CORPORATION OF THE CITY OF VERNON

ADVISORY PLANNING COMMITTEE

TUESDAY, MAY 29, 2018

4:00 pm – OKANAGAN LAKE ROOM

A G E N D A

1. **INTRODUCTION OF NEW MEMBERS**

2. **ADOPTION OF AGENDA**

3. **ADOPTION OF MINUTES**

   May 15, 2018 (attached)

4. **NEW BUSINESS**

   a) **DVP00428 –** Development Variance Permit application for 5545 27th Avenue

   b) **ZON00291 –** Rezoning application for 5770 Pleasant Valley Road

5. **INFORMATION ITEMS**

   a) An update of APC related items discussed at the May 29, 2018 Council meeting will be provided.

6. **NEXT MEETING**

   The next meeting is tentatively scheduled for Tuesday, June 12, 2018**.**

7. **ADJOURNMENT**

THE CORPORATION OF THE CITY OF VERNON

MINUTES OF ADVISORY PLANNING COMMITTEE MEETING

HELD

TUESDAY, MAY 15, 2018

PRESENT: VOTING
Mark Longworth, Chair
Doug Neden, Vice-Chair
Jamie Paterson
Don Schuster
Monique Hubbs-Michiel
Vicki Topping
Joanne Georgeson

NON VOTING
Councillor Cunningham
Councillor Spiers
Corbin Kelley, Youth Member

ABSENT: Lisa Briggs
Ian Murphy

STAFF: Carie Liefke, Planning Assistant
Keltie Chamberlain, Planning Assistant
Cleo Corbett, Long Range Planner
Ed Stranks, Manager, Engineering Development
Janice Nicol, Legislative Committee Clerk

ORDER

The Chair called the meeting to order at 4:00 p.m.

ADOPTION OF AGENDA

Moved by Jamie Paterson, seconded by :Don Schuster:

THAT the agenda of the Advisory Planning Committee meeting for Tuesday, May 15, 2018 be adopted.

CARRIED.

ADOPTION OF MINUTES

Moved by Don, seconded by Monique Hubbs-Michiel;

THAT the minutes for the Advisory Planning Committee meeting of Wednesday, February 14, 2018 be adopted.

CARRIED.

UPDATE ON KAL TIRE PLACE - PARKING

An update was provided on handicapped parking spaces at Kal Tire Place. The following points were noted:

- Parking was completed last year
- Since installation there has been one complaint received regarding slope of parking space.

NEW BUSINESS:

DEVELOPMENT VARIANCE APPLICATION – 7012 APPALOOSA WAY

The Advisory Planning Committee reviewed development variance permit application DVP00430 for property located at 7012 Appaloosa Way. The Planning Assistant provided an overview of the application.

Moved by Doug Neden, seconded by Monique Hubbs-Michiel;

THAT the Advisory Planning Committee support Council's approval, at its Regular Meeting of June 26, 2017, of Development Variance Application #DVP00395 to vary the following sections of Zoning Bylaw #5000 to allow for an addition to the house and a retaining wall with a fence on top on the property described as Lot H, Plan 19058, Sec 31, Tp 9, ODYD (7012 Appaloosa Way):

a) to vary the minimum front yard building setback from 7.5m to 1.8m (Sec.9.2.5); and

b) to vary the maximum combined height of a retaining wall and a fence on top of the retaining wall from 2.0m to 3.96m (Sec.5.11 and Sec.6.5.12).

AND FURTHER, that Council's support of DVP00395 is subject to the following:

a) That the revised site, elevation, floor, retaining wall and fence plans be provided by the applicant and attached to and form part of DVP00395 as Schedule 'A'; and

b) That the revised site plan is to indicate that the west driveway access is to be closed and the closed area is to be landscaped

be extended for one year.

THAT the Advisory Planning Committee recommends Council support Development Variance Permit Application #DVP00430 to vary the following section of Zoning Bylaw #5000 to allow for an addition to the house on the property described as Lot H, Plan 19058, Sec 31, Tp 9, ODYD (7012 Appaloosa Way):

a) to vary the minimum west side yard building setback from 2.5m to 1.5m (Sec.9.2.5).

AND FURTHER, that Council's support of DVP00430 is subject to the following:

a) That the site, elevation, floor, retaining wall and fence plans noted as Attachments 3 to 9 inclusive in the report titled Development Variance Permit Application for 7012 Appaloosa Way dated May 7, 2018 be attached to and form part of DVP00430 as Schedule 'A'; and

b) That the site plan is to indicate that the west driveway access is to be closed and the closed area is to be landscaped.

CARRIED.

REZONING APPLICATION – 7818 OKANAGAN LANDING BENCH ROAD

The Advisory Planning Committee reviewed Rezoning application ZON00293 located at 7818 Okanagan Landing Bench Road. The Planning Assistant provided an overview of the application.

The following points were noted:

- Clarification on Level 5 buffer – Agricultural Land Reserve (ALR) requires buffer, Zoning Bylaw #5000 specifies that it must be done in accordance with ALR requirements.

Moved by Don Schuster, seconded by Monique Hubbs-Michiel;

THAT the Advisory Planning Committee recommends that Council support the application to rezone Lot 2, DL 6, ODYD Plan 26285 (7818 Okanagan Landing Bench Road) from A3 – Rural Small Holdings to R1 – Estate Lot Residential, in order to allow the boundary adjustments of four contiguous lots, subject to the following:

a) The installation of a Level 5 buffer along the southern boundary of the subject property adjacent to ALR lands

pursuant to the requirements of Zoning Bylaw #5000 Section 6.6.2., and the Ministry of Agriculture's *Guide to Edge Planning.*

CARRIED.

DEVELOPMENT VARIANCE APPLICATION – 8853 ADVENTURE BAY ROAD

The Advisory Planning Committee reviewed development variance permit application DVP00422 for property located at 8853 Adventure Bay Road. An overview of the application was provided.

The following points were noted:

- Concerns that some slopes are greater than 30%. Areas that are over 30% have been built up with fill and this will be removed prior to development proceeding.

Moved by Jamie Paterson, seconded by Doug Neden;

THAT the Advisory Planning Committee recommends that Council support the development variance permit application to vary Section 4.16 of Zoning Bylaw #5000 to allow for subdivision and construction on lands with slopes in excess of 30% on Lot 2, Plan 27137, DL 298, ODYD (8853 Adventure Bay Road).

CARRIED.

LAND USE CONTRACT DISCHARGE AND DEVELOPMENT VARIANCE APPLICATION – 9238 CHINOOK ROAD

The Advisory Planning Committee reviewed the land use contract discharge LUC00013 and development variance permit application DVP00421 for property located at 9238 Chinook Road. An overview of the application was provided.

Moved by Doug Neden, seconded by Jamie Paterson;

THAT the Advisory Planning Committee recommends that Council support the application to discharge Bylaws #291 and #292 respecting Land Use Contract (LTO #P2461) from the title of Lot 17, Sec 11, Twp 13, ODYD, Plan 31060 (9238 Chinook Road) and allow the property to be governed by Zoning Bylaw #5000;

AND FURTHER, that Bylaws #291 and #292, being bylaws to designate the subject lands as a Development Area and to

authorize the Regional District of North Okanagan to enter into a Land Use Contract, be repealed;

AND FURTHER, that the Advisory Planning Committee recommends that Council support the Development Variance application (DVP00421) for Lot 17, Sec 11, Twp 13, ODYD, Plan 31060 (9238 Chinook Road) to vary:

a) Section 4.5.4 to allow the location of a secondary building in the front yard;

b) Sections 4.5.6 and 9.2.5 to allow a secondary building to exceed the lesser of 4.5m or one storey in height, to a maximum of 7.6m and one and a half storeys in height; and

c) Section 9.2.5 to reduce the minimum front yard setback from 7.5m to 4.5m.

subject to the following:

a) That the site plan and building elevation plans generally shown as Attachment 1 in the report titled "Land Use Contract Discharge and Development Variance Permit Application for 9238 Chinook Road" dated May 8, 2018 by the Manager, Current Planning, be attached to and form part of Development Variance Permit DVP00421 as Schedule 'A'; and

b) That a Section 219 Covenant (Wildfire) in favour of the City of Vernon be registered on the title of the subject lands.

CARRIED.

INFORMATION ITEMS:

The Committee reviewed the information for APC related items discussed at the Feb. 26, March 12 & 26, April 9 & 23 Council meetings. The Staff Liaison provided an update of APC related items discussed at the May 14, 2018 Council meetings as follows:

- Bylaw 5627 – 5545 27 Avenue was adopted yesterday, the building has been relocated to other side of property to lessen impact to adjacent development.

NEXT MEETING The next regular meeting of the Advisory Planning Committee is scheduled for Tuesday, May 29, 2018**.**

ADJOURNMENT The meeting of the Advisory Planning Committee adjourned at 4:17 p.m.

CERTIFIED CORRECT:

_____**Chair**

THE CORPORATION OF THE CITY OF VERNON
REPORT TO COUNCIL

SUBMITTED BY: Roy Nuriel
Economic Development Planner

COUNCIL MEETING: REG ☒ COW ☐ I/C ☐
COUNCIL MEETING DATE: June 25, 2018
REPORT DATE: May 23, 2018
FILE: DVP00428

SUBJECT: **DEVELOPMENT VARIANCE PERMIT APPLICATION FOR 5545 – 27TH AVENUE**

PURPOSE:

To review the development variance permit application for 5545 – 27th Avenue to vary sections of Zoning Bylaw #5000 in order to construct a four storey, 38 unit non-profit rental apartment development for the Vernon Native Housing Society.

RECOMMENDATION:

THAT Council support Development Variance Permit Application #DVP00428 to vary the following sections of Zoning Bylaw #5000 in order to construct a four storey, 38 unit non-profit rental apartment development on Lot 1, Plan 5914, DL 66, ODYD (5545 – 27th Avenue):

a) to vary the minimum side yard setback on the south side of the property from 4.5m to 3.2m (Section 9.12.5);

b) to vary the minimum two-way drive aisle width from 7.0m to 6.0m (Section 7.1.12);

c) to vary the minimum number of required off-street parking spaces from 61 spaces to 55 spaces (Section 7, Table 7.1); and

d) to vary the maximum number of small car parking spaces from 40% to 62% (Section 7.1.11).

AND FURTHER, that Council support of DVP00428 is subject to the following:

a) That the site, floor, elevation plans, shadow analysis and the Transportation Impact Assessment generally noted as Attachments 1 to 5 inclusive in the report titled "Development Variance Permit Application for 5545 – 27th Avenue" and dated May 23, 2018 by the Economic Development Planner be attached to and form part of DVP00428 as Schedule 'A'.

ALTERNATIVES & IMPLICATIONS:

1. THAT Council support Development Variance Permit Application #DVP00428 to vary the following sections of Zoning Bylaw #5000 in order to construct a four storey, 38 unit non-profit rental apartment development on Lot 1, Plan 5914, DL 66, ODYD (5545 – 27th Avenue):

    a) to vary the minimum side yard setback on the south side of the property from 4.5m to 3.2m (Section 9.12.5);

    b) to vary the minimum two-way drive aisle width from 7.0m to 6.0m (Section 7.1.12);

c) to vary the minimum number of required off-street parking spaces from 61 spaces to 55 spaces (Section 7, Table 7.1); and

d) to vary the maximum number of small car parking spaces from 40% to 62% (Section 7.1.11).

AND FURTHER, that Council support of DVP00428 is subject to the following:

a) *(To be cited by Council); and*

b) That the site, floor, elevation plans, shadow analysis and the Transportation Impact Assessment generally noted as Attachments 1 to 5 inclusive in the report titled "Development Variance Permit Application for 5545 – 27th Avenue" and dated May 23, 2018 by the Economic Development Planner be attached to and form part of DVP00428 as Schedule 'A'.

Note: This alternative supports the development variance application subject to the condition recommended by Administration, as well as an additional condition or conditions as cited by Council.

2. THAT Council not support the Development Variance Permit Application #DVP00428 to vary Zoning Bylaw #5000 in order to construct a four storey, 38 unit non-profit rental apartment development on Lot 1, Plan 5914, DL 66, ODYD (5545 – 27th Avenue).

Note: This alternative does not support the development variance application. The owner would have to develop the property in accordance with the bylaw.

ANALYSIS:

A. Committee Recommendations:

At its meeting of May 29, 2018 the Advisory Planning Committee passed the following resolution:

" ."

B. Rationale:

1. The subject property at 5545 – 27th Avenue, as shown on Figures 1 and 2, has an area of 0.4 ha (1.0 acre). The property is designated Neighbourhood Centre in the Official Community Plan (OCP) and is located in the Okanagan Landing Neighbourhood Centre. At its Regular Meeting of May 14, 2018, Council adopted the rezoning application to rezone the property from R1 – Estate Lot Residential to RH1 – Low Rise Apartment in order to construct a four storey apartment with 38 non-profit rental units for the Vernon Native Housing Society.

2. The subject application is to vary the following sections of Zoning Bylaw #5000:

   a) to vary the minimum side yard setback on the south side of the property from 4.5m to 3.2m (Section 9.12.5);

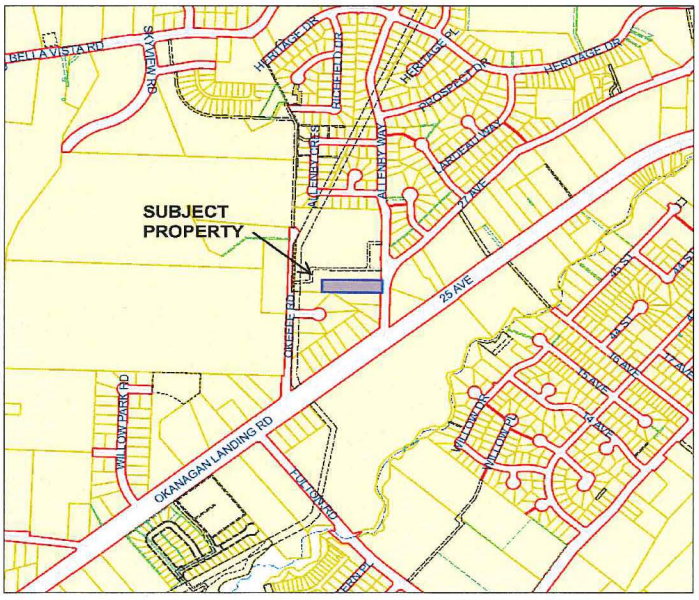


Figure 1 - Property Location Map

b) to vary the minimum two-way drive aisle width from 7.0m to 6.0m (Section 7.1.12);

c) to vary the minimum number of required off-street parking spaces from 61 spaces to 55 spaces (Section 7, Table 7.1); and

d) to vary the maximum number of small car parking spaces from 40% to 62% (Section 7.1.11).

Figure 2 - Aerial View of Subject Property

3. As illustrated in Attachments 1 to 3, the proposed four storey multifamily residential building will provide 38 units ranging from studios to three bedrooms. The building has been designed with a contemporary modern appearance. Exterior finishes include the use of wood and stone textures. Landscaping includes tree plantings within side yards to provide screening and privacy for adjacent properties. An onsite playground with an adjacent seating amenity area is intended for family enjoyment. Parking is provided via surface stalls behind the building so as to be less visible from the street.

4. In order to reduce the impact on the nearby properties to the north and as directed by Council, the building is being sited on the southern portion of the property (Attachment 1) and a restrictive covenant to limit the access driveway to the northern portion of the property was submitted to the Land Title Office. As such, the applicant has requested a setback variance for the south side of the building from 4.5m to 3.2m. In support of the setback variance, the applicant has provided a shadow analysis illustrating the building's shadow during different times and seasons of the year (Attachment 4).

5. Due to the width of the site and the building location, the applicant has also requested a variance to decrease the two-way drive aisle width from 7.0m to 6.0m (Attachment 1). The reduced drive aisle of 6.0m only applies to the access portion of the internal road adjacent to the building where there will be no parking stalls on either side. Full 7.0m drive aisles are still provided adjacent to parking stalls. In support of this variance, the applicant provided a Transportation Impact Assessment (TIA) dated May 3, 2018 prepared by R.F Binnie & Associates (Attachment 5). The TIA indicates that there are no safety or maneuverability concerns caused by this variance. Moreover, the Subdivision and Development Servicing Bylaw #3843 allows 6.0m wide gutter-to-gutter private roadways, so this width is considered acceptable for the entrance to the parking area.

6. The proposed apartment building would provide 38 rental units comprising of four studio, 14 one bedroom, 12 two bedroom and eight three bedroom units (Attachments 1 and 2). Zoning Bylaw #5000 requires 61 off-street parking spaces (five of which would be designated as visitor parking), at 1.60 spaces per unit. The applicant is proposing 55 spaces (five of which would be designated as visitor parking), resulting in 1.44 spaces per unit. In support of the parking variance, the applicant provided a parking study as part of the TIA (Attachment 5). The study provides the support rationale for the variance request (page 9 and 10, and Appendix D in Attachment 5), as follows:

- The user groups are individuals with low incomes. Studies have shown that rental housing developments generate less vehicle ownership and less parking demands than market-housing developments;
- Secure and sheltered bike parking would be provided for residents;

- Transit service is available within a five minute walking distance of the development (Route 7 operates adjacent to the site and Route 8 operates nearby on Okanagan Landing Road/Heritage Drive). The site is located within walking distance to services, jobs and shopping at the adjacent Okanagan Landing Plaza;
- Existing active transportation infrastructure is provided nearby, including multiuse pathways on Allenby Way and Okanagan Landing Road and sidewalks / bike lanes on 27th Avenue; and
- Future active transportation improvements are planned for the area, including a multiuse pathway adjacent to the site on 27th Avenue, connecting the existing Allenby Way and Okanagan Landing Road multiuse pathways.

The TIA also assessed that the development is expected to produce a peak period demand of 47 parking spaces which includes both residents and visitors (1.23 spaces per unit). While the 55 stalls provided (1.44 spaces per unit) are below the zoning bylaw requirement, they are in excess of the anticipated demand.

7. As illustrated in Attachment 1, the parking layout consists of 55 off-street parking spaces, which includes 18 regular, 34 small car and three accessible parking spaces. Zoning Bylaw #5000 limits the number of small car spaces to 40% of the total parking supply. The applicant has also requested a parking variance to the maximum number of small car spaces from 40% to 62% of the total parking supply. The TIA (Attachment 5) supports the variance to provide a total of 62% of small car spaces based on the following:

    - Smaller vehicles are generally more affordable to purchase and operate for lower income and budget conscious residents;
    - Market trends are to cross-over models and small or mid-sized SUVs, which have an average length of 4.9m and could be accommodated by the small car parking space; and
    - The top selling large vehicles and pickup trucks made up only 23% of the Canadian new vehicle market in 2017 (Drive.ca).

8. Administration supports the development variance application for the following reasons:

    a) The proposed variance would allow for a non-profit rental housing development which meets the goals and objectives in the City's Attainable Housing Strategy. This strategy has been endorsed by Council.

    b) The proposed building siting was developed based on Council's direction to be located on southern portion of the property in order to reduce the impact on the nearby properties to the north.

    c) The TIA indicates that there are no safety or maneuverability concerns caused by decreasing the drive aisle width at the access portion of the internal road from 7.0m to 6.0m this variance.

    d) Based on the provided TIA, the proposed 55 parking spaces, of which 62% would be designated for small car, are expected to accommodate the estimated parking demands and typical vehicle sizes in a low income non-profit rental development.

C. Attachments:

Attachment 1 – site plan
Attachment 1 – ground to fourth level floor plans
Attachment 3 – building elevations
Attachment 4 – shadow analysis
Attachment 5 – Transportation Impact Assessment (TIA)

D. Council's Strategic Plan 2015 – 2018 Goals/Deliverables:

The subject rezoning application involves the following objectives in Council's Strategic Plan 2015 – 2018:

- Support sustainable neighbourhood by implementing the OCP
- Work with community partners to create more affordable housing

E. Relevant Policy/Bylaws/Resolutions:

1. The subject property is designated Neighbourhood Centre in the Official Community Plan (OCP). The property is zoned RH1 – Low Rise Apartment Residential in Zoning Bylaw #5000.

2. At its Regular Meeting of May 14, 2018, Council adopted the following resolution:

   "THAT Bylaw #5627, "5545 27th Avenue Rezoning Amendment Bylaw Number 5627, 2017" – a bylaw to rezone the subject property from "R1- Estate Lot Residential" to "RH1 – Low-Rise Apartment Residential", be adopted."

3. At its Regular Meeting of May 23, 2017, Council gave third reading to Bylaw #5627, "5545 27th Avenue Rezoning Amendment Bylaw Number 5627, 2017" – a bylaw to rezone the subject property from R1 - Estate Lot Residential to RH1 – Low-Rise Apartment Residential. At that same meeting, following the Public Hearing for the noted bylaw, Council passed the following resolution:

   "THAT Council directs that prior to adoption of "5545 27th Avenue Rezoning Amendment Bylaw Number 5627, 2017" the following items must be brought back to Council for consideration:

   The owner is to provide a Transportation Impact Assessment (TIA) including an access sightline assessment with recommended implementation actions to be undertaken.

   The owner is to provide a detailed apartment building shadow analysis for all seasons and with mid-morning, noon and mid-afternoon shadow lines and with the analysis based upon the proposed finished grade elevations and including a shadow analysis measured from the centreline of 27th Avenue.

   The owner is to submit a revised site plan based upon the apartment building being sited on the southern portion of the property with the access driveway on the northern portion of the property which is to be registered as a covenant on title."

