determine the level of service, delays and 95th percentile queue lengths. The levels of service are broken down into six letter grades with LOS A being excellent operations and LOS F indicating failing operations. Level of service C is generally considered to be an acceptable LOS by most municipalities. Level of service D is generally considered to be on the threshold between acceptable and unacceptable operations. A description of level of service and Synchro software is provided in **Appendix A**.

2.5 EXISTING VOLUMES AND CONDITIONS

The existing traffic volumes and lane geometrics were entered into Synchro to determine existing traffic conditions for both study area intersections during the AM and PM peak hours. At the Helmcken Rd / Burnside Rd West signalized intersection, all movements are operating at LOS D or better during the AM peak hour with two exceptions; northbound and southbound movements currently operate at LOS F. During the PM peak hour, all movements operate at LOS D of better except for the northbound movements which also operate at LOS F.

At the Helmcken Rd / Watkiss Way / Chancellor Ave signalized intersection, all movements are operating at LOS D or better during the AM peak hour except for the eastbound (Helmcken to Watkiss) left turn movement that operates at LOS E. During the PM peak hour, all movements operate at LOS D of better.

It is important to note that the Synchro software analyses each intersection in isolation, not as connected nodes of a system that interact with and affect other intersections in the system. However, when the intersections are simulated with SimTraffic as part of a network, the interaction between the intersections, especially westbound queues from the Helmcken Rd / Watkiss Way / Chancellor Ave intersection confirm traffic operations are worse than the Synchro results indicate. Observations in the field also confirm that during the PM peak hour, the westbound movement on Helmcken Road experiences long queues that extend from Watkiss Way / Chancellor Avenue beyond Burnside Road West approximately one kilometer. The northbound movement on Burnside Road West in turn experiences failing conditions due to the westbound queues and

limited storage on Helmcken Road for northbound left turning traffic from Burnside Road West. The Burnside Road West northbound left movement is further impacted by opposing southbound right turn traffic on Burnside Road West. However, there is potential for the current McKenzie Interchange project to improve conditions on Helmcken Road and Burnside Road West with the study area. Conditions at each intersection should be reassessed to confirm impacts on traffic when the McKenzie Interchange project is completed. See **Figure 2** for 2019 existing volumes and levels of service.

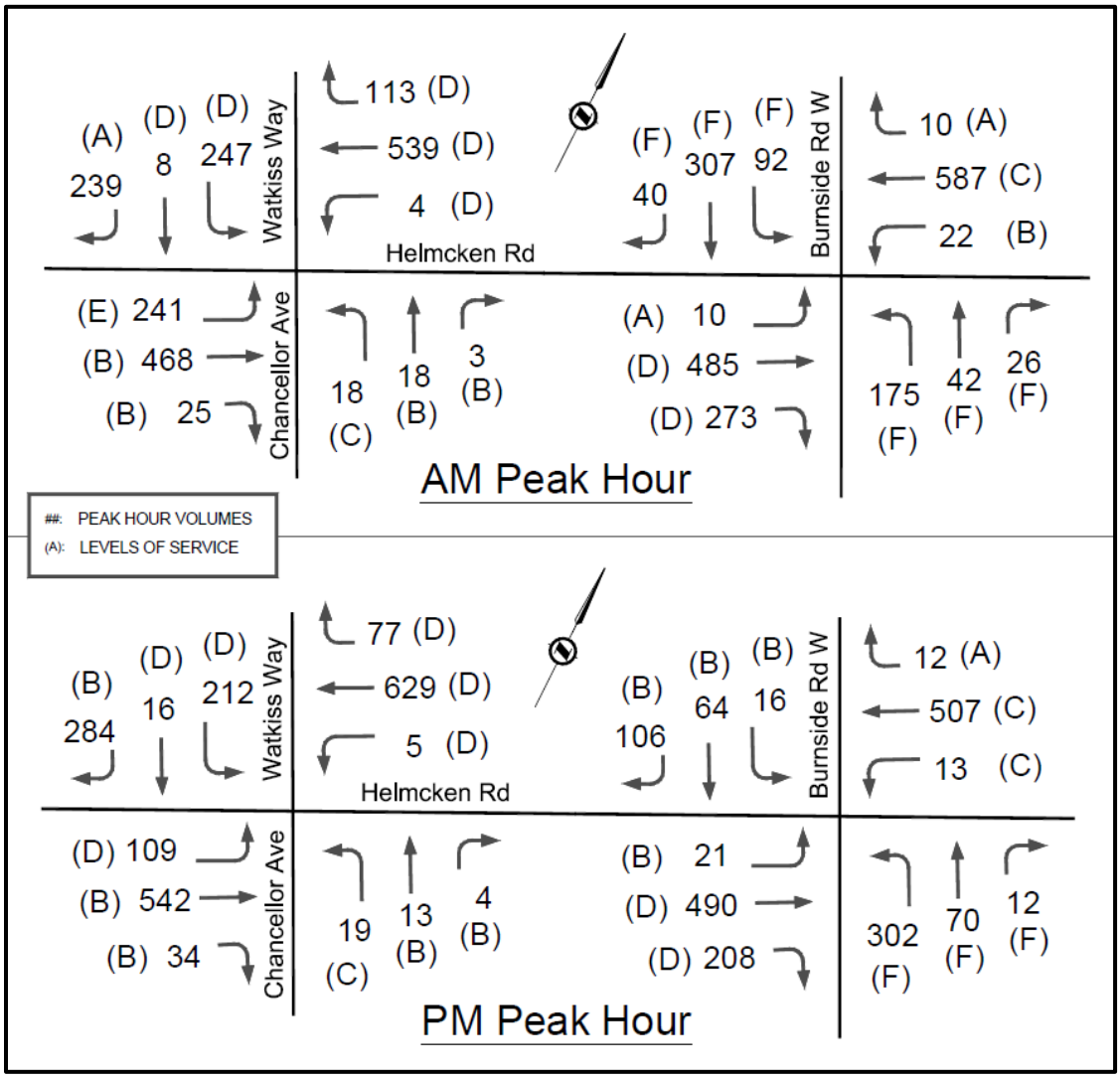

Figure 2: 2018 Existing Volumes and Levels of Service

3.0 BACKGROUND VOLUMES AND CONDITIONS

3.1 BACKGROUND VOLUMES

Background traffic volumes are future traffic volumes that are anticipated as a result of traffic volume increases due to general growth/development in the area over a period of time, exclusive of site development traffic. To estimate study area traffic growth over time at the year of expected

buildout (2023) and 10 years beyond buildout (2033), WATT compared traffic volumes at the intersection taken in March 2018 with the recent traffic counts taken in December 2019. The comparison of total traffic volumes at the intersection indicates there has been a 3% annual growth in total traffic volumes at the study area intersections. However, the McKenzie Interchange's potential impact on traffic volumes in the area suggests that a reduced annual traffic growth rate of 2.0% be applied to all 2019 traffic volumes to estimate 2023 and 2033 background traffic volumes at the study area intersections.

3.2 BACKGROUND CONDITIONS

The 2023 and 2033 background traffic volumes were then analyzed to estimate future operations the study area intersections without site generated traffic. During the 2023 Background AM peak hour, all movements at each study area intersection will continue to operate at the same LOS as the 2019 AM peak hour with the following exceptions:

- Helmcken Rd / Watkiss Way / Chancellor Ave eastbound left turn drops from LOS E to LOS F and the westbound through/right turn movement drops from LOS D to LOS F
- Helmcken Rd / Burnside Rd West eastbound through movement drops from LOS D to LOS E

During the 2023 Background PM peak hour, all movements at each study area intersection will continue to operate at the same LOS as the 2019 AM peak hour with the following exceptions:

- Helmcken Rd / Watkiss Way / Chancellor Ave westbound through/right turn movement drops from LOS D to LOS F
- Helmcken Rd / Burnside Rd West southbound movement drops from LOS B to LOS C.

During the 2033 Background AM peak hour, all movements at each study area intersection will continue to operate at the same LOS as the 2023 Background AM peak hour with the following exceptions:

- Helmcken Rd / Watkiss Way / Chancellor Ave southbound left turn drops from LOS D to LOS E and the southbound right turn movement drops from LOS A to LOS B
- Helmcken Rd / Burnside Rd West eastbound through movement drops from LOS E to LOS F

During the 2033 Background PM peak hour, all movements at each study area intersection will continue to operate at the same LOS as the 2023 Background PM peak hour with the following exceptions:

- Helmcken Rd / Watkiss Way / Chancellor Ave southbound right turn movement drops from LOS C to LOS D
- Helmcken Rd / Burnside Rd West eastbound through movement drops from LOS C to LOS D.

All 2023 and 2033 background conditions are provided in **Table 1** and **Table 2** respectively.

TABLE 1: 2023 BACKGROUND CONDITIONS

Intersection	Movement	2023 AM Backgrond			2023 PM Backgrond		
		LOS	Delay (s)	95% Queue (m)	LOS	Delay (s)	95% Queue (m)
Helmcken / Watkiss / Chancellor	NBL	C	24.7	9.0	C	23.6	15.5
	NBTR	B	18.9	11.1	B	15.3	13.1
	SBTL	D	49.5	64.6	D	41.5	63.7
	SBR	A	9.4	44.1	B	16.4	48.9
	EBL	**F**	**87.9**	**69.0**	D	45.9	31.5
	EBTR	B	14.5	63.6	B	13.9	81.4
	WBL	D	46.0	5.2	D	46.4	3.4
	WBTR	**F**	**82.7**	**381.3**	**F**	**87.7**	**334.4**
Helmcken / Burnside	EBL	A	7.6	38.2	B	11.4	54.2
	EBTR	**E**	**61.3**	**322.8**	D	37.7	414.2
	WBL	B	15.3	68.7	C	25.9	53.3
	WBT	C	22.3	512.6	C	26.9	466.7
	WBR	A	0.8	25.5	A	0.4	27.7
	NBLTR	**F**	**443.6**	**125.9**	**F**	**209.1**	**180.6**
	SBLTR	**F**	**161.7**	**110.7**	C	20.5	48.4

TABLE 2: 2033 BACKGROUND CONDITIONS

Intersection	Movement	2033 AM Background			2033 PM Backgrond		
		LOS	Delay (s)	95% Queue (m)	LOS	Delay (s)	95% Queue (m)
Helmcken / Watkiss / Chancellor	NBL	C	27.9	10.9	C	24.3	16.6
	NBTR	B	18.6	13.5	B	15.0	12.3
	SBTL	**E**	**78.8**	**230.1**	D	48.0	216.9
	SBR	B	16.5	111.0	C	25.0	100.4
	EBL	**F**	**157.8**	**128.6**	D	49.3	140.1
	EBTR	B	15.9	334.8	B	18.1	317.7
	WBL	D	46.6	3.9	D	48.0	3.3
	WBTR	**F**	**184.0**	**330.8**	**F**	**215.8**	**332.1**
Helmcken / Burnside	EBL	A	7.9	46.2	B	12.5	66.7
	EBTR	**F**	**154.1**	**355.7**	**E**	**66.9**	**387.4**
	WBL	B	15.8	61.2	D	41.9	86.8
	WBT	C	34.2	413.5	C	33.3	525.3
	WBR	A	1.5	29.6	A	1.3	22.9
	NBLTR	**F**	**728.1**	**168.8**	**F**	**568.2**	**158.0**
	SBLTR	**F**	**276.9**	**133.5**	C	26.6	124.5

4.0 POST DEVELOPMENT CONDITIONS

4.1 PROPOSED LAND USE

The proposed development is 247 units of multi-family housing within four buildings.

4.2 SITE ACCESS

The proposed access will be on Burnside Road West approximately 100m north of Helmcken Road. It is assumed that all site generated traffic will be going to and coming from the Helmcken Rd / Burnside Rd West intersection. **Figure 3** shows the proposed site plan and site access on Burnside Road West.

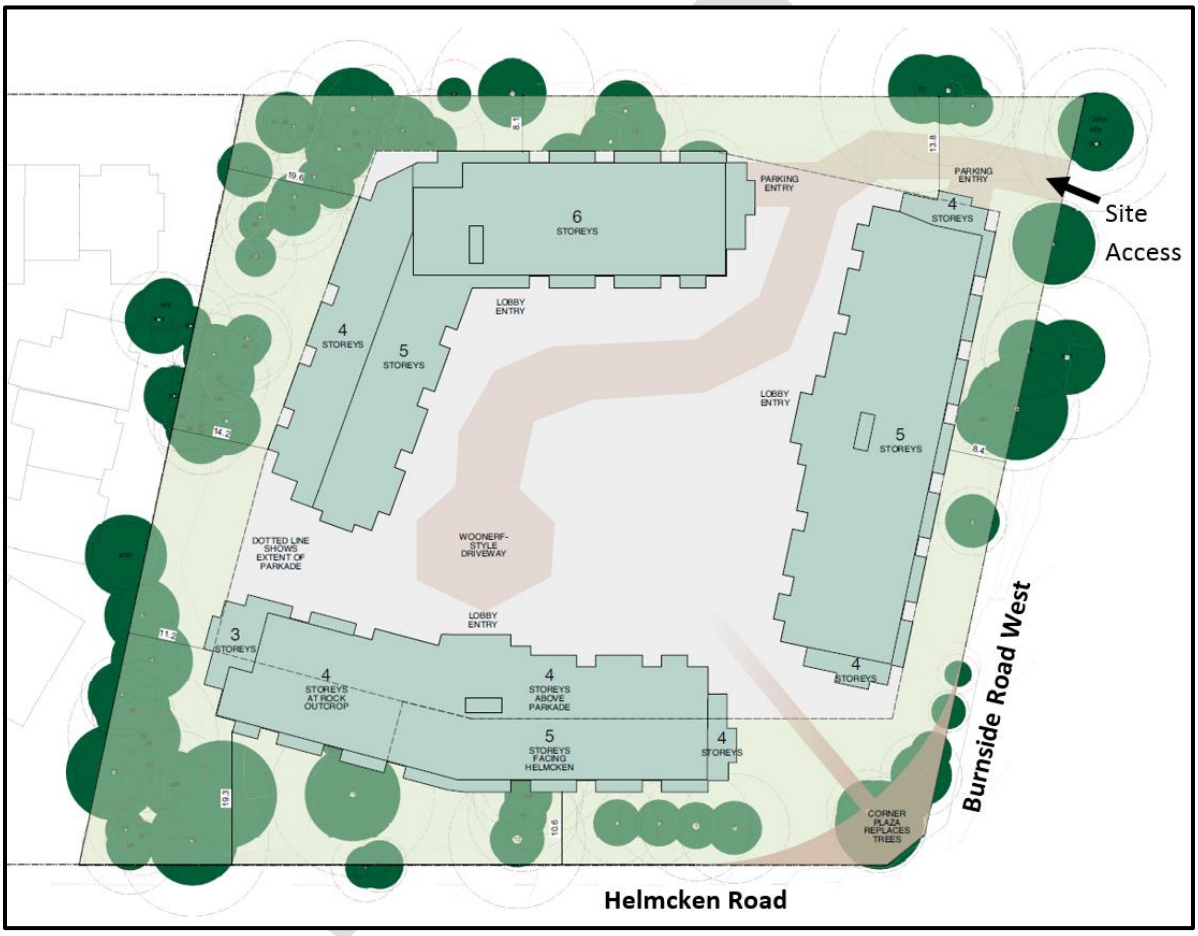

Figure 3: Proposed Site Plan and Access

4.3 TRIP GENERATION

Site trips were estimated using the ITE Trip Generation Manual (10th Edition) for the AM and PM peak hours. The peak hour site trip estimates also account for the existing trips generated by the current land uses at the site. **Table 3** and **Table 4** summarize the net trips for the site.

TABLE 3: AM PEAK HOUR TRIP GENERATION

ITE Code	Land Use	Size	Trip Rate	Total Trips	Trips In	Trips Out
221	Multi-family Housing (Mid-Rise)	247 units	0.36 trips / unit	89	23	66
221	Existing Apartment (Trip Deduction)	15 units	0.36 trips / unit	(-5)	(-1)	(-4)
210	Existing Single-family (Trip Deduction)	2 lots	0.74 trips/ unit	(-1)	(0)	(-1)
			Net Trips	**83**	**22**	**61**

TABLE 4: PM PEAK HOUR TRIP GENERATION

ITE Code	Land Use	Size	Trip Rate	Total Trips	Trips In	Trips Out
221	Multi-family Housing (Mid-Rise)	247 units	0.44 trips / unit	109	66	43
221	Existing Apartment (Trip Deduction)	15 units	0.44 trips / unit	(-7)	(-4)	(-3)
210	Existing Single-family (Trip Deduction)	2 lots	0.99 trips/ unit	(-2)	(-1)	(-1)
			Net Trips	**100**	**61**	**39**

The proposed development will generate 83 new trips in the AM peak hour and 100 new trips in the PM peak hour after the existing site trips are deducted. When distributed evenly over the peak hours, the site will generate one new trip (entering or exiting the site) approximately every 40 seconds during the AM peak hour and every 35 seconds during the PM peak hour. The site generated trip estimates taken from ITE Trip Generation Manual were used directly and without trip modification factors as all site generated trips are considered primary trips and, exclusively residential developments do not generate pass-by trips. Moreover, the amenities that exist at the Eagle Creek Village (grocery store, pharmacy, medical clinic, YMCA gym, cafes and restaurants) which are within a five minute walk from the site may contribute to reducing vehicle trips to/from the site. Accordingly, the trip generation estimates for the site are considered conservative for analysis purposes.

4.4 TRIP ASSIGNMENT

The development trips were assigned to the study intersections and site access based on the distribution of existing trips at the study area intersections. At the Helmcken Rd / Burnside Rd West intersection, a traffic pattern is evident that sees southbound trips on Burnside Road predominantly travel straight through the intersection along Burnside Road in the AM peak hour while in the PM peak hour, northbound trips predominantly turn left onto westbound Helmcken Road. This traffic pattern is representative of the high volume of commuter traffic that travel

through this intersection. Site generated trips have been assigned to the Helmcken Rd / Watkiss Way / Chancellor Ave and Helmcken Rd / Burnside Rd intersections as follows:

Helmcken Rd / Burnside Rd Intersection
AM Peak Hour
Trips In

- 55% of entering trips are from Burnside Road West south of Helmcken Rd
- 30% of entering trips are from Helmcken Road west of Burnside Rd West
- 15% of entering trips are from Helmcken Road east of Burnside Rd West

Trips Out

- 68% of exiting trips are to Burnside Road West south of Helmcken Rd
- 15% of exiting trips are to Helmcken Road west of Burnside Rd West
- 17% of exiting trips are to Helmcken Road east of Burnside Rd West

PM Peak Hour
Trips In

- 52% of entering trips are from Burnside Road West south of Helmcken Rd
- 23% of entering trips are from Helmcken Road west of Burnside Rd West
- 25% of entering trips are from Helmcken Road east of Burnside Rd West

Trips Out

- 20% of exiting trips are to Burnside Road West south of Helmcken Rd
- 74% of exiting trips are to Helmcken Road west of Burnside Rd West
- 6% of exiting trips are to Helmcken Road east of Burnside Rd West

Helmcken Rd / Watkiss Way / Chancellor Ave Intersection
AM Peak Hour
Trips In
35% of entering trips from Helmcken Road west of Burnside Rd West are from Watkiss Way
65% of entering trips from Helmcken Road west of Burnside Rd West are from Helmcken Road west of Watkiss Way / Chancellor Ave

Trips Out
20% of exiting trips to Helmcken Road west of Burnside Rd West are to Watkiss Way
80% of exiting trips to Helmcken Road west of Burnside Rd West are to Helmcken Road west of Watkiss Way / Chancellor Ave

PM Peak Hour
Trips In
30% of entering trips from Helmcken Road west of Burnside Rd West are from Watkiss Way

70% of entering trips from Helmcken Road west of Burnside Rd West are from Helmcken Road west of Watkiss Way / Chancellor Ave

Trips Out
20% of exiting trips to Helmcken Road west of Burnside Rd West are to Watkiss Way
80% of exiting trips to Helmcken Road west of Burnside Rd West are to Helmcken Road west of Watkiss Way / Chancellor Ave

Figure 4 shows site trips assigned to the Helmcken Rd / Watkiss Way / Chancellor Ave and Helmcken Rd / Burnside Rd intersections.

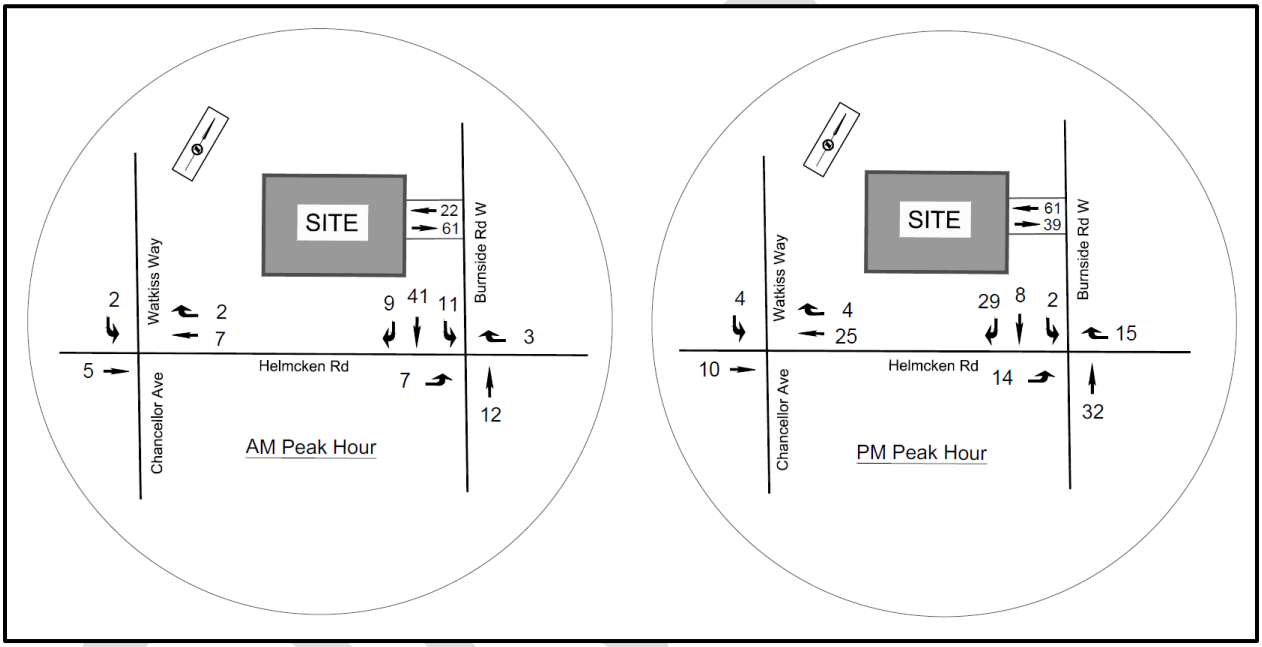

Figure 4: Site Trip Assignment for Peak Hours

4.5 POST DEVELOPMENT CONDITIONS

The AM and PM site generated trips were added to the 2023 and 2033 AM and PM background traffic volumes to determine the AM and PM peak hour post development traffic volumes. The post development traffic volumes were then entered into Synchro to determine the post development traffic conditions at the study area intersections.

4.6 2023 CONDITIONS – OPENING DAY

During the 2023 post development AM and PM peak hours, all movements at each intersection will continue to operate the same levels of service as 2023 background conditions. All movements at each intersection will experience five seconds or less of additional delay during the AM and PM peak hours except for those movements that operate at LOS F under background conditions. Movements with LOS F can experience up to 80 seconds of additional delay under AM post development conditions and up to 100 seconds of additional delay under PM post development

conditions. However, even a small increase in volume to an already failing movement can increase delay and/or queuing exponentially.

4.7 2033 CONDITIONS- 10 YEARS POST BUILDOUT

During the 2023 post development AM and PM peak hours, all movements at each intersection will continue to operate the same levels of service as 2033 background conditions with one exception; the westbound through movement at the Helmcken Rd / Burnside Rd intersection will drop from LOS C to LOS D during the AM peak period. All movements at each intersection will experience 10 seconds or less of additional delay during the AM and PM peak hours except for those movements that operate at LOS F under background conditions. Movements with LOS F can experience up to 80 seconds of additional delay under AM post development conditions and up to 147 seconds of additional delay under PM post development conditions. As noted, small volume increases to an already failing movement can exponentially increase delay and/or queuing.

All 2023 and 2033 post development conditions are provided in **Table 5** and **Table 6** respectively.

TABLE 5: 2023 POST DEVELOPMENT CONDITIONS

Intersection	Movement	2023 AM Post Development			2023 PM Post Development		
		LOS	Delay (s)	95% Queue (m)	LOS	Delay (s)	95% Queue (m)
Helmcken / Watkiss / Chancellor	NBL	C	25.4	10.2	C	23.6	13.0
	NBTR	B	19.3	11.8	B	15.3	12.5
	SBTL	D	52.2	65.5	D	41.7	90.9
	SBR	A	9.6	41.0	B	17.0	77.0
	EBL	**F**	**89.4**	**51.6**	D	46.0	37.5
	EBTR	B	14.2	66.3	B	14.1	67.5
	WBL	D	46.0	15.5	D	46.4	15.0
	WBTR	**F**	**81.5**	**369.0**	**F**	**104.6**	**378.8**
Helmcken / Burnside	EBL	A	8.1	66.6	B	12.9	54.8
	EBTR	**E**	**61.3**	**322.2**	D	37.7	147.6
	WBL	B	17.4	29.7	C	27.6	68.8
	WBT	C	28.0	528.3	C	30.4	524.3
	WBR	A	1.3	17.9	A	4.5	32.5
	NBLTR	**F**	**529.3**	**203.4**	**F**	**292.7**	**188.1**
	SBLTR	**F**	**235.4**	**101.8**	C	22.4	51.9

TABLE 6: 2033 POST DEVELOPMENT CONDITIONS

Intersection	Movement	2033 AM Post Development			2033 PM Post Development		
		LOS	Delay (s)	95% Queue (m)	LOS	Delay (s)	95% Queue (m)
Helmcken / Watkiss / Chancellor	NBL	C	28.0	12.6	C	24.3	11.8
	NBTR	B	18.6	13.7	B	15.0	13.3
	SBTL	**E**	**79.8**	**231.8**	D	49.0	140.3
	SBR	B	16.7	111.3	C	25.2	90.5
	EBL	**F**	**157.8**	**122.7**	D	49.3	130.9
	EBTR	B	15.9	299.3	B	18.2	317.1
	WBL	D	47.4	3.1	D	48.0	23.3
	WBTR	**F**	**188.2**	**331.4**	**F**	**236.1**	**330.8**
Helmcken / Burnside	EBL	A	8.3	54.3	B	14.5	71.7
	EBTR	**F**	**154.1**	**353.1**	**E**	**66.9**	**400.9**
	WBL	B	17.9	42.7	D	41.8	68.5
	WBT	D	49.9	450.2	C	33.9	443.7
	WBR	A	1.9	20.1	A	5.1	23.5
	NBLTR	**F**	**757.4**	**158.6**	**F**	**715.2**	**156.7**
	SBLTR	**F**	**356.2**	**89.9**	C	29.9	91.1

4.8 MITIGATION MEASURES

The analysis indicates that the unstable/ failing movements under existing conditions will worsen under 2023 and 2033 background conditions without site generated traffic. Signal timing changes including signal coordination between the two intersections will not improve the current and future congestion on Helmcken Road and Burnside Road West during the background and post development AM and PM peak hours. Widening of the westbound lanes on Helmcken Road at the Helmcken Rd / Watkiss Way / Chancellor Ave intersection can improve operations on Helmcken Road that can in turn improve operations at the Helmcken Rd / Burnside Rd intersection. However, until the McKenzie Interchange is completed and its impact on traffic operations in the area can be fully assessed, no mitigation measures are recommended at this time.

It is important to highlight that future failing conditions are due to background traffic, not site generated traffic. When site traffic is added to the study area intersections at buildout and 10 years beyond buildout, site traffic has minimal impact on level of service, delay and queuing at both intersections.

4.9 SITE ACCESS

The proposed site access will provide full movement access with stop control on the approach to Burnside Road West. All movements will operate at LOS A/B during the AM and PM peak hours

under 2033 post development conditions. A northbound left turn lane is not warranted on Burnside Road West at the site access with 2033 post development peak hour volumes.

The proposed access location meets TAC's recommended minimum corner clearance requirements of 55m between an access and a signalized intersection for collector roads. There is also sufficient sight distance at the proposed site access for drivers turning left (105m) and right (95m) at the access onto a 50 km/h road.

5.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management (TDM) refers to policies, programs and services that influence whether, why, when, where and how people travel.[1] TDM initiatives typically aim to reduce vehicle trips and parking demand while encouraging alternative travel options such as walking, cycling, public transit and shared rides. The developer may want to consider the following TDM programs to help support a reduction of single-occupant vehicle trips to and from the site.

5.1 BICYCLES AND ELECTRIC BICYCLES

The site is favourably located on the Helmcken Road bike route that provides dedicated bike lanes on both sides of Helmcken Road. In addition, the Galloping Goose Trail is approximately 300m south of the site providing a dedicated and separated multiuse trail connection between View Royal, downtown Victoria and several other Greater Victoria municipalities to the east and west. Burnside Road West is not a bicycle route and there are no bicycle facilities located on Burnside Road West. Bicycle facilities are not required on Burnside Road West as part of the site's development.

As per Town of View Royal Zoning bylaw, the developer will commit to providing on-site bicycle parking to help promote the use of cycling for commuter and shopping trips. As part of a broader strategy to reduce vehicle ownership, the developer should also consider secure bicycle parking spaces to accommodate 50 electric bikes (E-Bike) with an 110V wall outlet for each stall to allow E-Bike users to park and charge their E-Bikes. To further promote cycling use, the developer could provide 10 shared E-Bikes for commuting or recreational use by residents. Shared E-Bikes should be stored in a secure area accessible to residents with a key.

5.1.1 E-BIKE REBATES

According to research completed in Greater Victoria, the cost of an electric bike is the largest barrier preventing residents of the region from purchasing an E-Bike. Other research has confirmed the high purchase price as a barrier, however, one study found that those who were given access to an E-Bike had much higher willingness to pay for one. As part of an overall strategy to encourage more cycling, reduce vehicle use and make E-Bike ownership more attainable for residents, the applicant should consider providing a $500 rebate toward residents' purchase of an E-Bike.

[1] Definition based on Transport Canada, TDM for Canadian Communities, March 2011

5.2 PEDESTRIAN FACILITIES

Currently there is an asphalt walkway with an extruded asphalt curb separating pedestrians from vehicle traffic along the site's Helmcken Road frontage and no sidewalk is provided along the Burnside Road West frontage. The site will provide new sidewalks on both the Helmcken Road and Burnside Road West frontages in accordance with the Town of View Royal's design standards.

5.3 TRANSIT SERVICES

The site is also favourably located to take advantage of public transit. Victoria Transit routes #22 Hillside Mall / Victoria General and # 39 Westhills / Uvic Exchange currently service the bus stop on the Helmcken Road fronting of the site. The developer has confirmed with BC Transit that improvements to the existing transit stop facility fronting of the site will include a new bus bay when the sidewalk on the Helmcken Road frontage is constructed as part of this development. In addition to this transit improvement, the developer could consider providing one monthly bus pass per unit twice annually to promote transit use by future residents. The provision of bus passes will allow residents to experience transit at no cost and may encourage them to use transit in the future.

BC Transit also currently offers the EcoPASS Program for New Developments, a program that provides Capital Regional District developers with a potential transit-oriented approach to reducing traffic congestion and carbon footprint. Under the EcoPASS Program, the occupants of a new residential, commercial or mixed-use development receive annual bus passes for a pre-determined number of years that are valid for use throughout the Victoria Regional Transit System. Each annual pass has a cost to the developer of $1,000. The size and value of the TDM program is established by the municipal government, with a minimum required program value of $5,000. The applicant could consider approaching the District of Saanich and BC Transit to learn more about this program and whether it may be feasible for long-term operations of the site.

In addition to transit passes, all new residents should be provided with a transit information package including information on how to obtain a transit pass, as well as a rider's guide which details scheduling and mapping information.

5.4 CARSHARING

Carsharing and ridesharing services including Modo and Rideshare Victoria (www.poparide.com) currently exist in the Greater Victoria area. Each model offers a potential reduction of on-site parking demand and development related traffic impacts.

Modo is a paid membership carsharing service where members share Modo vehicles. Modo requires a one-time membership purchase with pay-by-use fees for each ride thereafter. Pay-by-use fees vary depending on usage. There are currently no Modo vehicles close to the facility, however the developer has discussed with Modo the potential to provide a Modo vehicle stored

on site or nearby. Should Modo carsharing services be provided at or within close proximity to the site, Modo memberships could be included with the purchase of all units. Promotional material on carsharing and ridesharing programs should also be part of a TDM welcome package.

5.5 TDM INCENTIVES

Incentives and promotions have been valuable in encouraging use of alternative modes of transportation. However, if residents are not aware of the available TDM options, they will likely not consider using them. Information about available TDM programs for the site should be included in the show suite(s) and as part of a welcome package with the sale of all units. Once residents move into the site, on-going contests, promotions and incentives should be used to maintain awareness of the available TDM programs. The use of an annual week long contest similar to a commuter challenge or bike to work week for residents would encourage use of alternative transportation modes that residents may not normally consider or try. Prizes for participation and high use could include gift certificates for local grocery stores and restaurants, YMCA gym passes, BC Transit vouchers or bicycle equipment such as helmets and bike lights.

6.0 CONCLUSIONS

Synchro analysis of existing conditions at the Helmcken Rd / Burnside Rd West signalized intersection indicates northbound and southbound movements on Burnside Road West currently operate at LOS F during the AM peak hour. During the PM peak hour, northbound movements also operate at LOS F.

Existing conditions at the Helmcken Rd / Watkiss Way / Chancellor Ave signalized intersection indicate the eastbound left turn movement (Helmcken to Watkiss) operates at LOS E during the AM peak. During the PM peak hour all movements operate at LOS D of better. However, SimTraffic analysis confirms field observations that during the PM peak hour, the westbound movement on Helmcken Road experiences long queues that extend from Watkiss Way / Chancellor Avenue beyond Burnside Road West (approximately one kilometer). In turn, the northbound movement on Burnside Road West experiences failing conditions and long queues due to the westbound queues on Helmcken Road that provide limited storage for northbound left turning traffic on Burnside Road West.

The proposed development will generate 83 new trips in the AM peak hour and 100 new trips in the PM peak hour. When distributed evenly over the peak hours, the site will generate one new trip (entering or exiting the site) approximately every 40 seconds during the AM peak hour and every 35 seconds during the PM peak hour. Based on the site's proximity to Eagle Creek amenities as well as proximity to alternative modes for commuting, the trip generation estimates for the site are considered conservative.

Future failing conditions are due to background traffic, not site generated traffic. When site traffic is added to the study area intersections at buildout and 10 years beyond buildout, site traffic has a minimal impact on level of service, delay and queuing at both intersections.

Signal timing changes including signal coordination will not improve the current and future congestion on Helmcken Road and Burnside Road West during the AM and PM peak hours. Until the McKenzie Interchange is completed and its impact on traffic operations in the area can be fully assessed, no mitigation measures are recommended.

The proposed site access meets the recommended access spacing from a signalized intersection as well as driver sight distance requirements. A northbound left turn lane is not required on Burnside Road West at the access based on the 2033 post development peak hour volumes.

Sidewalk will be provided on the site's Helmcken Road and Burnside Road West frontages along with improvement to the Helmcken bus stop.

TDM programs and incentives can further help support a reduction of single-occupant vehicle trips to and from the site.

7.0 RECOMMENDATIONS

- Install concrete sidewalks along the development frontages on Helmcken Road and Burnside Road West.
- Install bus bay on the Helmcken Road frontage.
- Consider TDM programs and incentives to help support a reduction of single-occupant vehicle trips to and from the site.

APPENDIX A: SYNCHRO BACKGROUND

SYNCHRO MODELLING SOFTWARE DESCRIPTION

The traffic analysis was completed using Synchro and SimTraffic traffic modelling software. Results were measured in delay, level of service (LOS), 95th percentile queue length and volume to capacity ratio. Synchro is based on the Highway Capacity Manual (HCM) methodology. SimTraffic integrates established driver behaviours and characteristics to simulate actual conditions by randomly "seeding" or positioning vehicles travelling throughout the network. The simulation is run ten times (ten different random seedings of vehicle types, behaviours and arrivals) to obtain statistical significance of the results.

Levels of Service

Traffic operations are typically described in terms of levels of service, which rates the amount of delay per vehicle for each movement and the entire intersection. Levels of service range from LOS A (representing best operations) to LOS E/F (LOS E being poor operations and LOS F being unpredictable/disruptive operations). LOS E/F are generally unacceptable levels of service under normal everyday conditions. A LOS C or better is considered acceptable operations, while D is considered to be on the threshold between acceptable and unacceptable operations. Highway operations will typically need to operate at LOS C or better for through movements and LOS E or better for other traffic movements with lower order roads.

The hierarchy of criteria for grading an intersection or movement not only includes delay times, but also takes into account traffic control type (stop signs or traffic signal). For example, if a vehicle is delayed for 19 seconds at an unsignalized intersection, it is considered to have an average operation, and would therefore be graded as an LOS C. However, at a signalized intersection, a 19 second delay would be considered a good operation and therefore it would be given an LOS B. The table below indicates the range of delay for LOS for signalized and unsignalized intersections.

Table A1: LOS Criteria, by Intersection Traffic Control

Level of Service (LOS)	Unsignalized Intersection Average Vehicle Delay (sec/veh)	Signalized Intersection Average Vehicle Delay (sec/veh)
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

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MEMORANDUM

To: Doug Foord – Invictus Commercial Investment

From: Nadine King, P.Eng., PTOE

Our File #: 2497.B01

Project: Eagle Nest - TIA

Date: November 9, 2018

RE: Review of Options to Add Additional Capacity on Helmcken Road

---

1.0 INTRODUCTION

Watt has been retained by Invictus Commercial Investment to conduct a review of options for adding additional capacity to Helmcken Road to address queueing issues observed during the Traffic Impact Assessment conducted by Watt for the proposed Eagle Nest development on the northwest corner of Burnside Road and Helmcken Road. The analysis of the existing traffic conditions identified that westbound traffic queues from the Helmcken Road / Watkiss Way back through the Helmcken Road / Burnside Road intersection during the PM peak hour. This queueing also creates queueing on Burnside Road as northbound left turners cannot easily turn onto Helmcken due to the extended queuing. This review will examine options to improve the operations along Helmcken Road.

The high volume of northbound Burnside Road traffic turning left onto Helmcken Road may be due to vehicles avoiding the construction at the Highway 1 / McKenzie Avenue / Admirals Road intersection. The intersection is currently partially through a 4-year construction project to install an interchange which will include a dual left right turn on-ramp from McKenzie Avenue onto Highway 1. The completion of the McKenzie interchange may divert traffic from Helmcken Road / Burnside Road to McKenzie Avenue / Highway 1 and therefore improve operations along Helmcken Road.

2.0 EXISTING CONDITIONS

During the PM peak hour, the westbound movement on Helmcken Road experiences long queues and spillbacks past the Burnside Road W intersection from the Watkiss Way signal. The northbound movement on Burnside Road W is also poor due to the limited ability to make a left turn onto Helmcken Road due to the queues on Helmcken Road. The northbound left movement is further impacted by right turn traffic from the southbound movement on Burnside Road. The

northbound left turn queue impacts the ability of northbound through and right turn vehicles to access Helmcken Road since the northbound direction is a single lane.

3.0 ADDITIONAL LANING

One option is to add a second through lane westbound east of Watkiss Way for approximately 100m. The addition of the second westbound lane through the Watkiss intersection is an improvement in the left turn, north-south, and westbound delays. The westbound 95th percentile queue length drops by 330m to less than 100m and eliminates the spillback of westbound traffic through the Burnside Road intersection.

The northbound movement on Burnside Road at Helmcken Road remains poor due to the high percentage (70%) of northbound left turning vehicles. The addition of a northbound left turn lane would provide for separation of left turning vehicles and allow northbound through and right turning vehicles to access Helmcken. Sufficient right-of-way exists on Burnside Road to accommodate the road widening required for a northbound left turn lane. The addition of a northbound left turn lane results improves the LOS for the northbound left turn movement from LOS F to LOS E in the new left turn lane and LOS B for the combined through / right turn lane.

Although transit buses servicing at the westbound transit stop west of Burnside Road pull into the bike lane as they stop, they remain partially in the westbound lane of Helmcken Road and may impede traffic for up to 30 seconds. The developer is working with BC Transit to determine if a bus bay is desired. Installation of a bus bay at the existing transit stop location will allow buses to pull fully out of the westbound lane at the stop.

4.0 CONCLUSIONS

At the Helmcken Road / Watkiss Way intersection, the existing laning results in significant peak hour queueing, causing traffic to back up into and through the Burnside Road intersection. The installation of a second westbound through lane at the Helmcken Road / Watkiss Way intersection reduces the 95th percentile queue length of westbound vehicles to less than 100m, eliminating spillback of westbound traffic into the Burnside Road intersection. The additional lane improves the overall operation of the intersection.

The addition of a 40m northbound left turn lane improves the northbound left turn movement to LOS E and LOS B for the northbound through / right turn movement as well as reduces northbound queues.

Sincerely,
Watt Consulting Group

Tanner Vollema, EIT
Transportation Engineer

Nadine King, P.Eng., PTOE
Senior Transportation Engineer

Talbot Mackenzie & Associates

Consulting Arborists

Eagles Nest Residences, View Royal

Helmcken Road & Burnside Road West

Arborist Report:

Demolition Impact Assessment &

Tree Preservation Plan

PREPARED FOR:	Invictus Commercial Investments Corp. 605 Douglas Street, Suite 204 Victoria, BC, Canada V8V 2P9
PREPARED BY:	Talbot, Mackenzie & Associates
	Graham Mackenzie – Consulting Arborist ISA Certified # PN-0428A TRAQ - Qualified
DATE OF ISSUANCE:	September 14, 2018

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Talbot Mackenzie & Associates

Consulting Arborists

Attention:	Doug Foord
Jobsite Property:	Northwest corner of Helmcken Road and Burnside Road West, View Royal, BC
Date of Site Visit:	August 30&31, 2018
Site Conditions:	3 lots with existing single residences and one lot with a multi unit building. Existing buildings and landscapes still on property, no construction activity present at the time of our site visit.

Summary: We anticipate that the proposed new development of the property will require the removal of the majority of the trees located on the subject properties. We believe there will be a good opportunity for retaining trees on the municipal frontages and on neighboring properties providing their critical root zones can be protected during the development and construction process. Depending on the amount of necessary rock blasting, required cut slopes and existing soil conditions, there may be an opportunity for retaining some of the trees around the perimeter of the subject property. The proposed building scheme offers an opportunity for replanting with healthy young trees that can adapt to the new growing conditions being introduced.

Scope of Assignment:

- To inventory the existing bylaw protected trees and any trees on neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line
- Review the proposal to demolish the existing buildings and construct a new multi unit, multi building proposal with underground parking.
- Comment on how construction activity may impact existing trees
- Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts

Methodology: We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet. Each by-law protected tree was identified using a numeric metal tag attached to its lower trunk. Municipal trees and neighbours' trees were not tagged. Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory. The by-law protected trees with their identification numbers were labelled on the attached Site Plan. The conclusions reached were based on the information provided within the attached survey plans (dated February 13, 2018) and site plans and underground parkade plans from De Hoog & Kierulf Architects.

Limitations:
No exploratory excavations have been requested and thus the conclusions reached are based solely on critical root zone calculations and our best judgement using our experience and expertise. The location, size and density of roots are often difficult to predict without exploratory excavations and therefore the impacts to the trees may be more or less severe than we anticipate.

Summary of Tree Resource: 105 trees were inventoried on the subject properties, municipal frontages and neighbours' properties that have the potential to be impacted by the proposed development. The trees inventoried are comprised of mixture of native and ornamental species and vary in health from Poor to Good (see attached Tree resource spreadsheet). The best opportunity for tree retention given the proposed building scheme will be around the perimeter of the subject property along with trees on neighbouring properties and trees on municipal frontages.

Potential Impacts on Trees to be Retained and Mitigation Measures

- **Barrier fencing:** The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones. The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

- **Demolition of the Existing Houses:** We anticipate that the demolition of the existing buildings on the properties will using the existing driveway as access. Trees to be retained near the existing driveways on the municipal frontages will have to be protected during the demolition process to mitigate any potential impacts.

- **Underground Parking excavation:** The excavation for the portions of the underground parking that encroach into the critical root zones of trees to be retained must be supervised by the project arborist. To minimize the extent of the excavation, it will likely be necessary to use shoring techniques or similar methods to reduce the requirements for cut slope. Any roots critical to the trees survival must be retained and any non-critical roots in direct conflict with the excavation must be pruned to sound tissue to encourage new root growth. It may be necessary to excavate using a combination of hand digging, small machine excavation and hydro excavation to expose roots in conflict with the proposed excavation and determine whether they can be pruned without having a significant impact on the trees. If it is found that large structural roots must be pruned to accommodate the proposed construction, it may be necessary to remove additional trees to eliminate any risk associated with them.

- **Blasting:** We anticipate that there will be significant blasting required to excavate for the proposed underground parking area. Care must be taken to ensure that the area of blasting does

not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibration, and overall impact on the surrounding environment. Only explosives of low phytotoxicity and techniques that minimize tree damage should be used. Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.

- **Arborist Supervision**: All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any roots that are in direct conflict with proposed services must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. Where roots can be retained the excavation may consist of a combination of hydro excavation, small excavation equipment and hand digging.

- **Minimizing Soil Compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

    - Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
    - Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
    - Placing two layers of 19mm plywood.
    - Placing steel plates.

- **Mulching**: Mulching is an important proactive step to maintaining the health of the trees to be retained and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. As much of the area within two times the dripline of the tree should be mulched, both inside and outside of the critical root zone. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.

- **Servicing:** There are no servicing details shown on the plans provided, but it is our understanding that they are to be located outside of the critical root zone of trees to be retained. If services must be located within the critical root zones of trees to be retained it must be reviewed with the project arborist. Installing services within critical root zones will likely require a combination of hand digging, small machine or hydro excavation. If significant roots are encountered that are critical to the health and stability of the trees and they cannot be retained, it may be necessary to remove additional trees.

- **Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable

locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.

- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
  - Locating the barrier fencing
  - Reviewing the report with the project foreman or site supervisor
  - Locating work zones, where required
  - Supervising any excavation within the critical root zones of trees to be retained
  - Reviewing and advising of any pruning requirements for machine clearances

- **Review and site meeting**: Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

Please do not hesitate to call us at (250) 479-8733 should you have any further questions. Thank you.

Yours truly,

Talbot Mackenzie & Associates
ISA Certified Consulting Arborists

Encl. 10-pages tree resource spreadsheet, 2-page tree resource spreadsheet methodology and definitions, 1-page site plan with tree locations, 3-pages design concept and underground parking, 1-page barrier fencing specifications.

Disclosure Statement

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

Tree ID	Common Name	*Latin Name*	DBH (cm) ~ approximate	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations
NT 01	Cherry	*Prunus species*	29 bu	4	3	Moderate	Fair/poor	Fair	Some canker, tortrix, insect damage
2	Cherry	*Prunus species*	32 bu	5	3	Moderate	Fair	Fair	Some canker, tortrix, insect damage
3	Cherry	*Prunus species*	29 bu	6	3	Moderate	Fair/poor	Fair/poor	Canker, tortrix, suppressed by adjacent tree.
4	Norway spruce	*Picea abides*	51	9	6	Moderate	Good	Good	Surface rooted, some minor root damage
5	Cherry	*prunus species*	33 bu	6	3	Moderate	Fair	Fair	Included bark, insect damage.
6	Shore pine	*Pinus contorta*	62	13	7	Moderate	Good	Fair	Some sequoia pitch moth, possible girdling root.
7	Shore pine	*Pinus contorta*	38, 27, 29	9	6	Moderate	Fair	Fair	Sequoia pitch moth, poor stem attachment at base
8	Norway spruce	*Picea abies*	65	8	8	Moderate	Good	Good	Interior deadwood
9	Norway spruce	*Picea abies*	48, 48	7	8	Moderate	Good	Fair	Co-dominant at dbh , deadwood
10	Norway spruce	*Picea abies*	50	7	6	Moderate	Good	Good	Deadwood,

11	Norway spruce	*Picea abies*	48	7	6	Moderate	Good	Good	Deadwood, sapsucker damage
12	Lombardy poplar	*Populus nigra*	100, 40	8	10	Good	Good	Fair	Deadwood, Previously topped, leaf gall
13	Lombardy poplar	*Populus nigra*	80	7	8	Good	Good	Fair	Deadwood, preciously topped, leaf gall
14	Lombardy poplar	*Populus nigra*	80	7	8	Good	Good	Fair	Deadwood, previously topped, leaf gall
15	Lombardy poplar	*Populus nigra*	80	7	8	Good	Good	Fair	Deadwood, previously topped, leaf gall
16	Lombardy poplar	*Populus nigra*	120	8	12	Good	Good	Fair	Deadwood, previously topped, leaf gall
17	Big leaf maple	*Acer macrophyllum*	30	7	4	Moderate	Fair	Fair	Some dieback, possibly growth from old stump
18	Douglas fir	*pseudotsuga menziesii*	34	6	5	Poor	Good	Fair	Assymetric growth due to blm
19	Douglas fir	*pseudotsuga menziesii*	85	14	12	Poor	Fair	Fair	Large deadwood, hangers in crown, rooted against rock on southwest side
176	Garry oak	*Quercus garryana*	64	15	6.5	Good	Good	Fair	Rooted in rock, some endweighted limbs
20	Western red cedar	*Thuja plicata*	45,55	10	9	Moderate	Fair	Fair/poor	Thinning foliage, multiple tops, co-don at doh

21	Garry oak	*Quercus garryana*	68	16	7	Good	Fair	Fair	Sparse foliage,large deadwood, rooted against rock east side
22	Douglas fir	*pseudotsuga menziesii*	76	13	11	Poor	Fair	Fair	Large deadwood, rooted against rock
23	Douglas fir	*pseudotsuga menziesii*	37	5	5.5	Poor	Poor	Fair	Epicormic growth
24	Douglas fir	*pseudotsuga menziesii*	37,28	7	7	Poor	Fair	Fair/poor	Co-dominant at dbh , deflected top
25	Douglas fir	*pseudotsuga menziesii*	35	6	5.5	Poor	Fair/poor	Fair	Stunted growth, deflected top
26	Douglas fir	*pseudotsuga menziesii*	56	10	8	Poor	Fair	Fair	Some deadwood, surface rooted
27	Douglas fir	*pseudotsuga menziesii*	53	9	8	Poor	Fair/poor	Fair	Running foliage, large deadwood
28	Garry oak	*Quercus garryana*	54	14	5.5	Good	Good	Fair	Assymetric crown
29	Douglas fir	*pseudotsuga menziesii*	34	6	5	Poor	Poor	Fair	Sparse pale foliage
30	Douglas fir	*pseudotsuga menziesii*	76	11	11	Poor	Fair	Fair	Some deadwood
31	Garry oak	*Quercus garryana*	64	11	6	Good	Fair	Fair	Deflected top

32	Big leaf maple	*Acer macrophyllum*	23,9,12	10	6	Moderate	Good	Fair	Multi stem, near property line
33	Garry oak	*Quercus garryana*	39	12	4	Good	Fair	Fair	Some epicormic growth, deadwood, assymetric crown
34	Garry oak	*Quercus garryana*	45	11	4.5	Good	Fair	Fair	Ivy on trunk, near property line
NT 01	Western red cedar	*Thuja plicata*	30-40	12	5	Moderate	Fair	Fair	Cedar hedgerow on neighbours property, not recently maintained as a hedge
35	Garry oak	*Quercus garryana*	32,22	10	4	Good	Good	Fair	May have partially uprooted in the past. Assymetric crown leans into subject property
36	Douglas fir	*pseudotsuga menziesii*	42	9	6	Poor	Fair/poor	Fair	Thinning foliage, deadwood, epicormic growth
37	Douglas fir	*pseudotsuga menziesii*	48	9	7	Poor	Fair	Fair	Thinning foliage, deadwood, epicormic growth
38	Big leaf maple	*Acer macrophyllum*	22	7	3	Moderate	Good	Fair	Young tree, may have been topped historically
39	Douglas fir	*pseudotsuga menziesii*	35	6	5	Poor	Fair	Fair	Epicormic growth, deadwood
Nt2	Big leaf maple	*Acer macrophyllum*	35	9	4	Moderate	Good	Good	Located on neighbours property
40	Garry oak	*Quercus garryana*	12	5	2	Good	Good	Fair	Deflected trunk, young tree.

41	Douglas fir	*pseudotsuga menziesii*	47	10	7	Poor	Fair	Fair	Large deadwood, deflected trunk
42	Douglas fir	*pseudotsuga menziesii*	39	9	6	Poor	Fair	Fair	Large deadwood, some epicormic growth
N3	Douglas fir	*pseudotsuga menziesii*	40	6		Poor	Fair	Fair	Located on neighbours property
Nt4	Douglas fir	*pseudotsuga menziesii*	45	10		Poor	Fair	Fair	Located on neighbours property
Nt5	Big leaf maple	*Acer macrophyllum*	30	8	3.5	Moderate	Good	Good	Located on neighbours property
43	Douglas fir	*pseudotsuga menziesii*	43	6	6.5	Poor	Fair	Fair	Deflected trunk, assymetric crown
44	Douglas fir	*pseudotsuga menziesii*	46	7	6.5	Poor	Fair/good	Fair	Slight deflection in top
45	Douglas fir	*pseudotsuga menziesii*	41	6	6	Poor	Fair	Fair	Epicormic growth,assymetric crown
46	Douglas fir	*pseudotsuga menziesii*	34	5	5	Poor	Fair	Fair	Epicormic growth
47	Douglas fir	*pseudotsuga menziesii*	36	5	5	Poor	Fair	Fair	Epicormic growth, ivy on trunk
48	Big leaf maple	*Acer macrophyllum*	32	8	4	Moderate	Good	Good	Hanger from d fir in crown

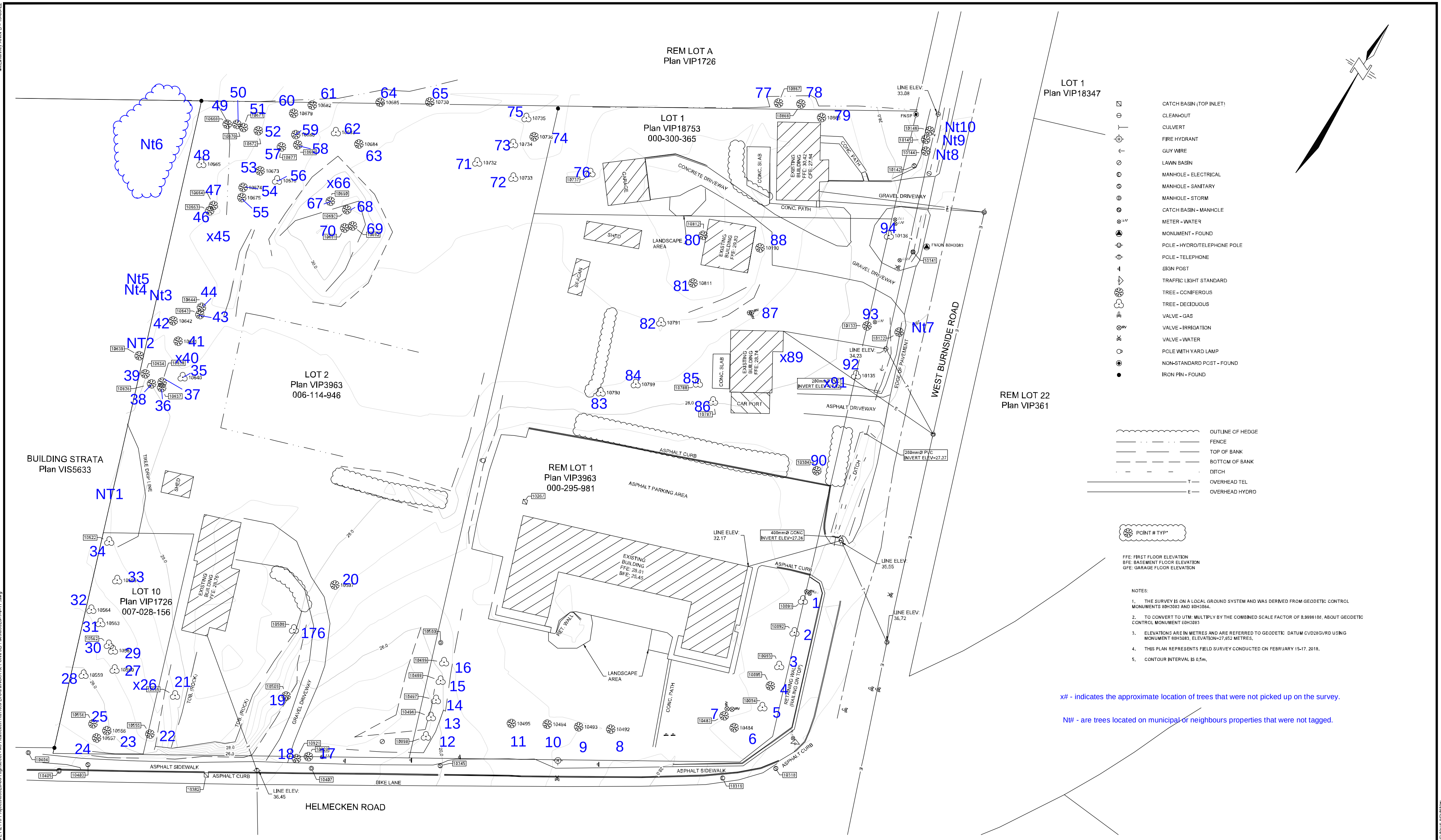
Nt6	Neighbours trees	*Various species*	25-100	25	15	Various	Fair	Fair	G. Oak, D. fir, BLM, Arb- approx 12 trees
30	Grand fir	*Abies grandis*	30	4	4.5	Poor	Fair/poor	Fair	Ivy on trunk, suppressed
50	Douglas fir	*pseudotsuga menziesii*	50	9	7.5	Poor	Fair	Fair	Ivy on trunk
51	Douglas fir	*pseudotsuga menziesii*	27	4	4	Poor	Fair	Fair	Epicormic growth
52	Douglas fir	*pseudotsuga menziesii*	31	4	4.5	Poor	Fair	Fair	Epicormic growth
53	Douglas fir	*pseudotsuga menziesii*	40	5	6	Poor	Fair	Fair	Some epicormic growth
54	Douglas fir	*pseudotsuga menziesii*	48	7	7	Poor	Fair	Fair	Deflected top
55	Douglas fir	*pseudotsuga menziesii*	52	8	7.5	Poor	Fair	Fair	Some epicormic growth
56	Pacific willow	*Salix species*	30	6	3.5	Moderate	Fair	Fair	Broken limbs, old tear out injury in trunk
57	Douglas fir	*pseudotsuga menziesii*	61	10	9	Poor	Fair	Fair	Large deadwood, ivy on trunk
58	Grand fir	*Abies grandis*	30	5	4.5	Poor	Fair	Fair	Suppressed, ivy on trunk

59	Grand fir	*Abies grandis*	36	5	5.5	Poor	Fair/poor	Fair/poor	Sparse foliage, frass at base
60	Douglas fir	*pseudotsuga menziesii*	73	12	10	Poor	Fair	Fair	Surface rooted, large deadwood, broken limbs
61	Grand fir	*Abies grandis*	33	6	5	Poor	Good	Fair	Small deflection in trink
62	Garry oak	*Quercus garryana*	33	10	3.5	Good	Good	Fair	Ivy on trunk
63	Douglas fir	*pseudotsuga menziesii*	54	8	8	Poor	Fair	Fair	Some deadwood
64	Grand fir	*Abies grandis*	33	5	5	Poor	Poor	Fair/poor	Dead top, declining
65	Douglas fir	*pseudotsuga menziesii*	86	10	12	Poor	Fair	Fair	Large deadwood
66	Grand fir	*Abies grandis*	50	6	7.5	Poor	Poor	Poor	Previous top failure, 1/2 tree, fill soils
67	Douglas fir	*pseudotsuga menziesii*	52	8	7.5	Poor	Fair	Fair/poor	Ivy on trunk, fill soil
68	Douglas fir	*pseudotsuga menziesii*	75	8	11	Poor	Fair/poor	Fair/poor	Epicormic growth, deadwood, fill soil
69	Douglas fir	*pseudotsuga menziesii*	52	0	7.5	Poor	Dead	Dead	Dead, fill soil

70	Douglas fir	*pseudotsuga menziesii*	49	6	7	Poor	Poor	Poor	Dead top, declining, fill soil
71	Garry oak	*Quercus garryana*	36	9	3.5	Good	Good	Fair	Assymetric crown
72	Garry oak	*Quercus garryana*	43	9	4.5	Good	Good	Fair	Assymetric crown
73	Garry oak	*Quercus garryana*	37,28	9	4.5	Good	Good	Fair	Ivy on trunk,
74	Douglas fir	*pseudotsuga menziesii*	59	9	7.5	Poor	Poor	Fair/poor	Dead top, epicormic growth, large deadwood, surface rooted
75	Big leaf maple	*Acer macrophyllum*	50	9	6	Moderate	Poor	Fair/poor	Large deadwood, dieback
76	Weeping willow	*Salix babylonica*	56	10	6.5	Moderate	Good	Fair/poor	Possibly uprooted previously deflected trunk, previously topped
77	Douglas fir	*pseudotsuga menziesii*	100	10	15	Poor	Fair	Poor	Co-dominant at dbh , previously topped
78	Douglas fir	*pseudotsuga menziesii*	79	10	11	Poor	Fair	Poor	Previously topped, ivy on trunk
79	Western red ceda	*Thuja plicata*	36	6	4.5	Moderate	Fair	Poor	Previously topped, ivy on trunk
80	Sitka spruce	*Picea sitchensis*	49	8	6	Moderate	Fair	Fair	Some deadwood

81	Sitka spruce	*Picea sitchensis*	63	10	7.5	Moderate	Fair	Fair	Some deadwood
82	Weeping willow	*Salix babylonica*	24	9	3	Moderate	Good	Fair	Young tree
83	Weeping willow	*Salix babylonica*	43	9	5	Moderate	Good	Fair	Surface roots
84	Apple	*Malus sp.*	14	4	2	Moderate	Good	Fair	Basal wound
85	Red maple	*Acer rubrum*	20,20	8	3.5	Moderate	Poor	Poor	Co-dominant dieback, decay, previous top failure
86	Sumac	*Rhus typhina*	17	4	2	Good	Good	Good	Trunk wound
87	Sitka spruce	*Picea sitchensis*	36	5	4.5	Moderate	Fair	Fair/poor	Co-dominant stem previously removed, assymetric form
88	Incense cedar	*Calocedrus decurrens*	109	11	10	Good	Good	Fair	Co-dominant at 4meters, large stem removed on house side
89	Chamaecyparis	*Chamaecyparis species*	36	7	5	Poor	Good	Fair	Ivy on lowere trunk, likely topped in past
90	Norway spruce	*Picea abies*	44	8	5	Moderate	Fair	Fair	Co-dominant at 5 meters
91	Norway spruce	*Picea abies*	39	8	5	Moderate	Fair	Fair	Co-dominant at 4 meters, assymetric crown

92	Weeping willow	*Salix babylonica*	74	15	9	Moderate	Fair	Fair	Large deadwood
93	Shore pine	*Pinus contorta*	59	9	7	Moderate	Good	Fair	Sequoia pitch moth, co-dominant at 6 meters, end weighted lim
Nt7	Douglas fir	*pseudotsuga menziesii*	80	11	12	Poor	Fair	Fair	Municipal tree, small dead top, surface rooted
94	Weeping willow	*Salix babylonica*	54	12	6.5	Moderate	Good	Fair	Large deadwood
Nt8	Douglas fir	*pseudotsuga menziesii*	52	8	7.5	Poor	Good	Fair/poor	Municipal tree, previously topped
Nt9	Douglas fir	*pseudotsuga menziesii*	80	11	12	Poor	Fair	Fair/poor	Municipal tree, previously topped
Nt10	Douglas fir	*pseudotsuga menziesii*	49	8	7.5	Poor	Good	Fair/poor	Municipal tree, previously topped



Rev	Date	Description	Surv	Drawn	App'd
0	2018-02-23	ORIGINAL ISSUE	SA	LM	GQ

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0 1:300 15

ORIGINAL DWG SIZE: ANSI D (22" x 34")
ALL DIMENSIONS ARE IN METRES

McElhanney
McElhanney Consulting Services Ltd.

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Victoria BC
Canada V8X 4A3
Tel 250 370 9221

Approved Sealed

HIGHSTREET VENTURES
702-1708 DOLPHIN AVE. KELOWNA, BC

HIGHSTREET DEVELOPMENT TOPOGRAPHIC SURVEY PLAN OF 3 HELMECKEN ROAD

3 HELMECKEN ROAD
VIEW ROYAL, BC

Drawing No. 03520-V-1-TP

Project Number 2113-03520-00

Rev. 0

DATE: 2018-02-27 15:56 FILE: P:\SURVEY\2113 Projects\03520-00 Highstreet - #3 Helmcken Rd\10.0 DRAWINGS\10.1 Civil 3D Files\03520-1-V-TP.dwg

McElhanney ANSI D - 15-05-22

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

0 6250 12500mm

1 : 250

1	22 JAN 2020	RE-ISSUED FOR REZONING
1	28 JUN 2019	RE-ISSUED FOR REZONING
Rev	Date 17 SEP 2018	Description ISSUED FOR REZONING
prn date	22 JAN 20	drawing file A101
drawn by	EDS	checked by RAW
scale	1:250	project number 1827

NOTE: All dimensions are shown in millimeters.

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project name

Eagles Nest Residences
Helmcken Rd
View Royal BC

drawing title

Site Plan

drawing no. A101

revision no. -

Talbot Mackenzie & Associates
Consulting Arborists

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6
Ph: (250) 479-8733
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Email: tmtreehelp@gmail.com

Tree Resource Spreadsheet Methodology and Definitions

Tag: Tree identification number on a metal tag attached to tree with nail or wire, generally at eye level. Trees on municipal or neighboring properties are not tagged.

NT: No tag due to inaccessibility or ownership by municipality or neighbour.

DBH: Diameter at breast height – diameter of trunk, measured in centimetres at 1.4m above ground level. For trees on a slope, it is taken at the average point between the high and low side of the slope.
* Measured over ivy
~ Approximate due to inaccessibility or on neighbouring property

Crown Spread: Indicates the diameter of the crown spread measured in metres to the dripline of the longest limbs.

Relative Tolerance Rating: Relative tolerance of the tree species to construction related impacts such as root pruning, crown pruning, soil compaction, hydrology changes, grade changes, and other soil disturbance. This rating does not take into account individual tree characteristics, such as health and vigour. Three ratings are assigned based on our knowledge and experience with the tree species: Poor, Moderate or Good.

Critical Root Zone: A calculated radial measurement in metres from the trunk of the tree. It is the optimal size of tree protection zone and is calculated by multiplying the DBH of the tree by 10, 12 or 15 depending on the tree's Relative Tolerance Rating. This methodology is based on the methodology used by Nelda Matheny and James R. Clark in their book "Trees and Development: A Technical Guide to Preservation of Trees During Land Development."

- 15 x DBH = Poor Tolerance of Construction
- 12 x DBH = Moderate
- 10 x DBH = Good

To calculate the critical root zone, the DBH of multiple stems is considered the sum of 100% of the diameter of the largest stem and 60% of the diameter of the next two largest stems. It should be noted that these measures are solely mathematical calculations that do not consider factors such as soil volume restrictions, age, crown spread, health, or structure (such as a lean).

Health Condition:

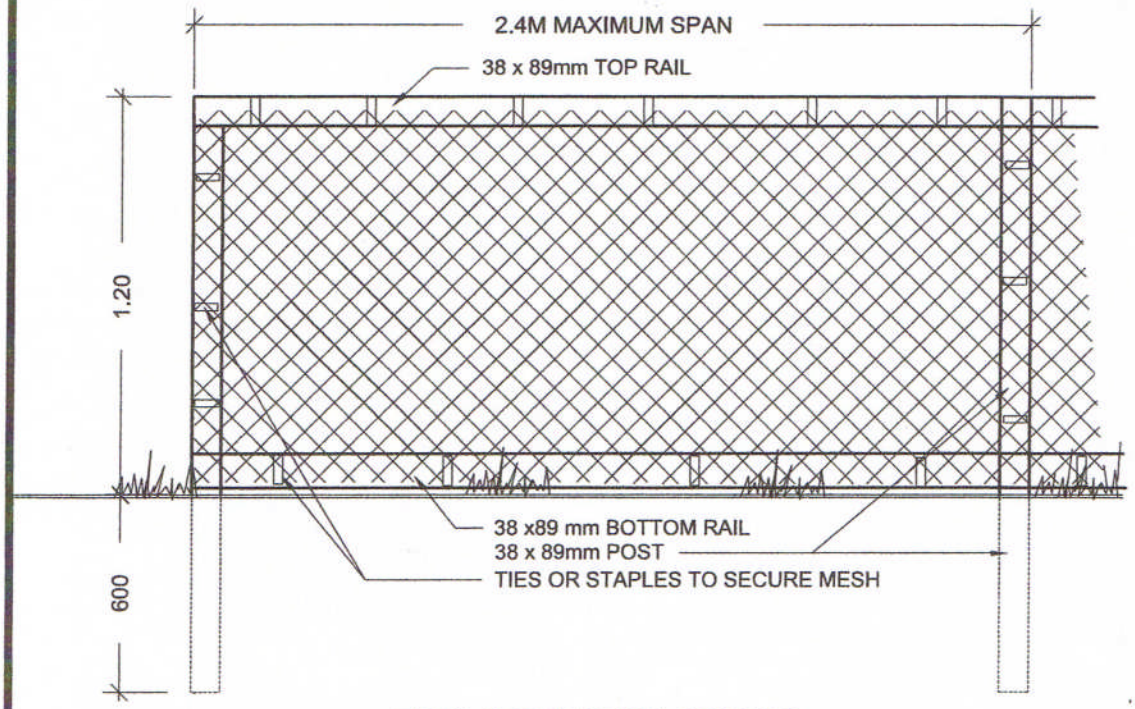
- Poor - significant signs of visible stress and/or decline that threaten the long-term survival of the specimen
- Fair - signs of stress
- Good - no visible signs of significant stress and/or only minor aesthetic issues

Structural Condition:

- Poor - Structural defects that have been in place for a long period of time to the point that mitigation measures are limited
- Fair - Structural concerns that are possible to mitigate through pruning
- Good - No visible or only minor structural flaws that require no to very little pruning

Retention Status:

- X - Not possible to retain given proposed construction plans
- Retain - It is possible to retain this tree in the long-term given the proposed plans and information available. This is assuming our **recommended mitigation measures are followed**
- Retain * - See report for more information regarding potential impacts
- TBD (To Be Determined) - The impacts on the tree could be significant. However, in the absence of exploratory excavations and in an effort to retain as many trees as possible, we recommend that the final determination be made by the supervising project arborist at the time of excavation. The tree might be possible to retain depending on the location of roots and the resulting impacts, but concerned parties should be aware that the tree may require removal.
- NS - Not suitable to retain due to health or structural concerns



TREE PROTECTION FENCING

FENCE WILL BE CONTRUCTED USING
38 X 89 mm (2"X4") WOOD FRAME:
TOP, BOTTOM AND POSTS. *
USE ORANGE SNOW-FENCING MESH AND
SECURE TO THE WOOD FRAME WITH
"ZIP" TIES OR GALVANZIED STAPLES

* IN ROCKY AREAS, METAL POSTS (T-BAR
OR REBAR) DRILLED INTO ROCK WILL BE
ACCEPTED

DETAIL NAME:

TREE PROTECTION FENCING

DATE:	Oct 30/07
DRAWN:	DM
APP'D.	RR
SCALE:	N.T.S.