   This information was provided to Council at its Regular Meeting of May 14, 2018.

4. At its Regular Meeting of April 24, 2017, Council adopted the following resolution:

   "THAT Council support the application to rezone Lot 1, Plan 5914, DL 66, ODYD (5545 – 27th Avenue) from R1 – Estate Lot Residential to RH1 – Low Rise Apartment Residential in order to construct a four storey rental apartment development, subject to the following:

   The owner is to enter into a Development Agreement for the extension and connection of sanitary sewer, storm sewer and water services to the subject property; and

   The owner is to dedicate road right-of-way along the 27th Avenue frontage as shown on Attachment 9 in the report titled Rezoning Application for 5545 – 27th Avenue and dated April 12, 2017 by the Manager, Current Planning."

5. The Local Government Act provides Council with the authority to vary local bylaws based on site specific considerations. The granting of such variances does not set a precedent within the community for future variances to be based upon, as each variance application must be evaluated on its own merit and potential implications to the whole community and the specific neighbourhood.

BUDGET/RESOURCE IMPLICATIONS:

The subject project involves low income housing to be developed, owned and operated by a non-profit housing society. This project would qualify for the City and RDNO DCC waiver provisions.

Prepared by:

Right-click to sign with DocuSign

Roy Nuriel
Economic Development Planner

Right-click to sign with DocuSign

Kim Flick
Director, Community Infrastructure and Development

Approved for submission to Council:

_____
Will Pearce, CAO

Date: _____

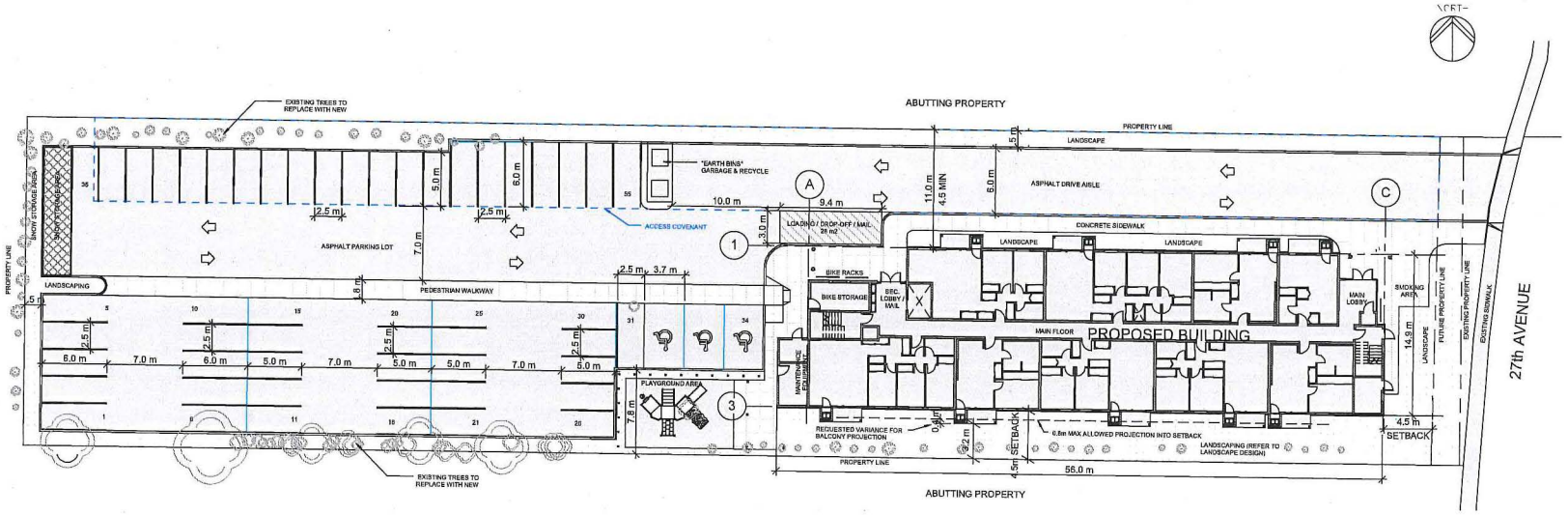
REVIEWED WITH

- ☐ Corporate Services
  - ☐ Bylaw Compliance
  - ☐ Real Estate
- ☐ RCMP
- ☐ Fire & Rescue Services
- ☐ Human Resources
- ☐ Financial Services
- ☒ COMMITTEE: APC (May 29/18)
- ☐ OTHER:

- ☐ Operations
  - ☐ Public Works/Airport
  - ☐ Facilities
  - ☐ Utilities
- ☐ Recreation Services
- ☐ Parks

- ☒ Current Planning
- ☐ Long Range Planning & Sustainability
- ☐ Building & Licensing
- ☐ Engineering Development Services
- ☐ Infrastructure Management
- ☒ Transportation
- ☒ Economic Development & Tourism

Attachment 1



ZONING ANALYSIS

EXISTING ZONING:	PROPOSED ZONING:
R1	RH1 - Low-Rise Apartment Housing
SITE AREA:	
1400.0 m2 MIN.	4049.2 m2
ALLOWED	**PROPOSED**
MAXIMUM DENSITY:	
110 Units/ ha	44 Units/ ha
MAXIMUM SITE COVERAGE:	
65% For Buildings	20%
85% For Buildings & Hard Surfaces	77%
MAXIMUM HEIGHT:	
4.5 Storeys/ 16.5 m	4 Storeys / 12 m
SETBACKS:	
Front: 4.5 m	4.5 m
Side 4.5 m	4.5 m
Rear: 9.0 m	79.0 m
CAR PARKING:	
56 STALLS + 5 VISITOR STALLS	50 STALLS + 5 VISITOR (6 STALL VARIANCE)
BIKE PARKING:	
19 CLASS I 10 CLASS II	19 CLASS I 10 CLASS II

BUILDING AREA STATS:

BUILDING AREA:

768.7 m2 (8275 SF)

GROSS CONSTRUCTION AREA	
	Area
LEVEL 1	8335 SF
LEVEL 2	7946 SF
LEVEL 3	8060 SF
LEVEL 4	8057 SF
Total	32401 SF

UNIT SCHEDULE BY TYPE		
TYPE	COUNT	AREAS (MIN-MAX)
1BR	11	458 SF ... 526 SF
1BR HC	3	522 SF ... 526 SF
2BR	12	710 SF ... 777 SF
3BR	8	823 SF ... 908 SF
STUDIO	4	367 SF
Total	38	

UNIT TYPES BY-FLOOR	
Name	Count
LEVEL 1	
1BR HC	3
2BR	3
3BR	2
STUDIO	1
LEVEL 2	
1BR	3
2BR	3
3BR	2
STUDIO	1
LEVEL 3	
1BR	4
2BR	3
3BR	2
STUDIO	1
LEVEL 4	
1BR	4
2BR	3
3BR	2
STUDIO	1
Total	38

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Seal

Revision

No	Date MM-DD-	Description
1	JAN 31, 2018	ISSUED FOR DP
2	FEB 05, 2018	ISSUED FOR BC HOUSING REVIEW
3	FEB 28, 2018	AMENDED FOR DP
4	MAR 14, 2018	MAGIC-PAK ADDITION
5	MAY 01, 2018	PARKING REVISIONS

MAKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

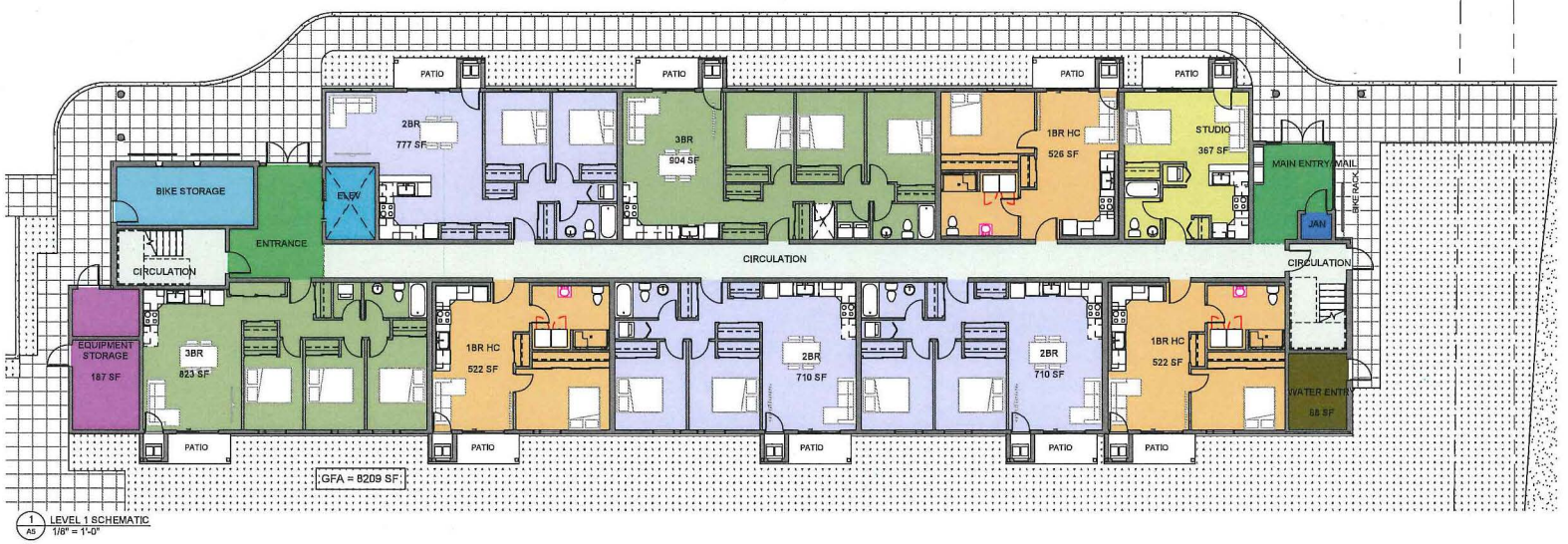
project no. 4018

file no.

drawing title
SITE PLAN & ZONING ANALYSIS

designed — scale: As Indicated
drawn: R.V./R.B.
checked: R.V.
drawing no.
A2
plotted 5/1/2018 2:32:12 PM

Attachment 2



1 / A5 LEVEL 1 SCHEMATIC
1/8" = 1'-0"

2 LEVEL 2 SCHEMATIC
1/8" = 1'-0"

NEW TOWN
ARCHITECTURE
URBAN PLANNING
CIVIL ENGINEERING
www.newtownservices.ca

Seal

Revision

No	Date MM-DD-	Description
1	JAN 31, 2018	ISSUED FOR DP
2	FEB 05, 2018	ISSUED FOR BC HOUSING REVIEW
3	FEB 28, 2018	AMENDED FOR DP
4	MAR 14, 2018	MAGIC-PAK ADDITION

M'AKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4013

file no.

drawing title
LEVEL 1 & LEVEL 2 PLANS

designed	scale 1/8" = 1'-0"
drawn	R.Y./R.B.
checked	R.Y.
drawing no.	A3

print MAR 14, 2018 3/14/2018 6:18:28 PM

GFA = 8060 SF

1 / A5 LEVEL 3 SCHEMATIC
1/8" = 1'-0"

GFA = 8057 SF

2 LEVEL 4 SCHEMATIC
1/8" = 1'-0"

NEW TOWN
ARCHITECTURE
URBAN PLANNING
CIVIL ENGINEERING
www.newtownservices.ca

Seal

Revision

No	Date MM-DD-	Description
1	JAN 31, 2018	ISSUED FOR DP
2	FEB 05, 2018	ISSUED FOR BC HOUSING REVIEW
3	FEB 28, 2018	AMENDED FOR DP
4	MAR 14, 2018	MAGIC-PAK ADDITION

MAKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4613

file no.

drawing title
LEVEL 3 & LEVEL 4 PLANS

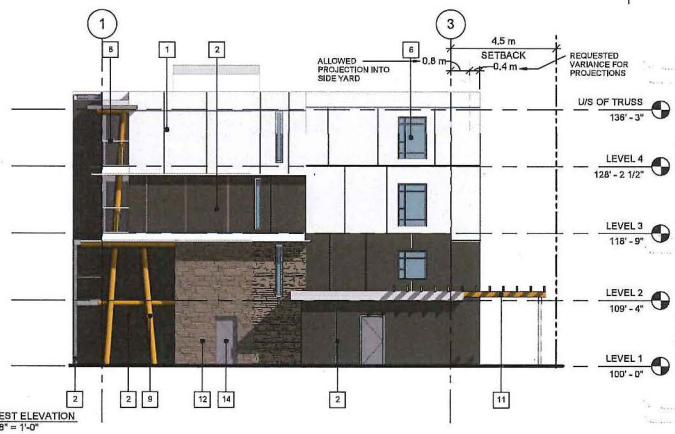
designed — scale 1/8" = 1'-0"
drawn R.V./R.B.
checked R.V.
drawing no. **A4**
plotted MAR 14, 2018 3/14/2018 8:58:40 PM

Attachment 3

1 NORTH ELEVATION
1/8" = 1'-0"

2 SOUTH ELEVATION
1/8" = 1'-0"

3 EAST ELEVATION
1/8" = 1'-0"



4 WEST ELEVATION
1/8" = 1'-0"

MATERIAL KEYNOTE

1. CEMENTITIOUS PANELS - LIGHT GRAY
2. CEMENTITIOUS PANELS - BROWN
3. IMITATED CEDAR SIDING (FIBRE CEMENT BOARD)
4. STOREFRONT GLAZING
5. ALUMINUM GLAZED DOORS
6. DOUBLE GLAZED WINDOWS
7. METAL POSTS TO BALCONIES
8. ALUMINUM GUARDS
9. WOOD-CLAD STEEL STRUCTURE
10. ALUMINUM SOLAR SHADES
11. SEMI-DETACHED WOOD TRELLIS
12. STONE VENEER
13. PATIO DOORS
14. PAINTED METAL EXTERIOR DOORS
15. MAGIC-PAK MECH LOUVRES

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Revision

No	Date MM-DD-	Description
1	JAN 31, 2018	ISSUED FOR DP
2	FEB 05, 2018	ISSUED FOR BC HOUSING REVIEW
3	FEB 28, 2018	AMENDED FOR DP
4	MAR 14, 2018	MAGIC-PAK ADDITION

MAKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4013

tip no.

drawing title
BUILDING ELEVATIONS

designed	scale As indicated
drawn	R.Y./R.B.
checked	R.Y.

drawing no. A5

plotted MAR 14, 2018 3/14/2018 6:16:16 PM

Attachment 4

STREET PERSPECTIVE OF THE PROPOSED BUILDING

REAR PERSPECTIVE OF THE PROPOSED BUILDING

SHADOW ON JUNE 21st, 12.00PM

SHADOW ON SEPTEMBER 21st, 12.00PM

SHADOW ON DECEMBER 21st, 12.00PM

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Revision

No	Date MM-DD-	Description
1	JAN 31, 2018	ISSUED FOR DP
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4	MAR 14, 2018	MAGIC-PAK ADDITION

MAKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4012

file no.

drawing title
RENDERINGS & SHADOW STUDY

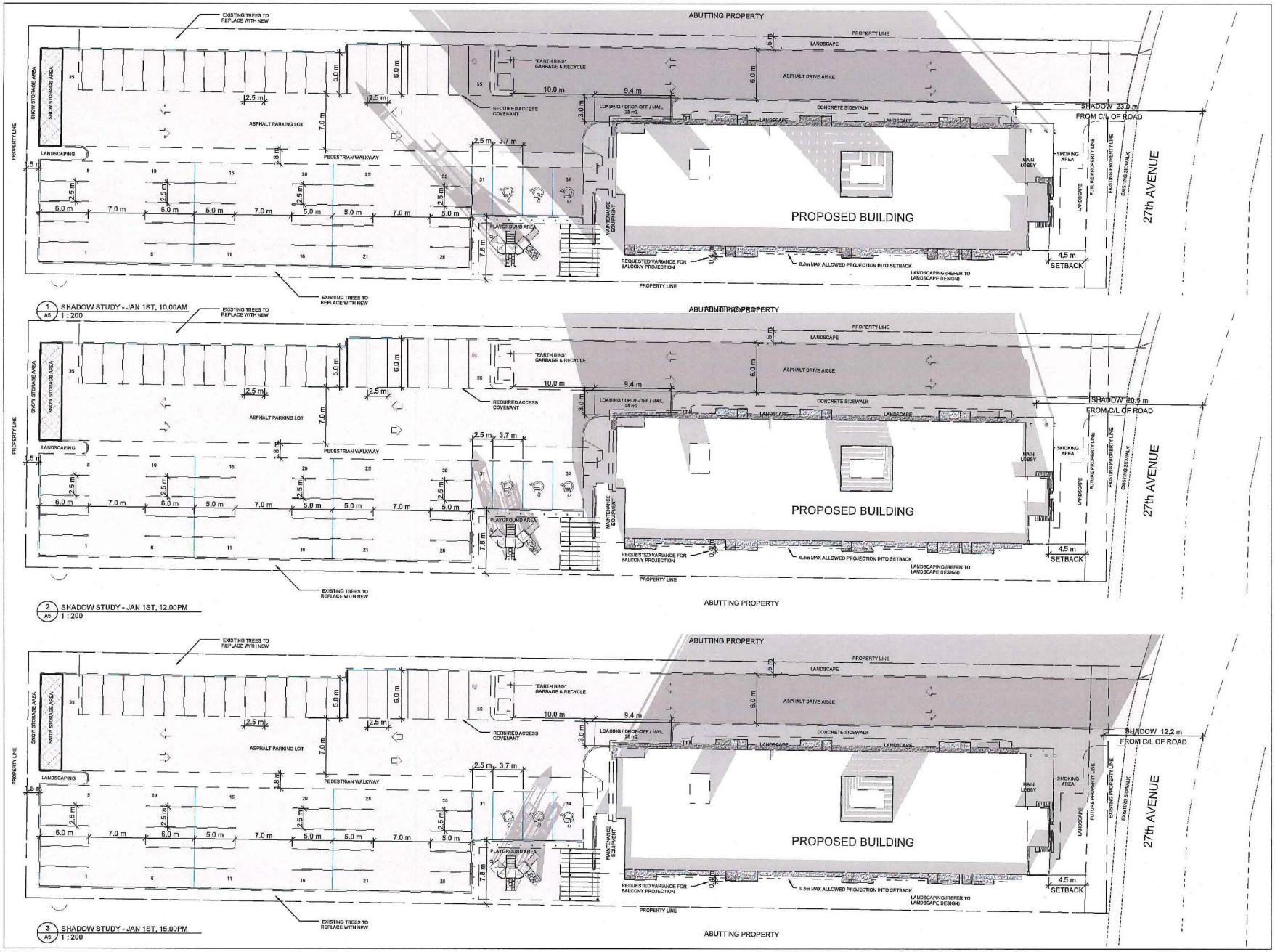
designed SCHP

drawn R.V./R.B.

checked R.V.

drawing no. A9

plotted MAR 14, 2018 3/14/2018 8:17:37 PM



ALL CONTRACTORS ARE REQUIRED TO PERFORM THEIR WORK AND SUPPLY THEIR PRODUCTS IN COMPLIANCE WITH ALL BUILDING CODES AND LAWS OF THE PROVINCE OF BRITISH COLUMBIA

This drawing is an instrument of service and the property of New Town Services. The use of this drawing shall be restricted to the original site for it was prepared and publication thereof is expressly limited to such use.

This drawing must not be scaled
Verify all dimensions and datums prior to commencement of work.

Report all errors and omissions to the Architect.