E105
DRAWING

March 8, 2018

Phase I Environmental Site Assessment (ESA) located at Helmcken Road & Burnside Road W, View Royal, BC

Prepared for

Highstreet Ventures Inc.
702 – 1708 Dolphin Ave
Kelowna, BC V1Y 9S4

Prepared by

McElhanney

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Executive Summary

McElhanney Consulting Services Ltd. (McElhanney) was retained by the Highstreet Ventures Inc. (the Client) to conduct a Phase I Environmental Site Assessment (Phase I ESA) for several properties located near the intersection of Helmcken Road and Burnside Road West in View Royal, BC (the Site). A comprehensive review of historical records was completed for the Site and surrounding adjacent properties. Visual observations were made of land at and adjacent to the Site.

The Site was first developed in the 1940s and land use at the time included a single residential home and cattle pasture/agricultural land. The Site and neighbouring land to the north and east have been owned and occupied by the Henson family since the 1950s. Additional single-family residential homes were built in the 1950s and 1960s. The Henson family also constructed and managed a 12-unit apartment building on-Site in 1970. Members of the Henson family continue to reside in several homes in the area but primarily rent the residencies on the Site to various tenants.

The Henson family has also operated contracting businesses on the Site. The first was Henson W Building Contractors which owned by William Henson and operated out of the home at 1449 Burnside Rd W from around 1969 to the mid-1970s. The business then moved to a newly constructed home at 1480 Burnside Rd W (north of the Site) and was in operation until the early 1990s. The second contracting business is owned and operated by Julie and Robert Henson (J&R Henson Construction Ltd). For a period, they operated a plant nursery on the Site (circa 2005). The business also brought soil materials onto the northwest portion of the Site to be segregated and reused in landscaping (i.e. top soils, field stones and woody debris were separated on Site into various stockpiles).

It is McElhanney's opinion that, based on the findings of this Phase I ESA, historical and current activities present a potential risk of impacting environmental media at the Site and further environmental investigation is warranted. Based on our assessment of the Site, four areas of potential environmental concern (APEC) were identified that require further investigation and is presented in the below table and figure summarized from the text.

Table Areas of potential environmental concern

Area of Potential Environmental Concern	Description
APEC 1	**#3 Helmcken Rd** Approximately 1000 L heating oil tank. Small stains noted under the tank, gravel floor is directly adjacent to the AST providing a pathway for potential contamination to enter the subsurface.
APEC 2	**1445 Burnside Rd W** abandoned home heating oil AST in the crawlspace on the southwest corner of the building (size could not be determined, but greater than 1000L)
APEC 3	**1449 Burnside Rd W** 1000 L heating oil tank located on the northwest corner of the building. The original tank was leaking as was replaced with the current tank.

Area of Potential Environmental Concern	Description
APEC 4	**#5 Helmcken Rd** poor housekeeping in the yard to the north of the house included disposal of a kerosene container, a 205 L steel drum of unknown contents and several other chemical containers inferred to be for lawn care and/or general home maintenance.

Figure. Areas of potential environmental concern.

A limited Phase II Environmental Site Assessment (Limited Phase II ESA) is recommended to quantitatively assess surficial soils at the identified APEC locations. The collected soil samples would be analyzed by an accredited laboratory. Potential contaminants of concern will be determined during the planning stages of the Phase II ESA.

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Appendices

1. Introduction

McElhanney Consulting Services Ltd. (McElhanney) was retained by Highstreet Ventures Inc. (the Client) to conduct a Phase I Environmental Site Assessment (Phase I ESA) for several properties located at the intersection of Helmcken Road and Burnside Road West in View Royal, BC (herein referred to as #3 Helmcken Rd or the Site) (*Figure 1& Figure 2*). This report presents the findings of the Phase I ESA.

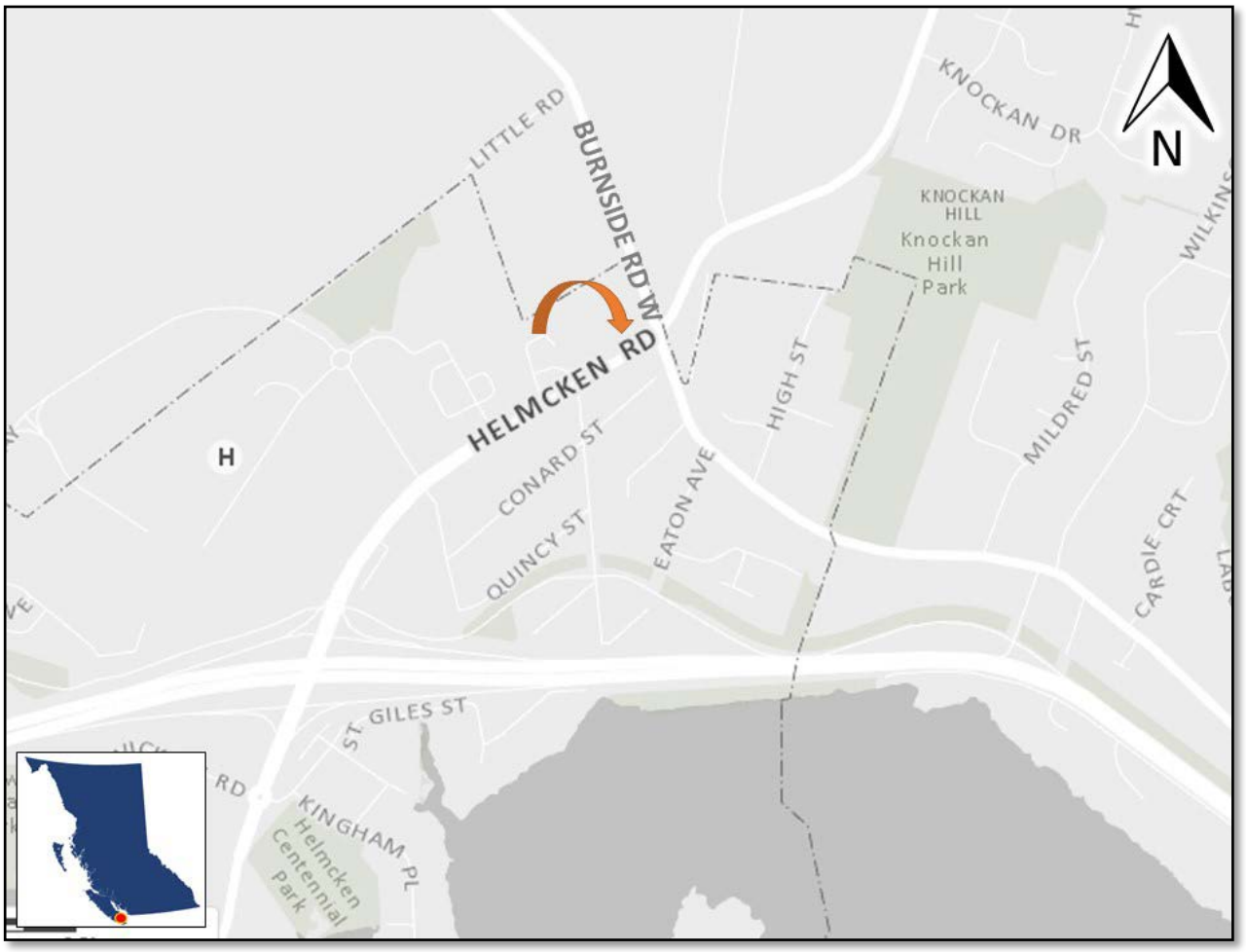


Figure 1. General Site Location (orange arrow) at Helmcken Road and Burnside Road W, View Royal, BC.

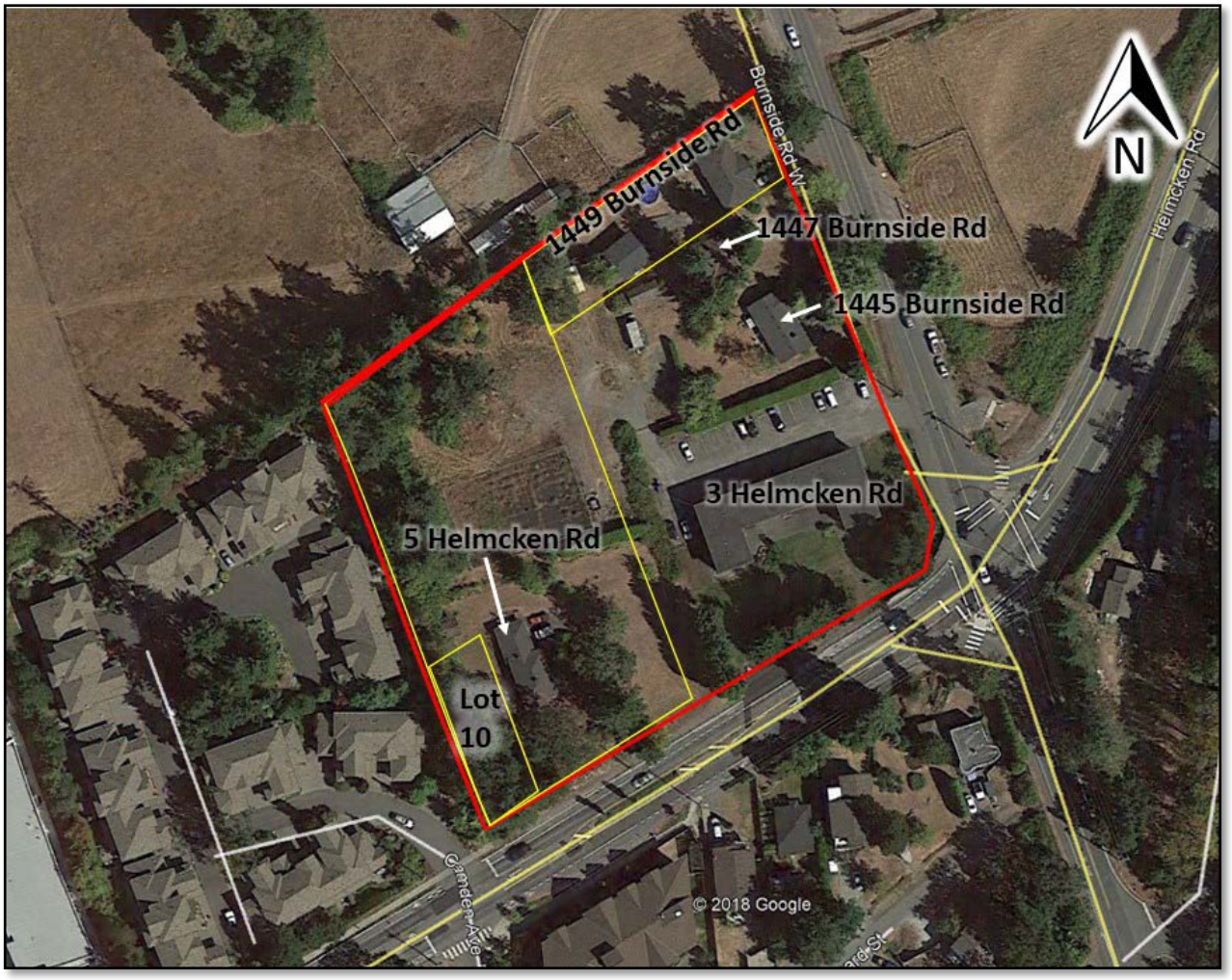


Figure 2. Approximate Site Boundary (red outline) in View Royal, BC (ortho courtesy of Google Earth). Lots are outlined in yellow and civic addresses are bolded.

General Property Information

General Site information is summarized below in *Table* 1. Reconnaissance photographs of the Site and surrounding properties are included in *Appendix A.* Historical aerial photographs showing past land uses for the area are included in *Appendix B.* The Site is comprised of four single family residential homes, a twelve-unit apartment building and an area formerly used as a plant nursery. The Site is bounded by Helmcken Road to the south and Burnside Road W to the east. All lots on the Site are currently owned by the Henson family and have been so for multiple generations. Neighbouring properties to the north and east are also owned and occupied by the Henson family. The current land use proposal is to remove all existing buildings for Site redevelopment. Land title information and plans are provided in *Appendix C*.

Table 1. General Site Information

Site Civic Address	3 Helmcken Rd (includes homes with addresses 1445 & 1447 Burnside Rd W)
	5 Helmcken Rd
	Lot 10 Helmcken Rd
	1449 Burnside Rd W
Legal Description	Lot 1 Plan VIP3963 Section 9 Land District 21 Except Plan 18753
	Lot 2 Plan VIP3963 Section 9 Land District 21
	Lot 10, Block 5, Section 9, Esquimalt District, Plan 1726
	Lot 1 Plan VIP18753 Section 9 Land District 21
Parcel Identifier Number (PID)	000-295-981
	006-114-946
	007-028-156
	000-300-365
Registered Land Owner	000-295-981 – Julie and Robert Henson
	006-114-946 (5 Helmcken Rd)– J&R Henson Construction Ltd.
	007-028-156 (Lot 10) – J&R Henson Construction Ltd.
	000-300-365 (1449 Burnside Rd W)– Julie and Robert Henson
Occupant	All buildings/homes are currently occupied by tenants
Current Use	Residential
Area	1.33 Hectares (3.3 Acres)
Zoning	RM-1 (Ground-Oriented Multiple-Unit Residential) R-1 (Detached Residential – Large Lot)

The current property owner is listed as the Julie and Robert Henson on two of the titles and J&R Henson Construction Ltd. on the other two titles. The entire Site is owned by the Henson family. A copy of the current title search has been provided in *Appendix C*. All four of the titles were recently registered (between 2016 to 2017) but the Henson family has owned the land since approximately the 1950s, it has transferred ownership through several family members over time.

Site contamination issues, if listed on a title search, are most often found in Section 219 Covenants. A Section 219 covenant was not listed on the current title search for the Site. Leases, title transfers or easements related to site contamination issues were absent in the current title search results.

2. Assessment Methodology

The scope of this assignment was to conduct a Phase I ESA in accordance with *CSA Standard Z768-01* (Reaffirmed 2016). The objective of this Phase I ESA was to determine whether Areas of Potential Environmental Concern (APECs) are present at the Site due to current and/or historical on and off-site activities. The study was completed to qualitatively identify the risk of actual or potential contamination of environmental media (soil, surface water, groundwater or soil vapour) on or adjacent to the Site.

The following rationale was applied throughout the assessment to determine whether current or historical activities represent a potential environmental concern for the Site:

- BC Contaminated Sites Regulations (CSR) Schedule 2 Activities for commercial or industrial sites identified on or adjacent to the Site;
- The presence of a hazardous substances (including waste) storage or use on-Site;
- Indication that substances were inadequately handled or contained and a pathway to the receiving environment may be present;
- The use, storage, or handling of a substance of potential concern occurred consistently over a long period of time, or in sufficient quantities to be considered a potential concern; and
- Are identified off-site land uses of concern located in close enough proximity and topographic orientation to present a potential for the migration of contamination onto the Site.

The following specific tasks were undertaken:

- Review of relevant records including: historical environmental reports; a search of relevant Provincial and Federal databases; available fire insurance maps; and available historic aerial photographs for the Site;
- Completion of a site visit to review and document existing conditions of the Site and surrounding area;
- Interviews with individuals knowledgeable of Site conditions;
- A review of the current land title for items related to site contamination issues (most often found in Section 219 Covenants, and certain lease, title, easement information); and
- Preparation of this report documenting the findings, summarizing recommendations (if any) and stating the limitations of this study.

The findings contained in this Phase I ESA are partly based on information provided by others. Where possible, information obtained through interviews was cross referenced through other sources.

Sampling and analysis of environmental media (soil, groundwater, surface water, or soil vapour) was not undertaken as part of this study. The assessment included a search of regulatory databases as defined in Section 4. Searches included properties bordering all extents of the Site.

3. Records Review

Several historical records were reviewed to assess the environmental conditions and current or historical land use activities at the Site. The following sections summarize the findings of this review.

3.1 ENVIRONMENTAL SETTING

3.1.1 Precipitation

Climatic conditions at the Site were inferred based on data provided by Environment Canada, Canadian Climate Normals 1981-2010. Recorded precipitation data for the Victoria Francis Park station were considered representative of the Site based on their proximity to that station. Annual precipitation was 1029.3 mm with monthly average lows of 19.3 mm in July and highs of 204.2 mm in November.

3.1.2 Water Resources

The iMapBC Water Resources layer, which is maintained by the Ministry of Environment & Climate Change Strategy (ENV), was used to create a map (*Figure 3* below) depicting local topography, known water well locations, and surface water within a 500 m radius of the Site. This figure was used to infer groundwater flow direction.

Portage Inlet is located approximately 500 m south of the Site. Three water wells were identified within the 500 m search radius of the Site. The closest well (Well Tag # 34554) is 250 m north northwest of the Site and was constructed in 1976. Groundwater in this location was encountered at 41 meters below ground surface (mbgs).

Local topography suggests that the Site is on undulating ground which is approximately 30 m above sea level (masl). There is a hill to the east of the site in the area known as Strawberry Vale the summit of the hill is approximately 75 masl. There is a low point to the northwest of the Site with an elevation of approximately 14 masl. Based on the available information the groundwater flow direction is assumed to be south towards the Portage Inlet. Note that an intrusive Site-specific assessment of groundwater would be required to calculate actual groundwater flow direction.

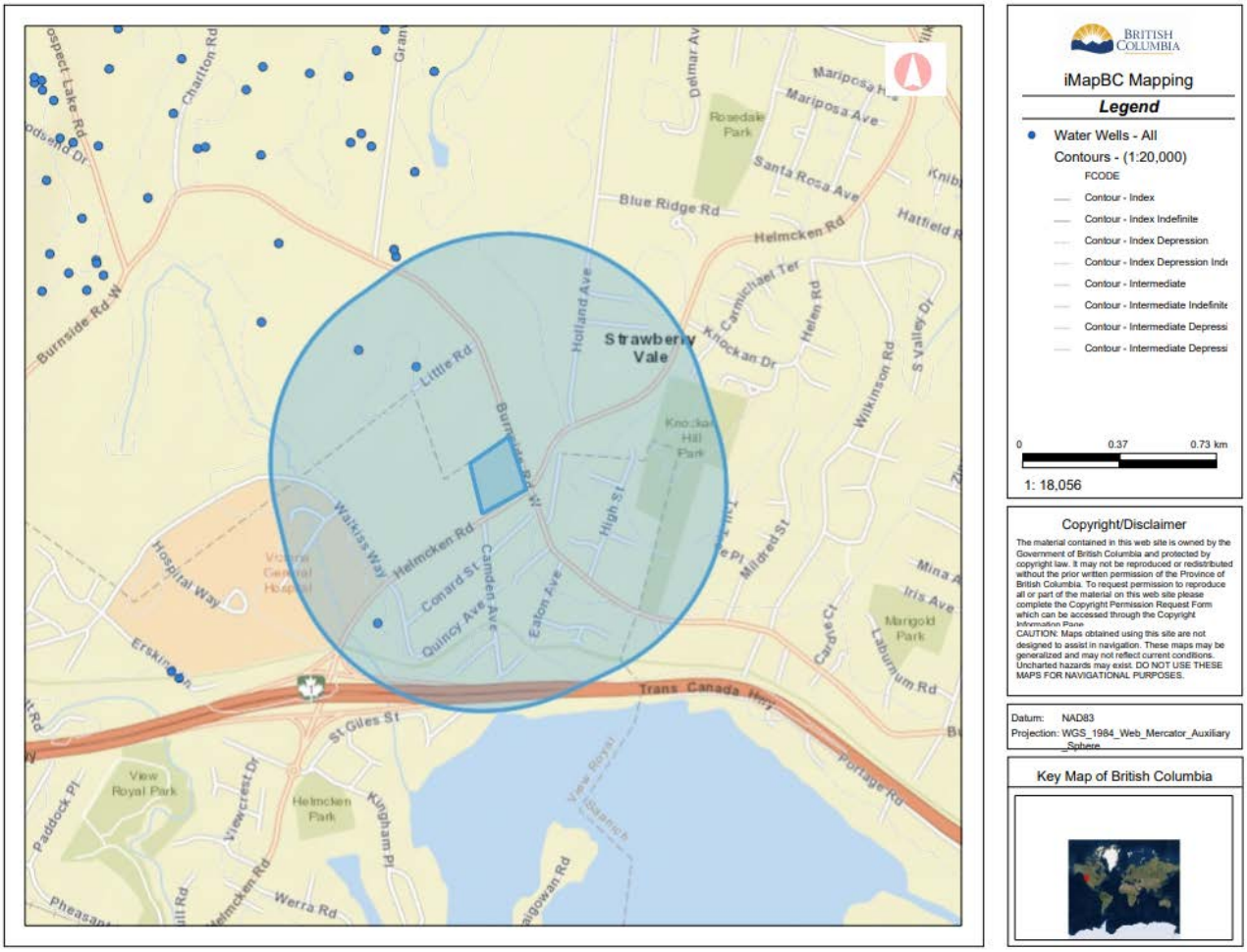


Figure 3. BC ENV Water Resource Atlas 500 m radius search results (iMapBC 2018).

3.1.3 Surficial Geology

Soil Survey Reports for British Columbia are published by Agriculture and Agri-Food Canada. Available soil survey reports and maps for British Columbia were reviewed to determine surficial geology and soil types at the Site. Map 4-1959 *Soil Map of Vancouver Island British Columbia – Victoria – Saanich Sheet* was reviewed. The Site was classified as Saanichton-Cowichan soils which are clay to clay loam soils which are developed on fine-textured marine materials (*Figure 4*).

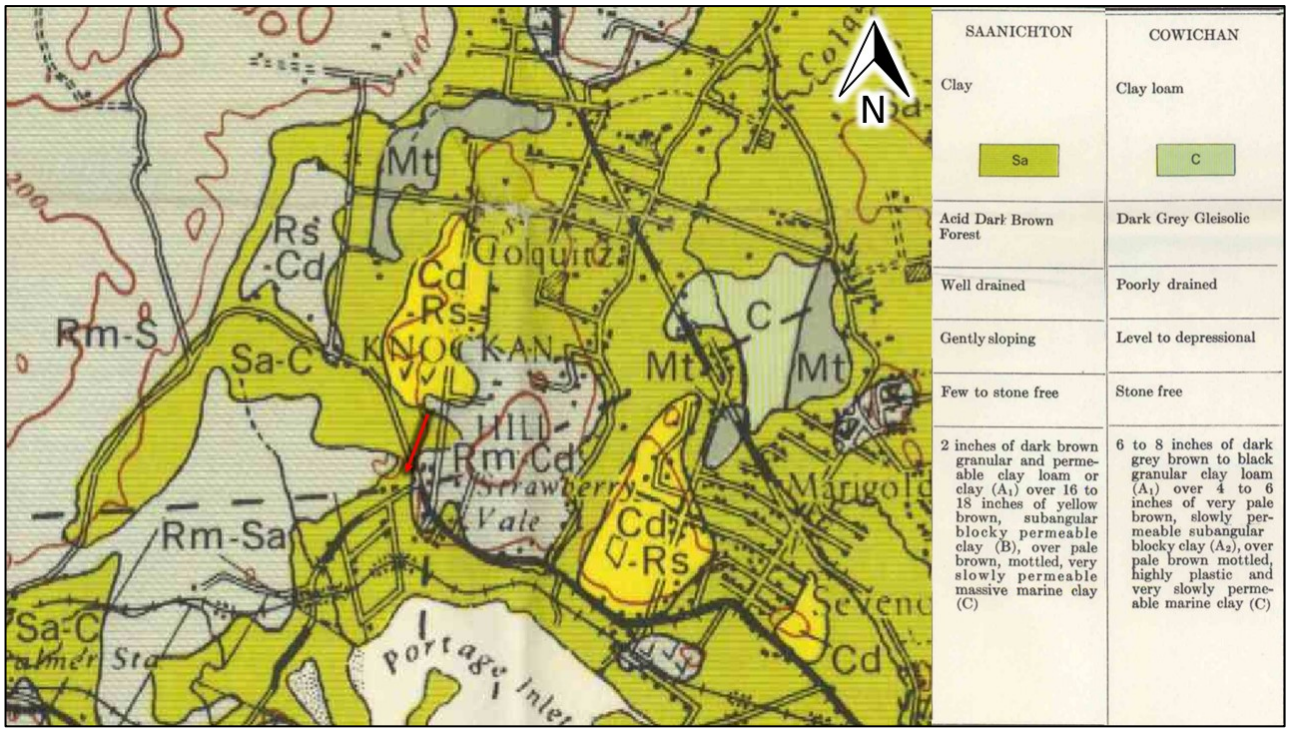


Figure 4. Excerpt from Relevant Soil Map of Vancouver Island – Victoria Saanich Sheet (BC6_map4) from Agriculture and Agri-Food Canada.

3.2 PREVIOUS ENVIRONMENTAL REPORTS

No previous environmental reports are known, and no reports were provided to McElhanney for review.

3.3 ERIS ECOLOG DATABASE SEARCHES

EcoLog Environmental Risk Information Services (ERIS) was retained to perform a 500 m search radius (from the edge of the Site) of the BC Ministry of Environment & Climate Change Strategy Site Registry (Site Registry) and a 250 m radius search of several additional environmental inventories and databases. The Site Registry is a data repository maintained by the BC ENV under the provisions of the *Environmental Management Act* (EMA) and Contaminated Sites Regulation (CSR) regarding information on activities with contamination causing potential.

It should be noted that ERIS provides a general database report which contains the most current information available for the databases reviewed. However, when registered sites are identified, an additional detailed site registry report is generated by ERIS which only provides information listed on the registry until 2012. To address the data gap between 2012 and the date of this assessment, BC Online was used (as necessary) to obtained detailed reports for relevant registered sites identified in the investigation.

3.3.1 Database Results within 250 m of Site Boundaries

There were no database listings for the Site property or the 250 m surrounding areas of the Site. There were no historical activities of concern identified through a review of historical databases. A copy of ERIS search results is provided in *Appendix D.*

3.3.2 BC Ministry of Environment & Climate Change Strategy Site Registry Search

There were no listings for the Site property or the surrounding area within the 500 m search radius.

3.3.3 Fire Insurance Plans

Historical fire insurance maps may provide insight into historical activities of a Site and they may document underground storage tanks or historical Site usage that may warrant environmental concern and/or further investigation. A search for available Fire Insurance Maps was conducted through ERIS/Opta. Fire insurance search results are provided in *Appendix E*. Results indicated that no fire insurance records were available for the Site area.

3.4 AERIAL PHOTOGRAPH INTERPRETATION

Historical aerial photographs were obtained from UBC's Geographic Information Center and images from Google Earth. A selection of photographs available for review from the following years; 1932, 1946, 1956, 1968, 1974, 1980, 1986, 1997, 2005, 2010, 2014 and 2017. A summary of our review has been presented in *Table 2* and copies of selected aerial photographs with a detailed review are provided in *Appendix B*.

Table 2. Aerial Photograph Interpretation

Year	Photograph Reference	Site Area	Adjacent Properties
1932	A 4517 66	The Site was primarily forested with the southern portion cleared along Helmcken Rd.	Helmcken Rd bound the Site and ended where it intersected with the Burnside Rd W at the southeast corner of the Site. Both roads appeared to be single lane gravel roads. There was agricultural land to the east, south and west. The property directly to the east had a

Year	Photograph Reference	Site Area	Adjacent Properties
			single-family home and a dairy barn.
1946	BC 245 76	Most of the forested vegetation had been removed and the Site converted to agricultural land. Near the northeast corner a single-family home was visible which currently is at address 1447 Burnside Rd W.	A few rural residential homes were visible to the south and both Helmcken Rd and Burnside Rd W had been upgraded. Holland Ave had been constructed to the east of the neighbouring barn.
1956	BC 2042 63	The property appeared to have been subdivided with a hedge or fence running through the center (north south). A second single family residential home was visible on the southwest corner (5 Helmcken Rd).	Conrad Street had been constructed to the south. Holland Ave had been paved. Residential development had increased to the south.
1968	BC 5284 153	The residential home at 1449 Burnside Rd W. on the northeast corner had been built. The home at 1445 Burnside Rd W was under construction.	The lot to the north had a residential home and a building consistent with a barn directly adjacent to the northern boundary.
1974	BC 5568 0082	The apartment building on the southeast corner of the Site was visible (#3 Helmcken Rd). A third residential home had been built along the east of the Site off Burnside Rd W (1445 Burnside Rd W). To the west of the houses was a building consistent with a shed.	Observations were like 1968.
1980	15 BC 80005 272	A structure consistent with a shed had been removed and a building had been constructed on the north central part of the Site.	Helmcken Rd and Burnside Rd W had been upgraded and widened.
1986	FF 8606 70	Observations were like 1980.	Helmcken Rd had been extended to the

Year	Photograph Reference	Site Area	Adjacent Properties
			east, cutting off Holland Ave. The barn to the east had been removed to allow the road expansion.
1997	15 BCB 97005 14	Observations were like 1986.	Observations were like 1986.
2005	ME 05 439C 0093	On the northwest quarter of the Site, stockpiles of soil were visible. To the south of the stockpiles there was a new paved pad which was consistent with a commercial garden center or nursery. Bounding the garden boxes was a new paved or graveled parking area in the center of the Site. There was a stockpile of debris in the center of the Site on the new parking lot.	The property to the west had been redeveloped to a high density residential development.
2010	Google Earth	The plant nursery was removed, and a geo-synthetic lined fabric pad remained.	to the south of Helmcken single family residential homes had been demolished and were being redeveloped.
2014	Google Earth	Observations were like 2010.	To the west a large commercial development was under construction.
2017	Google Earth	Observations were like 2014.	The commercial development to the west was complete.

Based on the review of available aerial photographs, the historical Site and surrounding property land usage is not considered an environmental concern at this time.

3.5 CIVIC DIRECTORIES

A search of historical local property uses was conducted by the City of Vancouver Public Archives, and available directories from the years 1910-1999 were reviewed. The City of Vancouver Public Archives civic directories search results are presented in *Appendix F*. *Figure 5* below depicts the buildings on-Site and the in the surrounding areas. It should be noted that the CRD webmap tool (used to create the figure) had incorrectly plotted the civic addresses for the houses at 1447 & 1445 Burnside Rd W.

The following listings for the Site gives an approximate time frame for which the houses/residences were first constructed:

- **5 Helmcken Rd** was first listed in the directories in 1954 and visible first in the 1956 aerial photograph which indicates it was constructed in the early 1950s,
- **3 Helmcken Rd** (the Robalee Apartments) were first listed in the 1974 directories, anecdotal information indicates that the apartment building was constructed in 1970,
- **1445 Burnside Rd W** the house was listed as a "new house" in the 1969 directory and anecdotal information indicated that it was constructed around 1969 to 1970. The 1968 aerial photograph shows that construction was underway on the house,
- **1447 Burnside Rd W** is the original house on the property which was first listed in the 1959 directories. This home was first visible on the 1946 aerial photograph. It should be noted that the block numbers change in the directory in 1945, which makes interpreting the information from the directories prior to 1949 difficult,
- **1449 Burnside Rd W** first shows up on the 1969 directory listed as Henson William Building Contractor. It is first visible in the 1968 aerial photograph and Robert Henson indicated that it was constructed around 1966. The house at this location was originally listed as the location of the family business until the mid-1970s. In 1979, Henson W building contractors moved to the residence to the north at 1480 Burnside Rd W where it remained until the last directory listing. The Robalee Apartments were constructed 1969-1970 by the Henson family, thus it is inferred that the business at 1449 Burnside Rd W was related to the construction of the apartment building.

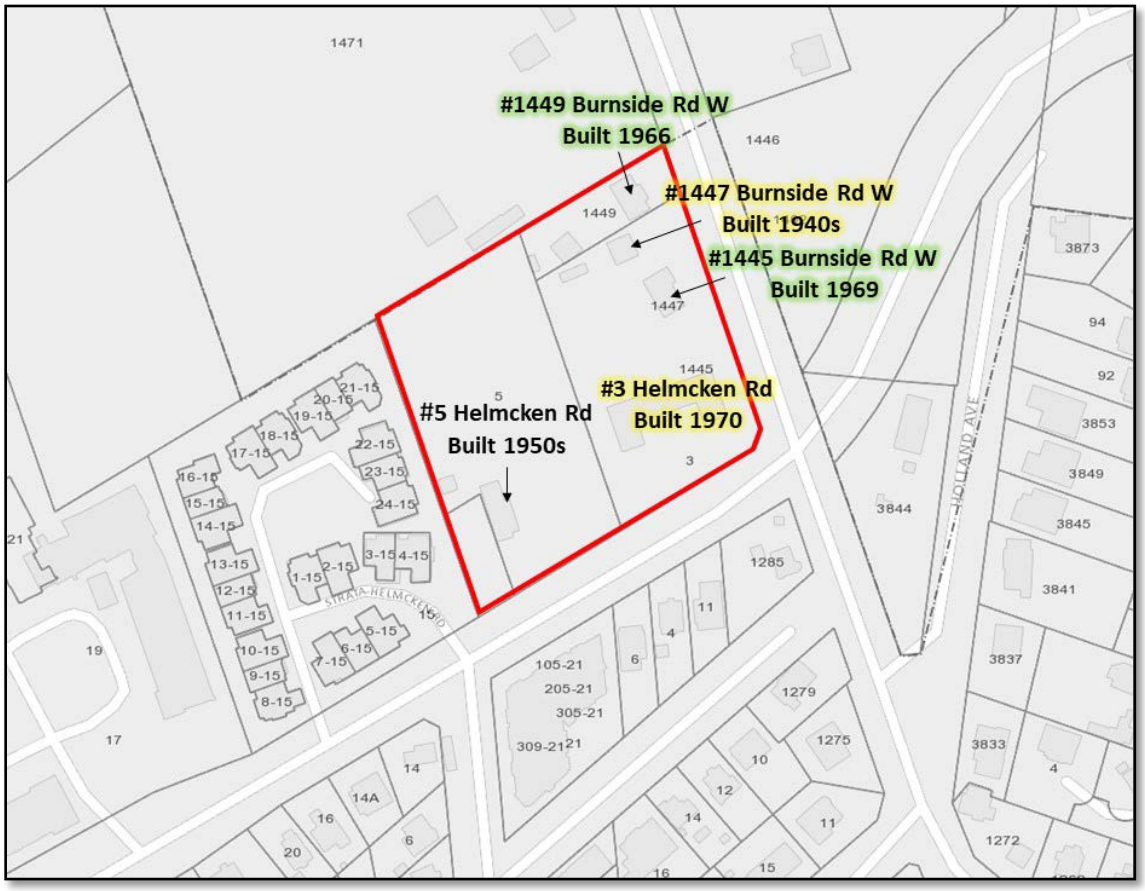


Figure 5. Civic addresses at the Site and surrounding areas used in the public directory search

McElhanney also reviewed the directories for the surrounding area. Primarily the listings were for residential properties and businesses associated with rural residential communities such as a plant nursery, a dairy farm, grocery and general stores, churches, and a few general contractors. No listings for the Site or surrounding areas were of environmental concern to the Site.

4. Site Visit

McElhanney personnel conducted a Site visit on February 24th, 2018. Field reconnaissance was limited to visual and olfactory observations. The following sections summarize observations. Select Site photographs captured during the Site visit are presented in *Appendix A*.

4.1 PROPERTY DESCRIPTION

The Site was first developed in the 1940s and land use at the time included a single residential home and cattle pasture/agricultural land. The Site and neighbouring land to the north and east are currently owned by the Henson family. Information obtained in a review of the public directories as well as anecdotal information provided by Robert Henson indicates that the Henson family has owned and occupied buildings on the Site and neighbouring properties since approximately the early 1950s.

Additional single-family residential homes were built in the 1950s and 1960s. The Henson family also constructed and managed a 12-unit apartment building on-Site in 1970. Members of the Henson family continue to reside in several homes in the area but primarily rent the residencies on the Site to various tenants.

The Site is bounded by Helmcken Rd to the south and Burnside Rd W to the east. The surrounding neighbouring property use was identified as mainly residential to the south and west. Land use to the north and east are agricultural. There was a dairy farm historically located to the east of the Site. Mr. Robert Henson now resides in a home to the east of the Site where he has some cattle which use the lot for grazing.

4.1.1 Topography, Fill Areas, and Local Geology

Imported fill presents environmental concern if the quality of fill is unknown. The general Site topography was undulating with a rocky outcrop on the west of the Site. On the southeast corner of the Site there is a retaining wall and the intersection of Helmcken Rd and Burnside Rd W is approximately 1 m higher than the yard at the Site. This indicates that when the road was upgraded in 1980, fill was brought in within the road right of way.

A large natural hill is located to the southeast of the Site. Despite the undulating and hilly local topography, the regional topography gradually slopes south towards Portage Inlet. According to Mr. Henson, the gravel fill observed in the center of the Site is road-based fill that was put in place as part of the developing the plant nursery in the mid-2000s. Anecdotal information obtained from the land owner, indicated that the area was regraded to develop the plant nursery.

The Henson family has operated contracting companies for over 50 years, currently under the legal name J&R Henson Construction Ltd. As part of business operations, loads of mixed soil/fill materials were deposited on the Site for segregation. The aerial photograph record shows this land use occurring from around the year 2005 until approximately 2016 (as seen in *Figure 6*).

Mr. Henson indicated that initially some of the soil stockpiles at the Site were generated from regrading the plant nursery area. The photograph record indicates that the soils included woody debris/field stones, mineral soil, and top soil which was confirmed by Mr. Henson during the Site visit. Mr. Henson indicated that the segregated materials were reused for landscaping. Contaminated fills are not suspected to have been placed on the Site, therefore this land use is not considered to be of environmental concern.

Figure 6. Soil segregation activities historically occurring on the northwest portion of the Site.

4.1.2 Buildings and Structures

At the time of the Site visit, several buildings and structures were present on the Site. There was a total of nine structures which consisted of four single-family residential homes, a twelve-unit apartment building, two detached garages, and a couple of sheds. There is also a large fenced area on the west side of the Site on #5 Helmcken Rd that was formerly used as a plant nursery.

The apartment building is a two-storey, stucco/cedar shake sided building with a tar and gravel roof. The home at 1447 Burnside Rd W has asbestos cement siding. The home at 1449 Burnside Rd W has stucco siding with shingle roof construction. There was concrete/stucco siding with shingle roof at the home on 1445 Burnside R W. The home at 5 Helmcken Rd appeared to be wood shingles with a shingle roof construction.

Several out buildings were on the Site which included a detached garage, some sheds, a shipping container and a weathered Quonset hut made of canvas on a metal frame.

4.1.3 Services and Utilities

The Site is serviced with electricity via BC Hydro. Sanitary and storm water services are provided by View Royal. The Site was connected to the municipal sanitary sewer system in 1980 when the roadways bounding

the Site were upgraded. Mr. Henson indicated that the former septic field and tank for the apartment building is in the lawn to the south of the building and were left in place. It is inferred that the homes along Burnside Rd W would have had septic fields in the back yards (to the west of the homes).

4.1.4 Heating and Cooling Systems

The following heating systems were noted during the Site visit:

- **5 Helmcken Rd** building is heated via electric baseboards,
- **3 Helmcken Rd** building is heated via electric baseboards and the hot water tanks are heated with fuel from an above ground storage tank (AST),
- **1445 Burnside Rd W** building is heated via electric baseboards, there is an abandoned home heating oil AST in the crawlspace which is inferred to have been formerly used to heat the house.
- **1447 Burnside Rd W** building is heated via electric baseboards,
- **1449 Burnside Rd W** building is heated a forced air furnace that is fueled by home heating oil.

4.1.5 Mechanical Equipment.

No mechanical equipment was present on the Site.

4.1.6 Underground Storage Tanks

Underground storage tanks (USTs) have the potential to affect soil and or groundwater if the contents of the UST leak into the surrounding environment or the tank is accidentally spilled during fill up. No indications of USTs were observed on the Site.

In addition, an inquiry regarding the availability of fire insurance maps for the Site was made through ERIS. Historical fire insurance plans are used to identify historical USTs if present on the Site or surrounding properties. No fire insurance plans were available for the Site or surrounding area. A letter response provided by ERIS is included in *Appendix F.* No evidence of historical USTs was indicated from available historical information.

4.1.7 Above Ground Storage Tanks

The presence of above-ground storage tanks (ASTs) could pose environmental concern if leakage onto underlying soils had occurred. Three home heating oil ASTs were observed on the Site:

- **3 Helmcken Rd** 1000 L heating oil tank. Located on the ground-floor and used to heat the hot water tanks. The tank is in relatively good condition but there are a few small stains under the tank. The tank is on a concrete floor but directly adjacent to the tank is a gravel floor. It is inferred that this tank is not the original one and that an older tank would have been replaced with this tank as some point in time. This is an area of potential environmental concern (APEC) to the broader Site,
- **1445 Burnside Rd W** abandoned home heating oil AST in the crawlspace which is an APEC for the Site,

- **1449 Burnside Rd W** 1000 L heating oil tank. Located on the northwest corner of the building. The original tank was leaking as was replaced with the current tank. This is considered an APEC for the Site.

4.2 EXTERIOR OBSERVATIONS

4.2.1 Surface Staining and Site Vegetation

The presence of stains on road surfaces or porous media such as soil and gravel may be indicative of environmental contamination caused by leaks or spills. Furthermore, stressed vegetation or an absence of vegetation may be regarded as viable bio-indicators for the presence of contaminated environmental media.

The Site was mainly comprised of grass covered lawn, a parking lot, and gravelled surfaces. Recent precipitation on exterior surfaces made it difficult to identify any potentially stained surfaces. In the ground floor of the apartment building there was extensive staining/moisture observed on the concrete and gravel surfaces. Staining was primarily attributed to leaking water tanks and moisture from the ground. There was small staining inferred to be from hydrocarbons under the AST.

In the crawl space under the home at 1445 Burnside Rd W there was staining on the concrete floor, there is an abandoned AST in the area which was not accessible, thus it cannot be concluded if the staining is due to moisture, a leaking tank or a combination of both.

4.2.2 Pits, Lagoons, Waste Water and Liquid Discharges

Pits and lagoons may warrant environmental concern if they are used to collect streams of waste water or liquid waste streams. No pits or lagoons were observed at the Site or on adjacent properties.

4.3 HAZARDOUS MATERIALS AND SPECIAL ATTENTION ITEMS

Hazardous materials listed under the BC Hazardous Waste Regulation (HWR) such as asbestos or lead paint may be present in structures built before 1990. In addition, the BC HWR defines hazardous waste as dangerous goods that are no longer used for their original purpose. These wastes require special consideration for disposal and are commonly produced as part of regular commercial/industrial business operations. Examples of some common hazardous wastes include waste oil, oily rags/filters, used paints/thinners, and spent aerosols.

No hazardous materials were observed during the Site visit. Special attention substances such as asbestos, urea formaldehyde foam insulation (UFFI), polychlorinated biphenyls (PCBs), lead and mercury are potentially present on the Site due to the age of the structures. It is recommended that prior to the future building demolition that a hazardous material assessment be conducted to rule out the possibility of the presence of potential hazardous materials.

4.3.1 Radon

Radon is a known carcinogen and is estimated to cause up to 10% of all lung cancers in Canada. It is a radioactive gas that is produced by the decay of uranium. Radon is naturally occurring within certain soil and rock formations. It has the potential to percolate through soil into buildings if it is not evacuated. Fortunately, high radon levels can be easily tested for, allowing for mitigation. Health Canada's guideline for the acceptable level of indoor radon in a normal living area has changed from 800 Bq/m^3 to 200 Bq/m^3 (guidelines changed in 2009). Elevated radon levels are not typical within the Victoria region (BC Center for Disease Control), and radon is not considered to pose an environmental concern to the Site.

4.3.2 Polychlorinated Biphenyls (PCBs)

PCBs may be present in electrical components such as pad-mounted or overhead transformers. Several pole mounted transformers were observed surrounding the Site, however; as the transformers are maintained by and the responsibility of BC Hydro, they are not considered to be an environmental concern to the Site.

4.3.3 Chemical Storage Containers

No major sources of chemical storage were observed on the Site. In the yard at #5 Helmcken Rd there was a variety of debris discarded and overgrown with blackberries. This included an old rusted drum and several rusted chemical containers. There was a 20 L metal kerosene pail and the other containers were inferred to be for lawn care or home maintenance. This area had poor housekeeping which included improperly discarded chemical waste containers and is an APEC for the Site.

4.4 NEIGHBOURING PROPERTIES

Properties neighbouring the Site were observed for indications of current and/or historical land use activities that could potentially represent off-site sources of contamination. A summary of neighbouring property land uses are presented in *Table 3* below.

Table 3. Neighbouring Properties

Direction from Site	Address	Current Use	Potential Environmental Significance
North	1471 Burnside Rd W	Rural residential with a barn adjacent to the Site. Owned by the Henson family.	No environmental concerns associated with the properties to the north are anticipated.
East	1446 Burnside Rd W	Rural residential, with cattle grazing pasture	No environmental concerns associated with the properties to the east are anticipated.
South	1285 Burnside Rd W 11, 4 and 6 Helmcken Rd	Single-family and high density residential housing	No environmental concerns associated with the properties to the south are anticipated.

Direction from Site	Address	Current Use	Potential Environmental Significance
West	15 Helmcken Rd	Hidden Oaks Townhouses	No environmental concerns associated with the properties to the west are anticipated.

Based on the available information, the surrounding current and historical property usage is not considered to have environmentally impacted the Site, and no off-Site APECs have been identified.

4.5 BC CSR SCHEDULE 2 ACTIVITIES

BC Contaminated Sites Regulations identifies Schedule 2 Activities for commercial or industrial sites and are regarded under the regulation as showing potential to release contaminants into the environment. Schedule 2 Activities, thus, are subject to scrutiny in the context of environmental site assessment. No current or historical Schedule 2 Activities were identified during this investigation.

5. Interviews

5.1.1 Mr. Robert Henson

Mr. Robert Henson, land owner and property manager of the Robalee Apartments accompanied McElhanney personnel during the Site investigation and answered questions pertaining to the current and historical Site use and operation. Mr. Henson grew up on the Site and currently lives on the neighbouring land to the east. His parent and grandparents also lived on the land and the family originally moved to the area in the early 1950s. Anecdotal information provided during the Site investigation has been included within the relevant sections of this report.

The Henson family has also operated contracting businesses on the Site. The first was Henson W Building Contractors which owned by William Henson and operated out of the home at 1449 Burnside Rd W from around 1969 to the mid-1970s. The business then moved to a newly constructed home at 1480 Burnside Rd W (north of the Site) and was in operation until the early 1990s. The second contracting business is owned and operated by Julie and Robert Henson (J&R Henson Construction Ltd). For a period, they operated a plant nursery on the Site (circa 2005). The business also brought soil materials onto the northwest portion of the Site to be segregated and reused in landscaping (i.e. top soils, field stones and woody debris were separated on Site into various stockpiles).

5.1.2 Eddie Trembay

Mr. Trembay is the long-time resident at 1445 Burnside Rd W and has lived on-Site for 18 years. Mr. Trembay provided McElhanney with access to his home and indicated that there was an AST in the crawl space under the home. He provided McElhanney access to the crawl space by removing a side panel on the south side of the home so that photographs of the tanks and the crawl space could be obtained. The crawl space was

not entered due to the small space and extensive storage of materials in the space and confined space considerations. Mr. Trembay indicated that the tank had not been used for his entire tenancy. The land owner (Mr. Henson) was present during this time and indicated that he had been unaware that a tank was in the crawl space under the house. It is inferred by all parties that this had previously been a heating oil tank.

5.1.3 Tracy Bruno

Ms. Tracy Bruno has been a tenant at 1449 Burnside Rd W for 8 years. She indicated that the home heating oil AST was replaced approximately 7 years ago when the original tank was identified as having a leak. To the best of her knowledge the tank was replaced relatively quickly after a leak was detected but there was no soil remediation conducted in the area of the leaking tank.

6. Summary and Conclusions

McElhanney was retained by Highstreet Ventures Inc. to conduct a Phase I ESA of the property located at the intersection of Helmcken Road and Burnside Road W, View Royal, BC. McElhanney conducted visual observations of land in and adjacent to the Site, a comprehensive review of historical records, interviews, and a Site visit.

It is McElhanney's opinion that, based on the findings of this Phase I ESA, historical and current activities present a potential risk of impacting environmental media at the Site and further environmental investigation is warranted. Based on our assessment of the Site, four areas of potential environmental concern (APEC) were identified that require further investigation and is presented in *Table 4* and *Figure 7*.

Table 4. Areas of potential environmental concern

Area of Potential Environmental Concern	Description
APEC 1	**3 Helmcken Rd** Approximately 1000 L heating oil tank. Small stains noted under the tank, gravel floor is directly adjacent to the AST providing a pathway for contamination to enter the subsurface.
APEC 2	**1445 Burnside Rd W** abandoned home heating oil AST in the crawlspace on the southwest corner of the building
APEC 3	**1449 Burnside Rd W** 1000 L heating oil tank located on the northwest corner of the building. The original tank was leaking as was replaced with the current tank.
APEC 4	**5 Helmcken Rd** poor housekeeping in the yard to the north of the house included disposal of a kerosene container, a 250 L steel drum of unknown contents and several other chemical containers inferred to be for lawn care or general home maintenance.

Figure 7. Areas of potential environmental concern.

A limited Phase II Environmental Site Assessment (Limited Phase II ESA) is recommended to quantitatively assess surficial soils at the identified APEC locations. The collected soil samples would be analyzed by an accredited laboratory. Potential contaminants of concern will be determined during the planning stages of the Phase II ESA.

7. Limitations of Report

This report was prepared by McElhanney Consulting Services Ltd. ("McElhanney") for the exclusive use of Highstreet Ventures Inc. and may not be reproduced in whole or in part without the prior written consent of McElhanney, or used or relied upon in whole or in part by a party other than Highstreet Ventures Inc. Any unauthorized use of this report, or any part hereof, by a third party, or any reliance on or decisions to be made based on it, are at the sole risk of such third parties. McElhanney accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, in whole or in part.

This report is intended to provide a preliminary assessment of potential environmental concerns at the subject properties. This report is not meant to represent a legal opinion regarding compliance with applicable laws

nor to judge the acceptability of risk associated with any potential contamination. Note that environmental statutes, regulations and guidelines, and the interpretation of such environmental statutes, regulations and guidelines, are subject to change over time and such changes, when put into effect, could alter the conclusions and recommendations noted in this report.

The investigation program followed the standard of care expected of professionals undertaking similar work in British Columbia under similar conditions. No warranties, either express or implied, are made as to the professional services provided and included in this report.

This report is based on data and information collected during the investigation conducted by McElhanney Consulting Services Ltd. personnel or agents and is based solely on the conditions of the subject properties at the time of the site work completed, as described in this report. McElhanney has relied in good faith on information provided by individuals and third parties noted in this report. McElhanney accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report because of omissions or errors in information provided by third parties or for omissions, misstatements or fraudulent acts of persons interviewed. The compliance of past owners with applicable environmental statutes, regulations or guidelines was not within the scope of the services provided for this report.

Achieving the objectives stated in this report has required us to arrive at conclusions based upon the best information presently known to us. No investigative method can eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Professional judgment was exercised in gathering and analyzing the information obtained and in the formulation of the conclusions. Like all professional persons rendering advice, we do not act as absolute insurers of the conclusions we reach, but we commit ourselves to care and competence in reaching those conclusions

The scope of work for this Phase I ESA did not include any subsurface investigation and testing (of soils, groundwater or other materials), and it was based on a limited review of regulatory files. The findings cannot be extended to portions of the site which were unavailable for observation at the time of McElhanney's field investigations. If new information is discovered in the future during site excavations, building demolition or other activities, or if additional subsurface investigations or testing are conducted by others, McElhanney should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein.

8. Professional Statement

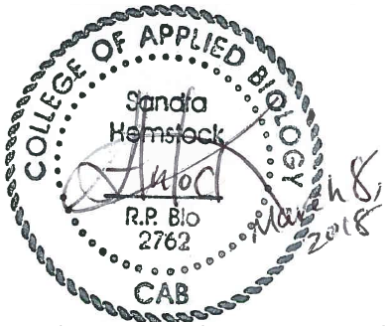
In conformance with applicable regulations we confirm that:

- This Phase I ESA Report has been prepared in accordance with the applicable standards; and
- The undersigned have demonstrable experience in investigation of the type of contamination at the Site for which this statement applies and are familiar with the investigation carried out at the Site.

Should there be any questions regarding the information within, please do not hesitate to contact the undersigned.

Yours truly,

MCELHANNEY CONSULTING SERVICES LTD.



Sandra Hemstock, M.Sc., R.P.Bio
Environmental Scientist

J. Dan Clowater, P.Eng.
Senior Environmental Engineer

Appendix A

Select Site Photographs

Photograph No.1: The Robalee Apartment Building at #3 Helmcken Rd, lawn in front of building former septic field.

Photograph No.2: The parking lot on the north side of the Robalee Apartment Building at #3 Helmcken Rd.

Photograph No.3: View looking east of back yard and house at 1445 Burnside Rd W

Photograph No.4: View west of 1447 Burnside Rd W (left side of photo) and 1449 Burnside Rd W (right side)

Photograph No.5: Storage shed and container to the west of 1447 Burnside Rd W

Photograph No.6: The detached garaged on the north boundary of the Site at 1449 Burnside Rd W

Photograph No.7: View northwest of house on southwest corner of the Site at #5 Helmcken Rd

Photograph No.8: Detached garage/shed along the western boundary of the Site for # 5 Helmcken Rd

Photograph No.9: View from center of Site looking west at former plant nursery and soil sorting area

Photograph No.10: Geosynthetic fabric lining the ground surface of the former plant nursery

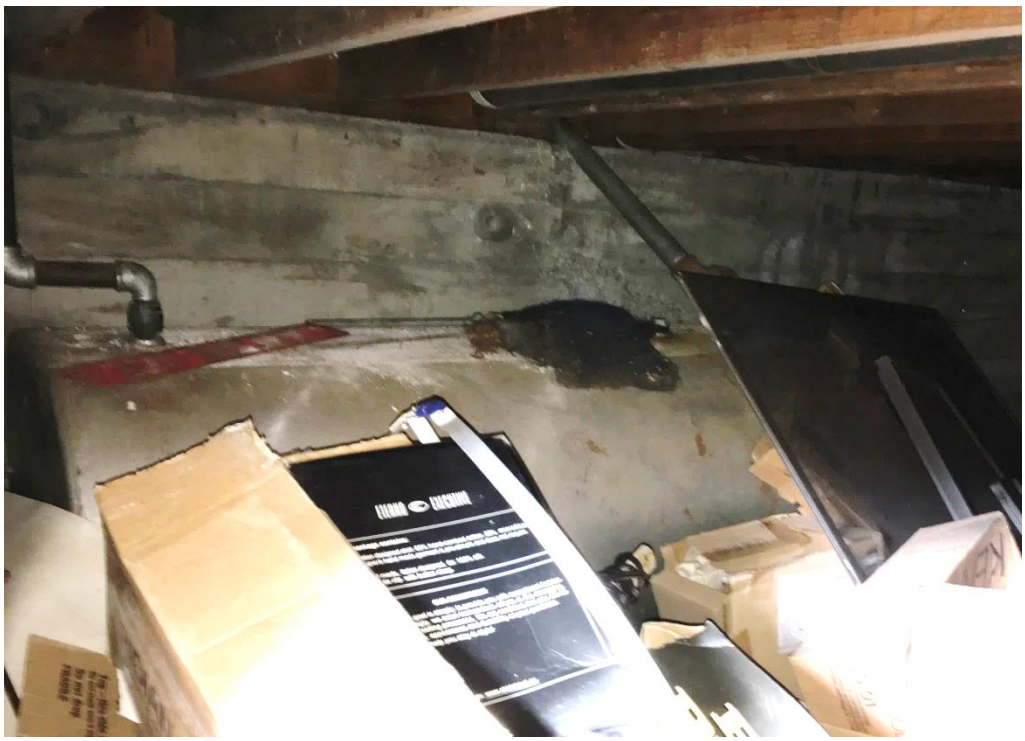
Photograph No.11: Lawn area along Helmcken Rd, undulating topography with a rocky outcrop in the background

Photograph No.12: Neighbouring cattle pasture and rural residential home to the east

Photograph No.13: Helmcken Road and residential area to the south, view looking east

Photograph No.14: Newly constructed townhouses to the west of the Site

Photograph No.15: Heating oil AST on the ground floor of the apartment building

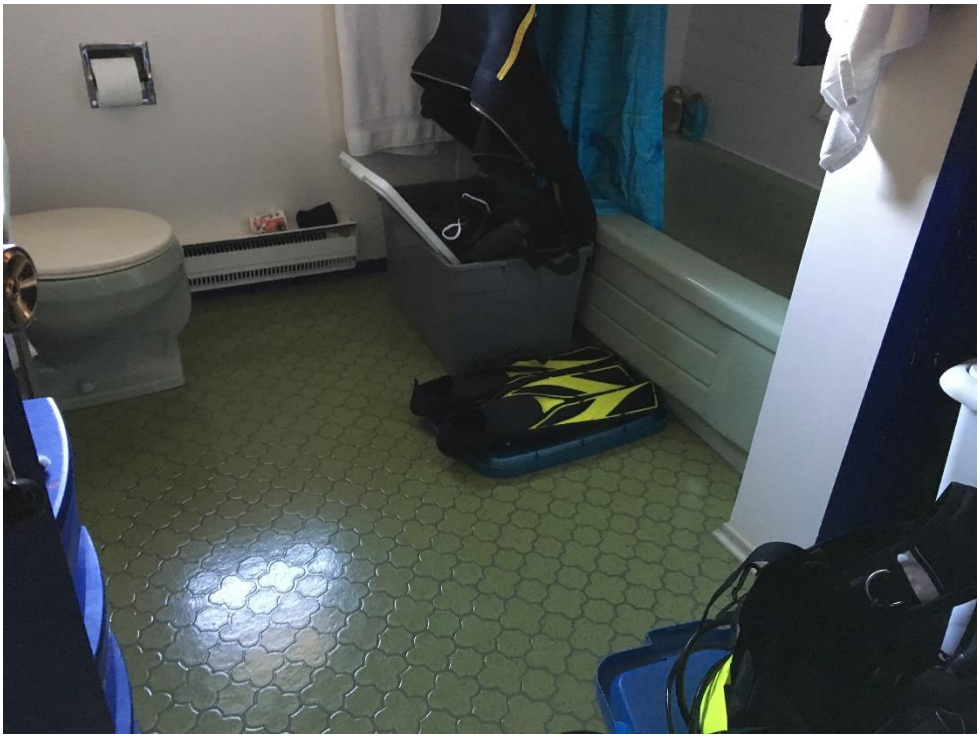


Photograph No.16: abandoned heating oil AST in the crawl space under the house at 1445 Burnside Rd W

Photograph No.17: Heating oil AST on the west side of the house at 1449 Burnside Rd W

Photograph No.18: Staining on the floor of the crawl space under 1445 Burnside Rd W

Photograph No.19: Staining under the valve of the AST at #3 Helmcken Rd



Photograph No.20: Example of linoleum that is suspect for containing asbestos

Photograph No.21: Example of ceiling tile that is suspect of containing asbestos

Photograph No.22: Asbestos cement siding on the house at 1447 Burnside Rd W

Photograph No.23: APEC for inappropriately discarded waste containers in the backyard at #5 Helmcken Rd

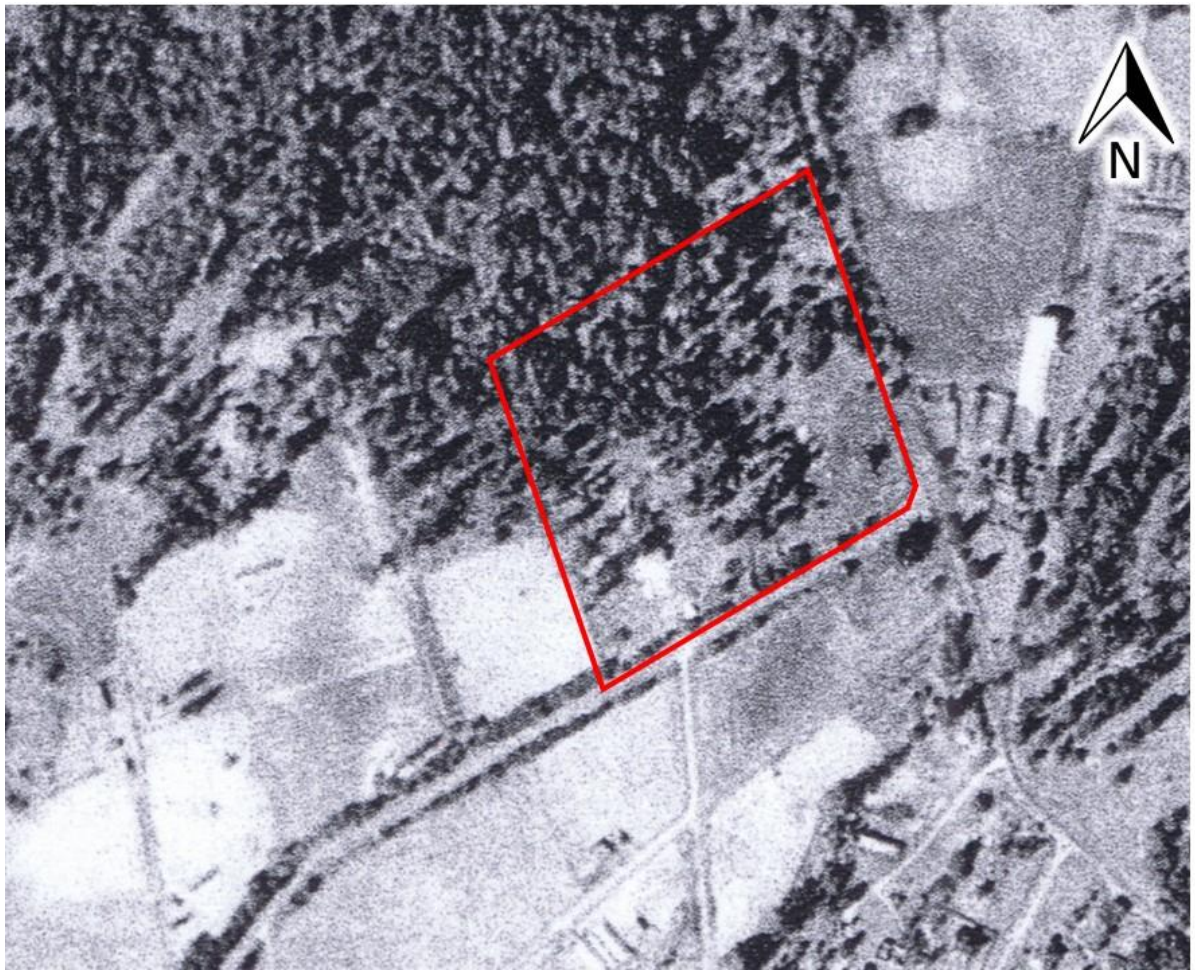
Photograph No.24: Rusted kerosene container in the scrap pile at #5 Helmcken Rd

Photograph No.25: Northwest corner of the Site formerly used to sort soil materials, some revegetated mounds of soil visible.

Photograph No.26: Road grade fill placed in the central northern portion of the Site adjacent to the former plant nursery and in the area where soil segregation formerly occured

Appendix B

Select Aerial Photographs



Photograph Reference: A 4517 66
Photograph Year: 1932
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: The Site was primarily forested with the southern portion cleared along Helmcken Rd.

The Surrounding Area: Helmcken Rd bound the Site and ended where it intersected with the Burnside Rd W at the southeast corner of the Site. Both roads appeared to be single lane gravel roads. There was agricultural land to the east, south and west. The property directly to the east had a single family home and a dairy barn.

McElhanney

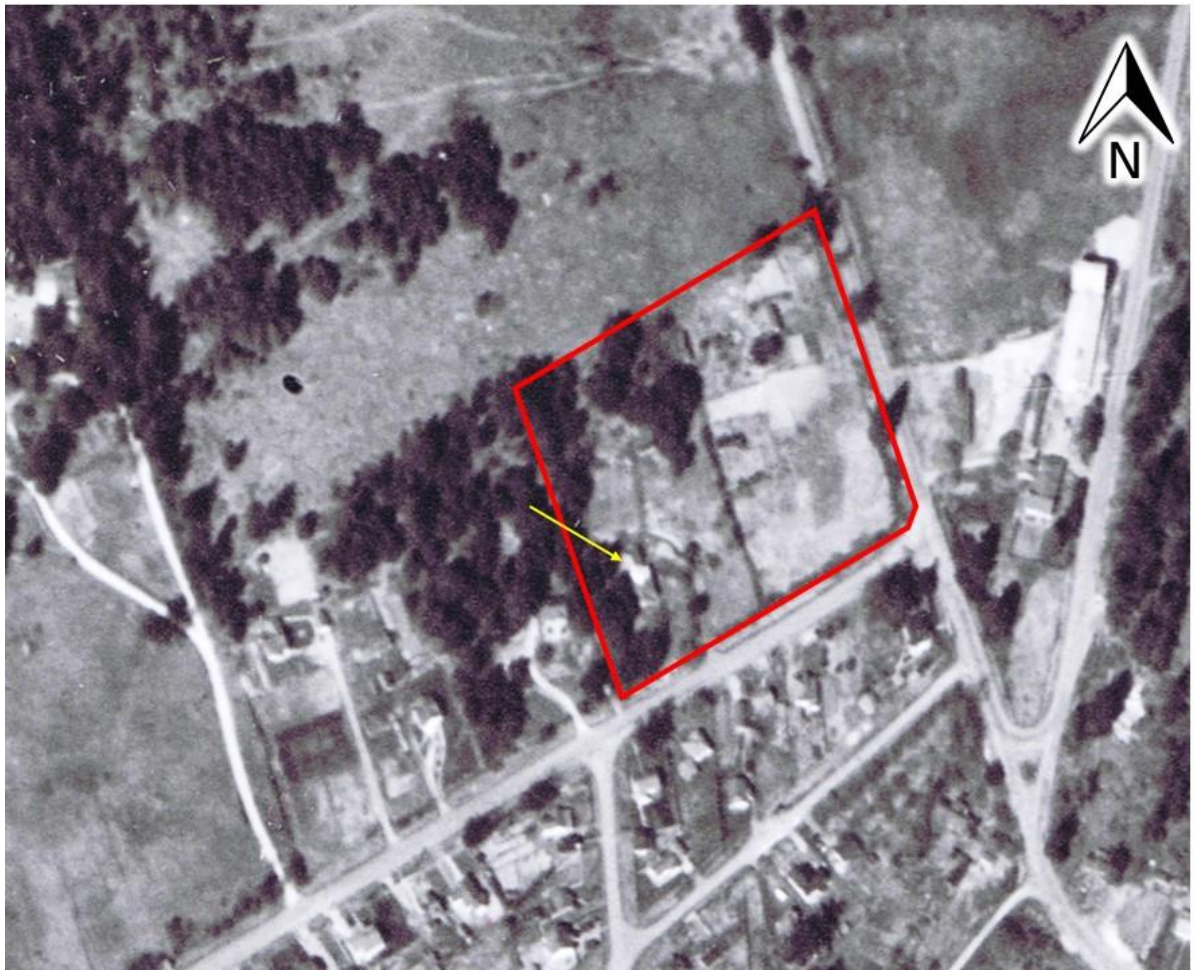
Photograph Reference: BC 245 76
Photograph Year: 1946
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: The majority of the forested vegetation had been removed and the Site converted to agricultural land. Near the northeast corner a single family home was visible which currently is 1447 Burnside Rd W (yellow arrow).

The Surrounding Area: A few rural residential homes were visible to the south and both Helmcken Rd and Burnside Rd W had been upgraded. Holland Ave had been constructed to the east of the neighbouring barn.

McElhanney



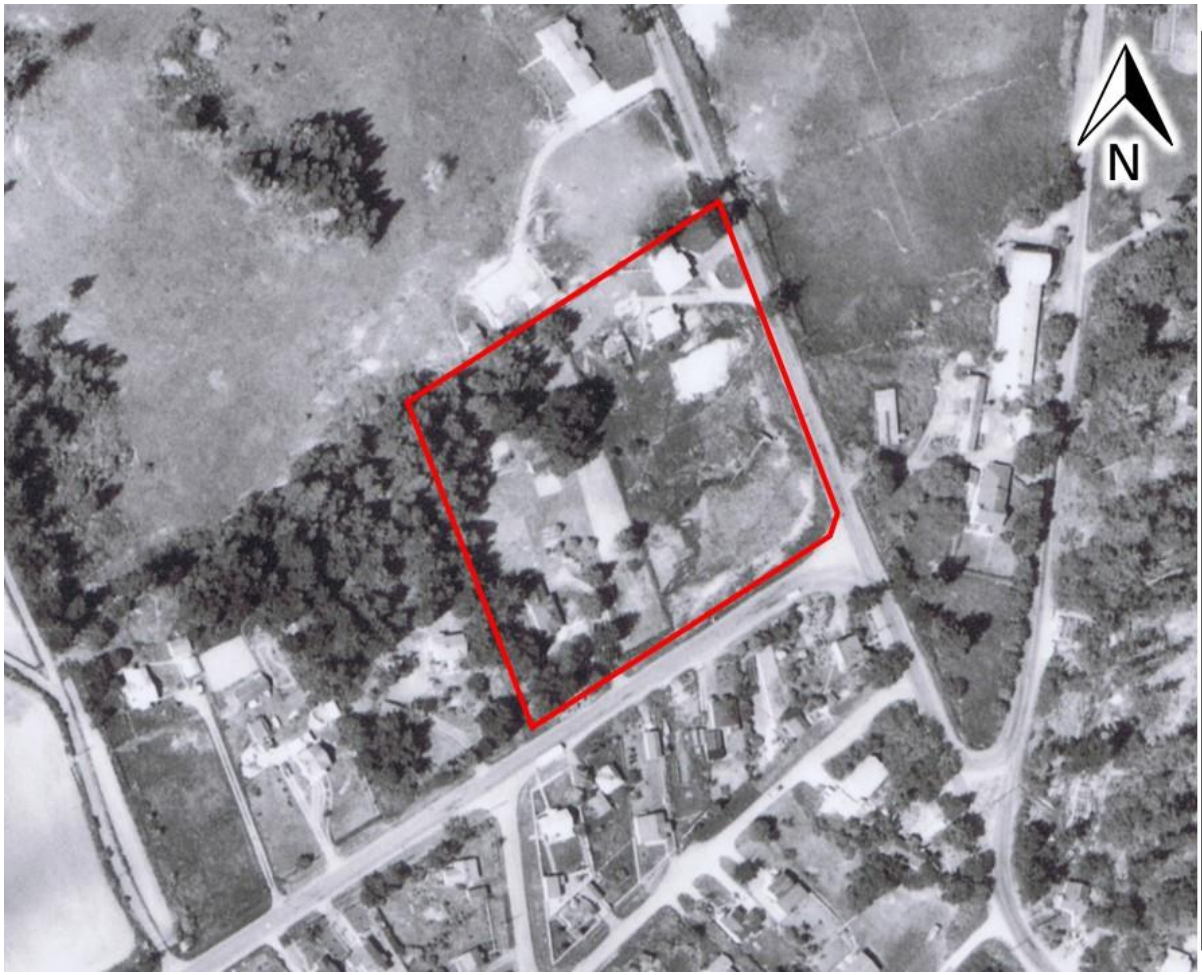
Photograph Reference: BC 2042 63
Photograph Year: 1956
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: The property appeared to have been subdivided with a hedge or fence running through the center (north south). A second single-family residential home was visible on the southwest corner which is 5 Helmcken Rd (yellow arrow).