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Revision

No	Date MM-DD-	Description

M'AKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4013

tip no.

drawing title
SHADOW STUDY - WINTER

designed — scale 1 : 200
drawn P.V./R.B.
checked P.V.

drawing no. A10

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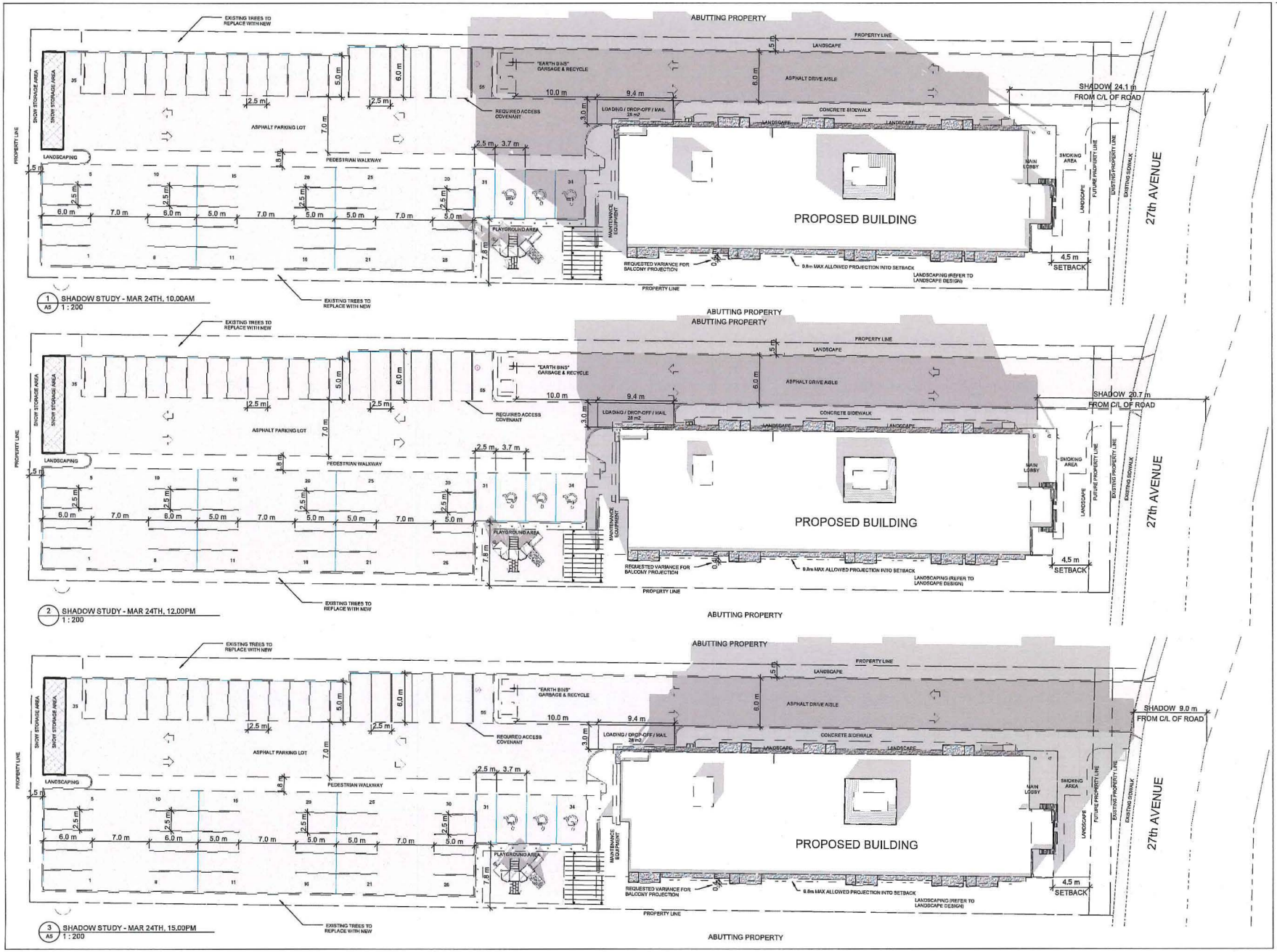

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Seal

Revision

No	Date MM-DD-	Description

MAKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4013

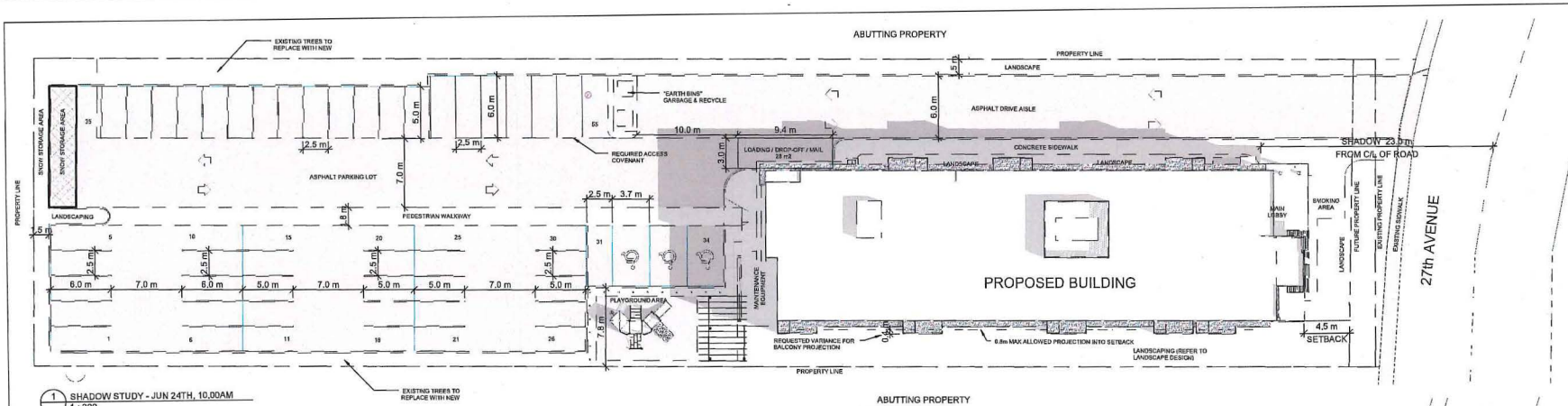
file no.

drawing title
SHADOW STUDY - SPRING

designed — scale 1 : 200
drawn R.Y./R.B.
checked R.Y.

drawing no.
A11

plotted 5/8/2018 11:57:28 AM



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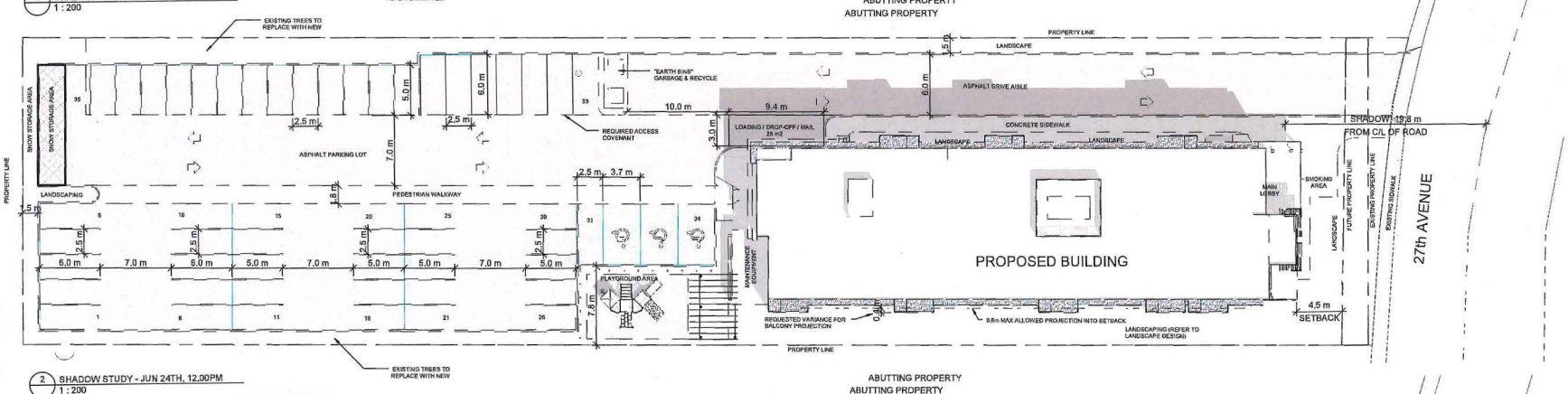

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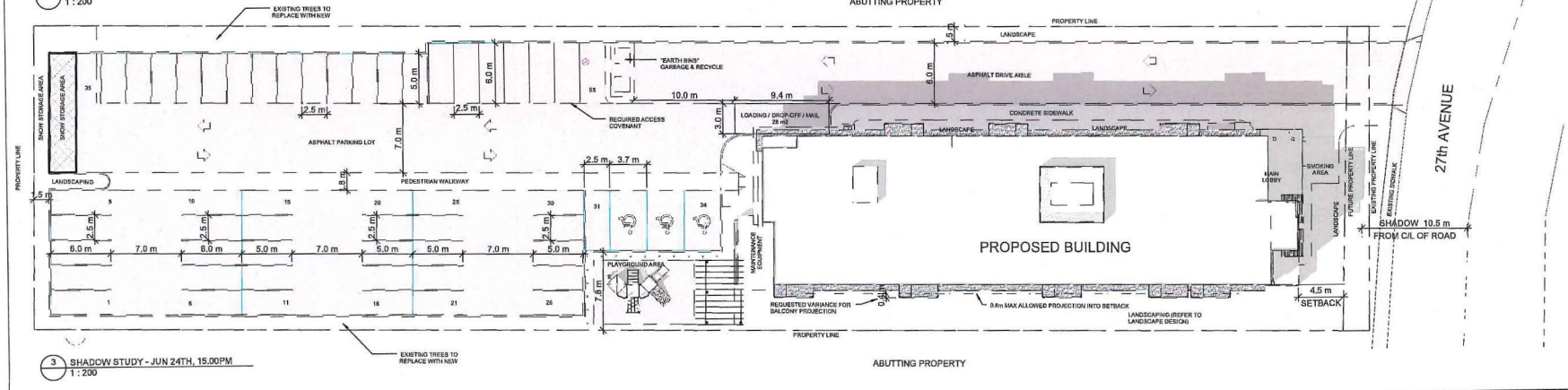

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Revision

No	Date MM-DD-	Description

MAKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4013

file no.

drawing title
SHADOW STUDY - SUMMER

plotted	scale 1 : 200
drawn	R.V./R.B.
checked	R.V.
drawing no.	**A12**
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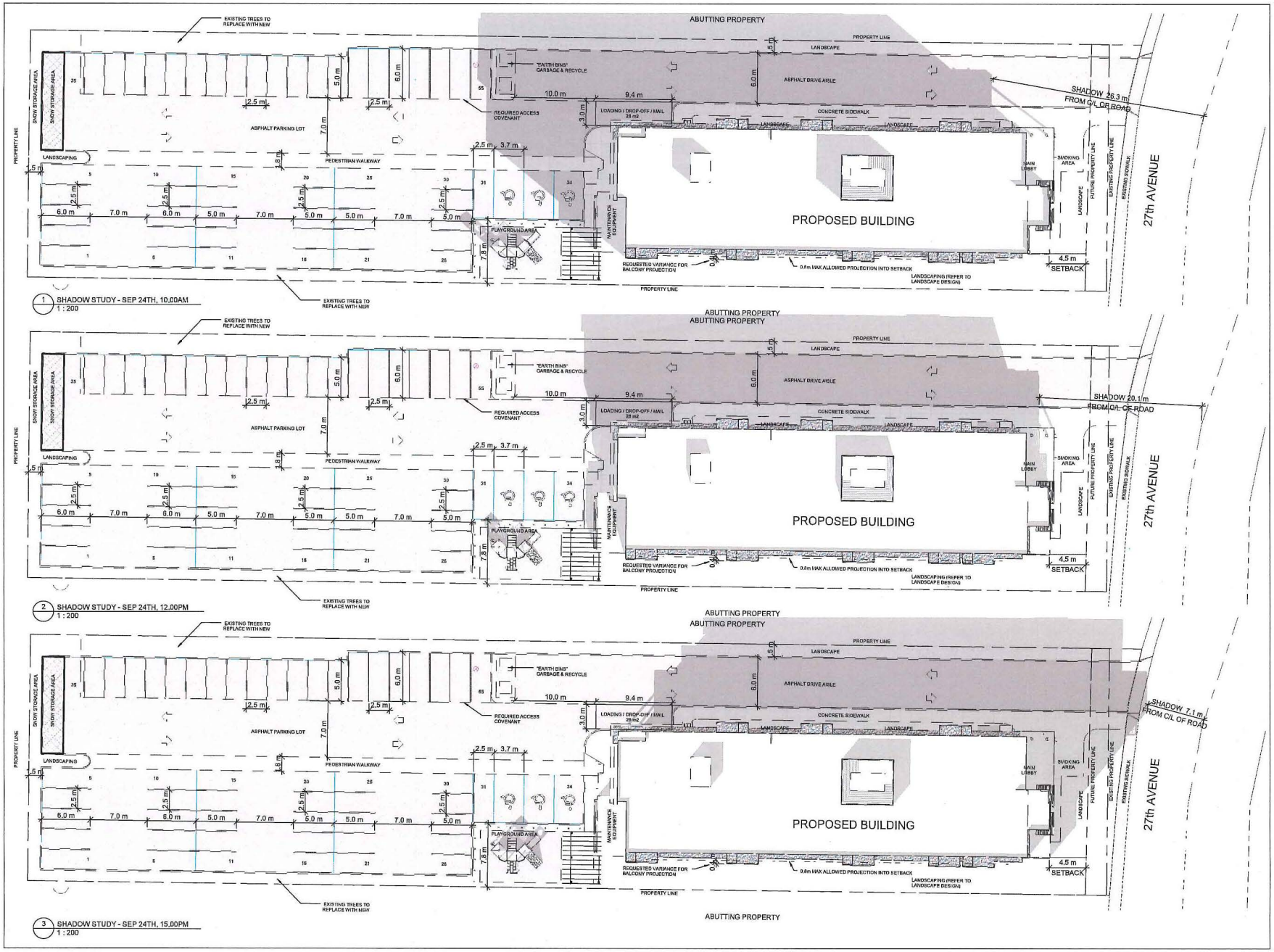

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Revision

No	Date MM-DD-	Description

MÁKOLA DEVELOPMENT SERVICES

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project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4013

file no.

drawing title
SHADOW STUDY - FALL

designed | scale 1 : 200
drawn R.V./R.B.
checked R.V.

drawing no. A13

plotted 5/8/2019 11:57:36 AM

Attachment 5

Binnie File No. 17-0234-06

FINAL Traffic Impact Study - Rev.3

M'akola Development Services

Vernon Native Housing Society Development

May 3, 2018

Reviewed by:
Jonathan Ho, P.Eng., PTOE
Traffic Services Division Manager

Prepared by:
Ava Li, EIT
Traffic Engineer

R.F. BINNIE & ASSOCIATES LTD.
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Main: 604-420-1721

ENGINEERS & GEOSCIENTISTS BRITISH COLUMBIA | OQM CERTIFIED

BINNIE

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APPENDICES

1 INTRODUCTION

1.1 Background

R.F. Binnie & Associates Ltd. (Binnie) was retained by M'akola Development Services (MDS), on behalf of Vernon Native Housing Society (VNHS), to prepare a traffic impact study for a proposed multi-family residential development in the City of Vernon (the City). The proposed development is expected to provide a total of 38 residential rental units for Aboriginal Elders, individuals with accessibility challenges, and families living off-reserve. A proposed site plan of the study development is provided in **APPENDIX A**.

1.2 Project Location

The address of the proposed development is 5545 27th Avenue. The site is located on the west side of 27th Avenue and north of Okanagan Landing Road. The primary access to the site is expected to be located on 27th Avenue. The location of the proposed development site is shown in **Figure 1-1**.

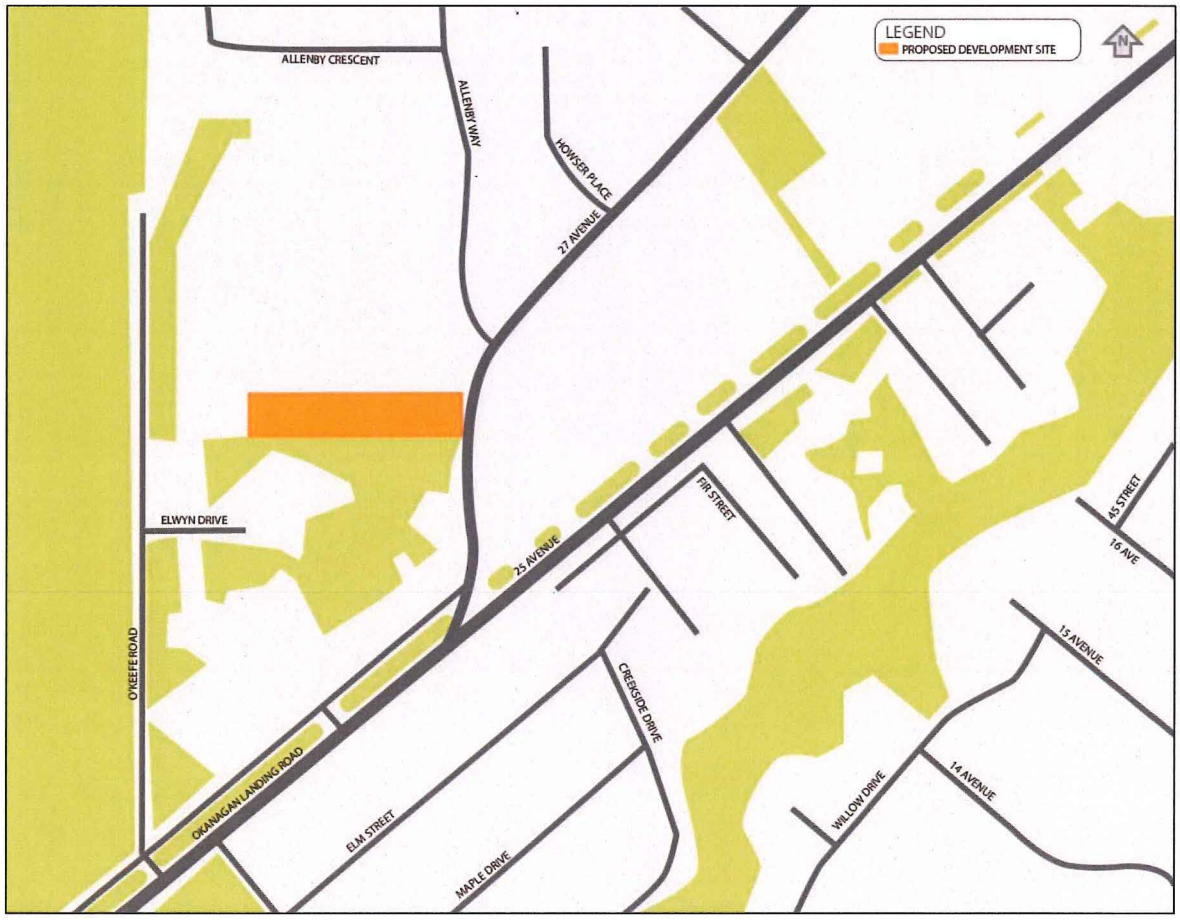


Figure 1-1: Proposed Development Location

1.3 Study Objectives

The objectives of this traffic impact study are to make considerations regarding the following items:

- Traffic flow in the vicinity of the development site
- Access to the proposed development
- Provision of on-site parking stalls
- Necessary transportation changes to support the proposed development

2 EXISTING CONDITIONS

2.1 Land Use

The development complies with the City's Official Community Plan (OCP) and the Development Permit Area (DPA) designation. The site is currently zoned as an R1 Estate Lot Residential, with a proposed re-zoning to RH1 Low-Rise Apartment Housing for the proposed development. The adjacent land uses are generally for single-family and multi-family developments. The site is also located near amenities and services such as Ellison Elementary School, Clarence Fulton Secondary School, and a commercial property with local groceries and food outlets.

2.2 Adjacent Road Network

2.2.1 Highway 97

Highway 97 is one of the main highways in the interior of British Columbia (B.C.), spanning from Osoyoos to the border between B.C. and Yukon Territory. It runs primarily in the north-south direction and connects the City to various other parts of the province. It is maintained by the B.C. Ministry of Transportation and Infrastructure (the MOTI). The section of the highway that runs through Vernon generally has a four-lane urban cross-section with two lanes in each direction.

2.2.2 Highway 6

Highway 6 is another MOTI highway that runs through the southern interior of B.C. It connects the City with numerous communities in the Kootenay region such as Nakusp and Castlegar. It is typically a two-lane highway that runs primarily in the east-west direction.

2.2.3 Arterial Roads

To the south of the site, Okanagan Landing Road and 25th Avenue intersects 27th Avenue at a three-legged intersection. Okanagan Landing Road/25th Avenue are classified as arterial roadways in the City and they generally run in the east-west direction. The existing Okanagan Landing Road has a two-lane rural cross-section and a posted speed of 50 km/h. 25th Avenue has a two-lane urban cross-section with a two-way-left-turn-lane (TWLTL) in the median. Its posted speed is also 50 km/h. The existing paved shoulders on both sides of Okanagan Landing Road/25th Avenue are marked for cyclists.

2.2.4 Collector Road

Allenby Way is classified as a collector roadway in the City with a two-lane urban cross-section. It generally runs in the north-south direction with a posted speed of 50 km/h. It has an existing pedestrian sidewalk on the west side between 27th Avenue and Allenby Crescent and a multi-use pathway (MUP) on the east side.

2.2.5 Local Road

27th Avenue is a local roadway that generally runs in the east-west direction. It has a two-lane urban cross-section with a posted speed of 50 km/h. A pedestrian sidewalk is currently provided on one side of the roadway and on-street bicycle lanes are provided on both sides of the roadway.

2.2.6 *Allenby Way and 27th Avenue Intersection*

The Allenby Way and 27th Avenue intersection is currently a three-legged stop-controlled intersection. The stop-control is placed on the north approach (Allenby Way) while the traffic on 27th Avenue is free-flowing. There is no existing eastbound left-turn lane for the traffic on 27th Avenue. On Allenby Way, the southbound left-turn movement and right-turn movement each has its own lane. A pedestrian crosswalk is currently provided on the north approach of this intersection.

The existing laning configurations at the study intersection are shown in **Figure 2-1**.