The Surrounding Area: Conrad Street had been constructed to the south. Holland Ave had been paved. Residential development had increased to the south.

McElhanney



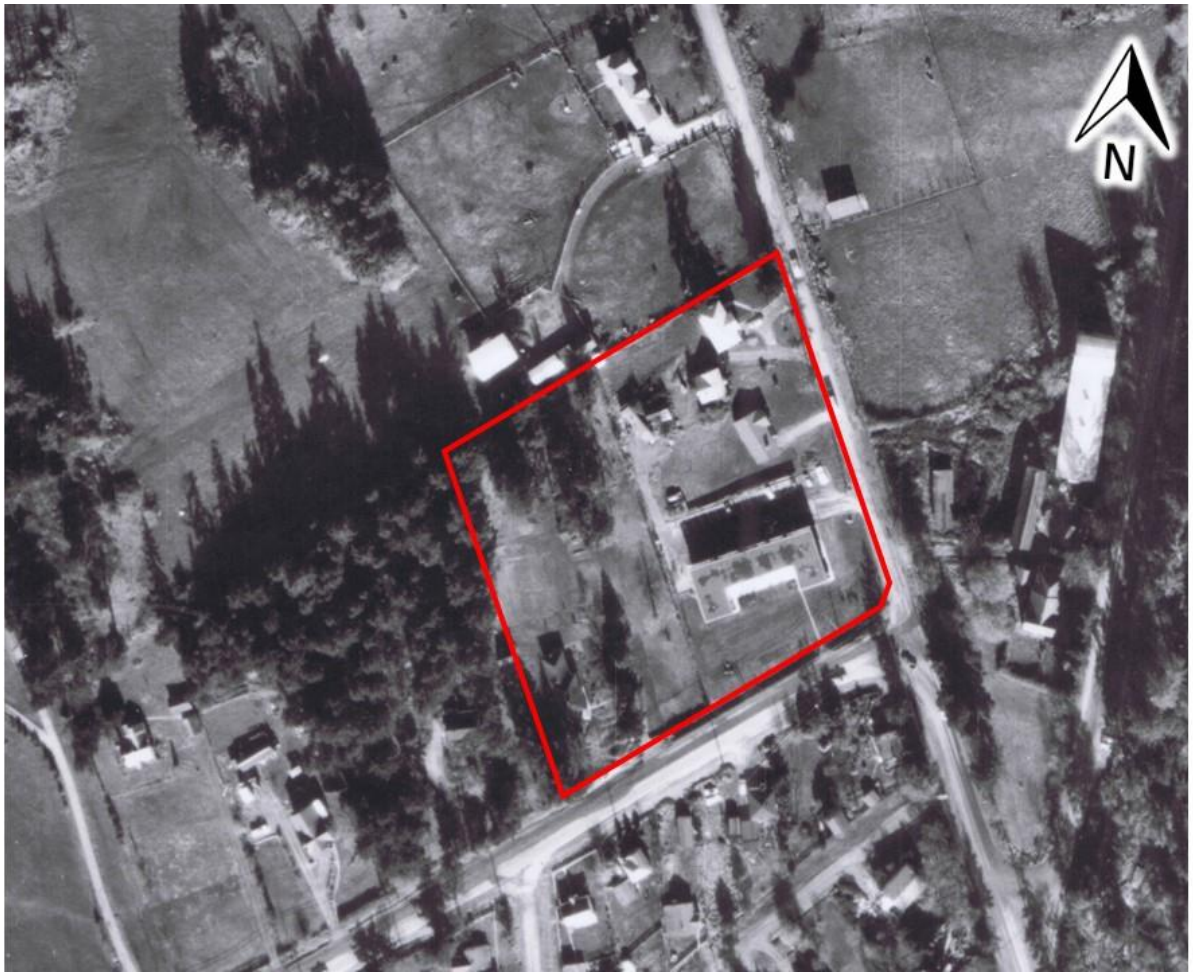
Photograph Reference: BC 5284 153
Photograph Year: 1968
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: The residential home at 1449 Burnside Rd W on the northeast corner had been built. The home at 1445 Burnside Rd W was under construction.

The Surrounding Area: The lot to the north had a residential home and a building consistent with a barn directly adjacent to the northern boundary.

McElhanney



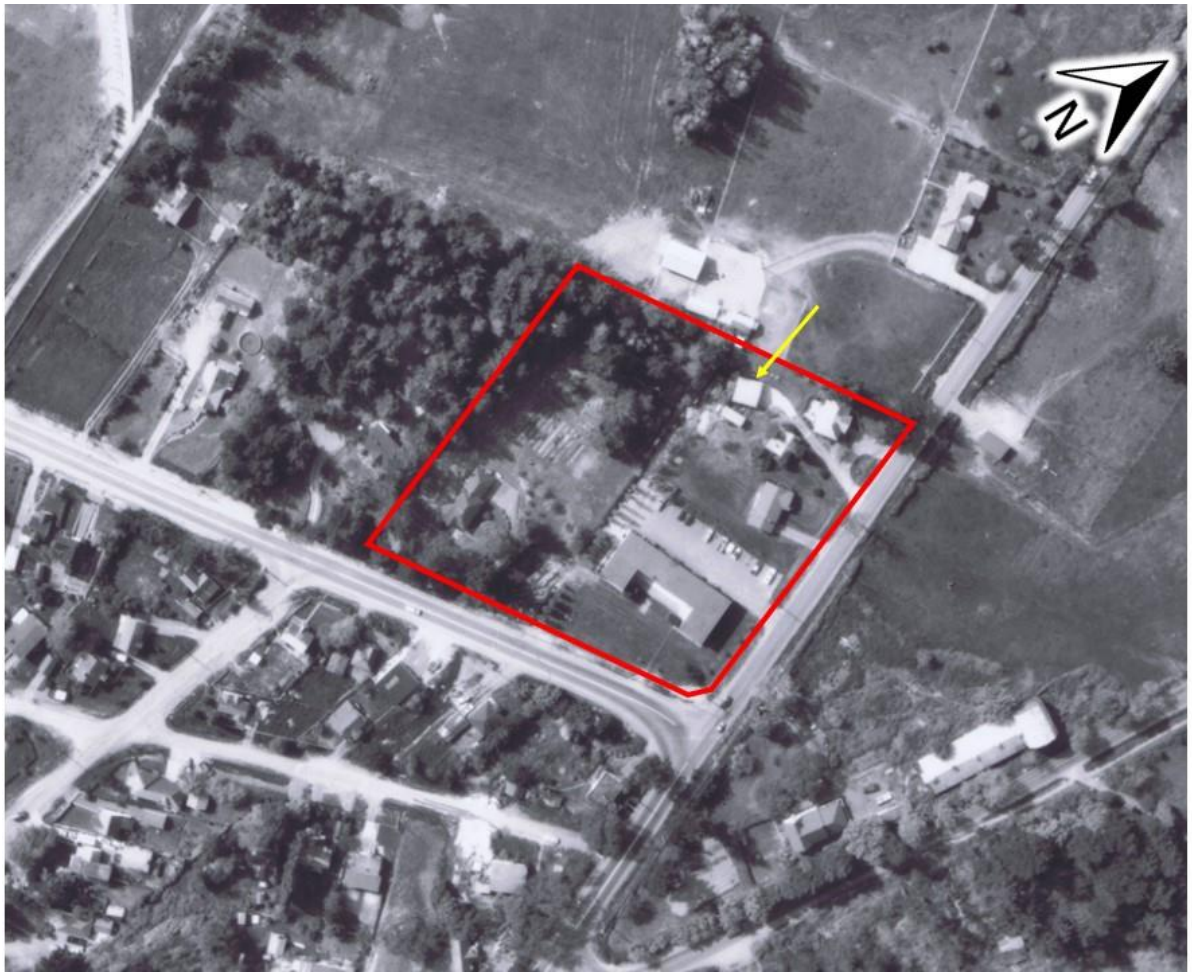
Photograph Reference: BC 5568 0082
Photograph Year: 1974
Interpreted by:
Reviewed by:

For ease of reference the Site has been outlined in red.

The Site: The apartment building on the southeast corner of the Site was visible (#3 Helmcken Rd). A third residential home had been built along the east of the Site off of Burnside Rd W (1445 Burnside Rd W). To the west of the houses was a building consistent with a mobile home unit.

The Surrounding Area: Observations were similar to 1968.

McElhanney



Photograph Reference: 15 BC 80005 272
Photograph Year: 1980
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: A structure consistent with a shed had been removed and a building had been constructed on the north central part of the Site (yellow arrow).

The Surrounding Area: Helmcken Rd and Burnside Rd W had been upgraded and widened.

McElhanney

Photograph Reference: FF 8606 70
Photograph Year: 1986
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 1980.

The Surrounding Area: Helmcken Rd had been extended to the east, cutting off Holland Ave. The barn to the east had been removed to allow the road expansion.

McElhanney

Photograph Reference: 15 BCB 97005 14
Photograph Year: 1997
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 1986.

The Surrounding Area: Observations were similar to 1986.

McElhanney

Photograph Reference: ME 05 439C 0093
Photograph Year: 2005
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: On the northwest quarter of the Site, stockpiles of soil were visible. To the south of the stockpiles there was an new paved pad which was consistent with a plant nursery. Bounding the garden boxes was a new paved or graveled parking area in the center of the Site. There was a stockpile of debris in the center of the Site on the new parking lot.

The Surrounding Area: The property to the west had been redeveloped to a high density residential development.

McElhanney

Photograph Reference: Google Earth
Photograph Year: 2010
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: The plant nursery was removed and a geo-synthetic lined fabric pad remained.

The Surrounding Area: to the south of Helmcken single family residential homes had been demolished and were being redeveloped.

McElhanney

Photograph Reference: Google Earth
Photograph Year: 2014
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 2010.

The Surrounding Area: To the west a large commercial development was under construction.

McElhanney

Photograph Reference: Google Earth
Photograph Year: 2017
Interpreted by: SH
Reviewed by: DC

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 2014.

The Surrounding Area: The commercial development to the west was complete.

McElhanney

Appendix C

Land Titles

TITLE SEARCH PRINT 2018-02-23, 10:22:02

File Reference: Requestor: Kyle D' Appolonia

Declared Value $962500

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Land Title District VICTORIA
Land Title Office VICTORIA

Title Number CA5514492
From Title Number CA4664021

Application Received 2016-09-19

Application Entered 2016-09-28

Registered Owner in Fee Simple
Registered Owner/Mailing Address: JULIE ANNE HENSON, HOMEMAKER
4548 ROCKY POINT ROAD
VICTORIA, BC
V9C 4E4
ROBERT WILLIAM HENSON, SELF-EMPLOYEED
1480 BURNSIDE ROAD
VICTORIA, BC
V8Z 1N2

Taxation Authority View Royal, Town of

Description of Land
Parcel Identifier: 000-295-981
Legal Description:
LOT 1 SECTION 9 ESQUIMALT DISTRICT PLAN 3963 EXCEPT PART IN PLAN 18753

Legal Notations NONE

Charges, Liens and Interests
Nature: UNDERSURFACE RIGHTS
Registration Number: M76301
Registered Owner: HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks: INTER ALIA
AFB 3.257.3685
DD 140 OS, SECTION 172(3)

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers	NONE
Pending Applications	NONE

TITLE SEARCH PRINT 2018-02-23, 10:19:17

File Reference: Requestor: Kyle D' Appolonia

Declared Value $250500

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Land Title District VICTORIA
Land Title Office VICTORIA

Title Number CA5749621
From Title Number CA5604932

Application Received 2017-01-05

Application Entered 2017-01-24

Registered Owner in Fee Simple
Registered Owner/Mailing Address: JULIE ANNE HENSON, HOMEMAKER
4548 ROCKY POINT ROAD
VICTORIA, BC
V9C 4E4
ROBERT WILLIAM HENSON, SELF-EMPLOYEED
1480 BURNSIDE ROAD
VICTORIA, BC
V8Z 1N2

Taxation Authority View Royal, Town of

Description of Land
Parcel Identifier: 000-300-365
Legal Description:
LOT 1 SECTION 9 ESQUIMALT DISTRICT PLAN 18753

Legal Notations NONE

Charges, Liens and Interests
Nature: UNDERSURFACE RIGHTS
Registration Number: M76301
Registered Owner: HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks: INTER ALIA
AFB 3.257.3685
DD 140 OS
SECTION 172(3)

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers	NONE
Pending Applications	NONE

TITLE SEARCH PRINT 2018-02-23, 10:22:48

File Reference: Requestor: Kyle D' Appolonia

Declared Value $680000

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Land Title District VICTORIA
Land Title Office VICTORIA

Title Number CA6364876
From Title Number CA2582289

Application Received 2017-10-12

Application Entered 2017-10-23

Registered Owner in Fee Simple
Registered Owner/Mailing Address: J&R HENSON CONSTRUCTION LTD., INC.NO. BC1105759
1480 BURNSIDE ROAD WEST
VICTORIA, BC
V9E 2E2

Taxation Authority View Royal, Town of

Description of Land
Parcel Identifier: 006-114-946
Legal Description:
LOT 2, SECTION 9, ESQUIMALT DISTRICT, PLAN 3963

Legal Notations NONE

Charges, Liens and Interests
Nature: UNDERSURFACE RIGHTS
Registration Number: M76301
Registered Owner: HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks: A.F.B. 3.257.3685 DD 504 OS
INTER ALIA SECTION 172(3)

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT 2018-02-23, 10:23:18

File Reference: Requestor: Kyle D' Appolonia

Declared Value $320000

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Land Title District VICTORIA
Land Title Office VICTORIA

Title Number CA6364879
From Title Number CA2582290

Application Received 2017-10-12

Application Entered 2017-10-23

Registered Owner in Fee Simple
Registered Owner/Mailing Address: J&R HENSON CONSTRUCTION LTD., INC.NO. BC1105759
1480 BURNSIDE ROAD WEST
VICTORIA, BC
V9E 2E2

Taxation Authority View Royal, Town of

Description of Land
Parcel Identifier: 007-028-156
Legal Description:
LOT 10, BLOCK 5, SECTION 9, ESQUIMALT DISTRICT, PLAN 1726

Legal Notations NONE

Charges, Liens and Interests
Nature: UNDERSURFACE RIGHTS
Registration Number: M76301
Registered Owner: HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA
Remarks: A.F.B. 3.257.3685 DD 142 OS
INTER ALIA SECTION 172(3)

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

Appendix D

ERIS Ecolog Database Search Results

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Helmken Phase I ESA* *3 Helmken Road* *View Royal BC*
Project No:	*2243-18014-00*
Report Type:	*Custom BC Standard Report Plus*
Order No:	*20180214175*
Requested by:	*McElhanney Consulting*
Date Completed:	*February 21, 2018*

Environmental Risk Information Services
A division of Glacier Media Inc.
P: 1.866.517.5204
E: info@erisinfo.com

www.erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property: *Helmken Phase I ESA*
3 Helmken Road View Royal BC

Project No: *2243-18014-00*

Coordinates:

Latitude:	*48.468802*
Longitude:	*-123.425063*
UTM Northing:	*5,368,494.99*
UTM Easting:	*468,580.57*
UTM Zone:	*UTM Zone 10U*

Elevation: *117 FT*
35.79 M

Order Information:

Order No: *20180214175*
Date Requested: *February 14, 2018*
Requested by: *McElhanney Consulting*
Report Type: *Custom BC Standard Report Plus*

Historical/Products:

Insurance Products *Fire Insurance Maps/Inspection Reports/Site Specific Plans*

Executive Summary: Report Summary

Database	Name	Searched	Search Radius	Project Property	Within 0.25 km	0.25 km to 0.50 km	Total
AMS	Authorization Management System (formerly WASTE)	Y	0.25	0	0	-	0
ARIS	Assessment Report Indexing System	Y	0.25	0	0	-	0
AUWR	Automobile Wrecking & Supplies	Y	0.25	0	0	-	0
BOGW	BC Oil and Gas Wells	Y	0.25	0	0	-	0
CHEM	Chemical Register	Y	0.25	0	0	-	0
CNG	Compressed Natural Gas Stations	Y	0.25	0	0	-	0
COAL	Coal Tar Sites	Y	0.25	0	0	-	0
CONV	Compliance and Enforcement Summary	Y	0.25	0	0	-	0
DIS	Wastewater Discharge Inventory	Y	0.25	0	0	-	0
EEM	Environmental Effects Monitoring	Y	0.25	0	0	-	0
EHS	ERIS Historical Searches	Y	0.25	0	0	-	0
EIIS	Environmental Issues Inventory System	Y	0.25	0	0	-	0
EM	Environmental Monitoring Locations	Y	0.25	0	0	-	0
FCON	Federal Convictions	Y	0.25	0	0	-	0
FCS	Contaminated Sites on Federal Land	Y	0.25	0	0	-	0
FISH	Commercial Fisheries	Y	0.25	0	0	-	0
FOFT	Fisheries & Oceans Fuel Tanks	Y	0.25	0	0	-	0
GEN	Waste Generators Summary	Y	0.25	0	0	-	0
GEN2	Generators - Special Waste Information System (SWIS)	Y	0.25	0	0	-	0
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0.25	0	0	-	0
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0.25	0	0	-	0
LUM	Lumber Mills	Y	0.25	0	0	-	0
MINE	Canadian Mine Locations	Y	0.25	0	0	-	0
MNR	Minerals Deposits Database	Y	0.25	0	0	-	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0.25	0	0	-	0
NCPL	Non-Compliance Reports	Y	0.25	0	0	-	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0.25	0	0	-	0
NDSP	National Defense & Canadian Forces Spills	Y	0.25	0	0	-	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0.25	0	0	-	0
NEBI	National Energy Board Pipeline Incidents	Y	0.25	0	0	-	0
NEBW	National Energy Board Wells	Y	0.25	0	0	-	0
NEES	National Environmental Emergencies System (NEES)	Y	0.25	0	0	-	0
NPCB	National PCB Inventory	Y	0.25	0	0	-	0
NPRI	National Pollutant Release Inventory	Y	0.25	0	0	-	0

Database	Name	Searched	Search Radius	Project Property	Within 0.25 km	0.25 km to 0.50 km	Total
OGW	Oil and Gas Wells	Y	0.25	0	0	-	0
PAP	Canadian Pulp and Paper	Y	0.25	0	0	-	0
PCB	Inventory of PCB Storage Sites	Y	0.25	0	0	-	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0.25	0	0	-	0
PES	Pesticide Register	Y	0.25	0	0	-	0
PRAI	Private Aggregate Inventory	Y	0.25	0	0	-	0
PUAI	Public Aggregate Inventory	Y	0.25	0	0	-	0
REC	Waste Receivers Summary	Y	0.25	0	0	-	0
REC SWIS	Receivers - Special Waste Information System (SWIS)	Y	0.25	0	0	-	0
RST	Retail Fuel Storage Tanks	Y	0.25	0	0	-	0
SCT	Scott's Manufacturing Directory	Y	0.25	0	0	-	0
SREG	Site Registry	Y	0.50	0	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0.25	0	0	-	0
WDS	Waste Disposal Site Inventory	Y	0.25	0	0	-	0
WWIS	Water Well Information System	Y	0.25	0	0	-	0
	Total:			0	0	0	0

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number

No records found in the selected databases for the surrounding properties.

Executive Summary: Summary By Data Source

No records found in the selected databases for the project property or surrounding properties.

Map : 0.5 Kilometer Radius

Order No: 20180214175

Address: 3 Helmken Road, View Royal, BC

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

123°25'30"W

48°28'30"N

48°28'30"N

Aerial (2013)

Address: 3 Helmken Road, View Royal, BC

Source: ESRI World Imagery

Order No: 20180214175

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

123°25'30"W

48°28'30"N

48°28'30"N

Topographic Map

Address: 3 Helmken Road, View Royal, BC

Source: ESRI World Topographic Map

Order No: 20180214175

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

No records found in the selected databases for the project property or surrounding properties.

Unplottable Summary

Total: 2 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
PES	0940349 BC LTD	#9 BURNSIDE ROAD WEST, VICTORIA, BC, CA V9A 1B2	BC	
PES	MR. FERTILIZER & HYDROPONICS	#9 BURNSIDE ROAD WEST	VICTORIA BC	

Unplottable Report

Site: ***0940349 BC LTD***
#9 BURNSIDE ROAD WEST, VICTORIA, BC, CA V9A 1B2 BC

Database: ***PES***

Licence NO:	19204	***Product/Service::***	87 - DOMESTIC AND UP TO 100KG COMMERCIAL PESTICIDES
Type:	Vendor	***Duration (yrs):***	
Approved Date:	04/01/2016	***Public Land::***	
Expiry Date:	04/01/2017	***Aerial Applicator::***	
Legal Name::	0940349 BC LTD	***Mailing Address::***	

Site: ***MR. FERTILIZER & HYDROPONICS***
#9 BURNSIDE ROAD WEST VICTORIA BC

Database: ***PES***

Licence NO:	19204	***Product/Service::***	DOMESTIC AND UP TO 100KG COMMERCIAL PESTICIDES
Type:	Vendor	***Duration (yrs):***	
Approved Date:	04/01/2013	***Public Land::***	
Expiry Date:	04/01/2014	***Aerial Applicator::***	
Legal Name::	0940349 BC LTD	***Mailing Address::***	#9 BURNSIDE ROAD WEST, VICTORIA, BC, V9A 1B2

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ***Note:*** *Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Authorization Management System (formerly WASTE): Provincial AMS

AMS is the Ministry of Environment's waste permit administration system. It maintains data related to the administration of permits issued under the Environmental Management Act and registrations under various regulations where the regulation requires a discharger to register. It will include information such as companies or individuals permitted to discharge waste; type of business and locations at which waste disposal is permitted; the types, amounts and frequency of waste products that are permitted to be discharged at given locations; issue date and more. This was previously referred to as the "WASTE" database.

Government Publication Date: 1957-Oct 2016

Assessment Report Indexing System: Provincial ARIS

Within British Columbia, the "Mineral Tenure Act Regulation", requires that results of mineral exploration and development programs be submitted to the British Columbia Ministry of Employment and Investment, where they are then maintained and housed by the Geological Survey Branch. The assessment reports provided by the Geological Survey Branch contain summary information for reports approved to November 1998; on geology, geophysics, geochemistry, drilling, prospecting and physical work.

Government Publication Date: Dec 31, 2016

Automobile Wrecking & Supplies: Private AUWR

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-May 2017

BC Oil and Gas Wells: Provincial BOGW

The BC Oil and Gas Wells database was collected from the BC Oil and Gas Commission and is a comprehensive database that includes information regarding well number, well name, operator name, location, depth, status, as well as drill date and type. Please note that this database will not be updated, information on wells drilled after January 2006 can be found in the Oil and Gas Wells (OGW) database under the 'Private Source Database' section.

Government Publication Date: 1918-Jan 2006*

Chemical Register: Private CHEM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

Government Publication Date: 1999-May 2017

Compressed Natural Gas Stations: Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 31, 2012

Coal Tar Sites: Provincial COAL

This one-time study is an inventory of all known and historical coal tar sites, identifying sites that produced coal tar and other related tars during the mid 1800's to the mid 1900's.

Government Publication Date: 1992*

Compliance and Enforcement Summary: Provincial CONV

This database summarizes orders, tickets and convictions issued by the Ministry of the Environment under applicable ministry and federal legislation. Orders are issued when action is required to prevent or stop actual or potential impact to the environment. Tickets apply to all tickets paid, deemed guilty by non-payment or expiry, or contested in court and found guilty by a judge. Convictions apply to all court convictions of ministry legislation as well as federal legislation where the ministry has taken action. This reporting summary began in January 2006, replacing Non-Compliance Reports by the former Ministry of Water, Land & Air Protection. See the Non-Compliance Reports (NCPL) database below for more information. This database is part of a larger COORS (Conservation Officer On-Line Reporting System) database controlled by the Ministry of Environment in BC.

Government Publication Date: 1990-Dec 2016

Wastewater Discharge Inventory: Provincial DIS

This inventory contains information regarding direct dischargers of toxic pollutants for the following operations: Industrial; Commercial; Agricultural; Mining; Municipal; Urban; Aquaculture; and Pulp & Paper, operating under provincial permits. Please note that this program was discontinued and therefore the database will not be updated.

Government Publication Date: 1957-1995*

Environmental Effects Monitoring: Federal EEM

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches: Private EHS

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Aug 2016

Environmental Issues Inventory System: Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Environmental Monitoring Locations: Provincial EM

List of environmental monitoring locations included in the Environmental Monitoring System (EMS) maintained by BC's Ministry of the Environment. EMS is the ministry's primary monitoring data repository. The system was designed to capture data covering physical/chemical and biological analyses performed on water, air, solid waste discharges and ambient monitoring sites throughout the province.

Government Publication Date: Mar 2011-Aug 2017

Federal Convictions: Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land: Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: Jun 2000-Dec 2017

Commercial Fisheries: Provincial FISH

The Fisheries, Aquaculture & Commercial Fisheries Branch of the Ministry of Water, Land & Air Protection maintains a database of fish processing plant approvals, licenses and activities. Each year, licenses need to be renewed.

Government Publication Date: 1993-2012

Fisheries & Oceans Fuel Tanks: Federal FOFT

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sep 2017

Waste Generators Summary: Provincial GEN

Within British Columbia, the Special Waste Regulation defines a waste generator as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number (BCG#), company name and address of registered generators; including the types of hazardous wastes generated and the form of treatment used in the handling of the waste. Some of "Waste Generators Summary" addresses may represent mailing addresses rather than waste/hazardous sites. This information is a summary of all years from June 1993 to September 2010. Please note that a British Columbia Generator number (BCG#) are not unique to a company. This database is part of a larger SWIS (Special Waste Information System) database controlled by the Ministry of Environment in BC. Waste Generators Summary data are historic and no longer being updated.

Government Publication Date: 1993-2010*

Generators - Special Waste Information System (SWIS): Provincial GEN2

The Special Waste Information System (SWIS) maintained by the BC Ministry of Environment holds information related to the generation and transportation of hazardous waste under the Hazardous Waste Regulation. This is a list of waste shipper sites (waste generators) included in hazardous waste transport manifests from 2011 - 2014, accompanied by manifest details.

Government Publication Date: Jan 2011-Dec 2014

Greenhouse Gas Emissions from Large Facilities: Federal GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO2 eq).

Government Publication Date: 2013-Dec 2015

Indian & Northern Affairs Fuel Tanks: Federal IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Lumber Mills: Provincial LUM

This database provides information regarding the general location and estimated annual output capacity of major timber processing facilities within the province of British Columbia.

Government Publication Date: 1997-2015

Canadian Mine Locations: Private MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Minerals Deposits Database: Provincial MNR

The Ministry of Energy and Mines maintains a database of more than 12,000 metallic mineral, industrial mineral and coal deposits and occurrences within British Columbia. Information within our report pertains to primary name, elevation, mining division, commodities, and status. Please note that as of January 27, 1999, information included within this database was divided into 2 categories: released and unreleased areas. Records for unreleased areas may contain incomplete, unedited, and/or inaccurate data.

Government Publication Date: Jul 31, 2017

National Analysis of Trends in Emergencies System (NATES): Federal NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports: Provincial NCPL

From 1990 to March 2001 the Ministry of Water, Land & Air Protection maintained a reporting system that identified any reported concern that pertained to compliance with authorized waste management permits or plans, approvals, orders, operational certificates and regulations, or any other activity under the Waste Management Act. This reporting system was discontinued in April of 2001; therefore there will be no updates to this database. However, beginning in January 2006 the Ministry of the Environment began publishing Compliance and Enforcement Summaries. See the Compliance and Enforcement Summary (CPL) database above for more information.

Government Publication Date: 1990-Mar 2001*

National Defense & Canadian Forces Fuel Tanks: Federal NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills: Federal NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites: Federal NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents: Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Dec 31, 2017

National Energy Board Wells: Federal NEBW

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017

Oil and Gas Wells: Private OGW

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-December 31, 2017

Canadian Pulp and Paper: Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009

Inventory of PCB Storage Sites: Provincial PCB

The Ministry of Water, Land & Air Protection maintains a database of all active Polychlorinated Biphenyls (PCB) waste storage sites within the Special Waste Information System. Please note that there is no requirement to maintain an accurate listing of all inactive PCB waste storage equipment and/or disposal sites. The records within this database provide information regarding site name, location, an inventory of stored wastes and quantities, and status date (when site first active/inactive). Previous to May 1993, data was collected from a different source and is only available for 1989. Inventory of PCB Storage Sites data are historic and no longer being updated.

Government Publication Date: 1989, May 1993-2010*

Parks Canada Fuel Storage Tanks: Federal PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register: Provincial PES

This is a database of individuals who apply for a service or vendor license for the use of registered pesticides. A service license is denoted by an "S" in the license number, likewise, a vendor license by a "V" in the license number.

Government Publication Date: 1989-Sep 2016

Private Aggregate Inventory: Provincial PRAI

Within British Columbia, aggregate pits are designated as mines; and as such, the Ministry of Energy and Mines is responsible for their planning, management and regulation, including permitting, health, safety and reclamation. Owners or operators of all private aggregate pits must file Notices of Work as part of the permitting and reclamation process. In 1994, the Geological Survey Branch initiated the Aggregate Program, in order to establish an inventory of natural and crushed aggregate pits. Information about each pit in the database file includes its location, NTS map sheet number, Notice of Work file number and status (active/inactive) and the type of landform hosting the pit. This database was a one-time inventory and will not be updated.

Government Publication Date: 1975-1996*

Public Aggregate Inventory: Provincial PUAI

Information about public aggregate pits in British Columbia is collected and managed by the Ministry of Transportation and Highways. Data has been gathered on more than 2000 pits, in respect to pit name, type and geographical location.

Government Publication Date: 1960-2001*

Waste Receivers Summary: Provincial REC

The Special Waste Regulation defines the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. A waste receiving location is any site or facility to which waste is transferred through a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address. Some of "Waste Receivers Summary" addresses may represent mailing addresses rather than waste/hazardous sites. This database is part of a larger SWIS (Special Waste Information System) database controlled by the Ministry of Environment in BC. Waste Receivers Summary data are historic and no longer being updated.

Government Publication Date: 1992-2010*

Receivers - Special Waste Information System (SWIS): Provincial REC SWIS

The Special Waste Information System (SWIS) maintained by the BC Ministry of Environment holds information related to the generation and transportation of hazardous waste under the Hazardous Waste Regulation. This is a list of waste receiver sites included in hazardous waste transport manifests from 2011 - 2014, accompanied by manifest details.

Government Publication Date: Jan 2011-Dec 2014

Retail Fuel Storage Tanks: Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-May 2017

Scott's Manufacturing Directory: Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Site Registry: Provincial SREG

This information is collected from the Ministry of Environment's Site Registry. It is not a registry of contaminated sites, although some sites on the registry are contaminated. Most sites have already been investigated and require minor remediation, or have already been cleaned up to government requirements. The Registry also stores environmentally relevant historic information about sites including: names of participants, legal and administrative notations, references to pertinent documents submitted to the ministry, associations with other sites, and much more.
1. Please note the information provided in the Detail Reports have been updated to the best of our ability as provided by the source, BC Government. For more information, please contact your ERIS sales representative.

Government Publication Date: Sep 30, 2017; details from Oct 2012

Transport Canada Fuel Storage Tanks: Federal TCFT

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970-Aug 2017

Waste Disposal Site Inventory: Provincial WDS

This inventory pertains to active, regulated waste disposal sites within the province of British Columbia. Registered companies may hold a permit or certificate for release of the following waste types: Effluent, Refuse, Air and Special Waste Storage. Information on Waste Disposal Sites after 1998 is contained within the Authorizations (AUTH) database.

Government Publication Date: 1980-1998*

Water Well Information System: Provincial WWIS

This database was collected from the Groundwater Information Center of the Ministry of Water, Land & Air Protection and contains over 90,000 records. Comprehensive information is available for each well including: well location (address/site area), latitude/longitude, legal description (section, lot, plan, district lot, range, township), BCGS Mapsheet No., depth of well, construction dates, well status and lithology. The accuracy of well locations is also provided, as well as the reference source for obtaining geographic coordinates.