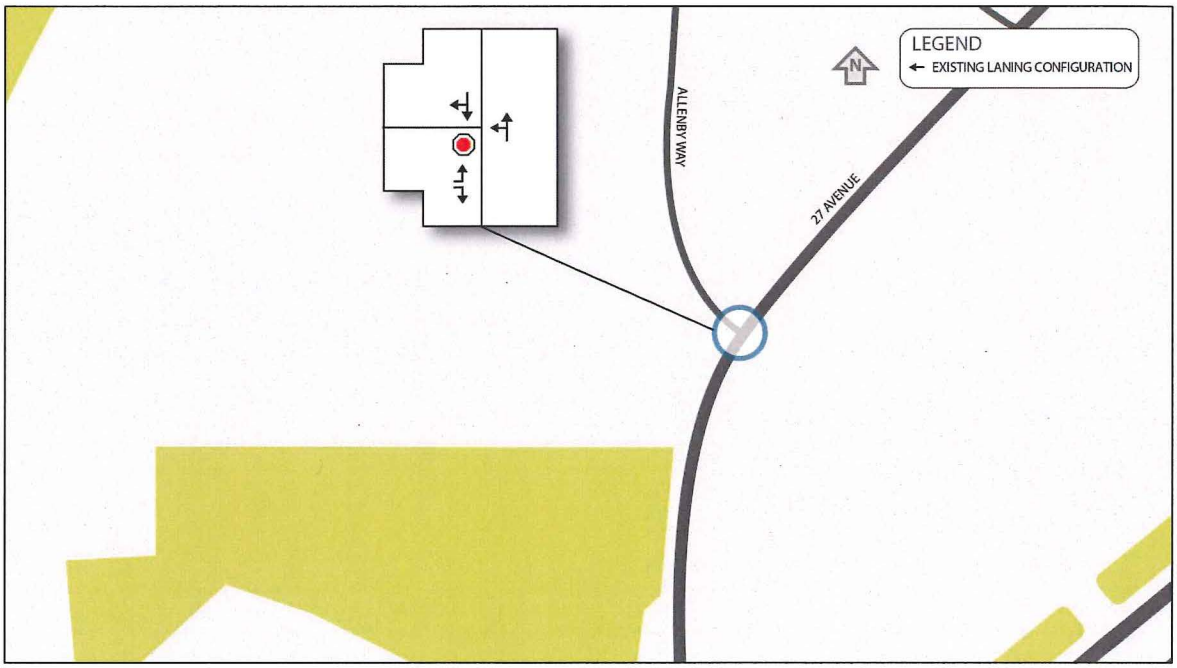


Figure 2-1: Existing Intersection Laning Configurations and Traffic Controls

2.3 Existing Traffic Volumes

Existing traffic volumes for the Allenby Way and 27th Avenue intersection were collected by TransTech Data Services Ltd. (TransTech) on June 1, 2017. The AM peak data were collected between 7:30 AM and 9:30AM and the PM peak data were collected between 2:30 PM and 5:30 PM as per the request by the City.

The turning movement data generally identified the AM peak hour to be from 7:45 AM to 8:45 AM for this intersection. Within the AM peak hour, approximately 60% of vehicles were travelling westbound on 27th Avenue in front of the proposed development site.

The turning movement data generally identified the PM peak hour to be from 2:30 PM to 3:30 PM for this intersection. Within the PM peak hour, approximately 55% of vehicles were travelling westbound on 27th Avenue in front of the proposed development site.

The existing traffic volumes for the AM peak hour and PM peak hour are summarized in **Figure 2-2.** The turning movement count data are provided in **APPENDIX B.**

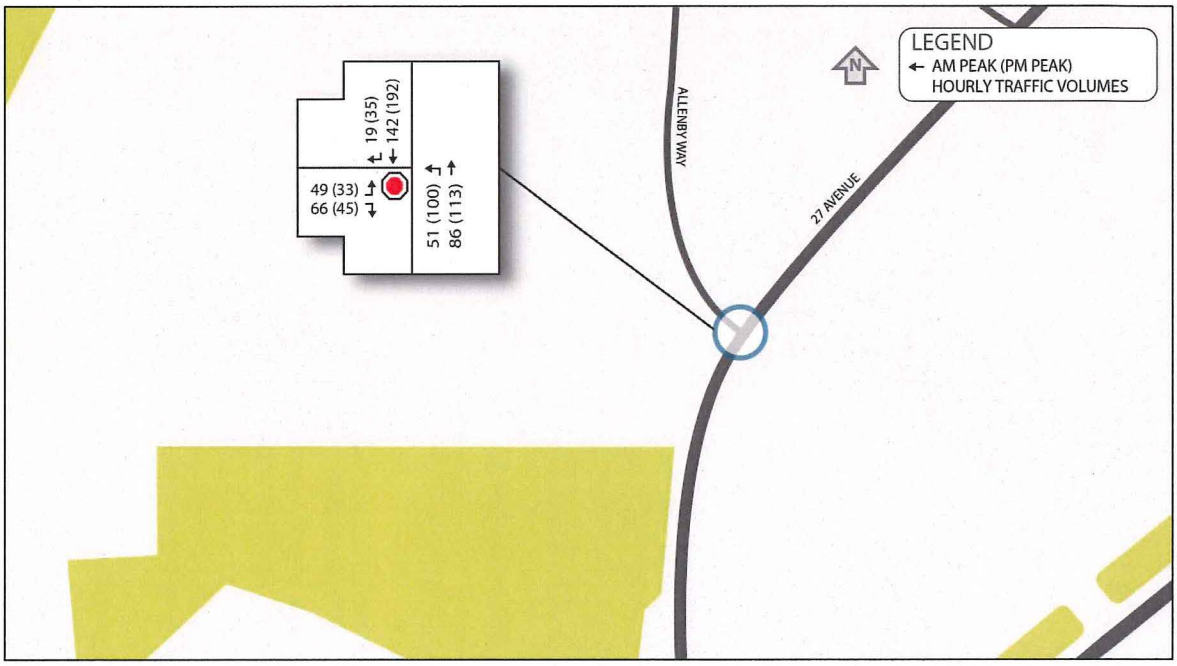


Figure 2-2: Existing Traffic Volumes at Allenby Way and 27th Avenue

2.4 Pedestrians

As described in **Section 2.2**, pedestrian facilities are currently provided on one side of 27th Avenue and on the west side of Allenby Way between 27th Avenue and Allenby Crescent. There is an existing pedestrian crosswalk on the north approach of the Allenby Way and 27th Avenue intersection. At the adjacent Okanagan Landing Road/25th Avenue and 27th Avenue intersection, a pedestrian crosswalk is also provided on the north approach. Further, there are multiple MUPs in the area as shown in **Figure 2-3**. Near the proposed development, there is a MUP along the east side of Allenby Way beginning at 27th Avenue. There is also a MUP along the north side of Okanagan Landing Road/25th Avenue, west of 27th Avenue.

2.5 Cyclists

Within the study area, multi-use pathways are provided on 25th Avenue and Allenby Way, which are facilities shared by pedestrians and cyclists. There are also on-street bicycle lanes on 27th Avenue, Okanagan Landing Road, and 25th Avenue. Based on the Vernon Community Bike Routes information prepared by the City, the South Vernon cycling routes are shown in **Figure 2-3** with various bicycle routes located in close proximity to the proposed development.

Figure 2-3: South Vernon Cycling Map (City of Vernon)

2.6 Transit Services

The existing transit services in the City are part of the Vernon Regional Transit System according to BC Transit's website. There are two bus routes operating near the proposed development site, each running approximately once every hour:

- Route #7 Okanagan Landing Route – This bus route operates between downtown Vernon and Okanagan Landing, extending past the Vernon Airport to Okanagan Lake. There are southbound and northbound bus stops located on 27th Avenue and Allenby Way respectively. Both bus stops are located within a five-minute walking distance from the proposed development.

- Route #8 Bella Vista – This bus route operates between downtown Vernon and Lakeshore Road along Bella Vista Road and Okanagan Landing Road. There is a northbound bus stop located on Okanagan Landing Road that is within a five-minute walking distance from the proposed site.

Minor route changes were made to the routes listed above on April 1, 2018 with more changes to be explored by the City and BC Transit as part of future service reviews. The existing transit routes in Vernon are shown in **Figure 2-4**.

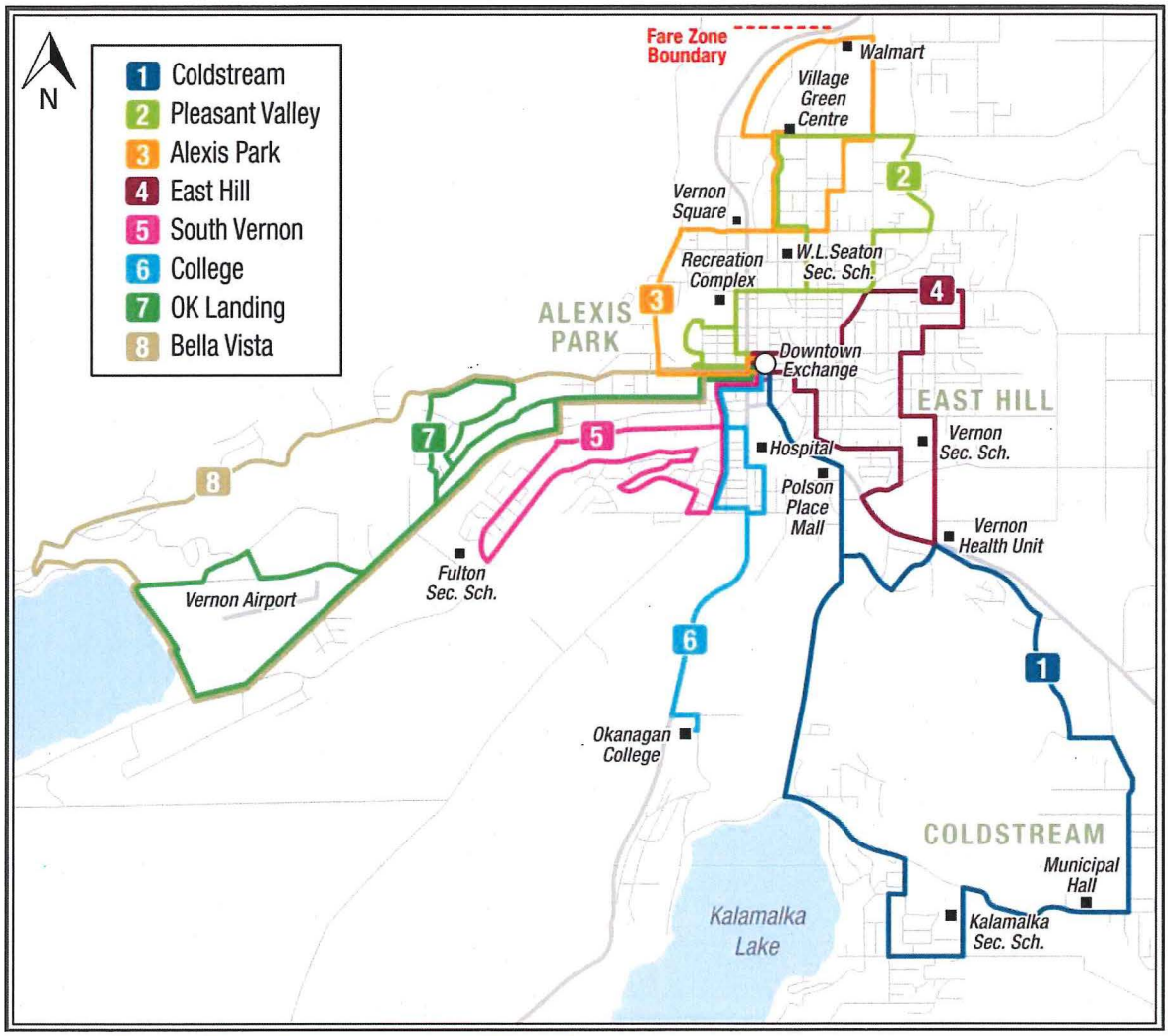


Figure 2-4: Existing Transit Routes in Vernon (BC Transit)

3 PROPOSED DEVELOPMENT

3.1 Development Concept

The proposed development is located on 27th Avenue between Okanagan Landing Road/25th Avenue and Allenby Way. The proposed driveway access to the site will be located on 27th Avenue. It is anticipated that the proposed development will provide 38 rental units when it is completed. Based on the most recent plan provided by MDS, the proposed development consists of four studio units, 11 one-bedroom units, three accessible one-bedroom units, 12 two-bedroom units, and eight three-bedroom units.

The study development is proposing a two-way internal roadway that is expected to be 6.0 m wide at the entrance. Within the site, the internal roadway is proposed to be 7.0 m to facilitate residents accessing the parking stalls. A single loading space is provided for pick-up/drop-off of residents and to be used as a loading area. The site plan also shows a separate loading area for postal delivery. The proposed internal roadway within the study site will include a pedestrian walkway which will connect to the future sidewalk along the frontage area of the study development.

The proposed development site plan is shown below in **Figure 3-1**.

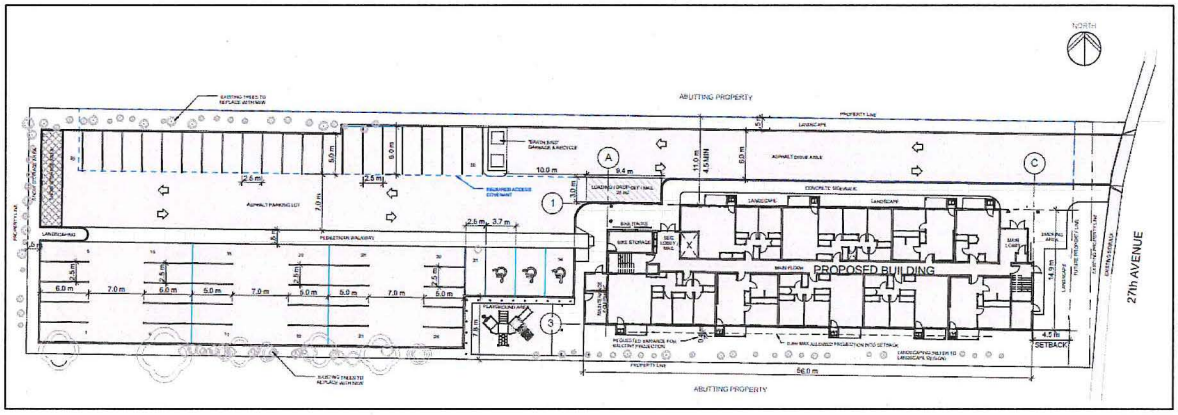


Figure 3-1: Proposed Site Plan

3.2 Internal Circulation

Based on the City's Zoning Bylaw No. 5000, 2003, roadways shall be a minimum 7.0 m wide for all two-way roadways and for all 90-degree parking stalls. The study development is proposing a 6.0 m wide internal roadway at the entrance where there will be no parking stalls on either side. Within the parking area with parking stalls on either side, the internal roadway will be 7.0 m to meet the City's bylaw requirement. The proposed development requires a variance of 1.0 m for the access portion of the internal roadway.

Based on our assessment, the requested variance for a 6.0 m access roadway is generally acceptable. It is not expected to have negative impacts on traffic operations and safety. There are examples from other municipalities that require two-lane roadways for 90-degree parking stalls to be just 6.1 m wide, such

as the City of Surrey's Zoning Bylaw 12000 – Part 5 Off-Street Parking and Loading and the City of Vancouver's Parking Bylaw 6059 Section 4. In addition, the City of Kelowna's Zoning Bylaw No. 8000 requires a two-way surface drive aisle to have a minimum width of 6.0 m. Since the 6.0 m portion of the access roadway is not required to accommodate any parking manoeuvres, it is considered acceptable and the narrow roadway width would encourage drivers to reduce operating speed within the site.

An AutoTURN analysis was conducted based on the site plan provided in **APPENDIX A**. The internal circulation of a garbage collection vehicle was analyzed. Further, the ingress and egress movements of a passenger vehicle during the occasion that both the loading and garbage spaces are occupied were also analysed. This report assumes that a HSU design vehicle is representative of the garbage collection vehicle and loading truck.

Based on the analysis, the garbage collection vehicle is expected to be able to turn around efficiently within the site to leave the study development by driving forward; therefore, it would not negatively impact traffic operations and safety on 27 Avenue. A passenger vehicle will also be able to enter and exit the parking lot while both a garbage collection vehicle and loading truck occupy the garbage collection and loading areas, respectively; however, a short portion of the internal driveway is expected to operate temporarily as a single-lane alternating traffic configuration. Due to the low operating speed within the site, this is not anticipated to be a safety concern. It is recommended that the property management schedule the garbage collection and the loading activities at different times during the day to minimize the impacts to the internal traffic circulation.

The AutoTURN analysis figures are provided in **APPENDIX C**.

3.3 Off-Street Parking Provisions

3.3.1 Off-Street Vehicular Parking

Based on Section 7 of the City's Zoning Bylaw No. 5000, dated 2003, the proposed development is expected to require 56 regular parking stalls when it is completed. **Table 3-1** shows a breakdown of the recommended number of parking stalls per unit type by the City.

Table 3-1: On-Site Residential Parking Requirements

No. Bedrooms	Total Units	Recommended	Residential Parking Spaces Required
Studio	4	1.0 spaces / unit	4
One-Bedroom	14	1.25 spaces / unit	18
Two Bedroom	12	1.5 spaces / unit	18
Three-Bedroom	8	2.0 spaces / unit	16

In addition to the parking stalls allocated for residents, the City recommends one visitor stall be provided for every seven units in a multi-family residential development. The proposed development is anticipated to have 38 residential units; therefore, approximately five visitor parking stalls should be provided. In total, the City would generally require 61 parking stalls in total for the proposed development. The City also recommends regular parking stalls to be 6.0 m in length and 2.5 m in width. Up to 40% of the required parking spaces may be of a shorter length, to a minimum of 5.0 m.

Based on the information provided by MDS, the current development concept is anticipated to provide a total of 55 parking stalls on-site, with 18 regular parking stalls, 34 small car parking stalls, and three accessible parking stalls. Five of the parking stalls will be designated as visitor parking to meet the City's bylaw. Therefore, there is a variance of six residential parking stalls when compared with the City requirements for a multi-family residential development. Further, approximately 62% of the parking stalls are expected to be small car parking stalls, which is more than the 40% limit in the City's bylaw.

According to Institute of Transportation Engineers' (ITE) *Parking Generation, 4th Edition,* a Low/Mid-Rise Apartment (ITE Ref. 221) has an average peak period parking demand of 1.23 vehicles per dwelling unit. Based on this rate, the study development is expected to generate a peak parking demand of 47 parking spaces by the residents and their visitors. Compared to that of the 55 parking stalls proposed for the study development, a surplus of eight parking stalls is anticipated between the forecast demand and provision. The residents expected to occupy the proposed development are of very low income and they are expected to have low vehicle ownership. Based on Metro Vancouver's *Apartment Parking Study* (September 2012) and the City of Victoria's *Offstreet Parking Review* (September 2017), rental housing developments generate less parking demands than market-housing developments. Further, given that there are two transit routes operating directly adjacent to the study development, the proposed number of on-site parking stalls are anticipated to be adequate for the proposed development.

This report supports the variance needed to provide a total of 62% of small car parking stalls within the development. Binnie's review found that typical sport utility vehicles (SUVs) on the market have an average length of 4.9 m in length from various manufacturers; therefore, these vehicles could be accommodated by both the small car parking stalls and the regular parking stalls. In addition, the proposed small car parking stalls are not placed beside any retaining walls or solid structures; therefore, no additional clearance distances would be needed by the residents that are expected to park in the small car parking stalls. This report recommends the property management to assign larger vehicles to the regular parking stalls if required.

A letter provided in **APPENDIX D** further describes the parking variance rationale for the City's review and acceptance.

3.3.2 Off-Street Loading

Section 7 of the City's Zoning Bylaw No. 5000, dated 2003, states that the proposed development is expected to require loading spaces at a rate of one per 2,800 sq. m. (approx. 30,200 sq. ft.) Gross Floor Area (GFA). Based on the aforementioned rate for loading space, the 32,339 sq. ft. GFA of the proposed development should provide one loading space but two would be preferable. Each off-street loading space is also required to be a minimum of 28 sq. m. in size.

Based on the information provided by MDS, the development is proposing one loading space. The loading space is located at the west end of the parking lot. It is proposed to be 3 m wide and 9.4 m long; thus, it meets the City's requirement to provide a loading space with 28 sq. m. or more

3.3.3 *Bicycle Parking*

Based on Section 7 of the City's Zoning Bylaw No. 5000, dated 2003, the proposed development is expected to require 19 Class I bicycle parking stalls and approximately ten Class II bicycle parking stalls when completed. A Class I bicycle parking stall is expected to be secured in either a designated area within a gated parkade or provided using bicycle lockers. The remaining Class II bicycle parking stalls are meant for short-term use and they could be provided using bicycle racks in front of the proposed development.

According to the information provided, the study development is expected to meet the requirements for bicycle parking by providing 19 Class I and ten Class II bicycle parking stalls.

3.4 Pedestrian Connections

Pedestrians will be able to access proposed development using the existing sidewalk on 27th Avenue. As previously mentioned in **Section 2.4**, there are also a number of pedestrian facilities provided around study development that the future tenants can use.

3.5 Cycling Connections

There are also a number of bicycle routes in the vicinity of the proposed development, namely 25th Avenue, 27th Avenue, and Allenby Way. It is understood that the City is proposing a multi-use pathway be constructed along the west (north) side of 27th Avenue between Allenby Way and Okanagan Landing Road/25th Avenue.

3.6 Phasing and Timing

The proposed development is expected to be fully constructed (in a single phase) by the 2018 horizon year 38 rental units.

3.7 Trip Generation

The forecast trip generation for the proposed study and adjacent developments was estimated based on the rates published in the ITE *Trip Generation, 9th Edition*.

Based on the information provided by MDS that the 38 dwelling units are all expected to be rental units, Binnie selected the Residential Low-Rise Apartment (ITE Ref. 221) land use from the ITE publication. The average trip generation rates for this land use are estimated to be 0.51 trips per dwelling unit during the AM peak hour and 0.62 trips per dwelling unit during the PM peak hour.

The forecast site generated traffic for the proposed study developments is summarized in **Table 3-2**.

Table 3-2: Forecast Study Developments Site Generated Traffic

Description	Size	Unit	ITE Ref.	Avg. Trip Ends per Unit	Generated Trip Ends	% Entering	% Exiting	Vehicle Entering	Vehicle Exiting
AM Peak Hour									
Residential									
Apartment	38	Units	221	0.51	20	20	80	4	16
							Subtotal:	4	16
							Total:	**4**	**16**
PM Peak Hour									
Residential									
Apartment	38	Units	221	0.62	24	64	36	15	9
							Subtotal:	15	9
							Total:	**15**	**9**

3.8 Trip Distribution

The forecast trip distribution for the site generated traffic volumes is estimated based on the existing travel patterns as identified by the recent turning movement counts. The forecast trip distribution and site generated traffic volumes are shown in **Figure 3-2** and **Figure 3-3** respectively.

3.8.1 AM Peak Hour

Inbound Trips

The forecast inbound trip distribution in the AM peak is estimated to be as follows:

- 60% from 27th Avenue east of the site access
- 40% from 27th Avenue west of the site access

Outbound Trips

The forecast outbound trip distribution in the AM peak is estimated to be as follows:

- 60% towards 27th Avenue west of the site access
- 40% towards 27th Avenue east of the site access

3.8.2 PM Peak Hour

Inbound Trips

The forecast inbound trip distribution in the PM peak is estimated to be as follows:

- 55% from 27th Avenue east of the site access
- 45% from 27th Avenue west of the site access

Outbound Trips

The forecast outbound trip distribution in the PM peak is estimated to be as follows:

- 55% towards 27th Avenue west of the site access
- 45% towards 27th Avenue east of the site access

Based on these considerations, the expected trip distribution percentages for the site generated traffic throughout the study intersections are shown in **Figure 3-2.** The resulting site generated traffic volumes on the study road network are shown in **Figure 3-3.**

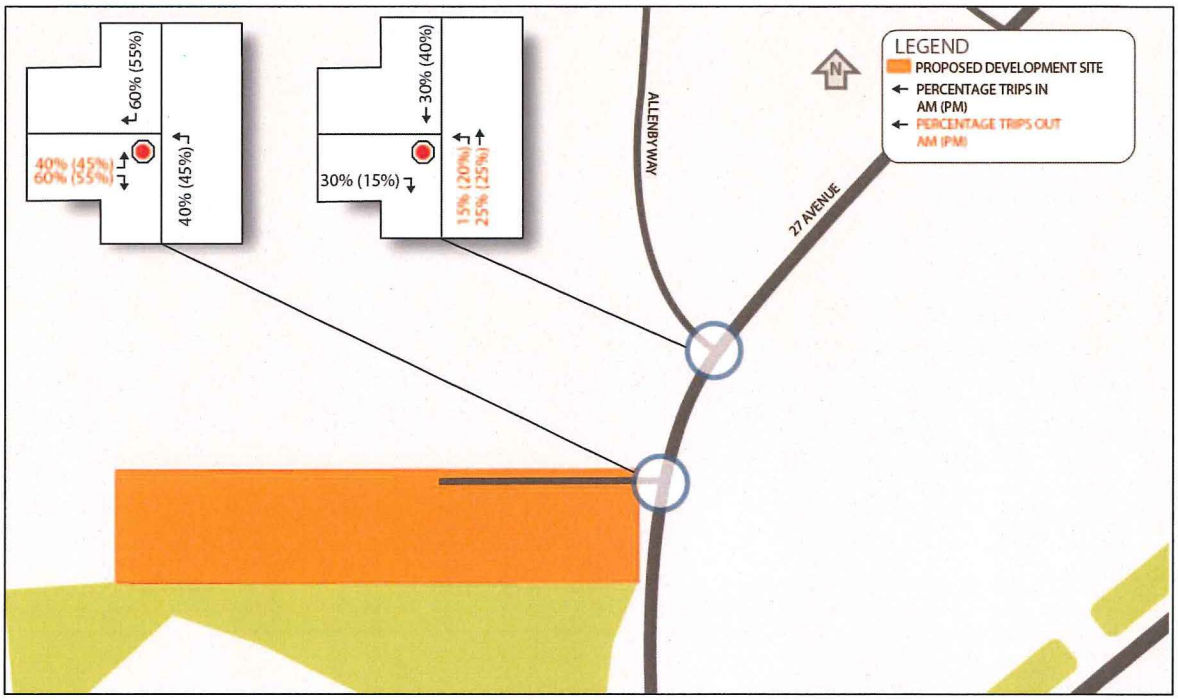


Figure 3-2: Forecast Trip Distribution on Study Road Network

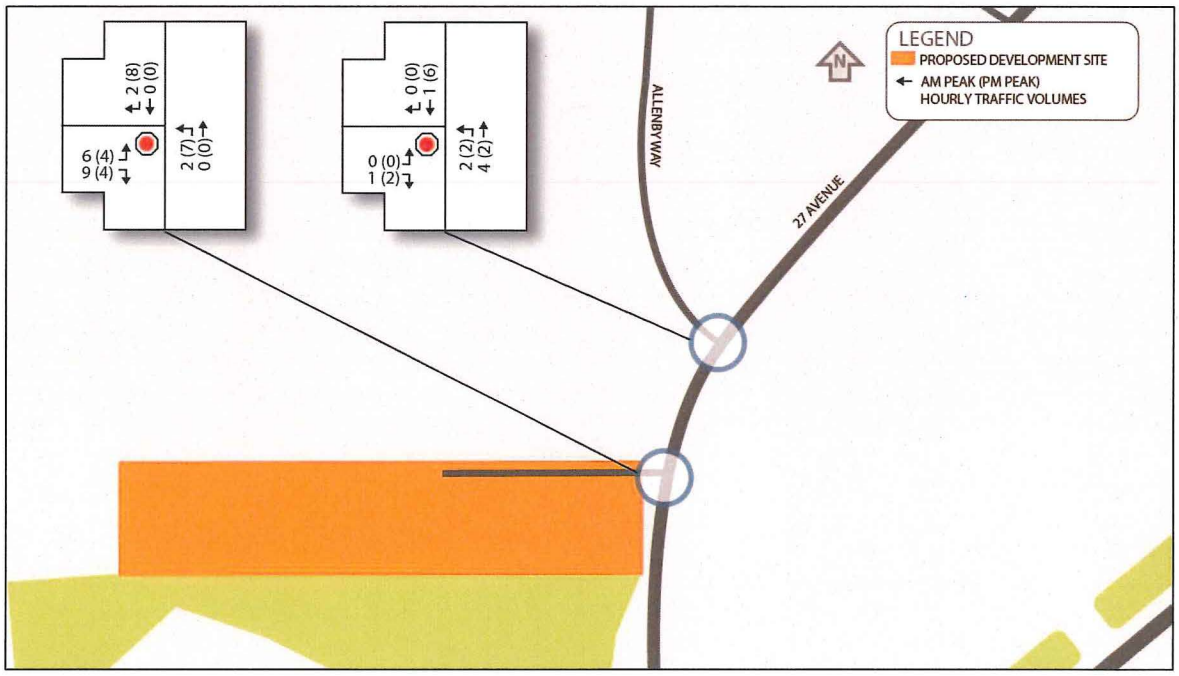


Figure 3-3: Forecast Site Generated Traffic Volumes

4 TRAFFIC ANALYSIS WITH EXISTING ROADWAYS

4.1 Traffic Operations Analysis Methodologies

The traffic operations analysis in this report was performed using the Synchro 9 software suite for unsignalized intersections, which is generally based on the Highway Capacity Manual (HCM) methodologies.

The traffic operations for the background condition, opening day 2018 horizon year, 2023 horizon year, and 2028 horizon year scenarios were evaluated to estimate the volume-to-capacity (v/c) ratios, approach delays, level-of-services (LOS), and 95th percentile queue lengths at the study intersections.

When reviewing the traffic analysis results, a v/c ratio at or above 1.00 typically indicates that traffic volumes exceed the intersection capacity. Delay, in terms of seconds, represents the average wait time experienced by a driver on the approach to the intersection. LOS is a grading system on intersection operation based on the calculated delay as shown in **Table 4-1** for an unsignalized intersection. LOS A means that the intersection experiences little to no delay whereas a LOS F indicates significant delay is present. In the publication titled *Transportation Impact Analyses for Site Development*, ITE recommends that a LOS of A to D should be maintained at an intersection in an urban environment, while LOS of E to F is typically undesirable.

The traffic operation analysis is conducted based on the following study thresholds:

- Overall intersection LOS D or better
- Individual movement LOS D or better
- Individual movement v/c ratio of 0.85 or less
- 95th percentile queue lengths

Table 4-1: HCM LOS Criteria for Unsignalized Intersection

Level of Service	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

The detailed traffic analysis results from Synchro are provided in **APPENDIX E.**

4.2 Existing Traffic Operations

Binnie evaluated the existing traffic conditions on the study road network. The existing traffic volumes are summarized in **Figure 2-2.** The analysis is performed based on the existing intersection configurations and controls.

4.2.1 AM Peak Hour

During the AM peak hour, the intersection of Allenby Way and 27th Avenue was found to be operating at LOS A with a maximum v/c ratio of 0.10 in the westbound movements. The southbound left-turn movement was found to be operating at LOS B with a v/c ratio of 0.09. All other movements were found to be operating at LOS A.

4.2.2 PM Peak Hour

During the PM peak hour, the intersection of Allenby Way and 27th Avenue as found to be operating at LOS A with a maximum v/c ratio of 0.15 in the westbound movements. The southbound left-turn movement was found to be operating at LOS B with a v/c ratio of 0.08. All other movements were found to be operating at LOS A.

The analysis results for the existing traffic condition are summarized in **Table 4-2**.

Table 4-2: Existing Traffic Operations

Intersection	Turning Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay (s)	V/C Ratio	95% Q (m)	LOS	Delay (s)	V/C Ratio	95% Q (m)
Allenby Way/ 27th Avenue *(Unsignalized)*	EBL/T	A	3.0	0.04	0.9	A	4.1	0.08	2.0
	WBT/R	A	0.0	0.10	0.0	A	0.0	0.15	0.0
	SBL	B	11.4	0.09	2.2	B	13.8	0.08	2.0
	SBR	A	9.4	0.08	2.0	A	9.7	0.06	1.5
	Int. LOS	A				A			

4.3 Background Traffic Operation Analysis

The horizon year background traffic volumes were projected based on an annual growth rate of 1.5% provided by the City. The following analysis scenarios also assumed that the intersection and laning configurations along Allenby Way and 27th Avenue are maintained as per the existing.

4.3.1 2018 Horizon Year Background Condition

The 2018 horizon year background traffic volumes are shown in **Figure 4-1**.

AM Peak Hour

During the AM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The southbound left-turn movement is expected to operate at LOS B with a v/c ratio of 0.09. All other movements are expected to operate at LOS A.

PM Peak Hour

During the PM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The southbound left-turn movement is expected to operate at LOS B with a v/c ratio of 0.08. All remaining movements will operate at LOS A.

The background traffic analysis results for the 2018 horizon year are summarized in **Table 4-3**.

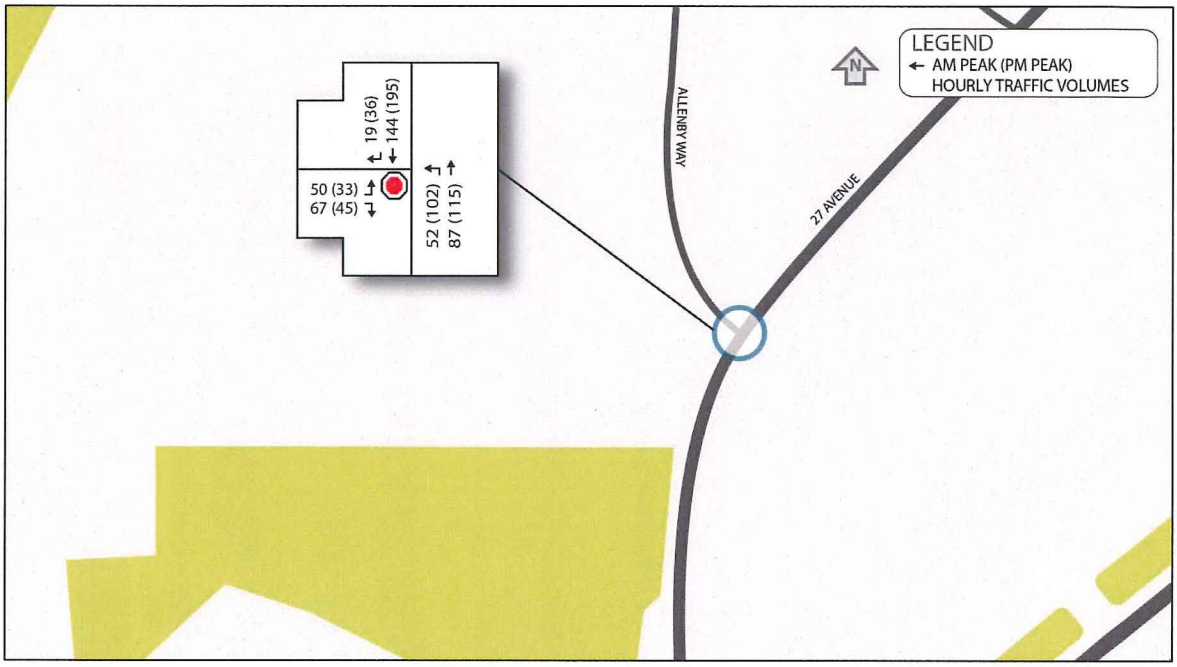


Figure 4-1: 2018 Horizon Year Background Traffic Volumes

Table 4-3: 2018 Horizon Year Background Traffic Operations

Intersection	Turning Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay (s)	V/C Ratio	95% Q (m)	LOS	Delay (s)	V/C Ratio	95% Q (m)
Allenby Way/ 27th Avenue *(Unsignalized)*	EBL/T	A	3.1	0.04	1.0	A	4.1	0.08	2.1
	WBT/R	A	0.0	0.10	0.0	A	0.0	0.15	0.0
	SBL	B	11.6	0.09	2.3	B	14.0	0.08	2.0
	SBR	A	9.5	0.08	2.1	A	9.8	0.06	1.5
	Int. LOS	A				A			

4.3.2 2023 Horizon Year Background Condition

The 2023 horizon year background traffic volumes are shown in **Figure 4-2**.

AM Peak Hour

During the AM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.11 in the westbound movements. The southbound left-turn movement is expected to operate at LOS B with a v/c ratio of 0.10. All other movements are expected to operate at LOS A.

PM Peak Hour

During the PM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.16 in the westbound movements. The southbound left-turn movement is expected to operate at LOS B with a v/c ratio of 0.10. All other movements are expected to operate at LOS A.

The background traffic analysis results for the 2023 horizon year are summarized in **Table 4-4**.

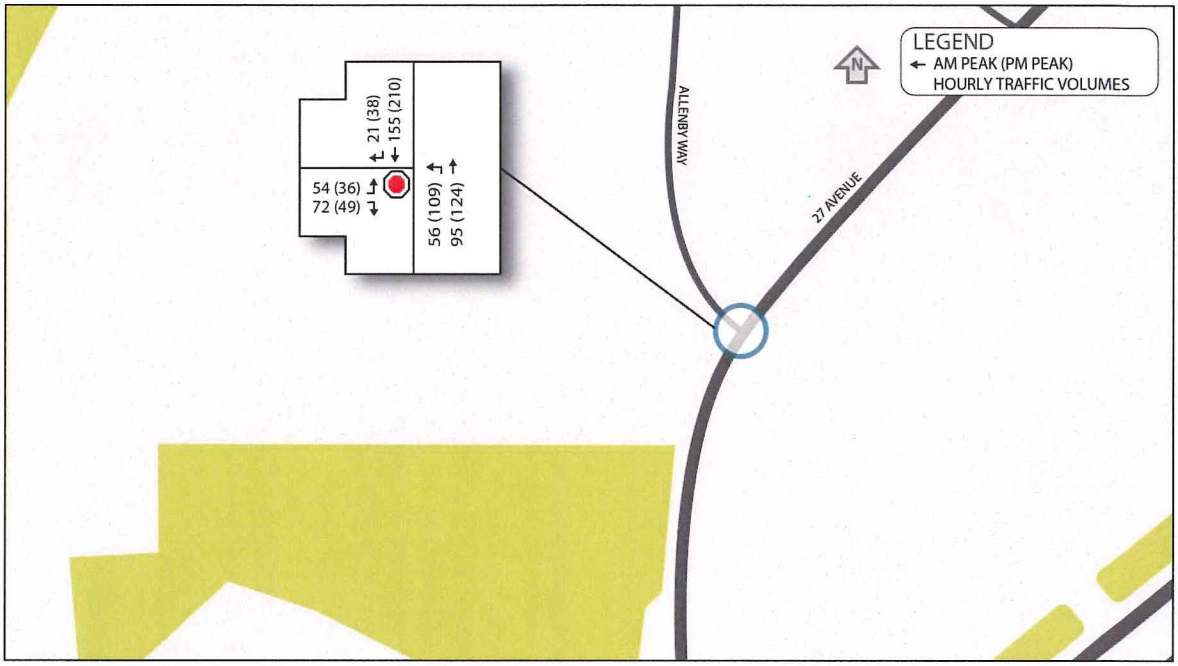


Figure 4-2: 2023 Horizon Year Background Traffic Volumes

Table 4-4: 2023 Horizon Year Background Traffic Operations

Intersection	Turning Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay (s)	V/C Ratio	95% Q (m)	LOS	Delay (s)	V/C Ratio	95% Q (m)
Allenby Way/ 27th Avenue (Unsignalized)	EBL/T	A	3.1	0.04	1.1	A	4.2	0.09	2.3
	WBT/R	A	0.0	0.11	0.0	A	0.0	0.16	0.0
	SBL	B	12.0	0.10	2.6	B	14.7	0.09	2.4
	SBR	A	9.6	0.09	2.3	A	9.9	0.07	1.6
	Int. LOS	A				A			

4.3.3 2028 Horizon Year Background Condition

The 2028 horizon year background traffic volumes are shown in **Figure 4-3**.

AM Peak Hour

During the AM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.12 in the westbound movements. The southbound left-turn movement is expected to operate at LOS B with a v/c ratio of 0.11. All other movements are expected to operate at LOS A.

PM Peak Hour

During the PM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.17 in the westbound movements. The southbound left-turn movement is expected to operate at LOS C with a v/c ratio of 0.11. All other movements are expected to operate at LOS B or better.

The background traffic analysis results for the 2028 horizon year are summarized in **Table 4-5**.

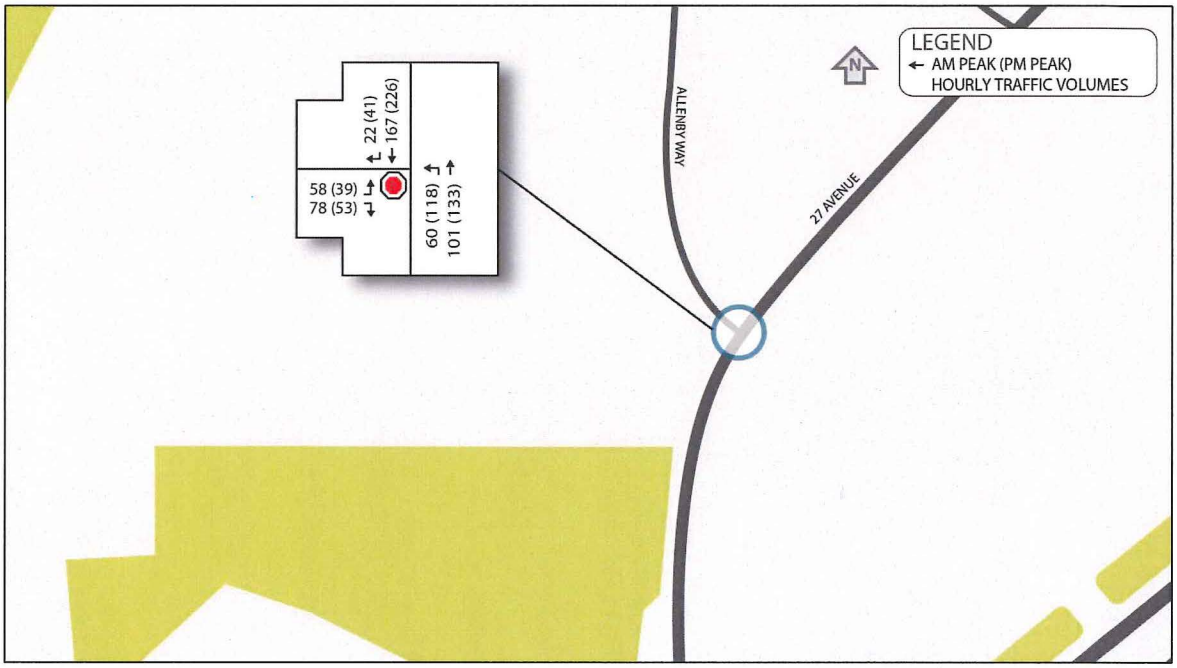


Figure 4-3: 2028 Horizon Year Background Traffic Operations

Table 4-5: 2028 Horizon Year Background Traffic Operations

Intersection	Turning Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay (s)	V/C Ratio	95% Q (m)	LOS	Delay (s)	V/C Ratio	95% Q (m)
Allenby Way/ 27th Avenue *(Unsignalized)*	EBL/T	A	3.1	0.05	1.1	A	4.3	0.10	2.5
	WBT/R	A	0.0	0.12	0.0	A	0.0	0.17	0.0
	SBL	B	12.4	0.11	2.9	C	15.6	0.11	2.8
	SBR	A	9.7	0.10	2.5	B	10.0	0.08	1.9
	Int. LOS	A				A			

4.3.4 *Background Traffic Operations Summary*

In summary, the background traffic analysis results showed that the study intersection at Allenby Way and 27th Avenue is expected to operate within the study thresholds up to the 2028 horizon year based on background traffic growths at the 1.5% rate.