Government Publication Date: Oct 31, 2017

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

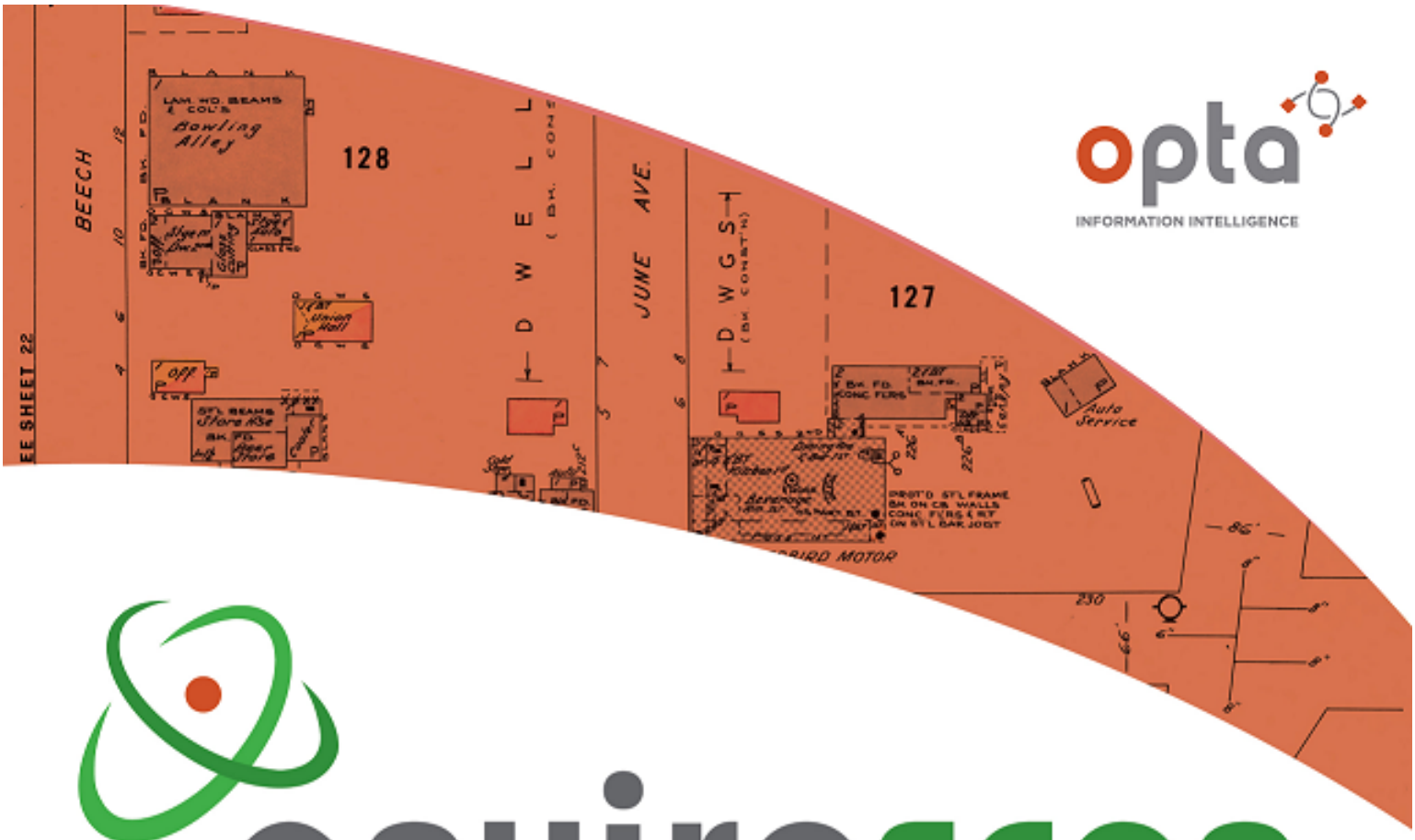
Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Appendix E

Opta Fire Insurance Records



opta
INFORMATION INTELLIGENCE

enviroscan

An SCM Company

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:

Catherine

Site Address:

3 Helmken Rd View Royal BC

Project No:

20180214175

Opta Order ID:

45876

Requested by:

Eleanor Goolab
Eris

Date Completed:

2/23/2018 1:30:11 PM

Project Name: Helmken Phase I ESA

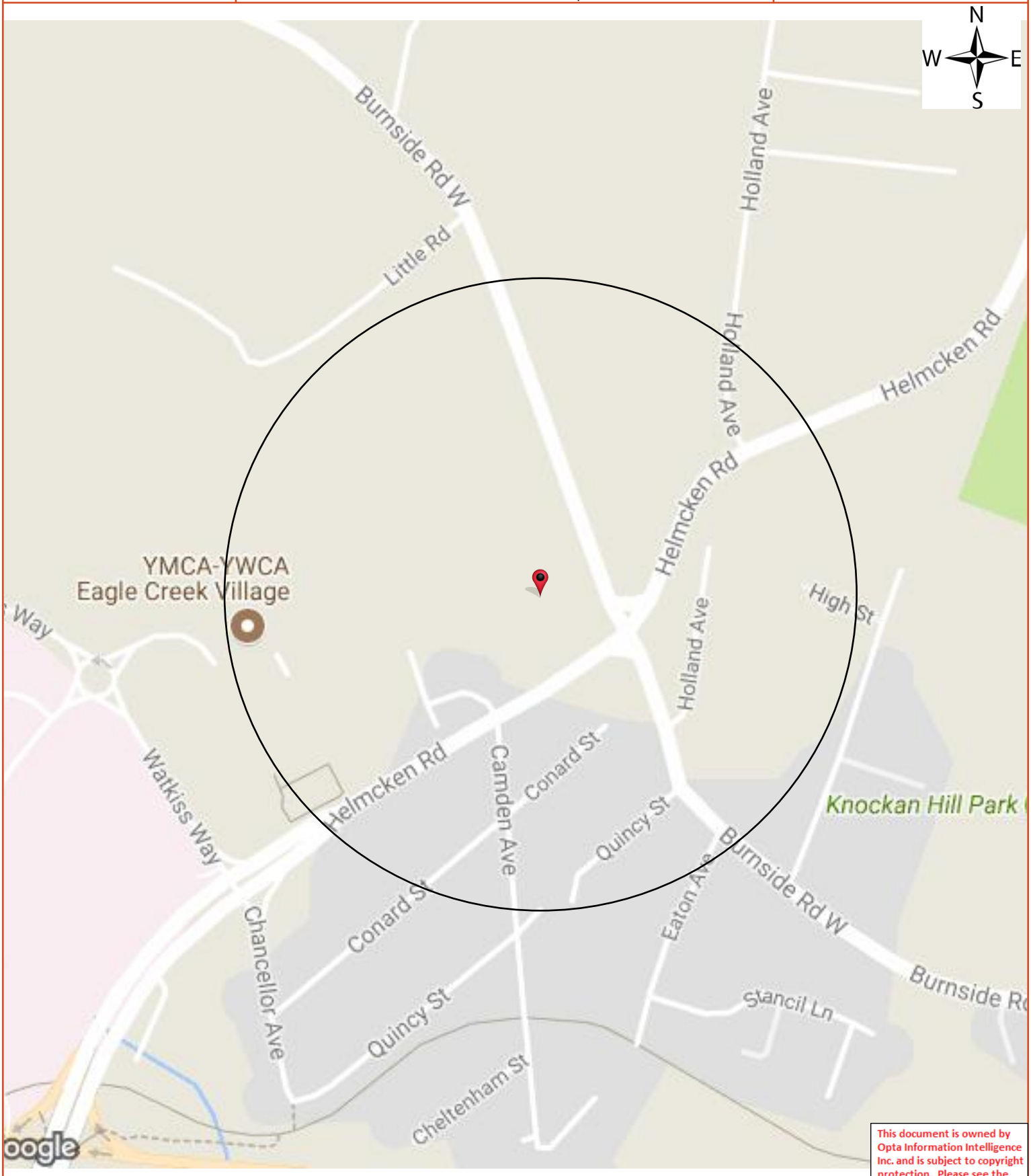
Project #: 20180214175
P.O. #: 22431801400

ENVIROSCAN Report

Search Area: 3 Helmken Rd View Royal BC

Requested by:
Eleanor Goolab
Date Completed: 02/23/2018 13:30:11

enviroscan
OPTA INFORMATION INTELLIGENCE



Opta Historical Environmental Services Enviroscan™ Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

ENVIROSCAN Report

No Records Found

Requested by:
Eleanor Goolab
Date Completed: 02/23/2018 13:30:11

OPTA INFORMATION INTELLIGENCE

No Records Found

N
W E
S

Appendix F

Vancouver Public Library Civic Directories

INFOACTION

Friday, February 16, 2018

Dear Sandra,

RE: View Royal City directory search (Project # 2443-18014-00)

As per your request, please find enclosed photocopies of the entries from the city directories for the following street/blocks:

- Burnside Rd 1200-1500
- Camden Ave
- Conrad St
- Helmken Rd from Chancellor to Holland
- Holland Ave

for the following years:

- 1999 (the most current directory)
- 1994
- 1989
- 1984
- 1979
- 1974
- 1969
- 1964
- 1959
- 1954
- 1949
- 1945
- 1940
- 1935
- 1930
- 1925
- 1920
- 1915
- 1910 (oldest city directory searched for View Royal streets)

Please not the following:

Burnside Road:
The blocks requested appear on Burnside Road West. The blocks requested do not appear in the directory for 1949, 1920 or 1910. The block numbers change in the directory for 1945 to 944-1001.

Vancouver Public Library

InfoAction - Information & Research Centre
Vancouver Public Library, Level 5
350 West Georgia Street, Vancouver, BC V6B 6B1
Phone: 604-331-3612 Fax: 604-331-3611
infoaction@vpl.ca www.infoaction.ca

INFOACTION

Camden Avenue:
This street is not listed in the directories for 1910-1954.

Conrad Street:
This street appears as Conard Street in most of the directories searched. The directory for 1945 says this street is part of Esquimalt. The directories for 1940 and 1930 say this street is part of Strawberryvale. This street is listed as Conrad in the directories for 1935 and 1915. This is no listing for this street in the directories for 1925, 1920 or 1910.

Helmken Road:
It is not clear if the blocks requested are included in the directory for 1949. The address numbers change to 3-58 in the directories for 1930-1945. The blocks requested are not included in the directories for 1925, 1920 and 1910. The directory for 1930 says this street is part of Strawberryvale.

Holland Avenue:
This street is listed as part of Saanich in most of the directories searched. The blocks requested do not appear in the directories for 1949, 1920 or 1910.

The total cost of this search and accompanying documentation came to $250.00 plus GST. Our Accounting Department will be invoicing your for this amount shortly.

As always, please don't hesitate to contact us if you have any questions or concerns regarding this search or if we can be of any further assistance.

Sincerely,

Kelly Erickson

Vancouver Public Library

InfoAction - Information & Research Centre
Vancouver Public Library, Level 5
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“Eagle Nest” at Helmcken Rd & Burnside Rd

Parking Study

Prepared for: Invictus Commercial Investment

Prepared by: **Watt Consulting Group**

Our File: 2496

Date: September 14, 2018

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1.0 INTRODUCTION

Watt Consulting Group ("WATT") was retained by Invictus Commercial Investment to conduct a parking study for the proposed development ("Eagle Nest") at the Northwest corner of Burnside Road / Helmcken Road in the Town of View Royal. The purpose of this study is to assess the adequacy of the proposed parking supply by considering parking demand at representative multi-family apartment rental buildings, primary research on vehicle ownership and parking demand adjustment factors. The study also explores parking management approaches.

1.1 SUBJECT SITE

The subject site is located at the Northwest corner of Burnside Road / Helmcken Road in the Town of View Royal. See **Figure 1**.

FIGURE 1. **SUBJECT SITE**

1.2 SITE CHARACTERISTICS

The following describes transportation options and services in proximity to the site.

SERVICES

The site is located at the eastern boundary of the Town of View Royal on the edge of the District of Saanich and benefits from immediate access to a variety of commercial and retail amenities. Within 400m (about a 5-minute walk) of the site, residents can access a number of amenities and services including a grocery store, pharmacy, liquor store, medical services, office buildings, and restaurants. Within 600m (about a 7-minute walk) of the site, residents can access the Victoria General Hospital.

TRANSIT

There are two bus stops—located at the intersection of Helmcken Road and Burnside Road and adjacent to the intersection of Watkiss Way and Helmcken Road—within a 5-minute walk of the subject site. The bus stops are served by a combined three bus routes (#22 – Vic General / Hillside Mall, #39 – Royal Roads / Camosun / Royal Oak / UVic, #14 – Vic General / UVic) that provide service to key employment hubs and destinations within the region including Victoria General Hospital, downtown Victoria, Royal Jubilee Hospital, the University of Victoria, the Hillside Mall, Langford Lake and other parts of Victoria, Saanich, and Oak Bay. With access to a multiplicity of bus routes servicing a variety of destinations, future residents can reliably use transit for both commuting and non-work trips.

The Victoria Region Transit Future Plan[1] provides guidance on future transit networks in the Victoria Region. The subject site benefits from access to a number of bus routes that use Highway 1, which is identified as an exclusive corridor on the Rapid Transit Network (RTN). The RTN is intended to move high volumes of passengers between major regional destinations along key transportation corridors. The RTN will provide service frequency of 15 minutes or better between 7:00am to 10:00pm, 7 days a week. Moreover, to improve travel time and reliability, the RTN will have its own right-of-way to eliminate or significantly reduce the impact of general traffic on transit vehicles.[2] As the RTN becomes fully realized, residents of the subject site will benefit from improved and more reliable transit service.

[1] BC Transit. (2011). Transit Future Plan Victoria Region. Executive Summary. Available online at: https://www.bctransit.com/documents/1507213421003

[2] Ibid.

WALKING

The subject site can be described as car-dependent with a walk score of 46, suggesting that most daily errands require a vehicle.[3] A sidewalk is available on the Northwest side of the intersection of Burnside Rd W and Helmcken Rd, immediately in front of the subject site, which would directly serve residents walking to and from the bus stops and the local stores (e.g., Eagle Creek Village – shopping mall). An enhanced marked crosswalk (e.g., zebra crossing) facilitates safe crossings at the intersection of Burnside Rd W and Helmcken Rd.

The proponent is planning to provide sidewalk upgrades along Burnside Rd W and Helmcken Rd. The planned improvements include sidewalks of 2 metres in width and a 2 metre boulevard, similar to the existing boulevard that is located on Helmcken Rd.

CYCLING

There are dedicated bike lanes on both sides of Helmcken Rd. In View Royal's 2008 Transportation Master Plan (TMP), both Helmcken Rd and Burnside Rd W are part of the proposed bicycle network. The TMP mentions that the District of Saanich has plans to reconstruct the portion of Burnside Rd W bordering with the Town of View Royal. The Town of View Royal has endeavoured to maintain a cross-section on this portion of the road that is consistent with the proposed cross-section for the District of Saanich section.[4] Both routes are part of the commuter route as designated in the bicycle network and provide connections to the Galloping Goose Regional Trail.[5]

1.3 CURRENT LAND USE

The site currently contains a multi-unit apartment building and is zoned RM1, Ground-Oriented Multiple-Unit Residential.

[3] More information about walk score is available online at: https://www.walkscore.com/score/3-helmcken-rd-victoria-bc-canada

[4] Town of View Royal. (2008). 6. Recommended improvements in *Transportation Master Plan* (pp.6.1-6.34). Available online at: http://www.viewroyal.ca/assets/Town~Hall/Documents~and~Forms/Engineering~Documents~and~Forms/TMP%20Chapter%206.pdf

[5] Town of View Royal. (2008). 4. Existing Conditions in *Transportation Master Plan* (pp.4.1-4.25). Available online at: http://www.viewroyal.ca/assets/Town~Hall/Documents~and~Forms/Engineering~Documents~and~Forms/TMP%20Chapter%204.pdf

2.0 PROPOSED DEVELOPMENT

2.1 LAND USE

The proposed development includes a 260-unit multi-family apartment development with a mix of one-, two-, and three-bedroom units. The proposed development will provide 81 one-bedroom units, 163 two-bedroom units, and 16 three-bedroom units.

2.2 PARKING SUPPLY

The proposed parking supply includes 366 off-street parking spaces, about 1.41 spaces per unit. The proposal also includes one long-term bicycle space per unit, plus four 6-space racks for visitors, consistent with the Town's parking requirements (see Section 3.0).

3.0 PARKING REQUIREMENT

The Town of View Royal Zoning Bylaw No. 900 determines the minimum parking supply requirement. Per the Bylaw, the required parking supply for this site (residential, apartment) is 1 space per one-bedroom unit, 1.5 spaces per two-bedroom unit, and 2 spaces per three-bedroom unit, resulting in a total requirement of 358 parking spaces. The proposed parking supply (366) meets the minimum parking supply requirement. The Bylaw does not require visitor parking for apartments. See **Table 1**.

TABLE 1. **MINIMUM PARKING SUPPLY REQUIREMENT**

Type of use	Number of Parking Spaces Required
One-bedroom	1 per dwelling unit
Two-bedroom	1.5 per dwelling unit
Three-bedroom	2 per dwelling unit

The Town also requires 1 long-term (i.e., Class 1) bicycle parking space per unit and a 6-space bicycle parking rack (i.e., Class 2) intended for visitors. See **Table 2**. This results in 260 bicycle parking spaces in a secure, weather-protected bicycle parking facility and four 6-space bicycle parking racks, one at each entrance of the four apartment buildings. The proposed development is meeting these requirements.

TABLE 2. **MINIMUM BICYCLE SUPPLY REQUIREMENT**

Type of use	Bicycle Spaces Required (minimum of 6)	Type and Number of Bicycle Spaces
Apartment	1 per dwelling unit, plus a 6-space rack at each entrance of an apartment	Class 1 – 100% Class 2 – six space rack

Further, the Town requires for every multiple unit residential development that requires more than 100 parking spaces, that an electric vehicle charging station is provided on the lot, which can be accessible to the residents.

4.0 EXPECTED PARKING DEMAND

Expected parking demand for the site is estimated in the following sections to determine if the proposed supply will adequately accommodate demand. Expected parking demand is based on [a] observations from representative multi-family apartment building sites in the Town of View Royal and the Township of Esquimalt, [b] research from past parking studies, and [c] relevant findings from the literature.

4.1 RESIDENT PARKING DEMAND

4.1.1 OBSERVATIONS

Observations were conducted at 10 representative multi-family apartment rental buildings in the Town of View Royal and the Township of Esquimalt. The representative sites combine for a total of 536 units. The sites were selected based on three criteria:

1. Walk Score. Sites needed to have comparable Walk Score to the subject site with a minimum score of 46 and a maximum score of 69, which are considered "car-dependent" to "somewhat walkable".[6] An additional site with a Walk Score of 83 was included to represent the potential Walk Score the subject site could achieve in the future, based on its proximity to a mixed used development (Eagle Creek) and once the transit future network is realized.
2. Countable parking spaces. The sites needed to have parking spaces that were visible and therefore countable. Newer multi-family apartment buildings in View Royal and the region typically have enclosed garages or gated underground parking, making counting difficult.
3. Housing Tenure. Only apartment (market rental) multi-family buildings were selected, in order to match the proposed development's type of tenure. This criterion was used to better represent parking demand as it varies based on type of ownership (i.e., higher parking demand for condominium units than apartment units).[7]

Observations were conducted on Wednesday September 5th and Tuesday September 6th from 9:00pm to 10:00pm (representing the peak period for residential land uses). Results indicate an average parking demand of 0.75 vehicles per unit and range from 0.47 to 1.17 vehicles per unit. See **Table 3**.

[6] More information about Walk Score's methodology is available online at: https://www.walkscore.com/methodology.shtml
[7] Watt Consulting Group. (2016). Parking Demand Assessment. Review of Zoning Regulation Bylaw Off-Street Parking Requirements (Schedule C). Available online at: https://www.victoria.ca/assets/Departments/Planning~Development/Community~Planning/Documents/Victoria%20Schedule%20C%20Parking%20Review_Working%20Paper%20no3_FINAL_Sept23-16.pdf

TABLE 3. **SUMMARY OF OBSERVATIONS AT REPRESENTATIVE SITES**

Location	Walk Score	Number of Units	Wednesday September 5th 9:30pm		Tuesday September 6th 9:30pm	
			Vehicles Observed	Demand Rate (vehicles per unit)	Vehicles Observed	Demand Rate (vehicles per unit)
948 Esquimalt Road	66	136	64	0.47	62	0.46
980 Wordsley Street	68	65	44	0.68	57	0.88
899 Craigflower Road	61	50	41	0.84	42	0.86
885 Craigflower Road	63	73	61	0.84	61	0.84
866 Craigflower Road	63	75	44	0.59	47	0.63
843 Craigflower Road[8]	69	48	20	0.42	29	0.60
830 Craigflower Road	66	32	25	0.78	23	0.72
827 Selkirk Avenue	63	23	13	0.57	12	0.52
3 Helmcken Road	46	12	14	1.17	12	1.00
493 Burnside Road East	83	23	16	0.70	12	0.52
Average				**0.70**		**0.70**

4.1.2 ADJUSTMENT FACTORS

Observations are a useful method of assessing parking demand rates; however, there are limitations. One such limitation is the fact that an observation may not "catch" all residents while they are home with their parked car on-site. As shown in **Figure 2**, peak resident parking demand typically reaches 100% at 10:00pm which is the tail end of when the observations were completed for this study. There is some variation between sources as to when the ideal time is to conduct observations. One study using similar methods conducted parking observations between 12am and 5am and reported that resident parking demand may be highest between those hours.[9] Based on the available research, a conservative 10% adjustment factor is considered appropriate for the observations.

[8] The parking lot of this site included a number of non-operational vehicles (without license plates) that were not considered as active vehicles and therefore not counted.
[9] Cervero, R., Adkins, A & Sullivan, C. (2010). *Are Suburban TODs Over-Parked?* Journal of Public Transportation, 13(2), 47-70.

FIGURE 2. RESIDENTIAL PARKING DEMAND BY TIME OF DAY[10]

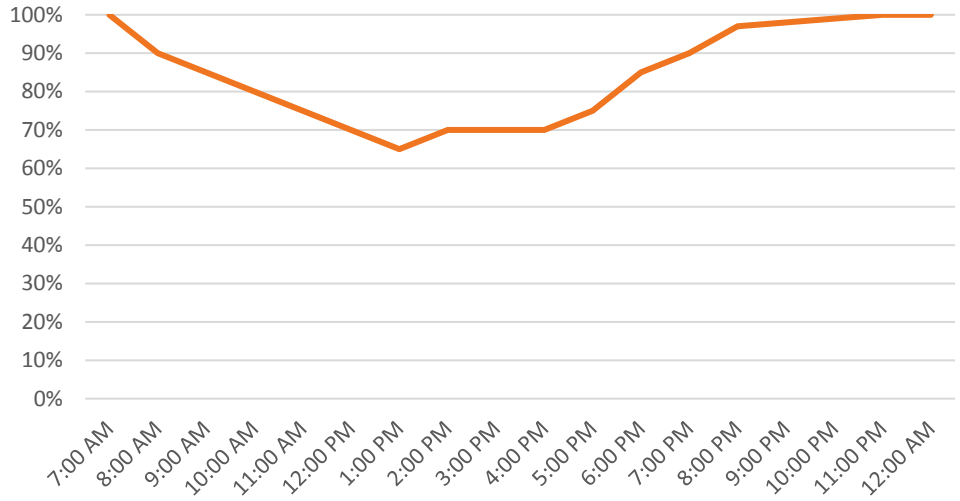

Table 4 shows the difference between the observed parking demand and the adjusted parking demand rate, reflecting the 10% increase for "missed vehicles" and the higher observed count. The average observed demand rate increased from 0.75 to 0.82 vehicles per unit.

TABLE 4. ADJUSTED PARKING DEMAND AT REPRESENTATIVE SITES

Address	Walk Score	Number of Units	Parking Demand Rate (vehicles per unit)	Adjusted Parking Demand Rate (vehicles per unit)
948 Esquimalt Road	66	136	0.47	0.52
980 Wordsley Street	68	65	0.88	0.96
899 Craigflower Road	61	50	0.86	0.94
885 Craigflower Road	63	73	0.84	0.92
866 Craigflower Road	63	75	0.63	0.69
843 Craigflower Road	69	48	0.60	0.66
830 Craigflower Road	66	32	0.78	0.86
827 Selkirk Avenue	63	23	0.57	0.62
3 Helmcken Road	46	12	1.17	1.28
493 Burnside Road East	83	23	0.70	0.77
		Average	**0.75**	**0.82**

[10] Residential Visitor Parking Demand by Time of Day is based on percentages identified in the Urban Land Institute *Shared Parking Manual*, Second Edition.

4.1.3 PARKING DEMAND BY UNIT SIZE

There is a significant amount of research concluding that parking demand varies based on unit size, that is, the greater the number of bedrooms, the higher the parking demand. For each representative site, the total parking demand can be further assessed by unit size (i.e., number of bedrooms).

Parking demand by unit type was calculated using:

1. Adjusted peak parking demand at each site;
2. The breakdown of unit type (i.e., number of bedrooms) at each site[11]; and
3. The assumed "ratio differences" in parking demand between each unit type based on the King County Metro[12] study, which recommends one-bedroom units have a 20% higher parking demand than bachelor units; two-bedroom units have a 60% higher parking demand than one-bedroom units; and three-bedroom units have a 15% higher parking demand than two-bedroom units.

Table 5 presents the assumed parking demand by unit type applied to the observed parking demand at each representative site. Applying these rates to the proposed development (81 one-bedroom, 163 two-bedroom, and 16 three-bedroom units) indicate that resident parking demand will be 253 vehicles.

[11] The unit size breakdown for the representative sites was obtained via email from the Canada Mortgage and Housing Corporation.

[12] King County Metro. (2013). Right Size Parking Model Code. Table 2, page 21. Available online at: http://metro.kingcounty.gov/programs-projects/right-size-parking/pdf/140110-rsp-model-code.pdf

TABLE 5. **PARKING DEMAND AT REPRESENTATIVE SITES, FACTORED FOR UNIT SIZE**

Location	Adjusted Parking Demand Rate (vehicles per unit)	Unit Type		
		One-Bedroom	Two-Bedroom	Three-Bedroom
948 Esquimalt Road	0.52	0.46	0.74	0.85
980 Wordsley Street	0.96	0.83	1.33	--
899 Craigflower Road	0.94	0.71	1.14	--
885 Craigflower Road	0.92	0.71	1.14	--
866 Craigflower Road	0.69	0.52	0.84	0.96
843 Craigflower Road	0.66	0.55	0.88	--
830 Craigflower Road	0.86	0.64	1.02	--
827 Selkirk Avenue	0.62	0.62	--	--
3 Helmcken Road	1.28	1.07	1.71	--
493 Burnside Road East	0.77	0.65	1.04	--
Average	**0.82**	**0.68**	**1.09**	**--**[13]

Only two of the representative sites (948 Esquimalt Road & 866 Craigflower Road) had three-bedroom units. There are a total of five units at the two representative sites. However, with only 5 of the 536 representative units being three-bedroom units, the demand rate could not be reliably derived from the data.

To estimate the three-bedroom demand rate, the assumed ratio from the King County Metro study was applied. The study indicates that three-bedroom units have 15% higher parking demand than two-bedrooms. Therefore, a 15% adjustment factor results in a rate of 1.26, or 20 vehicles for the three-bedroom units.

The results of the analysis indicate that average parking demand by unit type is as follows:

- One-bedroom units (81) = 0.68 vehicles per unit, 55 vehicles.
- Two-bedroom units (163) = 1.09 vehicles per unit, 178 vehicles.
- Three-bedroom units (16) = 1.26 vehicles per unit, 20 vehicles.
- **Total Resident Parking Demand = 253 vehicles**

[13] Due to the lack of representative sites with three-bedroom units, demand rate could not be derived from the data and an assumed ratio was used to calculate the three-bedroom units demand rate.

4.1.4 VEHICLE OWNERSHIP AT REPRESENTATIVE SITE

A multi-family apartment building (23 Helmcken Road) in the vicinity of the proposed development disclosed their most recent vehicle ownership data (August 2018).[14] The parking demand of that site is 0.82 vehicles per unit which is similar to the adjusted average parking demand calculated (0.82 vehicles per unit). The similarity between the calculated demand rate and the vehicle ownership rate indicates that the results presented in this report are an accurate prediction of what vehicle demand will be at the subject site. See **Table 6**.

TABLE 6. **VEHICLE OWNERSHIP AT EAGLE CREEK VILLAGE - SUITES**

Site	Walk Score	Units	Vehicles	Demand Rate (vehicles / unit)
23 Helmcken Road	43	60	49	0.82

Further, parking demand was identified for each unit type, see **Table 7**. The results of that site were found slightly lower than the parking demand calculated from observations at representative sites (0.68 vehicles per one-bedroom unit and 1.09 vehicles per two-bedroom unit). The results further validate that demand is significantly lower than the proposed parking supply.

TABLE 7. **PARKING DEMAND AT EAGLE CREEK VILLAGE - SUITES, FACTORED FOR UNIT TYPE**

Site	Parking Demand Rate (vehicles per unit)	Unit Type	
		One-Bedroom	Two-Bedroom
23 Helmcken Road	0.82	0.55	0.89

[14] Email correspondence with Eagle Creek Village Apartments

4.2 VISITOR PARKING DEMAND

Although the Town of View Royal does not require visitor parking, this section summarizes the expected visitor parking demand to help the proponent avoid potential spillover of visitors parking on adjacent streets.

Visitor parking demand rates have been demonstrated in the range of 0.05 to 0.07 vehicles per unit for multi-residential buildings across the Greater Victoria region.[15] More recent research found a visitor parking demand rate of 0.1 across 16 multi-family residential sites in proximity to downtown Victoria.[16] Observations of visitor parking at the representative sites demonstrated an average of 0.08 vehicles per unit, with a range from 0 to 0.19.

If a rate of 0.08 vehicles per unit was applied to this proposed development, it would result in a peak visitor parking demand of 20 vehicles.

4.3 SUMMARY OF EXPECTED PARKING DEMAND

Results from the observations of representative sites indicate that resident parking demand will be approximately 0.68 vehicles per one-bedroom unit, 1.09 vehicles per two-bedroom unit and 1.26 vehicles per three-bedroom unit, which results in 253 vehicles (0.97 per unit). See **Table 8**. The visitor parking demand rate is 0.08 spaces per unit, which results in a peak demand of 20 vehicles. Therefore, a total of 273 vehicles are expected for the subject site, which is 93 less than the proposed parking supply (366 parking spaces).

TABLE 8. **SUMMARY OF EXPECTED PARKING DEMAND**

Land Use		Quantity	Demand Rate (vehicles per unit)	Expected Parking Demand
Multi-Family Apartment	One-Bedroom Units	81 units	0.68	55
	Two-Bedroom Units	163 units	1.09	178
	Three-Bedroom Units	16 units	1.26	20
	Visitor Parking	260 units	0.08	20
		Total Expected Parking Demand		**273 vehicles**

[15] Based on observations of visitor parking conducted in 2015 for two studies of multi-family residential sites (one adjacent to downtown Victoria, the other in Langford) and findings from the 2012 Metro Vancouver Apartment Parking Study (Table 31, pg50) available at: www.metrovancouver.org/services/regionalplanning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf

[16] City of Victoria. (2016). Off-Street Parking Requirements (Schedule C) Working Paper No.3. Available online at: https://www.victoria.ca/assets/Departments/Planning~Development/Community~Planning/Documents/Victoria%20Schedule%20C%20Parking%20Review_Working%20Paper%20no3_FINAL_Sept23-16.pdf

5.0 ON-STREET PARKING

On-street parking observations were completed on Wednesday September 5th at 10:00pm and Thursday September 6th at 10:00pm to determine peak residential parking conditions. Evenings represent peak parking conditions for both residents and visitors alike according to the Urban Land Institute's Shared Parking manual.[17] The observations were completed to determine parking availability nearby the site. It should be noted that there is no provision of on-street parking along Helmcken Road.

Observations were completed on the following street:

- Burnside Road West from Helmcken Road to Little Road

A total of 4 parking spaces were observed. Peak utilization was observed at 0% of all available parking spaces occupied (0 of 4 available spaces). This indicates that there are four available on-street parking spaces available during peak conditions in case of spillover.

6.0 SUMMARY

The proposed development at the Northwest corner of Burnside Road / Helmcken Road in the Town of View Royal is for a 260-unit multi-family rental apartment building with a mix of one-, two- and three-bedroom units. The proposed parking supply is 366 spaces.

Parking demand was estimated for the site based on observations at representative study sites and primary research. The subject site's expected peak parking demand was determined to be 273 vehicles (253 resident, 20 visitor), which is 93 less than what is proposed

6.1 RECOMMENDATION

The proposed parking supply (366 spaces) is supported as appropriate for this site. However, consideration should be given to the findings of this report that indicates significantly lower parking demand (93 less parking spaces).

[17] Smith, M. (2005). Shared Parking, 2nd Edition. The Urban Land Institute.

EAGLE NEST

Helmcken Road Report

Prepared for:	Invictus Commercial Development Corp.
Prepared by:	**Watt Consulting Group**
Our File:	2497
Date:	March 27, 2019

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APPENDICES

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1.0 INTRODUCTION

WATT Consulting Group Ltd (WATT) has been retained by Invictus Commercial Development Corp (ICDC) to undertake a review of the Helmcken Road corridor near the Eagle Nest site between Burnside Road and Watkiss Way / Chancellor Avenue including the signalised intersections at Helmcken Road / Burnside Road and Helmcken Road / Watkiss Way / Chancellor Avenue. The review will consider the impact that reducing Helmcken Road southbound between Burnside Road and Watkiss Way / Chancellor Avenue has had on traffic operations and these intersections. The report will also review the available five year reported collision data for the corridor, potential traffic impacts to the Helmcken Road corridor near the site upon the completion of the McKenzie Road / Admirals Road / Highway 1 Interchange, any plans Victoria General Hospital has for expansion, future BC Transit plans and cycling. For clarity, the report orients Helmcken Road as a north-south road and Burnside Road as an east-west road.

Concept plans have also been developed for proposed roadway modifications to the Helmcken Road corridor between Burnside Road and Watkiss Way / Chancellor Avenue as well proposed modifications to the Helmcken Road / Watkiss Way / Chancellor Avenue and Helmcken Road / Burnside Road intersections. The concept plans illustrate the proposed roadway modifications to Helmcken Road and Burnside Road that will reduce traffic congestion, delay and in turn, environmental impacts near the site. The concept plans are supported by Synchro and SimTraffic software analysis of the recommended roadway modifications including microsimulation videos of existing and future (2028) traffic operations on Helmcken Road and Burnside Road.

The report also considers the impacts that the proposed roadway modifications will have on the north crosswalk at the Helmcken Road / Watkiss Way / Chancellor Avenue intersection as well as the east crosswalk at the Helmcken Road / Burnside Road intersection. The advantages and disadvantages of a potential pedestrian refuge area in the center median and a two-stage north / south crosswalk at the Helmcken Road / Watkiss Way / Chancellor Avenue intersection are also discussed.

An assessment of the pavement markings at the Helmcken Road / Watkiss Way / Chancellor Avenue intersection with the addition of a new southbound through lane on Helmcken Road was also undertaken and is detailed in the report.

2.0 BACKGROUND

According to the Transportation Association of Canada's (TAC) characteristics of urban roads, Helmcken Road near the Eagle Nest site is considered a minor urban arterial road.[1] Minor urban arterial roads are primarily intended to facilitate the movement of high volumes of traffic and provide connections to collector roads, other arterial roads, and freeways. Minor urban arterial roads typically realize traffic volumes between 5,000 and 20,000 vehicles per day and limit access to adjacent private lands. Helmcken Road has a daily traffic volume of approximately 12,000

[1] TAC Geometric Design Guide for Canadian Roads, Chapter 2

vehicles per day and provides direct access to a freeway (Highway 1) and other collector and arterial roads (Watkiss Way, Burnside Road, Interurban Road, Wilkinson Road, and West Saanich Road). As such, Helmcken Road is an important connection for View Royal and the region. This route provides access to educational facilities such as Camosun College and a key connection for those who conduct business and travel between the Western Communities and the Saanich Peninsula.

Between the fall of 2015 and the spring of 2016, Helmcken Road between Burnside Road and Watkiss Way / Chancellor Avenue underwent roadway modifications that included reducing southbound Helmcken Road from two lanes to one lane. The southbound lane reduction was based on a desire to calm southbound traffic between Watkiss Way and Burnside Road. However, its value as a traffic calming strategy is proving to be overly effective given the traffic congestion, delay and resulting environmental impacts that have resulted.

Shortly after the Helmcken Road modifications were made, construction of the McKenzie Road / Admirals Rd / Highway 1 Interchange began in September 2016. It is therefore assumed that some drivers may be choosing alternate routes, including Helmcken Road and / or Burnside Road, to avoid the construction impacts at McKenzie Road / Admirals Road / Highway 1.

3.0 EXISTING CONDITIONS (2018)

3.1 TRAFFIC CONDITIONS

Existing traffic conditions on Helmcken Road and at the Helmcken Road / Watkiss Way / Chancellor Avenue and Helmcken Road / Burnside Rd intersections were recently reviewed as part of the 2018 Eagle Nest Traffic Impact Assessment. Worst case conditions were reported during the PM peak hour and indicate southbound queues extend along Helmcken Road from Watkiss Way / Chancellor Avenue too far beyond Burnside Road which are considered indicative of excessively failing conditions at the Helmcken Road / Watkiss Way / Chancellor Avenue traffic signal. Similarly, westbound traffic at Helmcken Road / Burnside Road experiences significant queuing and a failing level of service during the PM Peak hour. Due to congestion on Helmcken Road and the single westbound lane on Burnside Road, westbound left turning drivers on Burnside Road have limited storage on Helmcken Road to complete their movement and results in congestion and delays for all westbound traffic on Burnside Road. A SimTraffic microsimulation of existing traffic conditions at the Helmcken Road / Watkiss Way / Chancellor Avenue and Helmcken Road / Burnside Road intersections was created to capture current traffic queuing during the PM peak hour. The results of the initial microsimulations did not accurately reflect the queue lengths observed in the field. Therefore, the model was calibrated using a 13% increase of southbound and westbound left turn traffic volumes at the Helmcken Road / Burnside Road intersection to account for latent traffic demand. Latent traffic demand is traffic demand that exists on the roadway, but is suppressed due to network capacity constraints and not counted as it cannot make it through/past a specific point in the network. Once additional capacity is added to

the network, the demand that had been latent materializes as actual usage.[2] For demonstration purposes, **Appendix A** provides the existing observed southbound and westbound traffic queue lengths during the PM peak hour on Helmcken Road and Burnside Road respectively.

3.2 COLLISIONS

A review of collision statistics from ICBC's website (between 2013 and 2017 inclusive) was undertaken for the key intersections of Helmcken Road / Watkiss Way / Chancellor and Helmcken Road / Burnside Road. As per **Table 1**, available total reported collision statistics are provided for the Helmcken Road / Watkiss Way / Chancellor Avenue and Helmcken Road / Burnside Rd intersections.