4.4 Combined Traffic Operation Analysis

For the combined traffic operation analysis on the study intersection, both the background traffic and site generated traffic volumes were considered. Further, the stop-controlled development access intersection is also analyzed assuming that free-flow traffic is maintained on 27th Avenue.

A summary of the assumed laning configurations for the combined traffic operation analysis is shown in **Figure 4-4**.

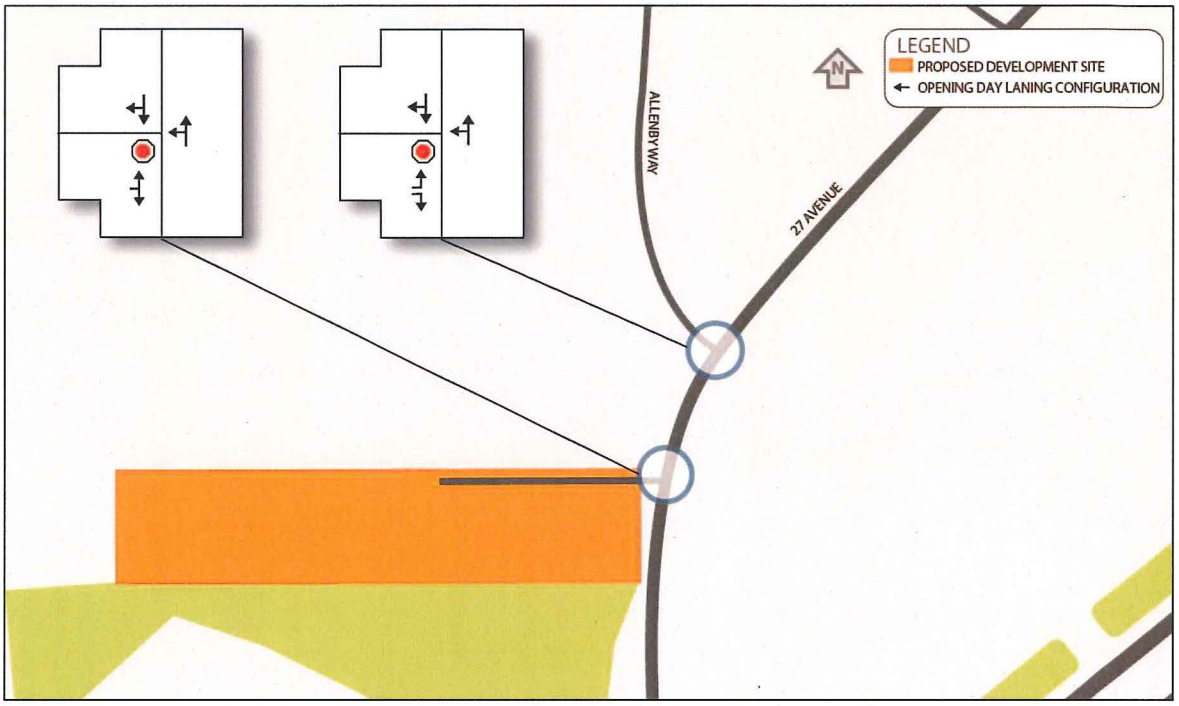


Figure 4-4: Opening Day Laning Configurations and Intersection Controls

4.4.1 Opening Day 2018 Horizon Year Combined Traffic Conditions

The opening day 2018 horizon year combined traffic operation analysis is performed based on the forecast traffic volumes shown in **Figure 4-5**. For the purpose of this study, the egress movements from the proposed development are considered to be in the southbound direction.

AM Peak Hour

During the AM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.11 in the westbound movements. The southbound left-turn movement and right-turn movement are expected to operate at LOS B with a v/c ratio of 0.09. All other movements at this intersection are expected to operate at LOS A.

The proposed development access intersection on 27th Avenue is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.14. The southbound movements are expected to operate at LOS B with a v/c ratio of 0.02. All remaining movements are expected to operate at LOS A.

PM Peak Hour

During the PM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.15 in the westbound movements. The southbound left-turn movement is expected to operate at LOS B with a v/c ratio of 0.08. All other movements at this intersection are expected to operate at LOS A.

The proposed development access intersection on 27th Avenue is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.16. The southbound movements are expected to operate at LOS B with a v/c ratio of 0.01. All remaining movements are expected to operate at LOS A.

The traffic analysis results for the opening day 2018 horizon year condition are summarized in **Table 4-6**.

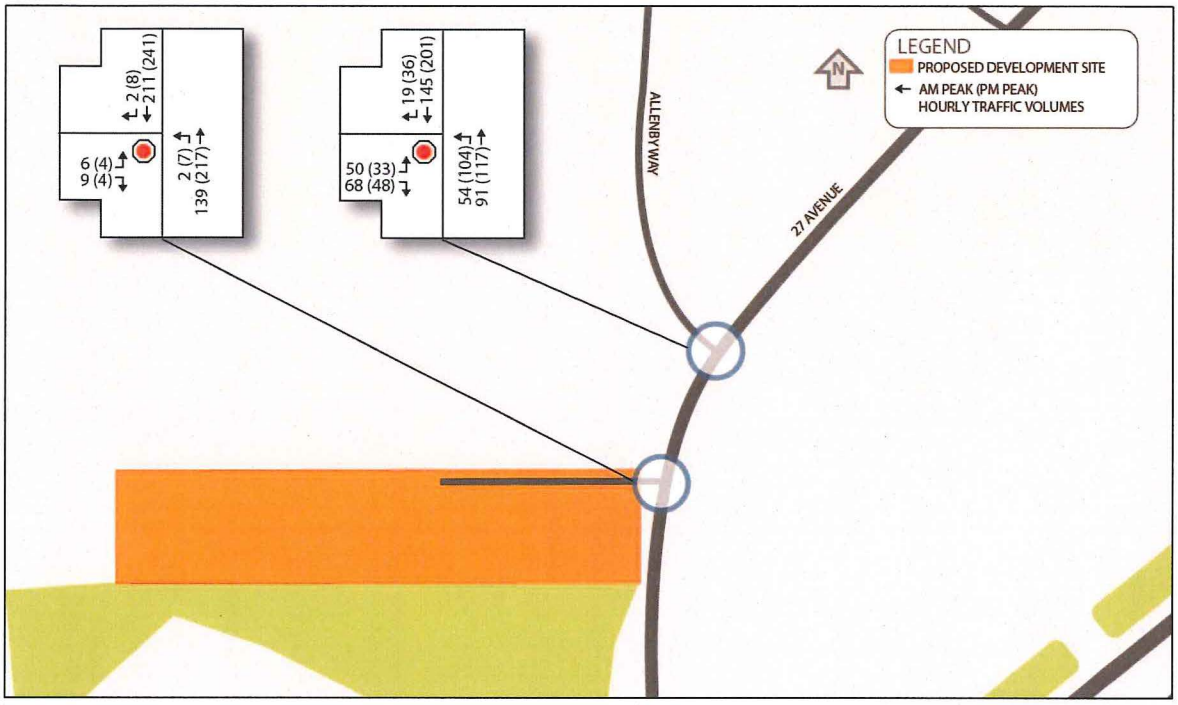


Figure 4-5: Opening Day 2018 Horizon Year Combined Traffic Volumes

Table 4-6: Opening Day 2018 Horizon Year Combined Traffic Operations

Intersection	Turning Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay (s)	V/C Ratio	95% Q (m)	LOS	Delay (s)	V/C Ratio	95% Q (m)
Allenby Way/ 27th Avenue *(Unsignalized)*	EBL/T	A	3.1	0.04	1.0	A	4.2	0.09	2.2
	WBT/R	A	0.0	0.11	0.0	A	0.0	0.15	0.0
	SBL	B	11.7	0.09	1.3	B	14.2	0.08	2.1
	SBR	B	9.5	0.08	2.1	A	9.8	0.06	1.6
	Int. LOS	A				A			
27th Avenue/ Proposed Site *(Unsignalized)*	EBL/T	A	0.1	0.00	0.0	A	0.3	0.01	0.1
	WBT/R	A	0.0	0.14	0.0	A	0.0	0.16	0.0
	SBL/R	B	10.1	0.02	0.6	B	10.8	0.01	0.3
	Int. LOS	A				A			

4.4.2 2023 Opening Day + 5 Years Combined Traffic Conditions

The 2023 opening day + 5 years horizon year combined traffic operation analysis is performed based on the forecast traffic volumes shown in **Figure 4-6**.

AM Peak Hour

During the AM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.11 in the westbound movements. The southbound left turn movement is expected to operate at LOS B with a v/c ratio of 0.10. All other movements at this intersection are expected to operate at LOS A.

The proposed development access intersection on 27th Avenue is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.15 in the westbound movements. The southbound movements are expected to operate at LOS B with a v/c ratio of 0.03. All remaining movements are expected to operate at LOS A.

PM Peak Hour

During the PM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.16 in the westbound movements. The southbound left-turn movement is expected to operate at LOS B with a v/c ratio of 0.10. All other movements at this intersection are expected to operate at LOS A.

The proposed development access intersection on 27th Avenue is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.17 in the westbound movements. The southbound movements are expected to operate at LOS B with a v/c ratio of 0.01. All remaining movements are expected to operate at LOS A.

The traffic analysis results for the 2023 opening day + 5 years horizon year condition are summarized in **Table 4-7**.

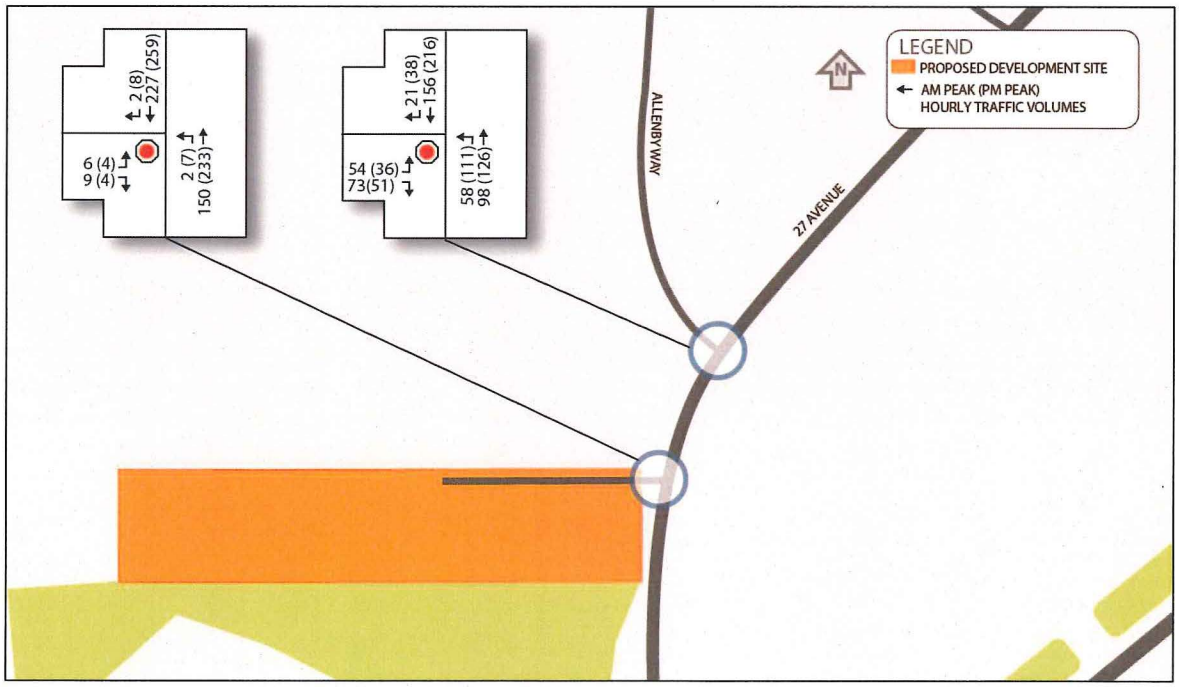


Figure 4-6: 2023 Horizon Year Combined Traffic Volumes

Table 4-7: 2023 Horizon Year Combined Traffic Operations

Intersection	Turning Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay (s)	V/C Ratio	95% Q (m)	LOS	Delay (s)	V/C Ratio	95% Q (m)
Allenby Way/ 27th Avenue (Unsignalized)	EBL/T	A	3.1	0.05	1.1	A	4.2	0.09	2.4
	WBT/R	A	0.0	0.11	0.0	A	0.0	0.16	0.0
	SBL	B	12.1	0.10	2.6	B	14.9	0.10	2.4
	SBR	A	9.6	0.09	2.3	A	9.9	0.07	1.7
	Int. LOS	A				A			
27th Avenue/ Proposed Site (Unsignalized)	EBL/T	A	0.1	0.00	0.0	A	0.3	0.01	0.1
	WBT/R	A	0.0	0.15	0.0	A	0.0	0.17	0.0
	SBL/R	B	10.3	0.03	0.6	B	11.0	0.01	0.3
	Int. LOS	A				A			

4.4.3 2028 Opening Day + 10 Years Combined Traffic Conditions

The 2028 opening day + 10 years horizon year combined traffic operation analysis is performed based on the forecast traffic volumes shown in **Figure 4-7.**

AM Peak Hour

During the AM peak hour, the unsignalized intersection of Allenby Way and 27th Avenue is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.12 in the westbound movements and in the southbound left-turn movement, with the latter movement operating at LOS B. All other movements at this intersection will operate at LOS A.

The proposed development access intersection on 27th Avenue is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.16 in the westbound movements. The southbound movements are expected to operate at LOS B with a v/c ratio of 0.03. All remaining movements are expected to operate at LOS A.

PM Peak Hour

During the PM peak hour, the Allenby Way and 27th Avenue intersection is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.17 in the westbound movements. The southbound left-turn movement is expected to operate at LOS C with a v/c ratio of 0.11. All other movements at this intersection are expected to operate at LOS B or better.

The proposed development access intersection on 27th Avenue is expected to operate at LOS A. The maximum v/c ratio is anticipated to be 0.18 in the westbound movements. The southbound movements are expected to operate at LOS B with a v/c ratio of 0.02. All remaining movements are expected to operate at LOS A.

The traffic analysis results for the 2028 horizon year condition are summarized in **Table 4-8**.

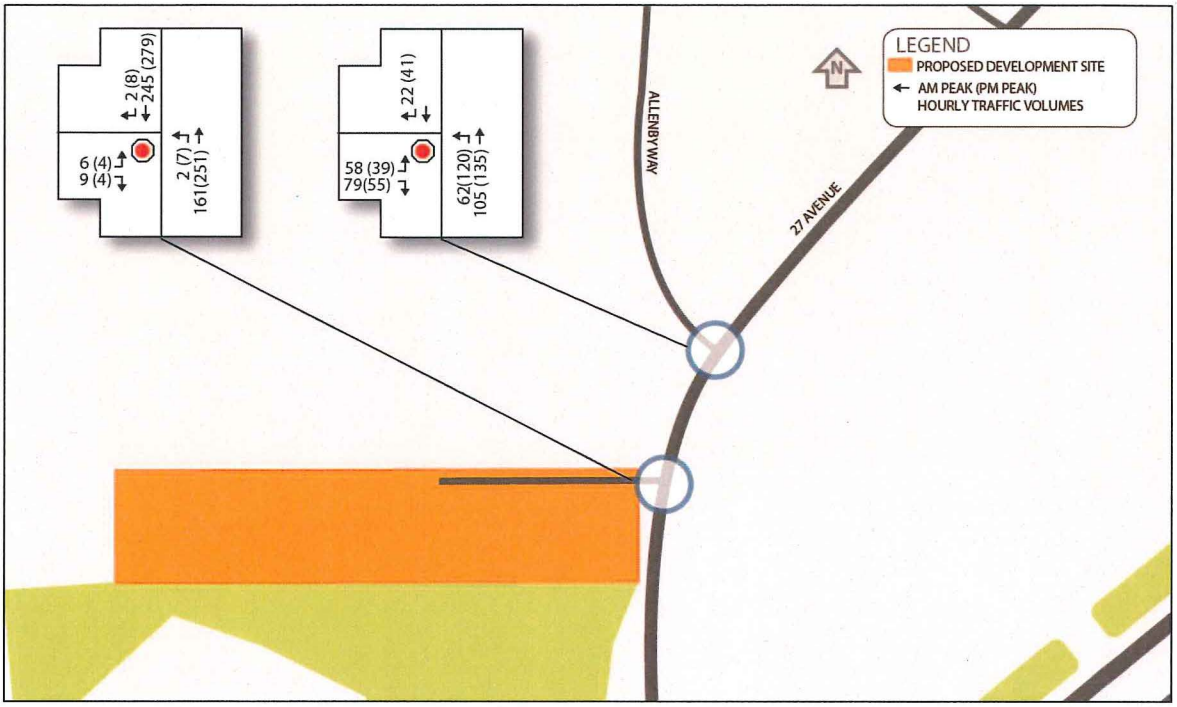


Figure 4-7: 2028 Horizon Year Combined Traffic Volumes

Table 4-8: 2028 Horizon Year Combined Traffic Operations

Intersection	Turning Movement	AM Peak Hour				PM Peak Hour			
		LOS	Delay (s)	V/C Ratio	95% Q (m)	LOS	Delay (s)	V/C Ratio	95% Q (m)
Allenby Way/ 27th Avenue *(Unsignalized)*	**EBL/T**	A	3.1	0.05	1.2	A	4.3	0.10	2.6
	WBT/R	A	0.0	0.12	0.0	A	0.0	0.17	0.0
	SBL	B	12.5	0.12	3.0	C	15.9	0.11	2.9
	SBR	A	9.7	0.10	2.6	B	10.1	0.08	1.9
	Int. LOS	A				A			
27th Avenue/ Proposed Site *(Unsignalized)*	**EBL/T**	A	0.1	0.00	0.0	A	0.3	0.01	0.1
	WBT/R	A	0.0	0.16	0.0	A	0.0	0.18	0.0
	SBL/R	B	10.5	0.03	0.6	B	11.3	0.02	0.4
	Int. LOS	A				A			

4.4.4 Combined Traffic Operations Summary

The combined traffic operation analysis results showed that all of the study intersections are expected to operate within the study thresholds when the site generated traffic volumes are added to the adjacent road network. Therefore, the existing intersection of Allenby Way and 27th Avenue has adequate reserve capacity to accommodate the forecast traffic growths and the additional traffic generated by the proposed development.

5 SIGHTLINE ASSESSMENT

TransTech conducted a Radar Speed Survey on 27th Avenue to estimate the average and 85th percentile speeds in the vicinity of the proposed development site. The survey was conducted on June 1, 2017 and 100 vehicle samples in the eastbound and westbound directions were collected.

The posted speed limit on 27th Avenue is currently 50 km/h. In the eastbound direction, the average speed was observed to be 52 km/h and the 85th percentile speed was 58 km/h. In the westbound direction, the average speed was observed to be 54 km/h and the 85th percentile speed was 59 km/h. Therefore, the existing 27th Avenue traffic was generally found to be travelling at speeds consistent with the posted speed limit.

Based on the Transportation Association of Canada (TAC) Geometric Design for Canadian Roads, 1999 Edition, the higher end Stopping Sight Distances (SSD) for passenger vehicles traveling at a speed of 50 km/h and 60 km/h are 65 m and 85 m respectively. Based on the field observations and Binnie's desktop review, the SSD for both 50 km/h and 60 km/h are achievable at the proposed development access intersection on 27th Avenue. There appears to be no physical obstructions that need to be removed in order to provide appropriate SSD at this intersection.

Based on Section 3.2.9.3 and Figure 2.3.3.2 in the TAC manual, the preferred Turning Sight Distances (TSD) for a design speed of 50 km/h is approximately 120 m as shown in **Figure 5-1**. Providing adequate TSD for the egress traffic would minimize the need of the approaching traffic to decelerate significantly that may increase the probability of rear-end collisions. Based on the field observations, the TSD could be achieved at the proposed development access intersection. However, another TSD review should be conducted again after the multi-use pathway design on 27th Avenue is finalized. This study notes that TSD is not always provided in an urban environment due to the frequent obstructions with street fixtures and reduce building setbacks.

Based on the City's Zoning Bylaw No. 5000, 2003, a RH1 Low Rise Apartment Residential zoning requires a minimum setback of 4.5 m for the front yard. The proposed development currently is providing a 4.5 m setback from the future property line, which is already set back from the existing property line. This setback will aid drivers to adequately see traffic along 27th Avenue when approaching the egress. It is encouraged for the study development to use low height shrubbery and foliage along the east frontage of the development to minimize sightline impacts for the egress traffic.

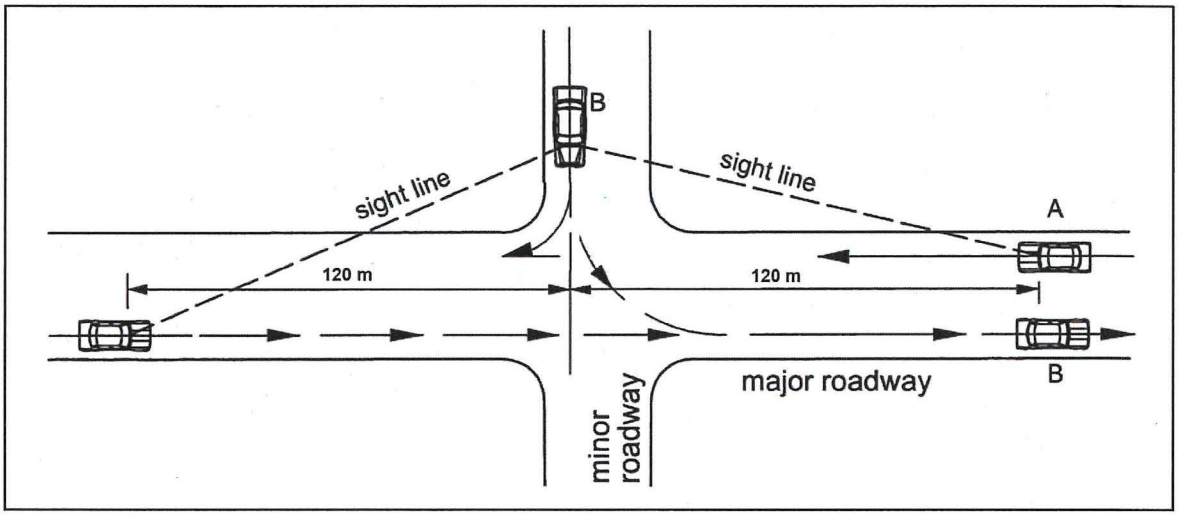


Figure 5-1: Sightlines for Vehicles Exiting the Development

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The purpose of this study is to evaluate the effects of the proposed multi-family residential development and its traffic impacts on the adjacent road network. The study findings would recommend necessary transportation infrastructure improvements to support forecast vehicular, cyclist, and pedestrian traffic volumes. The proposed development is expected to provide a total of 37 rental units ranging from studio apartments units to four-bedroom units.

A summary of the study findings are as follows:

- The study area is located at a close proximity to existing transit routes and regional cycling routes. There are existing pedestrian facilities provided on the study roadways as well. It is also within walking distance to a number of amenities and commercial services.
- The proposed development is expected to generate 20 vehicle trips onto the study road network during the AM peak hour, with 4 inbound trips, and 16 outbound trips.
- The proposed development is expected to generate 24 vehicle trips onto the study road network during the PM peak hour, with 15 inbound trips and 9 outbound trips.
- The proposed development is expected to provide one access point on 27th Avenue between Allenby Way and 25th Avenue. It will form a new three-legged stop-controlled intersection with free-flow traffic maintained on 27th Avenue.
- Both the existing Allenby Way and 27th Avenue intersection, and the proposed development access intersection, are anticipated to operate at LOS A up to the 2028 horizon year.
- Traffic on 27th Avenue was found to be travelling at speeds consistent with the posted speed of 50 km/h. Sightlines are not expected to be an issue for the proposed development access intersection.
- The proposed development is providing a 6.0 m wide two-way roadway to access the on-site parking lot. In the parking lot, the roadway widens to 7.0 m, fulfilling the City's requirements. The development is requesting a 1.0 m variance for the access roadway. Based on precedent bylaw examples from other municipalities, the 6.0 m wide access roadway is anticipated to be adequate for the study development especially when no parking manoeuvres will be performed on the 6.0 m driveway segment. The narrower access roadway may also reduce traffic speed and improve safety for pedestrians and other vehicles.
- Internal circulation of a HSU to manoeuvre within the parking lot is not expected to have any issues. A passenger car vehicle would be able to perform ingress and egress movements when the HSU design vehicle is occupying both the garbage collection and loading areas. It is recommended that the property management schedule the garbage collection and the loading activities at different times during the day.

- The proposed on-site parking provision requires a variance of six residential parking stalls when compared to the City's requirements; however, the proposed 55 parking stalls are expected to accommodate the estimated parking demands based on the ITE's *Parking Generation 4th Edition*. The proposed development consists only of rental units and based on the two reports from Metro Vancouver and City of Victoria, rental units require lower vehicle parking spaces. In addition, the residents expected to occupy the proposed development are typically of very low income and their vehicle ownership levels are expected to be low.
- The proposed development is providing approximately 62% of small car parking stalls, which is higher than the 40% permitted by the City according to its bylaw. Based on a review of the typical vehicle sizes, including the current SUVs on the market, the small car parking stall is expected to be adequate to accommodate them. It is recommended that the property management assigns larger vehicles to the regular parking stalls if necessary.
- One loading space is proposed for this development and meets the City's requirements for off-street loading spaces.
- The proposed development is expected to fulfill on-site Class I (long-term) and Class II (short-term) bicycle parking stalls based on the City's requirements.

6.2 Proposed Improvements for this Study

No intersection improvements are expected to be required to support the traffic generation projected for the study development. The study development is recommended to use lower height shrubbery and foliage along the eastern frontage of the site to mitigate potential impacts to vehicle sight distances. When the proposed multi-use pathway design is being developed, the sightlines may need to be reviewed again to ensure the egress traffic can access 27th Avenue safely from the proposed development.

7 CLOSING

We trust that this traffic impact study adequately shows the transportation infrastructure improvements required to support the proposed Vernon Native Housing Society Development.

Should there be questions or comments on the information contained herein, please do not hesitate to contact the undersigned.

Prepared by:

Ava Li, EIT
Traffic Engineer

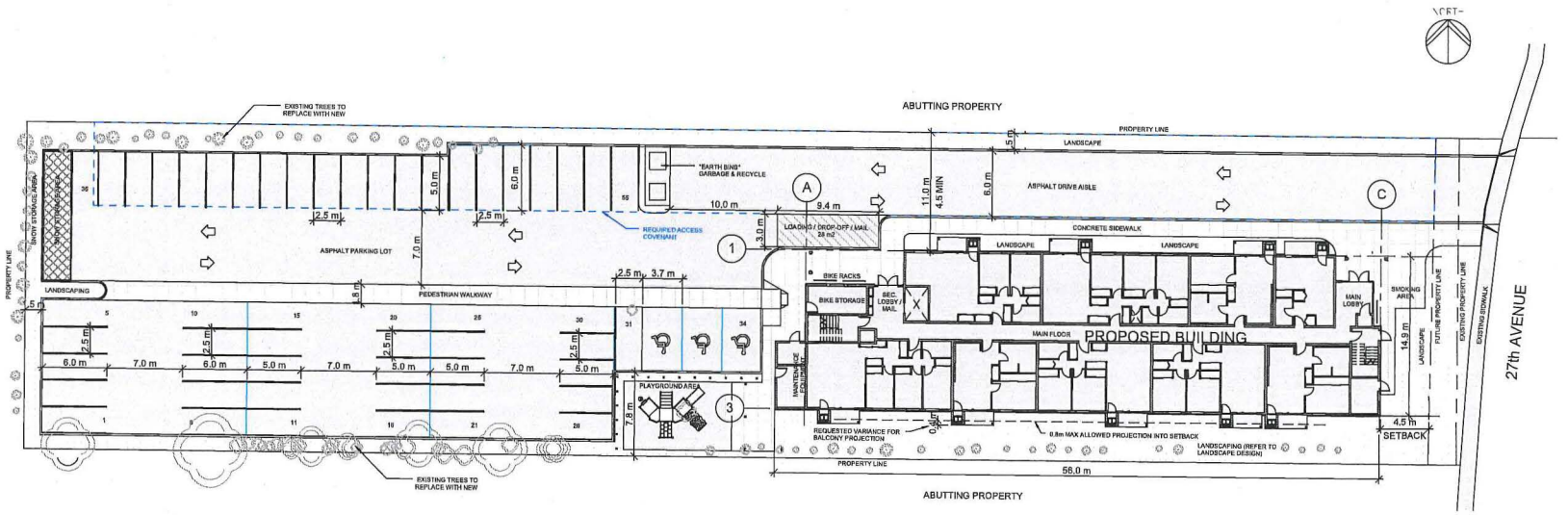
Reviewed by:

Jonathan Ho, P.Eng., PTOE
Traffic Services Division Manager

APPENDIX A

PROPOSED SITE PLANS

BINNIE



ZONING ANALYSIS

EXISTING ZONING:	PROPOSED ZONING:
R1	RH1 - Low-Rise Apartment Housing
SITE AREA:	
1400.0 m2 MIN.	4049.2 m2
ALLOWED	**PROPOSED**
MAXIMUM DENSITY:	
110 Units/ ha	44 Units/ ha
MAXIMUM SITE COVERAGE:	
65% For Buildings	20%
85% For Buildings & Hard Surfaces	77%
MAXIMUM HEIGHT:	
4.5 Storeys/ 16.5 m	4 Storeys / 12 m
SETBACKS:	
Front: 4.5 m	4.5 m
Side 4.5 m	4.5 m
Rear: 9.0 m	79.0 m
CAR PARKING:	
56 STALLS + 5 VISITOR STALLS	50 STALLS + 5 VISITOR (6 STALL VARIANCE)
BIKE PARKING:	
19 CLASS I 10 CLASS II	19 CLASS I 10 CLASS II

BUILDING AREA STATS:

BUILDING AREA:

768.7 m2 (8275 SF)

GROSS CONSTRUCTION AREA	
	Area
LEVEL 1	8336 SF
LEVEL 2	7946 SF
LEVEL 3	8060 SF
LEVEL 4	8057 SF
Total	32401 SF

UNIT SCHEDULE BY TYPE		
TYPE	COUNT	AREAS (MIN-MAX)
1BR	11	458 SF ... 526 SF
1BR HC	3	522 SF ... 526 SF
2BR	12	710 SF ... 777 SF
3BR	8	823 SF ... 906 SF
STUDIO	4	367 SF
Total	38	

UNIT TYPES BY-FLOOR	
Name	Count
LEVEL 1	
1BR HC	3
2BR	3
3BR	2
STUDIO	1
LEVEL 2	
1BR	3
2BR	3
3BR	2
STUDIO	1
LEVEL 3	
1BR	4
2BR	3
3BR	2
STUDIO	1
LEVEL 4	
1BR	4
2BR	3
3BR	2
STUDIO	1
Total	38

NEW TOWN
ARCHITECTURE
URBAN PLANNING
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Seal

Revision

No	Date MM-DD-	Description
1	JAN 31, 2018	ISSUED FOR DP
2	FEB 05, 2018	ISSUED FOR BC HOUSING REVIEW
3	FEB 28, 2018	AMENDED FOR DP
4	MAR 14, 2018	MAGIC-PAK ADDITION
5	MAY 01, 2018	PARKING REVISIONS

MAKOLA DEVELOPMENT SERVICES

VERNON NATIVE HOUSING SOCIETY

project title
VERNON NATIVE HOUSING 38-UNIT COMPLEX

project address
5545 - 27th AVENUE, VERNON, BC

project no. 4013

file no.

drawing title
SITE PLAN & ZONING ANALYSIS

designed — scale: As Indicated
drawn: R.Y./R.R.
checked: R.Y.

drawing no.
A2

plotted 5/1/2018 2:32:12 PM

APPENDIX B

FIELD TRAFFIC DATA

BINNIE

TRANSTECH
Data Services

Vehicle Turning Movement Survey
With Classification

Major Route: 27th Avenue
Minor Route: Allenby Way
Municipality: Vernon
Filename: 1-27th Ave @ Allenby Way-Jun 1, 2017.xlsx
Location #: 1

Date: June 1, 2017
Day-of-week: Thursday

East/West Route: 27th Avenue
Intersection Type: 3-leg north approach
Signalized?: No
Weather: Clear and dry

Vehicle Classifications: Regular Vehicles
Heavy Vehicles
Bicycles

This data is for All Vehicles Combined

Shift	Start	End	Duration
AM	7:30	9:30	2.00
MD			
PM	14:30	17:30	3.00
Total	**7:30**	**17:30**	**5.00**

Notes: 24-hour clock used for reporting (15-minute increments)
North Approach - southbound vehicles approaching intersection from the north
15x4 - 15 min volume (from maximum 15 minute period of movement/approach in peak hour period [*]) x 4
Pedestrians - N indicates pedestrians crossing north approach (east/west)

Comments:

Survey Data
All Vehicles Combined

27th Avenue @ Allenby Way
Thursday, June 1, 2017

Time Period	Allenby Way NORTH Approach				SOUTH Approach				27th Ave WEST Approach				27th Ave EAST Approach				Total Volume		Peak	Crosswalks			
Begins	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	15-min	Hour		N	S	W	E
7:30	9		9	**18**					7	17		**24**		15	0	**15**	**57**			3		0	0
7:45	17		10	**27**					8	13		**21**		26	1	**27**	**75**		*	4		0	0
8:00	9		21	**30**					13	24		**37**		41	8	**49**	**116**		*	8		0	0
8:15	16		28	**44**					18	29		**47**		49	4	**53**	**144**	392	+	3		0	0
8:30	7		7	**14**					12	20		**32**		26	6	**32**	**78**	413	*	2		0	0
8:45	7		9	**16**					9	21		**30**		18	2	**20**	**66**	404		3		0	0
9:00	6		12	**18**					6	13		**19**		22	5	**27**	**64**	352		0		0	0
9:15	15		7	**22**					8	15		**23**		18	2	**20**	**65**	273		3		0	0
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
Total	86		103	**189**					81	152		**233**		215	28	**243**	**665**			26		0	0

n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
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n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
Total																							

14:30	8		9	**17**					22	30		**52**		50	8	**58**	**127**		*	3		0	0
14:45	12		12	**24**					23	31		**54**		41	7	**48**	**126**		*	3		0	0
15:00	5		12	**17**					36	30		**66**		47	7	**54**	**137**		+	5		0	0
15:15	8		12	**20**					19	22		**41**		54	13	**67**	**128**	518	*	3		0	0
15:30	7		6	**13**					21	11		**32**		53	10	**63**	**108**	499		5		0	0
15:45	4		6	**10**					17	17		**34**		56	14	**70**	**114**	487		0		0	0
16:00	9		8	**17**					11	15		**26**		46	6	**52**	**95**	445		0		0	0
16:15	10		9	**19**					15	7		**22**		50	9	**59**	**100**	417		0		0	0
16:30	9		5	**14**					12	16		**28**		34	10	**44**	**86**	395		0		0	0
16:45	7		7	**14**					6	10		**16**		53	11	**64**	**94**	375		0		0	0
17:00	8		12	**20**					16	21		**37**		60	9	**69**	**126**	406		0		0	0
17:15	12		19	**31**					8	12		**20**		64	15	**79**	**130**	436		0		0	0
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
n/a																							
Total	99		117	**216**					206	222		**428**		608	119	**727**	**1371**			19		0	0

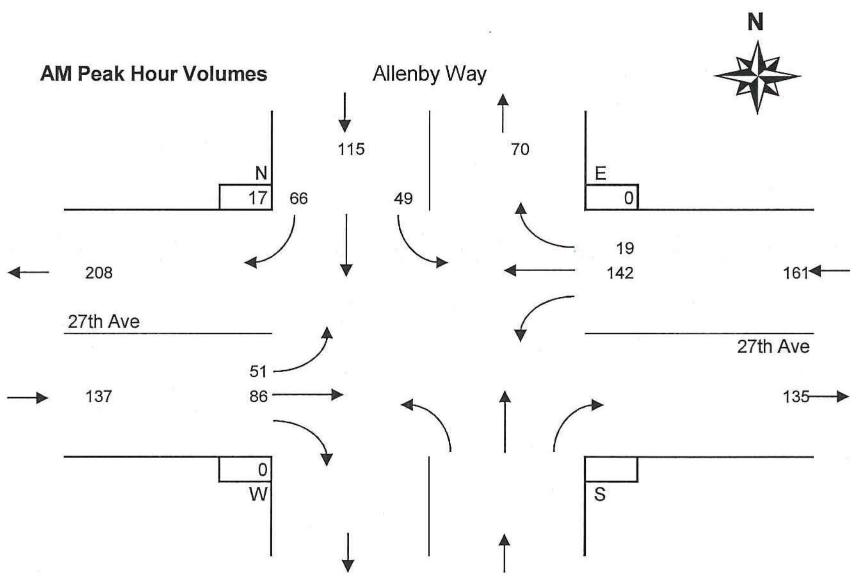
Time	Allenby Way								27th Ave				27th Ave												
Period	NORTH Approach				SOUTH Approach				WEST Approach				EAST Approach				Total Volume		Peak	Crosswalks				Conflict	
Begins	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	15-min	Hour		N	S	W	E	15 min	Hr
7:30	9		9	18					7	17		24		15	0	15	57			3		0	0	31	
7:45	17		10	27					8	13		21		26	1	27	75		*	4		0	0	52	
8:00	9		21	30					13	24		37		41	8	49	116		*	8		0	0	83	
8:15	16		28	44					18	29		47		49	4	53	144	392	+	3		0	0	99	265
8:30	7		7	14					12	20		32		26	6	32	78	413	*	2		0	0	51	285
8:45	7		9	16					9	21		30		18	2	20	66	404		3		0	0	38	271
9:00	6		12	18					6	13		19		22	5	27	64	352		0		0	0	45	233
9:15	15		7	22					8	15		23		18	2	20	65	273		3		0	0	43	177
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
Total	86		103	**189**					81	152		**233**		215	28	**243**	665			26		0	0		427
Avg Hr	43		52	**95**					41	76		**117**		108	14	**122**	333			13		0	0		

Peak hour of the intersection

Pk Hr	49		66	115					51	86		137		142	19	161	413	*	17		0	0		278
15x4	68		112	176					72	116		188		196	32	212	576	+	32		0	0		412
PHF	0.72		0.59	**0.65**					0.71	0.74		**0.73**		0.72	0.59	**0.76**	0.72		0.53		n/a	n/a		0.67

Peak hour of conflicting volumes for the intersection

Pk Hr	49		66	115					51	86		137		142	19	161	413	*	17		0	0		278
15x4	68		112	176					72	116		188		196	32	212	576	+	32		0	0		412
PHF	0.72		0.59	**0.65**					0.71	0.74		**0.73**		0.72	0.59	**0.76**	0.72		0.53		n/a	n/a		0.67



MD Peak Period
All Vehicles Combined

27th Avenue @ Allenby Way
Thursday, June 1, 2017

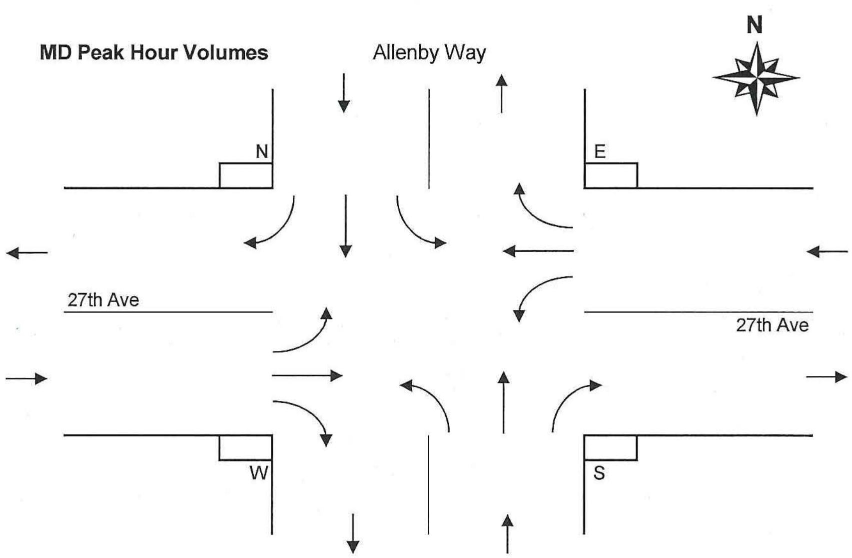
Time	Allenby Way								27th Ave				27th Ave												
Period	NORTH Approach				SOUTH Approach				WEST Approach				EAST Approach				Total Volume		Peak	Crosswalks				Conflict	
Begins	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	15-min	Hour		N	S	W	E	15 min	Hr
n/a																									
n/a																									
n/a																									
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
n/a																		0							
Total																									
Avg Hr																									

Peak hour of the intersection

Pk Hr																		*					
15x4																		+					
PHF																							

Peak hour of conflicting volumes for the intersection

Pk Hr																		*					
15x4																		+					
PHF																							



PM Peak Period
All Vehicles Combined

27th Avenue @ Allenby Way
Thursday, June 1, 2017

Time Period	Allenby Way NORTH Approach				SOUTH Approach				27th Ave WEST Approach				27th Ave EAST Approach				Total Volume		Peak	Crosswalks				Conflict	
Begins	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	15-min	Hour		N	S	W	E	15 min	Hr
14:30	8		9	17					22	30		52		50	8	58	127		*	3		0	0	89	
14:45	12		12	24					23	31		54		41	7	48	126		*	3		0	0	83	
15:00	5		12	17					36	30		66		47	7	54	137		+	5		0	0	102	
15:15	8		12	20					19	22		41		54	13	67	128	518	*	3		0	0	98	372
15:30	7		6	13					21	11		32		53	10	63	108	499		5		0	0	91	374
15:45	4		6	10					17	17		34		56	14	70	114	487		0		0	0	93	384
16:00	9		8	17					11	15		26		46	6	52	95	445		0		0	0	72	354
16:15	10		9	19					15	7		22		50	9	59	100	417		0		0	0	84	340
16:30	9		5	14					12	16		28		34	10	44	86	395		0		0	0	65	314
16:45	7		7	14					6	10		16		53	11	64	94	375		0		0	0	77	298
17:00	8		12	20					16	21		37		60	9	69	126	406		0		0	0	97	323
17:15	12		19	31					8	12		20		64	15	79	130	436		0		0	0	106	345
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									
n/a																									