TABLE 1: FIVE YEAR COLLISION TOTALS

Year	Number of Collisions	
	Helmcken / Watkiss Way / Chancellor	Helmcken / Burnside
2013	3	9
2014	5	13
2015	7	8
2016	17	5
2017	21	26

The collision data indicates that the total collisions at the Helmcken Road intersections have been increasing since 2016. The data shows that the Helmcken Road / Watkiss Way / Chancellor Avenue intersection's 2017 total collisions are three times what they were in 2015. It is also clear that total collisions in 2017 at the Helmcken Road / Burnside Rd intersection are five times higher than in 2016 and double this intersection's previous highest number of yearly collisions (2013). Since 2016 when the roadway modifications on Helmcken Road were completed, the total annual collisions at the two Helmcken Road intersections increased from an average of 15 (2013-2015) to 47 in 2017. This represents a significant increase in annual collisions. However, this is only one year of data and, given the limitations of the available data, the cause of these collisions is unknown. To better understand the change in the number of annual collisions, additional collision data details would be required through a request by the Town to ICBC.

4.0 OTHER CONSIDERATIONS

The Helmcken Road corridor near the site has realized significant changes in the last four years including the addition of the Eagle Creek development, modifications to the Helmcken Road / Watkiss Way / Chancellor Avenue intersection, and the loss of the second southbound lane. While these changes have had a significant impact on traffic operations, other factors need to be reviewed including ongoing construction projects, future area development, and access to alternate modes.

[2] Taken from the web https://en.wikipedia.org/wiki/Induced_demand

4.1 MCKENZIE ROAD / ADMIRALS RD / HIGHWAY 1 INTERCHANGE

The ongoing Interchange project at the McKenzie Road / Admirals Road / Highway 1 intersection may be impacting traffic on the surrounding road network. Construction impacts on Highway 1 and McKenzie Avenue may be diverting traffic to Burnside Road and Wilkinson/Helmcken to avoid the congestion and delay that has been created from the construction and changing intersection road network.

According to available traffic count data collected in April 2012, before construction of the McKenzie Road / Admirals Road / Highway 1 Interchange, the two way total PM peak hour volumes on Helmcken Rd between Burnside Road and Watkiss Way / Chancellor Avenue were approximately 1,840 vehicles per hour. Since interchange construction began, PM peak hour traffic count volumes (2017 and 2018 data) for this same segment of Helmcken Road are approximately 10% and 15% lower respectively than in 2012. This reduction in traffic may be due to the southbound lanes being reduced from two lanes to one lane and the resulting queuing that is inhibiting traffic from traveling through this segment of the Helmcken Road corridor. As extensive queuing occurs, there is an accumulation of demand (vehicles) wanting to travel this segment, but are unable to reach it due to congestion. This in turn can lead to a stretching of the peak periods as it takes longer for vehicles to travel through the network. Once the interchange project is completed, change in traffic patterns on the regional road networks is unknown, but there is a potential that traffic may be reduced on the Helmcken Road corridor. However, the impact of this reduced traffic volume, if any, may not be sufficient to reduce the current congestion and delays.

4.2 BC TRANSIT PLANS

The Victoria Regional Transit Plan has developed nine focused Local Area Transit Plans. The Esquimalt and View Royal Local Area Transit Plan is intended to outline interim improvements for transit service and infrastructure over the next seven to fifteen years. At the time this report was written, the Esquimalt and View Royal Local Area Transit Plan was in the early planning stages having completed the first of two public consultations in September 2018. The second public consultation is planned for spring 2019 with proposed neighbourhood service and infrastructure improvement priorities being brought to the Victoria Transit Commission for adoption sometime in the fall of 2019. The neighbourhood service and infrastructure improvements would then be integrated into BC Transit's Annual Transit Plans and three year Service and Financial Strategies.[3] Until the Esquimalt and View Royal Local Area Transit Plan process is complete, changes to transit on Helmcken Road near the site, if any, are not known. Additional service frequency and routes can help to provide minor changes in traffic volumes; however, this reduction would be relatively small.

[3] BC Transit website https://bctransit.com/victoria/transit-future/local-area-transit-plans/project-updates/esquimalt-view-royal

4.3 VICTORIA GENERAL HOSPITAL EXPANSION

Island Health currently has no plans to expand Victoria General Hospital (VGH) according to its six year Capital Plans. It is possible that beyond six years, VGH expansion may be considered, but Island Health staff commented they cannot speculate on any potential plans beyond six years.[4]

4.4 CYCLING

Available cycling data for Helmcken Road between Burnside Road and Watkiss Way / Chancellor Avenue from April 2012, Sept 2017 and March 2018 was also reviewed for this report. During the PM peak hour, cyclist volumes were 15 per hour in 2012, 4 per hour in 2017 and only 1 per hour in 2018. While this data may not be indicative of a trend, it does suggest that in the PM peak hour, cyclist volumes on this segment of Helmcken Road are relatively low and do not translate to reduced vehicle volumes on the corridor.

5.0 MITIGATION MEASURES

To improve capacity and alleviate traffic congestion and delay on Helmcken Road, an additional 100m long southbound through lane between Watkiss Way / Chancellor Avenue and Burnside Road is recommended. The concept design in **Appendix B** illustrates the proposed southbound through lane which would require the following roadway modifications:

- removal of the existing curb extension on the southwest corner of the Helmcken Road / Watkiss Way / Chancellor Avenue intersection to accommodate an additional southbound receiving lane
- adjustment of the center median to realign the existing southbound left turn lane
- removal of the yellow gore pavement markings to accommodate the new southbound through lane and other pavement marking revisions

A concept design was also developed for the east leg of the Helmcken Road / Burnside Road intersection to provide a new 70m long westbound left turn lane on Burnside Road. The westbound left turn lane would require limited road widening within the road right-of-way, preferably on the north side of Burnside Road and may require relocation of up to two hydro poles.

Should these concept designs be implemented, the impacts to traffic are expected to significantly reduce southbound traffic queues and driver delay at the Helmcken Road / Watkiss Way / Chancellor Avenue intersection and in turn, at Helmcken Road / Burnside Road. In addition, westbound through, left turn and right turn queues lengths and driver delay at the Helmcken Road / Burnside Road intersection are expected to improve significantly from current conditions during the PM peak hour. The estimated PM Peak hour post roadway modification queue lengths on southbound Helmcken Road and westbound Burnside Road are illustrated in **Appendix A**. SimTraffic microsimulation of future traffic conditions (2028) at the Helmcken Road / Watkiss Way / Chancellor Avenue and Helmcken Road / Burnside Road intersections (including development

[4] Phone conversation with Rob Gunther, VIHA Planning staff member on December 17, 2018.

traffic) was also developed and captures anticipated queuing during the PM peak hour with the proposed roadway modifications. These proposed roadway modifications may also help alleviate the notable increase in annual collisions since 2016.

To improve access to the Eagle Creek development and Watkiss Way, another concept design has been developed which includes the additional 100m sound bound through lane and a new dedicated southbound right turn lane on Helmcken Road. As per the concept drawing in **Appendix C**, the proposed southbound right turn lane develops approximately 30 meters east of the access to the Eagle Creek development. It is expected that a dedicated southbound right turn lane on Helmcken Road would require considerable road and roadside modifications including:

- narrowing the center median and median landscaping
- relocation of up to two street lights on the north side of Helmcken Road
- relocation of one fire hydrant on the north side of Helmcken Road
- rebuilding of 80m of sidewalk on the north side of Helmcken Road
- narrowing the boulevard on the north side of Helmcken Road
- adjustment to the Eagle Creek access island
- adjustment to the island on the northeast corner of the Helmcken Road/ Watkiss Way / Chancellor Avenue
- pavement marking revisions

5.1 CROSSWALK OPTIONS AND IMPACTS

The proposed westbound left turn lane on Burnside Road at Helmcken Road will have minor impacts to the east crosswalk, but will reduce delays and queuing in the adjacent through / right turn lane, the pros and coms of which are shown in **Table 2**.

TABLE 2: HELMCKEN / BURNSIDE INTERSECTION CROSSWALK IMPACTS

Pros	Cons
• Reduced westbound through / right turn queueing • Reduced westbound through / right turn driver delay • Reduced environmental impacts	• Increased east side crosswalk distance (~2.5m) which requires a slight increase in the pedestrian clearance time • Increased pedestrian exposure (2 – 3 secs) • Construction costs of westbound left turn lane • Potential relocation of up to two hydro poles

The addition of the proposed second southbound through lane at the Helmcken Road / Watkiss Way / Chancellor Avenue intersection will not impact the existing north crosswalk. However, the existing southbound left turn lane will need to be realigned requiring modifications to the center median. The modifications to the center median present an opportunity to provide median refuge

for pedestrians between the northbound and southbound lanes, the pros and cons of which are identified in **Table 3**.

TABLE 3: HELMCKEN ROAD / WATKISS WAY / CHANCELLOR AVENUE PEDESTRIAN REFUGE

Pros	Cons
• Two stage crosswalks reduce pedestrian exposure improving pedestrian safety • Reduced pedestrian clearance time if treated as a two stage crossing • Additional north / south green time through reduction pedestrian clearance time for north crosswalk • Reduced north / south congestion and driver delay • Reduced crossing distance required to be crossed at one time may be beneficial for those with mobility challenges	• Construction costs • May increase non-compliance amongst pedestrians wanting to cross Helmcken • Two stage pedestrian crossings are not common in to Greater Victoria and may be unfamiliar to pedestrians • May increase complaints by able-bodied pedestrians who may have to wait longer overall to cross Helmcken

The concept designs in **Appendix B** illustrate a preferred modified crosswalk at Helmcken Road / Burnside Road as well as median pedestrian refuge at the Helmcken Road / Watkiss Way / Chancellor Avenue intersection.

5.2 PAVEMENT MARKINGS

In British Columbia, the Manual of Standard Traffic Control Signs and Pavement Markings suggests that guiding lines should be used at intersections with dual left turn lanes, but it does not speak to their use for other purposes. A regional survey of the use of guiding lines at intersections finds that intersections generally include guiding lines where dual left turn lanes are provided and are also installed at intersections that provide more than two through lanes (Vernon Avenue / Saanich Road and Blanchard Street / Saanich Road). The existing dual left turn lane guiding lines at the Helmcken Road / Watkiss Way / Chancellor Avenue intersection are appropriate and should remain with the addition of the proposed southbound through lane. However, new guiding lines should not be installed to delineate the path of southbound through lanes given the visibility of the southbound receiving lanes is not reduced due to significant offset or skewed geometry at the intersection.

6.0 CONCLUSIONS

Helmcken Road near the Eagle Nest site is considered an urban arterial road providing direct access to Highway 1. As such, it functions to facilitate the efficient movement of high volumes of traffic and forms and an important connection in the overall Victoria region road network. This segment of Helmcken also provides direct access for two developments on the north side of Helmcken Road and single family homes on the south side.

Existing conditions on Helmcken Road near the site, especially during PM peak travel times, indicate that the Helmcken Road / Watkiss Way / Chancellor Avenue and Helmcken Road / Burnside Road intersections experience excessive southbound and westbound queuing and delays respectively. It is well documented that traffic congestion has negative impacts on both the economy and on the quality of people's lives that must contend with it. Deliveries don't arrive on time and road users experience delay and stress while simultaneously contributing to environmental pollution idling on congested roads.

A review of collisions on Helmcken Road between Burnside Road and Watkiss Way / Chancellor Avenue indicate a significant increase in collisions since the southbound lane reduction in 2016. This increase in collisions requires review of detail ICBC collision reports, request for which should be made by the Town in order to determine causation.

The potential impacts that ongoing construction and access to alternate modes were found to be negligible. Therefore, in order to reduce delays and queues, additional roadway capacity is required. Additional capacity should include a new 100m southbound through lane (second lane) at Helmcken Road / Watkiss Way / Chancellor Avenue and a new westbound left turn lane at Burnside Road / Helmcken Road. These two improvements will provide significant additional capacity on Helmcken Road reducing southbound queue lengths, road user delay and pollution with minimal impact to existing infrastructure. These modifications will also significantly reduce queue lengths and delay for westbound traffic on Burnside Road. Furthermore, the proposed modifications to the center median on Helmcken Road at Watkiss Way / Chancellor Avenue provides an opportunity to install a pedestrian median refuge area and two stage crossing. This crossing will improve pedestrian safety and can further reduce vehicle congestion and delay on Helmcken Road.

APPENDIX A: ROADWAY MODIFICATION QUEUE LENGTH IMPACTS

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PLOT DATE: 3/27/2019 10:22 AM
PLOTTED BY: Tanner Vollema

EXISTING QUEUE LENGTHS

ESTIMATED 2028 POST DEVELOPMENT QUEUE LENGTHS WITH PROPOSED LANING UPGRADES

95% QUEUE LENGTHS - EXISTING CONDITIONS

95% QUEUE LENGTHS- PROPOSED LANE CHANGES WITH 2028 BACKGROUND VOLUMES

ADDITIONAL QUEUE LENGTH DUE TO PROPOSED DEVELOPMENT TRAFFIC

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DESIGN VEHICLE:	DESIGN SPEED:
PROJECT NO: 2497.B01	DRAWING NO:
DATE: MAR 27, 2019	REVISION:

TITLE:

QUEUE LENGTHS (PM PEAK HOUR) EXISTING AND PROPOSED LANING HELMCKEN RD / BURNSIDE RD

WATT Consulting Group
#501, 740 - Hillside Ave
Victoria, BC V8B TZ4
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F. 250.388.9879
www.wattconsultinggroup.com

APPENDIX B: ROADWAY MODIFICATIONS CONCEPT PLANS

PROJECT: V:\Project Files\2497 - Eagle Nest - TIA\5 - Design\Laning Option Concept\Helmcken Rd 2nd Westbound Lane_Mar 12-2019.dwg
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PLOTTED BY: Tanner Vallerno

CONCEPT DESIGN ONLY - NOT FOR CONSTRUCTION

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TV	TV		

DESIGN VEHICLE:
DESIGN SPEED:
PROJECT NO: 2497.B01
DRAWING NO:
DATE: MAR 12, 2019
REVISION:

TITLE:
2ND WB THRU LANE W/ PED REFUGE
HELMCKEN RD / WATKISS WAY
EAGLE NEST TIA

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PROJECT: V:\Project Files\2497 - Eagle Nest - TIA\5 - Design\Laning Option Concept\Burnside Rd NB LT Lane_Nov 15-2018.dwg
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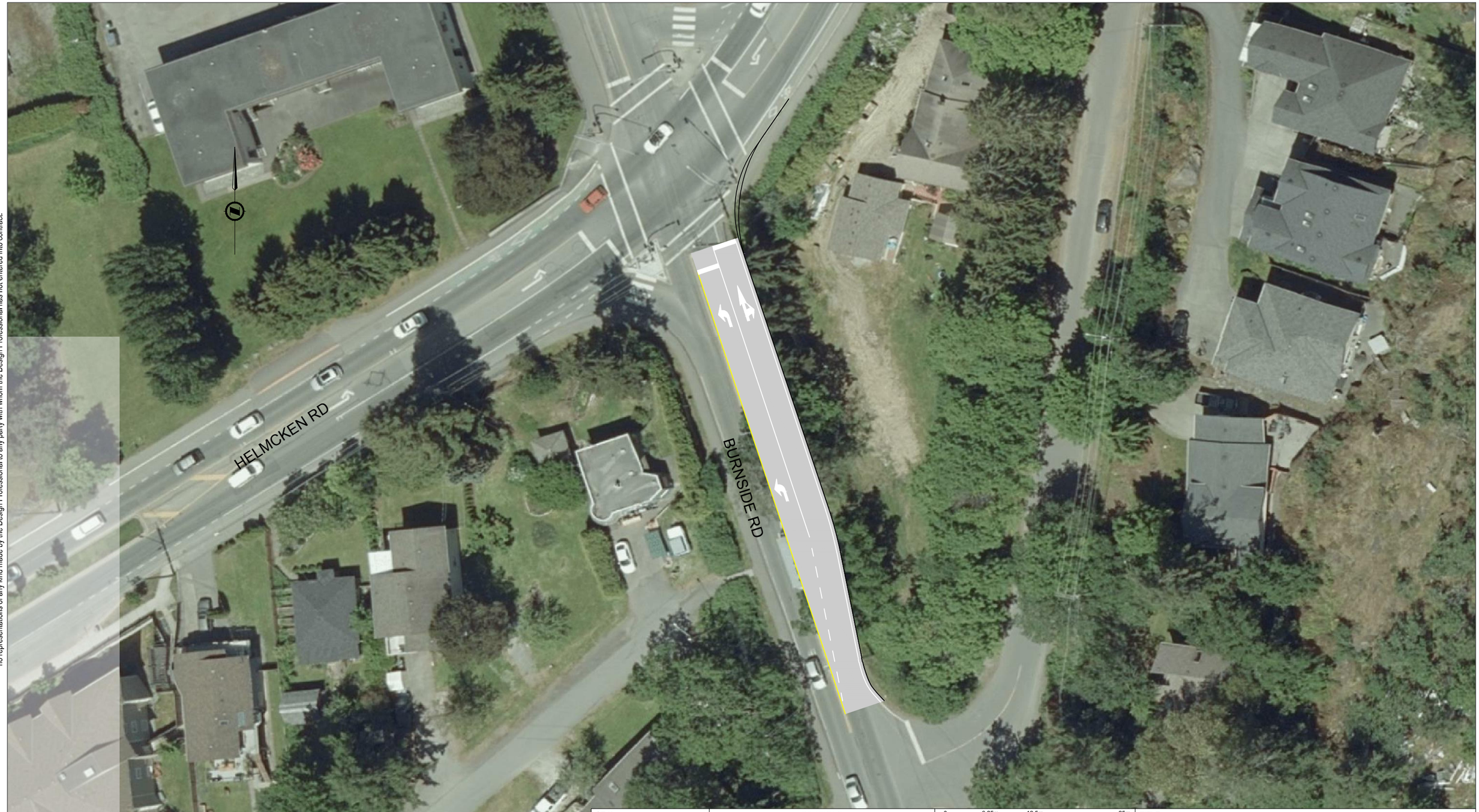

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TV	TV		

DESIGN VEHICLE:	DESIGN SPEED:
PROJECT NO: 2497.B01	DRAWING NO: S-2
DATE: NOV 15, 2018	REVISION: 0

TITLE:

BURNSIDE RD NB LT LANE
BURNSIDE RD / HELMCKEN RD
EAGLE NEST TIA

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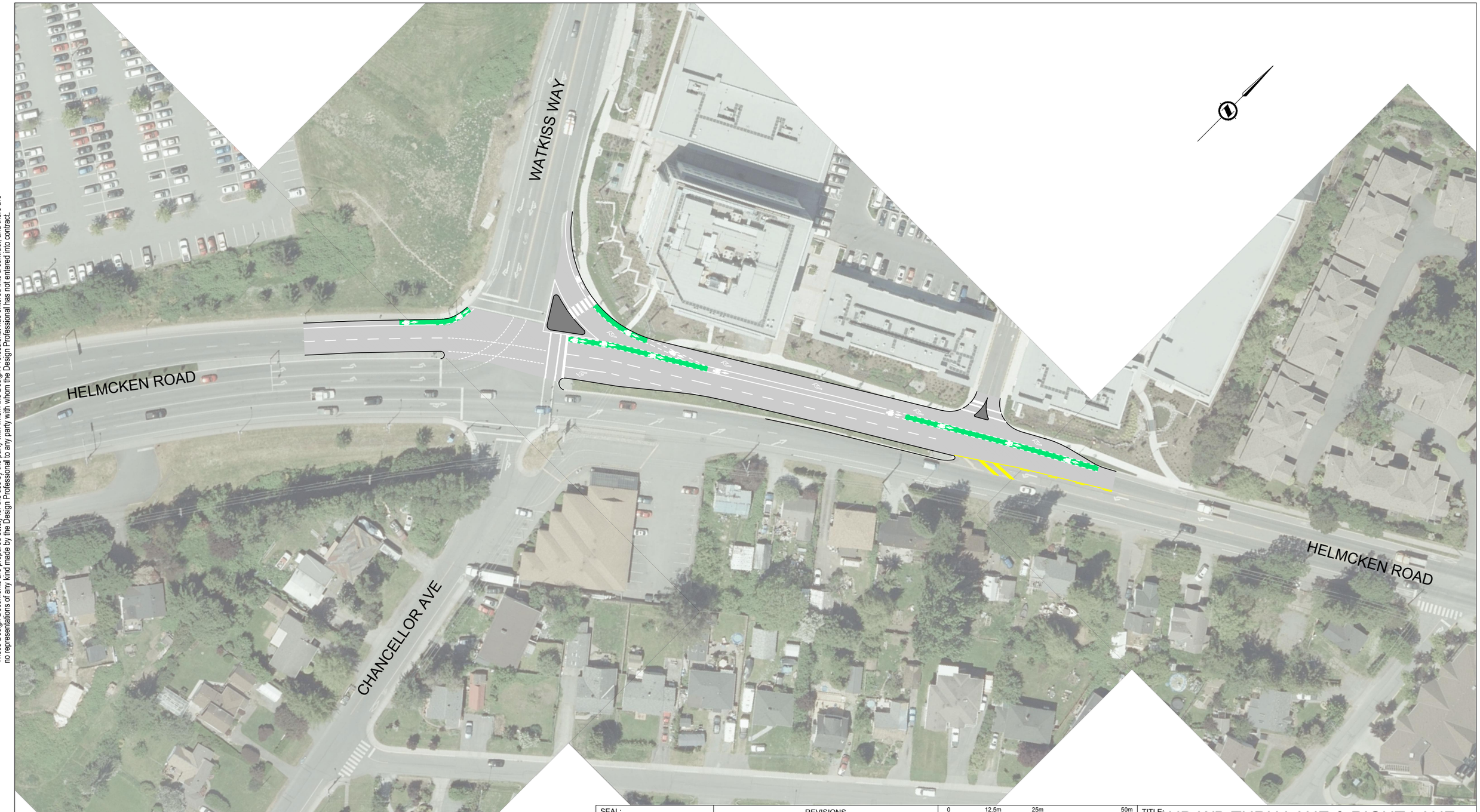
APPENDIX C: DEDICATED RIGHT TURN LANE CONCEPT PLAN

PROJECT: V:\Project Files\2497 - Eagle Nest - TIA\5 - Design\Lanning Option Concept\Helmcken Rd 2nd Westbound Lane + Right Lane_Dec 14-2018.dwg
PLOT DATE: 12/21/2018 2:19 PM
PLOTTED BY: Myongjoon Oh



CONCEPT DESIGN ONLY - NOT FOR CONSTRUCTION

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DESIGNED:	DRAWN:	CHECKED:	APRVD:
MJO	MJO		

DESIGN VEHICLE:	DESIGN SPEED:
PROJECT NO: 2497.B01	DRAWING NO: S-2
DATE: DEC 21-2018	REVISION: 0

TITLE:
2ND WB THRU LANE & RIGHT LANE
HELMCKEN RD / WATKISS WAY
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Project No: 8-8658-1
Project: Proposed Residential Development - 3 & 5 Helmcken Road - View Royal, BC
Client: Highstreet Ventures Inc
Contact: Alice Arsenault
Email / Fax No: aarsenault@highstreetliving.ca
Date: March 9, 2018

Copy to:	Email / Fax:	Copy to:	Email / Fax:
☒ Dave Slobodan	daslobodan@highstreetliving.ca	☐	
☐		☐	
☐		☐	

Microtremor Survey Memo

Further to our proposal, we attended the above referenced site on February 22, 2018, to carry out a non-invasive investigation to estimate depth to bedrock and determine a Seismic Site Class. This was done by assessing the depth to bedrock beneath the site using our Tromino geophysical instrument. The following summarizes the results of our investigation and our associated comments as such relate to the proposed development.

The site is roughly square in shape and is bounded by Burnside Road to the east and Helmcken Road to the south, with a multi-family residential complex to the west, and a single family residence with a large field and barn to the north. The site is approximately 13300 m^2 with three single family residences in the northeast corner and another in the southwest corner, a two-storey apartment building located in the southeast corner. The site slopes down from the western half to the south, north, and east edges of the site approximately 4 m, 1 m, and 1 m in relief, respectively. The site is mostly covered in grass with trees along the south and west edges and northwest corner, a bedrock outcrop in the southwest corner, an asphalt parking lot to the north of the apartment building, a fenced off area in the center of the western half of the site, and a rock and mortar retaining wall in the southeast corner.

Our investigation of the site consisted of a review of relevant file information from adjacent projects we have had past involvement. We also consulted regional maps showing surficial and bedrock geologies. We subsequently attended the site to conduct a micro-tremor survey which can be used to determine the natural frequency of the subsoil and estimate depth to bedrock.

The Tromino is a passive geophysical device that records minute ground waves (microtremors) which can then be correlated to provide an indication of depth to glacial till or bedrock. From these results, the shear wave velocity in the upper 30 m of soil, and the associated seismic site classification can be inferred. During our site attendance, we placed the Tromino at 14 locations within the site. Our analysis of the data from these locations suggests that glacial till or bedrock varies across site from at surface to 8 m depth (+/- 1 m). However, the bedrock surface in Victoria is known to be highly variable, and there is also a remote possibility that the Tromino instrument is detecting rock in a non-vertical direction that will cause the correlation of rock depth to be misleading.

Greater Victoria is situated in a region of very high seismicity. Considerable earthquake risk exists, stemming from our proximity to the Cascadia subduction zone and numerous more local faults in southwestern BC and northwestern Washington State.

It is noted that at the time of writing this report, the 2015 National Building Code has been published. Similarly, the 2015 NBC Seismic Hazard Calculation, which adopts new methods of calculating hazard values, has been released. Generally, British Columbia adopts the NBC two to three years after the publication date. It is anticipated that the adoption of the 2015 NBC in the form of the BC Building Code will occur sometime in 2018. As such, the seismic hazard values for Peak Ground Acceleration (PGA) and Spectral Acceleration are reported for both editions in anticipation of this change.

Based on observed and anticipated geological conditions at the site, the shear wave velocity in the upper 30 m (V_s^{30}) is expected to be between 360 and 760 m/s. This corresponds to a Site Classification for Seismic Site Response of 'C', in accordance with the current BC Building Code. However, depending on the final foundation design elevations, the site class may be adjusted to Site Class 'A'.

Information from Natural Resources Canada indicates response spectral accelerations for Site Classes 'C' and 'A' as noted, for a 2% in 50 year probability of exceedance, is summarized for 2010 results in Table 1, and 2015 results in Table 2.

Table 1: NBC 2010 Spectral Accelerations for 2% in 50-year Probability Event

Period (sec)	PGA	0.2	0.5	1.0	2.0
Response (g) Site Class 'C'	0.59	1.19	0.80	0.37	0.18
Response (g) Site Class 'A'	**0.59**	**0.95**	**0.46**	**0.21**	**0.11**

Table 2: NBC 2015 Spectral Accelerations for 2% in 50-year Probability Event

Period (sec)	PGA	0.2	0.5	1.0	2.0	5.0	10.0
Response (g) Site Class 'C'	0.59	1.31	1.17	0.69	0.41	0.13	0.04
Response (g) Site Class 'A'	**0.53**	**0.90**	**0.67**	**0.39**	**0.24**	**0.08**	**0.03**

Site Class 'C' pertains to the current site and Site Class 'A' pertains to an assumed foundation design elevation resting on bedrock. Phase II of our investigation would involve mobilization to drill a series of test holes both to confirm our initial findings and expand on the phase I subsurface investigation. We would recommend carrying out such work once final building locations and massing have been determined so that we may tailor out Phase II work accordingly.

We trust this is suitable for you needs at present. If you have any further questions, require clarification, or desire further assistance, please do not hesitate to contact our office.

Best regards,
Ryzuk Geotechnical

Simon Jones, EIT
Junior Engineer

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. S. CURRIE
29372

Scott Currie, P.Eng.
Geotechnical Engineer, Principal

Limited Hazardous Materials Investigation

3 Helmcken Road, Victoria, BC

Prepared for

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Executive Summary

Island EHS was engaged by High Street Living to carry out a non-destructive limited hazardous materials investigation at 3 Helmcken Road in Victoria, BC. This investigation was conducted prior to purchase of the building. If the client acquires the property, the building will be demolished. The building was occupied at the time of the investigation. This investigation was carried out on March 16, 2018.

This investigation is intended to identify the locations and types of hazardous materials that are present in the building.

The building is a two-level wood framed apartment building with a basement and partial crawlspace. The laundry/store room, crawlspace, Unit 10, common hallways and the exterior of the building (not including roof) were investigated. Additional stucco samples were collected from the exterior of 1445 Burnside Road and 1449 Burnside Road, as requested by the client. Invasive sampling was not carried out.

The following hazardous materials were reviewed:

Material	Description	Recommendation
Asbestos	Sheet vinyl flooring	High risk removal
Lead	Lead paint sampling was not carried out, however; lead containing paint is suspected on interior and exterior surfaces of the building.	**Lead paint sampling will be required prior to demolition** Personal protective equipment during demolition Lead exposure control plan and lead in air monitoring during demolition
Silica	Assumed to be present in concrete, plaster and stucco	Personal protective equipment during demolition Silica exposure control plan
Mercury	Fluorescent light tubes observed	Remove for proper disposal if no longer required
Hantavirus - Rodent Droppings	None observed	No action necessary
Arsenic	Pressure treated wood not observed	No action necessary
Radioactive Materials	Smoke detectors observed	Remove for proper disposal if no longer required
Mould	None observed	No action necessary
PCBs	Fluorescent light fixtures observed	Remove for proper disposal if no longer required
Ozone Depleting Substances	Refrigerators present	Remove for recovery & disposal if no longer required
Urea Formaldehyde Foam Insulation	None observed	No action necessary
Above Ground Storage Tanks (AGST)	AGST observed	Empty tank, clean and remove for disposal if no longer required
Leachable Lead	Leachate sample was not collected during the investigation	**Leachate sampling will be required prior to demolition**
Other Hazardous Materials	Fibreglass insulation	Personal protective equipment during demolition

Note: Renovation or demolition activities will require protective measures. Materials may be encountered during work activities that are not identified in this report. If this happens, work must stop in those areas until the materials are properly identified.

Table of Contents

1.0 Introduction

Island EHS was engaged by High Street Living to carry out a non-destructive limited hazardous materials investigation at 3 Helmcken Road in Victoria, BC. This investigation was conducted prior to purchase of the building. If the client acquires the property, the building will be demolished. The building was occupied at the time of the investigation. This investigation was carried out on March 16, 2018.

The building is a two-level wood framed structure with a basement. The interior walls and ceilings of the laundry/store room, Unit 10 and the hallways are finished with plaster. The flooring is a combination of concrete, carpet and sheet vinyl flooring. The exterior is finished with stucco and a tar and gravel roof. The building is heated by electric baseboards. Oil fired hot water heaters are present in the crawlspace. The roof and the ceiling cavity was not investigated during the survey.

Three additional stucco samples were collected from the exterior of 1445 Burnside Road and 1449 Burnside Road to test for the presence of asbestos, as requested by the client.

This report does not comply with the BC Occupational Health and Safety Regulation, Part 20, Section 20.112 with regards to the identification of all hazardous materials prior to demolition. Further assessment will be required prior to demolition.

Visual identification of hazardous materials was carried out. Representative samples of building materials were collected for asbestos testing.

2.0 Hazardous Materials

Hazardous materials are present in a large number of common building materials. These materials must be managed effectively to prevent exposure to workers and other persons, or they must be removed. In situations where work activities such as renovations and demolition will affect hazardous materials they must be removed prior to the start of work or appropriate control measures need to be implemented to ensure that workers are not exposed and contamination is not spread throughout the work and adjacent areas.

WorkSafeBC has established regulations regarding the handling and management of a number of hazardous materials along with guidelines for other hazardous materials. Other materials are regulated by environmental laws.

Materials that must comply with WorkSafeBC regulations include:

1. Asbestos
2. Lead
3. Silica
4. Mercury
5. Hantavirus
6. Arsenic
7. Radioactive materials

Materials that WorkSafeBC has established guidelines for include:

1. Mould

Materials that must comply with environmental regulations:

1. Polychlorinated biphenyls
2. Ozone depleting substances
3. Leachable metals
4. Urea formaldehyde foam insulation
5. Fuel oil storage tanks

2.1 Materials Subject to WorkSafeBC Regulations

2.1.1 Asbestos

Asbestos is a very common component of building materials. Most asbestos containing materials went out of use in the early 1980s. However, WorkSafeBC has determined that buildings constructed up to 1990 may contain asbestos and must be inspected prior to the start of renovation or demolition activities.

Asbestos becomes a hazard when it is disturbed and airborne dust is created. Caution must be taken to ensure that asbestos containing materials are not disturbed. Asbestos exposure is known to have a number of health effects including asbestosis, lung cancer and mesothelioma.

Asbestos has been used in approximately 3000 manufactured products and is commonly found in residential structures in:

- Floor products (sheet flooring and floor tiles)
- Drywall filler compounds
- Plasters (usually in buildings constructed prior to 1930)
- Textured ceiling applications
- Duct tape (on heating system ducting and around forced air registers)
- Vermiculite

- Caulking and putties (on windows and doors and in levelling compounds)
- Cement products (siding and shingles as well as underground drainage pipes)
- Roofing felts and papers
- Pipe insulation (on piping, boilers and hot water tanks)

WorkSafeBC defines an asbestos containing material as one containing 0.5% or more asbestos by weight. Vermiculite is considered to be asbestos containing if any asbestos is present. WorkSafeBC has designated asbestos as an ALARA substance. This means that exposures to this material must be kept "as low as reasonably achievable". Section 5.54 of the Occupational Health and Safety Regulation states that employers are required to develop and implement an exposure control plan when workers may be exposed to airborne concentrations of asbestos greater than 50% of the exposure limit.

All asbestos waste must be handled, transported and disposed of in accordance with current Ministry of Environment regulations.

2.1.2 Lead

Lead has been commonly used in paints and coatings. Coatings manufactured prior to 1970 are likely to contain high concentrations of lead. In the late 1970s, Canada restricted the concentration of lead in consumer paints to 5000 ppm. These restrictions did not apply to exterior paints. The acceptable level of lead in consumer paints was last reduced by the Federal government in 2010 to a concentration of 90 ppm. Lead can still be added to certain classes of paint, if the display panel carries a warning. Lead in paint concentration is not regulated when used in commercial or industrial worksites.

Lead becomes a hazard when painted surfaces are disturbed and airborne dust is created. Caution must be taken to ensure that lead containing materials are not disturbed. Lead exposure is known to have a number of health effects including damage to the central and peripheral nervous systems. It also affects the uptake of oxygen in the blood and can accumulate in bones. Lead is toxic to both male and female reproductive system and can have damaging effects to a developing fetus. Lead exposures can also occur when lead products are touched and lead contamination is ingested (eaten).

Lead is used in plumbing fixtures. Flashings and other products found on roofs may be made of pure lead. Lead has also been used in solders. This may be found on plumbing lines as well as on electrical equipment.

WorkSafeBC has designated lead as an ALARA substance. This means that exposures to this material must be kept "as low as reasonably achievable". An employer must not permit workers to engage in a work activity or lead process that may expose workers to lead dust, fumes or mist unless a risk assessment has first been completed by a qualified person. If the risk assessment indicates potential for lead exposure, an exposure control plan meeting the requirements of Section 5.54 of the Occupational Health and Safety Regulation must be developed.

Waste materials with lead based paint on them may have special disposal requirements (See Section 2.3.5). Lead paint that has been removed from building materials requires leachate testing to determine the appropriate method of disposal.

2.1.3 Silica

Silica is the second most common mineral on earth. It is found almost everywhere. It appears in two (2) main forms - amorphous and crystalline. Amorphous silica is not generally considered to be a significant hazard. Crystalline silica is known to have a number of health effects including silicosis. The definition of respirable crystalline silica (RCS) includes the quartz, crystalline silica and cristobalite.

RCS becomes a hazard when it is disturbed and airborne dust is created. Caution must be taken to ensure that silica containing materials are not disturbed.

Crystalline silica is present in a number of common building materials. These include:

- Plasters
- Cement
- Sand/gravel
- Stucco
- Drywall Filler Compounds
- Granite

As with lead, WorkSafeBC has designated crystalline silica as an ALARA substance which means that exposures to this material must be kept “as low as reasonably achievable”. Likewise, an employer must not permit workers to engage in a work activity or silica process that may expose workers to respirable crystalline silica dust unless a risk assessment has first been completed by a qualified person. If the risk assessment indicates potential for RCS exposure, an exposure control plan meeting the requirements of Section 5.54 of the Occupational Health and Safety Regulation must be developed.

2.1.4 Mercury

Mercury is a metal that is liquid at room temperatures and vaporizes at low temperatures. Mercury has a number of industrial uses. It is also found in thermostats, thermometers and inside fluorescent light tubes.

Mercury has a significant toxic effect on the central nervous system and can cause disease and even death. Mercury becomes a hazard when it is released into the environment. Significant concentrations of mercury can be present at room temperature because it vaporizes at low temperatures. This can occur when mercury thermometers or thermostat bulbs are broken or when fluorescent light tubes are broken.

WorkSafeBC has designated mercury as an ALARA substance. This means that exposures to this material must be kept “as low as reasonably achievable”. Section 5.54 of the Occupational Health and Safety Regulation states that employers are required to develop and implement an exposure control plan when workers may be exposed to airborne concentrations of mercury greater than 50% of the exposure limit.

All mercury waste requires disposal in accordance with current Ministry of Environment requirements.

2.1.5 Hantavirus

Hantavirus is associated with Hantavirus Pulmonary Syndrome. This disease is contracted by coming into contact with the droppings or urine of infected rodents. It can also be contracted by being bitten or scratched by infected rodents.

WorkSafeBC states that employers are required to develop and implement an exposure control plan when workers may be exposed to potentially contaminated rodent droppings.

It should be noted that diseases are associated from contact with other animal droppings, most notably Histoplasmosis, from contact with infected bird droppings.

There are no special disposal requirements for uninfected animal droppings.

2.1.6 Arsenic

Arsenic is a metal that is sometimes used in pesticides. It is also found in pressure treated wood products.

Exposures can occur when arsenic containing materials are disturbed and dust becomes airborne. Sawdust from cutting pressure treated wood or burning these materials can result in significant airborne arsenic concentrations.

Disposal of arsenic waste must be in accordance with current Ministry of Environment requirements.

2.1.7 Radioactive Materials

Radioactive materials are commonly found in smoke detectors. A small amount of radioactive materials (^{241}Americium) is sealed in a metal case inside smoke detectors. This metal case must remain undisturbed to prevent exposure to radioactive materials.

Some ceramic tiles and forms of granite have also been found to contain radioactive materials. Radon is a naturally occurring gas created during the decay of other radioactive materials. It is not considered a significant concern on Lower Vancouver Island.

Waste smoke detectors must be disposed of in accordance with Canadian Nuclear Safety Commission requirements.

2.2 Materials Subject to WorkSafeBC Guidelines

2.2.1 Mould

Mould is prevalent throughout our environment. It occurs naturally with mould spores being present everywhere. Mould is nature's way of breaking down and recycling materials. Mould spores require moisture and a food source to begin growing. Water leaks (even very minor leaks) and moisture accumulation are usually sufficient for mould to begin growing.

Exposure to mould spores most often results in allergy type responses in susceptible individuals. These are similar in nature to "hayfever" and can include runny eyes and noses and throat irritation. In more extreme cases, exposure to mould spores can result in "pneumonia-like" responses.

WorkSafeBC has not established exposure levels for airborne mould spores. WorkSafeBC does provide guidelines for dealing with mould contamination. These guidelines are included in the Indoor Air Quality regulation guidelines.

There are no special disposal requirements for mould waste.

2.3 Materials Controlled by Environmental Regulations

2.3.1 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are regulated by both Provincial and Federal regulations. Fluorescent light ballasts containing PCBs must be treated as PCB waste and stored and disposed of in accordance with current regulations. Fluorescent light fixtures removed during demolition, construction or maintenance activities must be inspected for the presence of PCBs.

Each ballast identified as containing PCBs must be sent to a licenced facility in accordance with current regulatory requirements.

2.3.2 Ozone Depleting Substances

Ozone depleting substances (ODS) and chlorofluorocarbons are commonly found in older refrigerators and air conditioning units. They are sometimes found in fire suppression systems. Environmental regulations restrict the release of these compounds into the environment.

When systems or equipment contains ODS are set for disposal all the ODS must be collected for recycling or disposal by a licenced contractor.

2.3.3 Urea Formaldehyde Foam Insulation

Urea formaldehyde foam insulation (UFFI) was used as a retrofit insulation in older buildings. The expanding foam would be sprayed into wall and ceiling cavities to provide additional insulation in older buildings. It was most commonly used in residential settings.

Over time, in the presence of moisture, the insulation can break down and release formaldehyde gas. This insulating material was banned in 1978. Many older buildings contain UFFI.

There are no special disposal requirements for UFFI waste.

2.3.4 Fuel Oil Storage Tanks

Fuel oil storage tanks (above and below ground) are found in many houses and commercial buildings. The tanks can corrode and leak as they age. Spills often occur during tank filling and create contamination.

Tanks in use must be monitored to ensure that spillage and contamination does not occur. Tanks no longer in use must be removed for disposal and the surrounding soil checked for contamination.

2.3.5 Leachable Metals

The BC Ministry of Environment regulates the disposal of some waste materials based on the leachability of metals and other compounds from the waste. Testing may have to be carried out

on materials removed from the building before they can be sent for disposal. This will depend on where the waste is being sent.

Within the Capital Regional District, disposal of painted waste materials at the Hartland landfill requires toxicity characteristic leaching procedure (TCLP) to determine leachable lead concentrations prior to acceptance as construction waste.

2.3.6 Other Materials

A number of hazardous materials may be present in a building that will be affected by renovations or demolition. These can include:

- Propane or butane cylinders
- Paint
- Solvents
- Toxic or corrosive products
- Other flammable materials

3.0 Results and Recommendations

The building was inspected for the presence of a variety of hazardous materials. WorkSafeBC requirements specify that precautions are necessary when handling these materials. The necessary precautions will depend on the disposition of each hazardous material.

Trained qualified contractors need to be hired to carry out remedial work on hazardous materials. All general demolition work should be carried out by workers wearing respirators and disposable coveralls.

Copies of this report must be provided to contractors engaged to work in the building.

Notices of Project must be submitted in accordance to WorkSafeBC requirements.

Materials may be encountered during work activities that are not identified in this report. If this happens, work must stop in those areas until the materials are properly identified.

3.1 Asbestos

A total of twenty-two (22) representative bulk samples of such materials as plaster, sheet vinyl flooring and stucco were collected from the building. The following asbestos containing materials were identified:

Table 1: Summary of Asbestos Containing Materials

Location	Description	Asbestos Type & Percentage	Approximate Quantity	Removal Requirements
Kitchens and bathrooms	Sheet vinyl flooring	70% Chrysotile	~ 150ft^2/per unit	High risk work procedures

*Quantities of identified asbestos containing materials are an estimate of observable asbestos-containing materials. Concealed or inaccessible materials may not have been included in this estimate. It is the responsibility of the abatement contractor to ensure accurate measurements.

Results of asbestos sample analysis and sample identification and locations are attached in Appendix 2.

All efforts were made to determine all potential asbestos containing materials; however, due to the non-destructive nature of this survey and limited access to other areas of the building additional asbestos containing materials may be present. A visual inspection of ceiling cavity was not possible at the time of the investigation.

This report does not comply with the BC Occupational Health and Safety Regulation, Part 20, Section 20.112 with regards to the identification of all hazardous materials prior to demolition. Further assessment will be required prior to demolition.

Prior to the performance of any work that may disturb asbestos containing materials it is a regulatory requirement that a qualified person perform a Risk Assessment. This requirement is in compliance with the WorkSafeBC Occupational Health & Safety Regulation *Part 6 "Substance Specific Requirements"*; specifically Section 6.6 subsections (1), (2), (3), & (4).

The removal of **asbestos backed sheet flooring** should be conducted using **High Risk** asbestos abatement procedures. These procedures must be utilized by a qualified contractor and include as a minimum requirement:

- HEPA-equipped Powered air purifying respiratory (PAPR) protection and disposable Tyvek coveralls;
- Application of water to the asbestos debris materials being disturbed;
- Isolation of the work area;
- HEPA equipped negative air unit for dust suppression purposes;
- Shower;
- Air monitoring as per WorkSafeBC requirements.

Asbestos cement piping was sometimes used for perimeter drains, storm drains and sewer lines. Bell & spigot gasket piping may contain asbestos gaskets. These products may be encountered on the site.

3.2 Lead

The currently allowable level of lead in paint is set by Health Canada under the Canada Consumer Protection Act, Surface Coating Materials Regulation (SOR 2005-09). Under this regulation the maximum allowable concentration of lead in paint sold to consumers is 0.009% (90 µg/g). WorkSafeBC considers paint which contains lead at concentrations greater than 0.009% to present a potential health hazard if it is removed incorrectly. **Lead testing was not carried out as part of this survey. Paint sampling will be required prior to demolition.**

Any untested painted surfaces are presumed lead-containing unless sampled and found to be non-lead containing. For removal of other hazardous materials, including lead-based paint, an employer is required under Section 5 of the OHSR to develop work procedures designed to minimize a worker's risk of exposure, and that both the supervisor and worker be properly trained to handle the material, including cleanup and disposal. Lead may be present as solder on any remaining plumbing systems and may be present on other fixtures such as flashings or roof vents.

WorkSafeBC regulation requires that contractors working with lead-based containing materials have a Lead Exposure Control Plan in place including site specific work procedures prior to work commencing. The Regulation also requires that lead in air samples be collected at the beginning of work tasks to ensure proper control methods are employed to control lead dust exposures.

Precautions must be put in place during demolition and renovation activities to ensure that workers are not exposed to lead containing dust and debris. Flashings can be removed and recycled.

In order to control worker exposure to lead paint particulate, any demolition, cutting, burning, grinding, sanding or other disturbance of identified lead painted surfaces should be conducted following appropriate safe work procedures. Procedures will vary depending on the nature of the work but should consider, as a minimum, the following:

- Use of Half face respirators equipped with P100 class filters, disposable Tyvek™ or equivalent coveralls and work gloves;
- Segregation of the work area by the use of barrier tape and warning placards;
- Use of drop sheets and tarps to prevent spread of lead-containing dust;
- Use of HEPA filter equipped vacuum cleaner(s);
- Thorough washing before eating, drinking or smoking;
- Application of water to the materials being disturbed;

- Filing of a "Notice of Project" with WorkSafeBC prior to significant disturbance of lead-containing paint; and,
- Air monitoring during disturbance of lead-containing paint

Under the BC Hazardous Waste Regulation materials with identified lead-based paint destined for disposal at a licensed landfill facility must be tested for leachability to determine if they should be handled as a hazardous waste.

3.3 Leachable Metals

The BC Ministry of Environment regulates the disposal of some waste materials based on the leachability of metals and other compounds from the waste.

Under the BC Hazardous Waste Regulation materials with lead paint concentrations over 0.01 wt% (100ppm) destined for disposal at a licensed landfill facility must be tested for leachability to determine if they should be handled as a hazardous waste.

Leachate sampling will be required prior to demolition. Prior to demolition it is the responsibility of the client or the contractor to have samples collected by a qualified person and analyzed using the toxicity characteristic leachate procedure (TCLP).

3.4 Silica

Silica testing was not carried out, but this material will be present in concrete, plaster and stucco.

Precautions must be put in place during demolition and renovation activities to ensure that workers are not exposed to silica containing dust and debris. **WorkSafeBC regulation requires that contractors working with silica-based containing materials have a Silica Exposure Control Plan in place including site specific work procedures prior to work commencing.**

In order to control worker exposure to silica dust, any abrasive blasting, jackhammering, chipping, drilling, cutting, sawing or other disturbance of identified concrete, plaster or drywall walls or cementicious products should be conducted following appropriate safe work procedures. Procedures will vary depending on the nature of the work but should consider, as a minimum, the following:

- Use of Half-face respirators equipped with P100 class filters, disposable Tyvek™ or equivalent coveralls and work gloves;
- Continuous application of water spraying to materials being disturbed;
- Use of drop sheets and tarps to prevent spread of silica-containing dust;
- Use of HEPA filter equipped vacuum(s);
- HEPA equipped negative air unit for dust suppression purposes (recommended); and
- Air monitoring as per WorkSafeBC requirements.

3.5 Mercury

Fluorescent lights were observed in the laundry/store room. Used light tubes and compact fluorescent bulbs must be sent for proper disposal.

Mercury containing thermostats were not observed.

3.6 Hantavirus (and other Animal Droppings)

Rodent droppings were not observed.

WorkSafeBC regulation requires that contractors handling/cleaning animal and rodent feces have a Hantavirus Exposure Control Plan in place including site specific work procedures prior to work commencing.

3.7 Arsenic

Pressure treated wood was not observed on the site.

3.8 Radioactive Materials

Smoke detectors were observed in the building. Smoke detectors must be sent for disposal in accordance with Canadian Nuclear Safety Commission requirements when they are taken out of service.

3.9 Mould

Mould was not observed in the building. If mould is encountered, precautions must be taken to ensure that workers are not exposed to mould spores.

Fungal contamination may be present within wall or ceiling cavities. During demolition activities, precautions must be taken to ensure that workers are not exposed to potential mould spores which would include, as a minimum, half face respirator fitted with HEPA filtered P100 cartridges, disposable suits and impermeable gloves and eye protection and that use of HEPA filtered negative air cabinets and HEPA filtered vacuums be employed.

3.10 Polychlorinated Biphenyls

Fluorescent light ballasts were observed in the laundry/store room. If thhe ballasts contain PCBs they must be transported to an acceptable waste storage facility when they are taken out of service.

3.11 Ozone Depleting Substances

Older refrigerators were observed in the laundry/store room and in Unit 10. These may contain chlorofluorocarbons. These materials must be removed for recycling or disposal when the units are taken out of service.

3.12 Urea Formaldehyde Foam Insulation

Urea Formaldehyde Foam Insulation was not observed in the building. This material is not suspected of being present.

3.13 Fuel Oil Storage Tanks

A fuel oil storage tank (above ground) is present in the crawlspace. Removal of oil tanks must be carried out by trained personnel, and in accordance with local municipal bylaws.

3.14 Other Materials

Synthetic fibre insulation is likely to exists throughout the ceiling cavities and wall cavities. Removal of these materials should be conducted wearing proper respiratory protection and protective clothing including impermeable gloves, eye protection and half-face respiratory protection equipped with P-100 particulate filters.

Tenant's contents were not assessed.

3.15 Abatement Clearance Documentation

In order to comply with BC Workers Compensation Board Occupational Health & Safety Regulation Part 20.112(8) a qualified person (Island EHS) must conduct a final inspection after all of the hazardous materials identified in this report have been safely contained or removed. Once all of the hazardous materials have been removed and the final inspection has been completed a written clearance letter can be provided.

Should asbestos abatement be undertaken by unqualified persons (i.e. homeowners), the work area will require aggressive air clearance sampling. This air sampling will extend to any adjacent areas that have not been isolated from the hazard and potential contamination. Clearance letters, required to document removal of asbestos for issuance of building permits and contractors hired to work in the space, will not be granted subject to failure of this testing. The owner/client is responsible for the additional fees incurred for these services.

4.0 Closure

This document was prepared for the exclusive use of our client. All conclusions and recommendations are based upon conditions at the site at the time of this investigation. All conclusions and recommendations are based upon professional opinions. These opinions are in accordance with accepted industrial hygiene assessment standards and practices and comply with current WorkSafeBC requirements.

All conclusions and recommendations made in this report are based on conditions at the time of inspection. Changes may occur over time that will require a re-evaluation of the site.

All work was carried out based on the Scope of Work that was agreed upon with the client prior to the start of work, constraints imposed by the client and availability of access to the site. A Stage 1 Preliminary Site Investigation was not part of the scope of work.

No warranty or guarantee, whether expressed or implied, are made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions at the time of the investigation.

This report may not be used, relied upon, copied, published, or quoted by any party without the written consent of Island EHS. Other parties reading this report must independently verify the completeness and accuracy of this report and its contents.

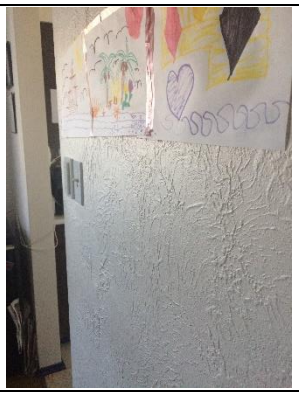
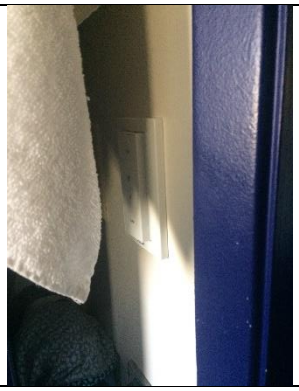
This report is not intended as a Scope of Work for tender or bidding purposes. Any use of this report in that fashion is at the sole discretion and liability of the Owner.

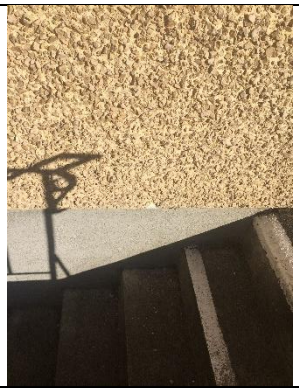
Rachelle Smith,
Occupational Hygiene Technician
Field Investigation & Report

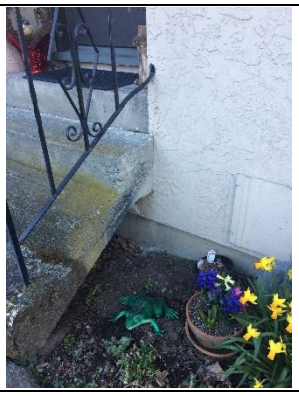
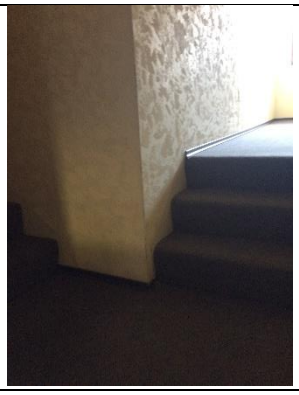
Heidi Dunn,
Principal
Field Investigation & Report Review

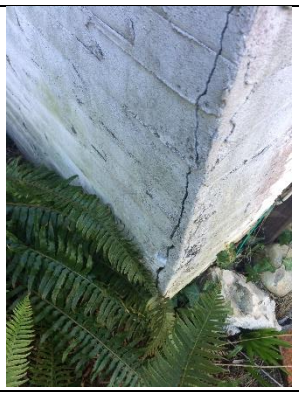
Appendix 1

Photographs

	
Sample: 13389 – 1 Unit/Location: Basement - Laundry/store room wall Description: Plaster Asbestos: None detected	Sample: 13389 – 2 Unit/Location: Basement - Laundry/store room ceiling Description: Plaster Asbestos: None detected
	
Sample: 13389 – 3 Unit/Location: Unit 10 - Bedroom wall - Textured Description: Plaster Asbestos: None detected	Sample: 13389 – 4 Unit/Location: Unit 10 - Living room wall - Textured Description: Plaster Asbestos: None detected
	
Sample: 13389 – 5 Unit/Location: Unit 10 - Bathroom wall - Smooth Description: Plaster Asbestos: None detected	Sample: 13389 – 6 Unit/Location: Unit 10 - Kitchen wall - Smooth Description: Plaster Asbestos: None detected

	
Sample: 13389 – 7 Unit/Location: Unit 10 – Kitchen Description: Sheet Vinyl Flooring Asbestos: **Chrysotile 70%**	Sample: 13389 – 8 Unit/Location: Unit 10 – Bathroom Description: Sheet Vinyl Flooring Asbestos: **Chrysotile 70%**
	
Sample: 13389 – 9 Unit/Location: Corridor outside Unit 10 - Textured Description: Plaster Asbestos: None detected	Sample: 13389 – 10 Unit/Location: Hall outside Unit 7 Description: Plaster Asbestos: None detected
	
Sample: 13389 – 11 Unit/Location: Exterior - SE lower side by stairs - Textured Description: Stucco Asbestos: None detected	Sample: 13389 – 12 Unit/Location: Exterior - SE lower side - Textured Description: Stucco Asbestos: None detected

	
Sample: 13389 – 13 Unit/Location: Exterior - SE outside Unit 6 - Smooth Description: Stucco Asbestos: None detected	Sample: 13389 – 14 Unit/Location: Exterior - NE outside Unit 6 - Smooth Description: Stucco Asbestos: None detected
	
Sample: 13389 – 15 Unit/Location: Exterior - NW outside Unit 3 - Smooth Description: Stucco Asbestos: None detected	Sample: 13389 – 16 Unit/Location: Exterior - SW outside Unit 1 - Smooth Description: Stucco Asbestos: None detected
	
Sample: 13389 – 17 Unit/Location: Hall outside Unit 12 Description: Plaster Asbestos: None detected	Sample: 13389 – 18 Unit/Location: 1445 Burnside - Exterior - SE side Description: Stucco Asbestos: None detected

	
Sample: 13389 – 19 Unit/Location: 1445 Burnside - Exterior - SW side Description: Stucco Asbestos: None detected	Sample: 13389 – 20 Unit/Location: 1445 Burnside - Exterior - North corner Description: Stucco Asbestos: None detected
	
Sample: 13389 – 21 Unit/Location: 1449 Burnside - Exterior - Lower SW side Description: Stucco Asbestos: None detected	Sample: 13389 – 22 Unit/Location: 1449 Burnside - Exterior - Upper West corner Description: Stucco Asbestos: None detected

Appendix 2

Laboratory Results

Island EHS
Island Environmental Health & Safety Ltd.

Asbestos Bulk Sample Report

201 - 990 Hillside Avenue
Victoria, B.C. V8T 2A1
Tel: 778-406-0933
E-Mail: admin@islandehs.ca

Job: 13389
Project: 3 Helmcken Road
Client: High Street Living
Client PO#:

Submitted By: HD/RS
Date Received: 2018-03-16
Analyst: IH

#	Location	Material	Analysis Date	Layer	Description	% of Sample	Asbestos Minerals	% Asbestos per Layer	Other Fibres	% Fibres per Layer
1	Basement - Laundry/store room wall	Plaster	2018-03-16	1	Paint	5.0	None Detected	0.0	Non fibrous	100.0
				2	Grey cement	95.0	None Detected	0.0	Non fibrous	100.0
2	Basement - Laundry/store room ceiling	Plaster	2018-03-16	1	Grey cement	100.0	None Detected	0.0	Cellulose	1.0
									Non fibrous	99.0
3	Unit 10 - Bedroom wall - Textured	Plaster	2018-03-16	1	Paint	20.0	None Detected	0.0	Non fibrous	100.0
				2	Off white cement	50.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	30.0	None Detected	0.0	Non fibrous	100.0
4	Unit 10 - Living room wall - Textured	Plaster	2018-03-16	1	Paint	30.0	None Detected	0.0	Non fibrous	100.0
				2	Off white cement	40.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	30.0	None Detected	0.0	Non fibrous	100.0
5	Unit 10 - Bathroom wall - Smooth	Plaster	2018-03-16	1	Paint	20.0	None Detected	0.0	Non fibrous	100.0

Analyzed in accordance with NIOSH Method 9002. AIHA BAPAT Lab ID - 214686

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#	Location	Material	Analysis Date	Layer	Description	% of Sample	Asbestos Minerals	% Asbestos per Layer	Other Fibres	% Fibres per Layer
				2	White cement	30.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	50.0	None Detected	0.0	Non fibrous	100.0
6	Unit 10 - Kitchen wall - Smooth	Plaster	2018-03-16	1	Paint	20.0	None Detected	0.0	Non fibrous	100.0
				2	White cement	30.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	50.0	None Detected	0.0	Non fibrous	100.0
7	**Unit 10 - Kitchen**	**Sheet Vinyl Flooring**	**2018-03-16**	**1**	**Grey vinyl**	**50.0**	**None Detected**	**0.0**	**Non fibrous**	**100.0**
				2	**Off white fibrous**	**50.0**	**Chrysotile**	**70.0**	**Cellulose**	**20.0**
									Non fibrous	**10.0**
8	**Unit 10 - Bathroom**	**Sheet Vinyl Flooring**	**2018-03-16**	**1**	**Green vinyl**	**50.0**	**None Detected**	**0.0**	**Non fibrous**	**100.0**
				2	**Off white fibrous**	**50.0**	**Chrysotile**	**70.0**	**Cellulose**	**20.0**
									Non fibrous	**10.0**
9	Corridor outside Unit 10 - Textured	Plaster	2018-03-16	1	Paint	20.0	None Detected	0.0	Non fibrous	100.0
				2	Off white cement	40.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	40.0	None Detected	0.0	Non fibrous	100.0
10	Hall outside Unit 7	Plaster	2018-03-16	1	Paint	20.0	None Detected	0.0	Non fibrous	100.0

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#	Location	Material	Analysis Date	Layer	Description	% of Sample	Asbestos Minerals	% Asbestos per Layer	Other Fibres	% Fibres per Layer
				2	Off white cement	40.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	40.0	None Detected	0.0	Non fibrous	100.0
11	Exterior - SE lower side by stairs - Textured	Stucco	2018-03-16	1	Beige/Grey cement	100.0	None Detected	0.0	Non fibrous	100.0
12	Exterior - SE lower side - Textured	Stucco	2018-03-16	1	Beige/Grey cement	100.0	None Detected	0.0	Non fibrous	100.0
13	Exterior - SE outside Unit 6 - Smooth	Stucco	2018-03-16	1	Paint	5.0	None Detected	0.0	Non fibrous	100.0
				2	White cement	65.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	30.0	None Detected	0.0	Non fibrous	100.0
14	Exterior - NE outside Unit 6 - Smooth	Stucco	2018-03-16	1	Paint	10.0	None Detected	0.0	Non fibrous	100.0
				2	White cement	30.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	60.0	None Detected	0.0	Non fibrous	100.0
15	Exterior - NW outside Unit 3 - Smooth	Stucco	2018-03-16	1	Paint	5.0	None Detected	0.0	Non fibrous	100.0
				2	White cement	45.0	None Detected	0.0	Non fibrous	100.0
				3	Grey cement	50.0	None Detected	0.0	Non fibrous	100.0

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Client: High Street Living
Client PO#:

Submitted By: HD/RS
Date Received: 2018-03-16
Analyst: IH

#	Location	Material	Analysis Date	Layer	Description	% of Sample	Asbestos Minerals	% Asbestos per Layer	Other Fibres	% Fibres per Layer
16	Exterior - SW outside Unit 1 - Smooth	Stucco	2018-03-16	1	White cement	50.0	None Detected	0.0	Non fibrous	100.0
				2	Dark grey cement	50.0	None Detected	0.0	Non fibrous	100.0
17	Hall outside Unit 12	Plaster	2018-03-16	1	Paint	5.0	None Detected	0.0	Non fibrous	100.0
				2	Off white cement	95.0	None Detected	0.0	Non fibrous	100.0
18	1445 Burnside - Exterior - SE side	Stucco	2018-03-16	1	White cement	80.0	None Detected	0.0	Non fibrous	100.0
				2	Grey cement	20.0	None Detected	0.0	Non fibrous	100.0
19	1445 Burnside - Exterior - SW side	Stucco	2018-03-16	1	White cement	70.0	None Detected	0.0	Non fibrous	100.0
				2	Grey cement	30.0	None Detected	0.0	Non fibrous	100.0
20	1445 Burnside - Exterior - North corner	Stucco	2018-03-16	1	White cement	60.0	None Detected	0.0	Non fibrous	100.0
				2	Grey cement	40.0	None Detected	0.0	Non fibrous	100.0
21	1449 Burnside - Exterior - Lower SW side	Stucco	2018-03-16	1	Grey pebble dash cement	100.0	None Detected	0.0	Non fibrous	100.0
22	1449 Burnside - Exterior - Upper West corner	Stucco	2018-03-16	1	Grey pebble dash cement	100.0	None Detected	0.0	Non fibrous	100.0

Analyzed in accordance with NIOSH Method 9002. AIHA BAPAT Lab ID - 214686

Helmcken & Burnside Tenant Relocation Matrix – January 22, 2020

We have provided View Royal staff a rent roll indicating the rent and length of tenancy for each of our rentals. We met with each of the tenants in October and November and ensured them that we are in the process of rezoning, obtaining a development permit and then a building permit and that this process takes a considerable amount of time. We assured them they would receive a minimum four months notice and that we would assist them in their move. We would also request Proline Property Management assist them were possible in finding accommodation.

Below is a chart that represents what the BC Residential Tenancy Act, The City of Victoria and the City of Vancouver require when terminating tenancy due to redevelopment. Please note that we have met and or exceeded the most onerous requirements in all areas.

	City of Victoria	City of Vancouver	BC Residential Tenancy Act	Eagles Nest
Compensation for length of tenancy				
Up to 5 years	3 months	2 months	2 months	4 months
Between 5-10 years	4 months	3 months	3 months	5 months
over 10 years	5 months	4 months	4 months	6 months
over 20 years	6 months	6 months	6 months	8 months
Moving Expenses				
Bachelor and One Bedroom	$ 500.00	$ 750.00	$ 750.00	$ 1,000.00
Two or more bedrooms	$ 750.00	$ 1,000.00	$ 1,000.00	$ 1,250.00
Notice for Termination	4 months	4 months	4 months	4 months

Eligibility in all cases	minimum 1 year prior to rezoning application
Exclusions in all cases	single family homes, duplexes, condos, secondary suites

Eagle's Nest Development Data | 20-02-04

		Pt A	Pt B	Pt C	Pt D	Pt E	Pt F	Pt G	Pt H		GRADE	MFE	AB. HT.	REL. HT.	
South Bldg (4-5 Storeys)	Elev.	28.4	27.1	27.2	27.2	27.1	25.2	27.9	28	28.4	27.1	25.4	41.9	**14.8**	**m**
	Dist.	34.2	33.5	15.2	7.6	36.8	36.2	15.2	7.6						
East Bldg (5 Storeys)	Elev.	29.5	28.6	28	27.5	27.4	27.3	29.5			28.1	28.5	45	**16.9**	**m**
	Dist.	15.2	7.6	65	7.6	15.2	63.7								
West Bldg (6 Storeys)	Elev.	29.5	29	29.3	29.2	29	28.3	28.4	28.2	29.5	28.9	28.5	48.1	**19.2**	**m**
	Dist.	15.2	7.6	15.2	36.5	35.3	7.6	15.2	48.7						

	South Bldg	East Bldg	West Bldg	Total	Site
Gross Area, sm	6,604	6,582	8,781	**21,252.0**	**13,760.9**
Lot Coverage, sm	1,628.9	1,356.3	1,726.3	4,711.5	–
Lot Coverage, %	12%	10%	13%	**34%**	–
Imp. Surface Cov., sm	–	–	–	–	7068.2
Imp. Surface Cov., %	–	–	–	–	**51%**
FAR	–	–	–	–	1.5

	1-Bed	2-Bed	3-Bed	Total	
Unit Size, sm	55-60	82-86	98-110	–	
Count	101	134	12	**247**	
Parking Ratio	1.0	1.5	2.0	–	
Parking Provided	101	201	24	**326**	
Bike Ratio (Class 1)	1.0	1.0	1.0	–	
Bike Pkg Provided	101	134	12	**247**	plus 3 x 6 short term spaces

Setbacks (m)	Required Minimum	Proposed Minimum	Proposed Average
Front (Helmcken)	7.5	10.5	16.2
Flanking (Burnside)	4.0	8.2	8.2
Side (West)	4.0	11.2	16.4
Side (North)	4.0	8.1	8.1

BIRD'S EYE - LOOKING WEST

Rev -	Date 05 JUN 2020	Description ISSUED FOR REZONING
plot date	05 JUN 2020	drawing file 1827 A100 Site Plan.vwx
drawn by	EDS	checked by RAW
scale	N.T.S.	project number 1827

NOTE: All dimensions are shown in millimeters.

ISSUED FOR REZONING

dHKarchitects

VICTORIA OFFICE
977 Fort Street
Victoria BC V8V 3K3
T 1•250•658•3367

NANAIMO OFFICE
102-5190 Dublin Way
Nanaimo BC V9T 0H2
T 1•250•585•5810

project name
Eagle Nest Residences
3 Helmcken Road
Victoria, BC

drawing title
Site Analysis

drawing no. A604

revision no. 1

TOWN OF VIEW ROYAL

BYLAW NO. 1050

A BYLAW TO AMEND THE ZONING BYLAW WITH RESPECT TO CREATING THE CD-24 (BURNSIDE HELMCKEN RESIDENTIAL) ZONE AND WITH RESPECT TO THE REZONING OF 3, 5 and 9 HELMCKEN ROAD and 1449 BURNSIDE ROAD WEST

The Council of the Town of View Royal, in open meeting assembled, enacts as follows:

1. This Bylaw may be cited as "Zoning Bylaw, No. 900, 2014, Amendment Bylaw No. 1050, 2020".

2. Bylaw No. 900 is hereby amended by adding the following Zone Table immediately after the "CD-23: Comprehensive Development (Thetis Lake)" Zone Table:

CD-24: Burnside Helmcken Residential

Principal Uses

- Residential, Apartment
- Residential, Townhouse

Accessory Uses

- Home Occupation

CD-24: Burnside Helmcken Residential	
Lot Size	
Lot Size, minimum	13,500m^2
Lot Density	
Floor Space Ratio	1.5
Lot Coverage, maximum	35%
Impermeable Surface Coverage, maximum	60%
Size of Principal Buildings and Other Structures	
Building Height, maximum (Subzone A)	15m and 5 storeys
Building Height, maximum (Subzone B)	17m and 5 storeys
Building Height, maximum (Subzone C)	19.5m and 6 storeys
Building Width, minimum	6m
Siting of Buildings and Other Structures (Principal and Accessory)	
Western property line, setback	11m
Helmcken Rd property line, setback	10m
Burnside Rd property line, setback	8m
Northern property line, setback	8m

3. Schedule "B" Zoning Map referred to in Section 1.7 of Zoning Bylaw, No. 900, 2014, is amended by amending the zoning and zoning boundaries for lands legally described as follows:

LOT 1 SECTION 9 ESQUIMALT PLAN VIP3963 EXCEPT PLAN 18753, LOT 2 SECTION 9 ESQUIMALT PLAN VIP3963, LOT 10 BLOCK 5 SECTION 9 ESQUIMALT PLAN VIP1726, LOT 1 SECTION 9 ESQUIMALT PLAN VIP18753

such that the zoning for the properties is established as follows:

"CD-24: Burnside Helmcken Residential, Subzones A, B and C" as illustrated in Schedule 1 of this bylaw.

READ A FIRST TIME THIS 19th DAY OF MAY, 2020.

READ A SECOND TIME THIS 19th DAY OF MAY, 2020.

PUBLIC HEARING HELD THIS _____ DAY OF _____, 2020.

READ A THIRD TIME THIS _____ DAY OF _____, 2020.

APPROVED BY THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE THIS _____ DAY OF _____, 2020.

ADOPTED BY COUNCIL, SIGNED BY THE MAYOR AND THE CLERK AND SEALED WITH THE SEAL OF THE TOWN OF VIEW ROYAL THIS _____ DAY OF _____, 2020.

MAYOR

CORPORATE OFFICER

Certified a true copy of
Bylaw No. 1050 at 3rd reading.

Clerk

Schedule 1

AMENDMENTS TO Schedule "2" Zoning Map of Zoning Bylaw, 2014, No. 900