Total	99		117	**216**					206	222		**428**		608	119	**727**	1371			19		0	0		1050
Avg Hr	33		39	**72**					69	74		**143**		203	40	**242**	457			6		0	0		

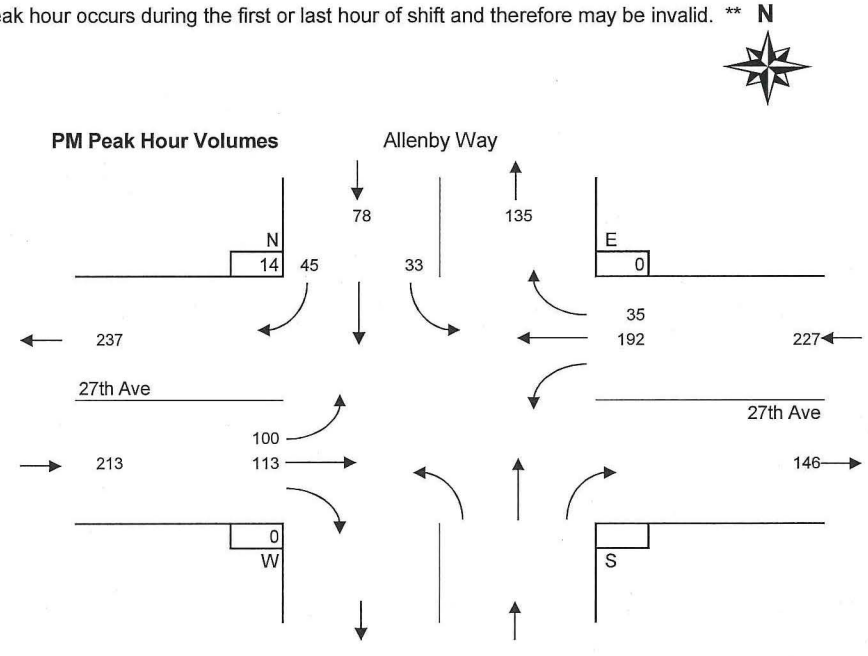
Peak hour of the intersection

Pk Hr	33		45	78					100	113		213		192	35	227	518	*		14		0	0		372
15x4	48		48	96					144	124		264		216	52	268	548	+		20		0	0		460
PHF	0.69		0.94	**0.81**					0.69	0.91		**0.81**		0.89	0.67	**0.85**	0.95			0.70		n/a	n/a		0.81

Peak hour of conflicting volumes for the intersection

Pk Hr	24		36	60					93	80		173		210	44	254	487	*		13		0	0		383
15x4	32		48	80					144	120		264		224	56	280	548	+		20		0	0		472
PHF	0.75		0.75	**0.75**					0.65	0.67		**0.66**		0.94	0.79	**0.91**	0.89			0.65		n/a	n/a		0.81

** Calculated peak hour occurs during the first or last hour of shift and therefore may be invalid. **



Period Hourly Averages
All Vehicles Combined

27th Avenue @ Allenby Way
Thursday, June 1, 2017

Entire Survey Period
5 Hours

	Allenby Way NORTH Approach				SOUTH Approach				27th Ave WEST Approach				27th Ave EAST Approach				Total	Crosswalks			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Volume	N	S	W	E
Total	185		220	**405**					287	374		**661**		823	147	**970**	2036	45		0	0
Avg Hr	37		44	**81**					57	75		**132**		165	29	**194**	407	9		0	0

AM Peak Period
2 Hours

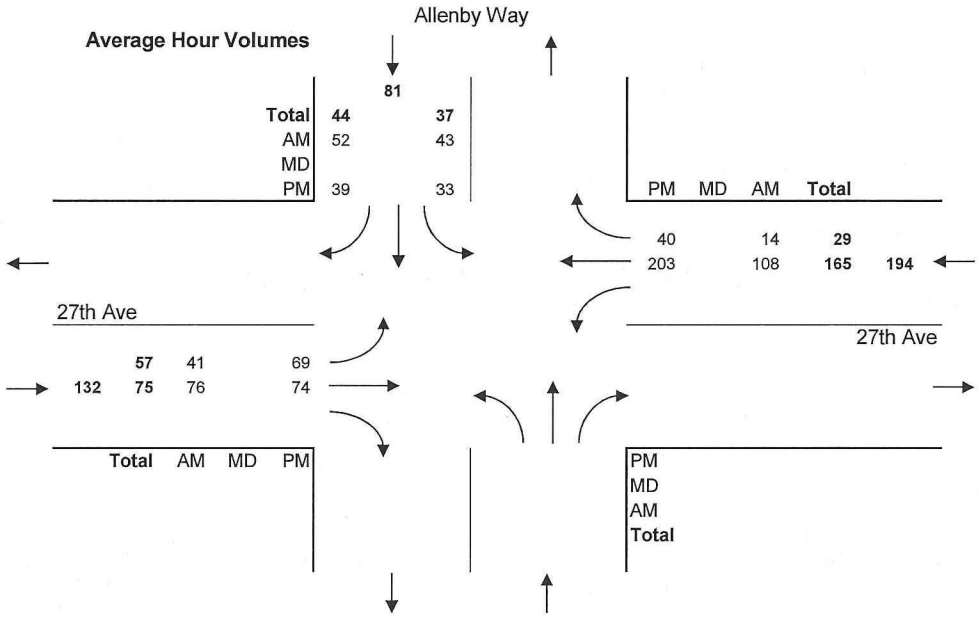
	Allenby Way NORTH Approach				SOUTH Approach				27th Ave WEST Approach				27th Ave EAST Approach				Total	Crosswalks			
Totals	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Volume	N	S	W	E
Period	86		103	**189**					81	152		**233**		215	28	**243**	665	26		0	0
Avg Hr	43		52	**95**					41	76		**117**		108	14	**122**	333	13		0	0

MD Peak Period
Hours

	Allenby Way NORTH Approach				SOUTH Approach				27th Ave WEST Approach				27th Ave EAST Approach				Total	Crosswalks			
Totals	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Volume	N	S	W	E
Total																					
Avg Hr																					

PM Peak Period
3 Hours

	Allenby Way NORTH Approach				SOUTH Approach				27th Ave WEST Approach				27th Ave EAST Approach				Total	Crosswalks			
Totals	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Volume	N	S	W	E
Total	99		117	**216**					206	222		**428**		608	119	**727**	1371	19		0	0
Avg Hr	33		39	**72**					69	74		**143**		203	40	**242**	457	6		0	0



TRANSTECH
Data Services

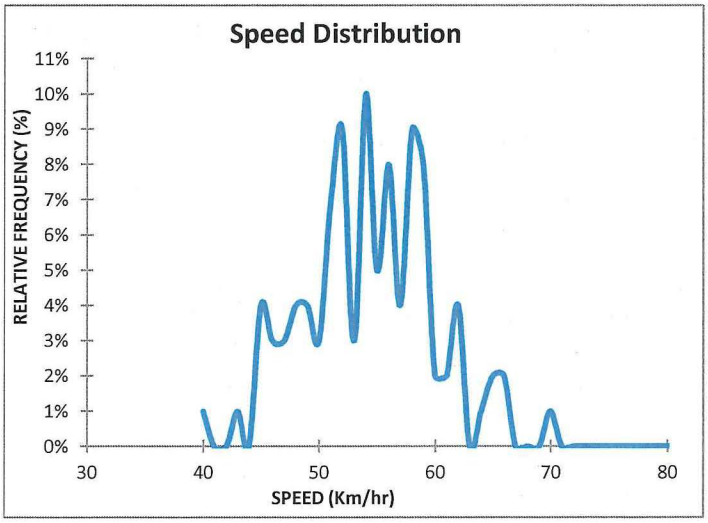
Radar Speed Survey

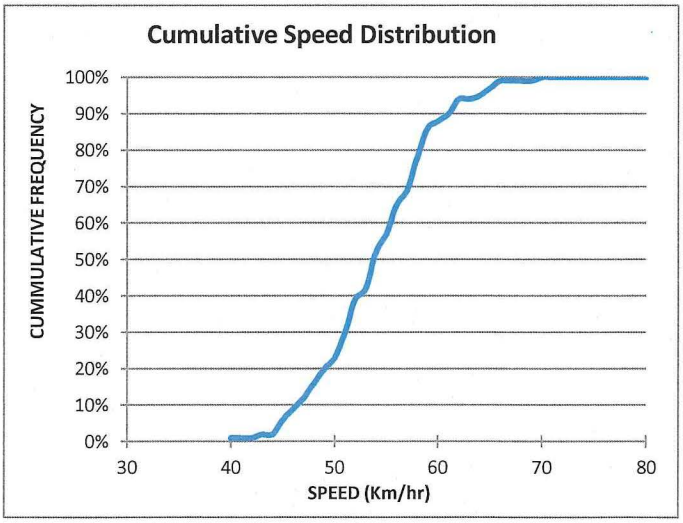
Route:	27 Avenue
Location:	Between Allenby Way and Alvaston Place
Direction:	Westbound
Municipality/Area:	Vernon
Posted Speed Limit (km/hr)	50
Number of Lanes:	1
Road Segment:	
Date:	June 1, 2017
Day-of-week:	Thursday
Weather:	Cloudy & Dry

Statistical Summary (All speeds KM/h)

	All
Number of observations:	100
Lowest Recorded Speed:	40
Highest Recorded Speed:	70
Percent at or below speed limit:	23%
Percent over speed limit:	77%
Average (mean) speed:	54.4
Percent at or below average speed:	52%
Percent over average speed:	48%
15th Percentile:	48.0
85th Percentile:	59.0
90th Percentile:	61.1
Variance:	31.22
Standard Deviation:	5.59
Median:	54
Skewness:	0.09
Kurtosis:	0.0
Pace speed (10 km/hr with most):	50-60
Percent below pace speed:	20%
Percent within pace speed:	66%
Percent above pace speed:	14%

Site Note:





Westbound

Data as Recorded		
Observation	Speed	Class
1	54	Regular
2	59	Regular
3	56	Regular
4	58	Regular
5	56	Regular
6	59	Regular
7	49	Bus
8	55	Regular
9	57	Regular
10	56	Regular
11	56	Regular
12	56	Regular
13	52	Regular
14	54	Regular
15	52	Regular
16	61	Regular
17	65	Regular
18	62	Regular
19	48	Regular
20	53	Regular
21	51	Regular
22	49	Regular
23	56	Regular
24	58	Regular
25	52	Regular
26	48	Regular
27	50	Bus
28	58	Regular
29	52	Regular
30	51	Regular
31	59	Regular
32	62	Regular
33	60	Regular
34	62	Regular
35	46	Regular
36	55	Regular
37	50	Regular
38	59	Regular
39	70	Regular
40	51	Regular
41	43	Regular
42	52	Regular
43	45	Regular
44	45	Regular
45	45	Regular
46	52	Regular
47	48	Regular
48	56	Regular
49	55	Regular
50	57	Regular

Frequency Distribution				
Speed	Frequency	Percent	Cumulative	Cum %
40	1	1.0%	1	1.0%
41	0	0.0%	1	1.0%
42	0	0.0%	1	1.0%
43	1	1.0%	2	2.0%
44	0	0.0%	2	2.0%
45	4	4.0%	6	6.0%
46	3	3.0%	9	9.0%
47	3	3.0%	12	12.0%
48	4	4.0%	16	16.0%
49	4	4.0%	20	20.0%
50	3	3.0%	23	23.0%
51	7	7.0%	30	30.0%
52	9	9.0%	39	39.0%
53	3	3.0%	42	42.0%
54	10	10.0%	52	52.0%
55	5	5.0%	57	57.0%
56	8	8.0%	65	65.0%
57	4	4.0%	69	69.0%
58	9	9.0%	78	78.0%
59	8	8.0%	86	86.0%
60	2	2.0%	88	88.0%
61	2	2.0%	90	90.0%
62	4	4.0%	94	94.0%
63	0	0.0%	94	94.0%
64	1	1.0%	95	95.0%
65	2	2.0%	97	97.0%
66	2	2.0%	99	99.0%
67	0	0.0%	99	99.0%
68	0	0.0%	99	99.0%
69	0	0.0%	99	99.0%
70	1	1.0%	100	100.0%
71	0	0.0%	100	100.0%
72	0	0.0%	100	100.0%
73	0	0.0%	100	100.0%
74	0	0.0%	100	100.0%
75	0	0.0%	100	100.0%
76	0	0.0%	100	100.0%
77	0	0.0%	100	100.0%
78	0	0.0%	100	100.0%
79	0	0.0%	100	100.0%
80	0	0.0%	100	100.0%
81	0	0.0%	100	100.0%
82	0	0.0%	100	100.0%
83	0	0.0%	100	100.0%
84	0	0.0%	100	100.0%
85	0	0.0%	100	100.0%
86	0	0.0%	100	100.0%
87	0	0.0%	100	100.0%
88	0	0.0%	100	100.0%
89	0	0.0%	100	100.0%

51	52	Regular
52	49	Regular
53	52	Regular
54	47	Regular
55	54	Regular
56	54	Regular
57	50	Bus
58	57	Regular
59	51	Regular
60	46	Regular
61	61	Regular
62	59	Regular
63	55	Regular
64	54	Regular
65	66	Regular
66	64	Regular
67	48	Regular
68	54	Regular
69	58	Regular
70	60	Regular
71	58	Regular
72	62	Regular
73	56	Regular
74	59	Regular
75	52	Regular
76	57	Regular
77	53	Regular
78	54	Regular
79	59	Regular
80	47	Regular
81	45	Regular
82	49	Bus
83	58	Regular
84	59	Regular
85	65	Regular
86	58	Regular
87	47	Regular
88	51	Regular
89	66	Regular
90	51	Regular
91	51	Regular
92	53	Regular
93	46	Regular
94	40	Regular
95	54	Regular
96	58	Regular
97	54	Regular
98	55	Regular
99	58	Regular
100	54	Regular

90	0	0.0%	100	100.0%
91	0	0.0%	100	100.0%
92	0	0.0%	100	100.0%
93	0	0.0%	100	100.0%
94	0	0.0%	100	100.0%
95	0	0.0%	100	100.0%
96	0	0.0%	100	100.0%
97	0	0.0%	100	100.0%
98	0	0.0%	100	100.0%
99	0	0.0%	100	100.0%
100	0	0.0%	100	100.0%
101	0	0.0%	100	100.0%
102	0	0.0%	100	100.0%
103	0	0.0%	100	100.0%
104	0	0.0%	100	100.0%
105	0	0.0%	100	100.0%
106	0	0.0%	100	100.0%
107	0	0.0%	100	100.0%
108	0	0.0%	100	100.0%
109	0	0.0%	100	100.0%
110	0	0.0%	100	100.0%
111	0	0.0%	100	100.0%
112	0	0.0%	100	100.0%
113	0	0.0%	100	100.0%
114	0	0.0%	100	100.0%
115	0	0.0%	100	100.0%
116	0	0.0%	100	100.0%
117	0	0.0%	100	100.0%
118	0	0.0%	100	100.0%
119	0	0.0%	100	100.0%
120	0	0.0%	100	100.0%
121	0	0.0%	100	100.0%
122	0	0.0%	100	100.0%
123	0	0.0%	100	100.0%
124	0	0.0%	100	100.0%
125	0	0.0%	100	100.0%
126	0	0.0%	100	100.0%
127	0	0.0%	100	100.0%
128	0	0.0%	100	100.0%
129	0	0.0%	100	100.0%
130	0	0.0%	100	100.0%
131	0	0.0%	100	100.0%
132	0	0.0%	100	100.0%
133	0	0.0%	100	100.0%
134	0	0.0%	100	100.0%
135	0	0.0%	100	100.0%
136	0	0.0%	100	100.0%
137	0	0.0%	100	100.0%
138	0	0.0%	100	100.0%
139	0	0.0%	100	100.0%

TRANSTECH
Data Services

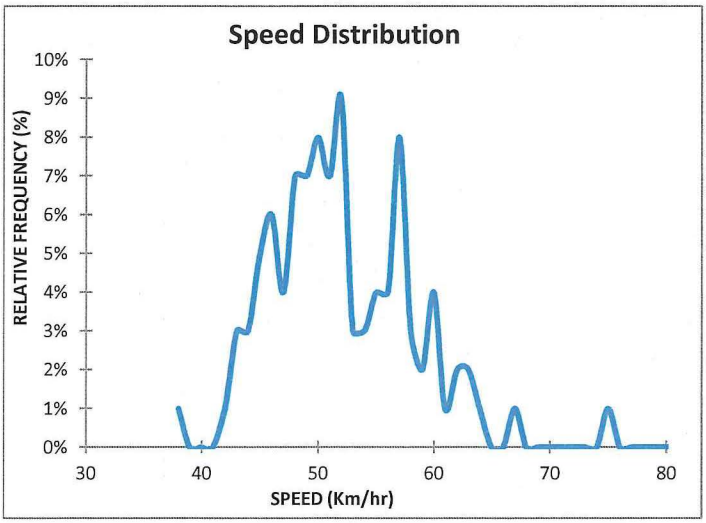
Radar Speed Survey

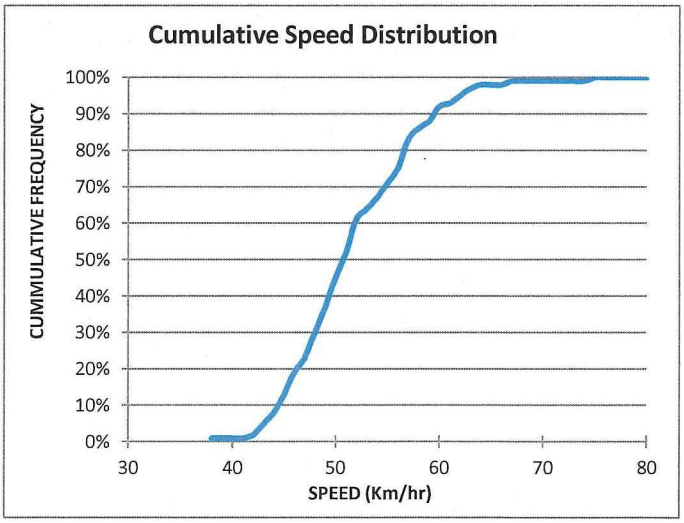
Route:	27 Avenue
Location:	Between Allenby Way and Alvaston Place
Direction:	Eastbound
Municipality/Area:	Vernon
Posted Speed Limit (km/hr)	50
Number of Lanes:	1
Road Segment:	
Date:	June 1, 2017
Day-of-week:	Thursday
Weather:	Cloudy & Dry

Statistical Summary (All speeds KM/h)

	All
Number of observations:	100
Lowest Recorded Speed:	38
Highest Recorded Speed:	75
Percent at or below speed limit:	45%
Percent over speed limit:	55%
Average (mean) speed:	52.0
Percent at or below average speed:	61%
Percent over average speed:	39%
15th Percentile:	46.0
85th Percentile:	58.0
90th Percentile:	60.0
Variance:	37.41
Standard Deviation:	6.12
Median:	51
Skewness:	0.69
Kurtosis:	1.1
Pace speed (10 km/hr with most):	48-58
Percent below pace speed:	23%
Percent within pace speed:	60%
Percent above pace speed:	17%

Site Note:





Eastbound

Data as Recorded		
Observation	Speed	Class
1	57	Regular
2	50	Regular
3	45	Regular
4	57	Regular
5	53	Regular
6	52	Regular
7	44	Regular
8	63	Regular
9	54	Regular
10	49	Regular
11	47	Regular
12	56	Regular
13	43	Regular
14	43	Regular
15	61	Regular
16	46	Regular
17	50	Regular
18	38	Regular
19	55	Regular
20	49	Regular
21	57	Regular
22	52	Regular
23	48	Regular
24	48	Regular
25	55	Regular
26	42	Regular
27	51	Regular
28	46	Regular
29	57	Regular
30	52	Regular
31	48	Regular
32	51	Regular
33	58	Regular
34	56	Regular
35	56	Regular
36	49	Regular
37	44	Regular
38	51	Regular
39	52	Regular
40	48	Regular
41	57	Regular
42	49	Regular
43	48	Regular
44	56	Regular
45	50	Regular
46	54	Regular
47	64	Regular
48	54	Regular
49	51	Regular
50	57	Regular

Frequency Distribution				
Speed	Frequency	Percent	Cumulative	Cum %
38	1	1.0%	1	1.0%
39	0	0.0%	1	1.0%
40	0	0.0%	1	1.0%
41	0	0.0%	1	1.0%
42	1	1.0%	2	2.0%
43	3	3.0%	5	5.0%
44	3	3.0%	8	8.0%
45	5	5.0%	13	13.0%
46	6	6.0%	19	19.0%
47	4	4.0%	23	23.0%
48	7	7.0%	30	30.0%
49	7	7.0%	37	37.0%
50	8	8.0%	45	45.0%
51	7	7.0%	52	52.0%
52	9	9.0%	61	61.0%
53	3	3.0%	64	64.0%
54	3	3.0%	67	67.0%
55	4	4.0%	71	71.0%
56	4	4.0%	75	75.0%
57	8	8.0%	83	83.0%
58	3	3.0%	86	86.0%
59	2	2.0%	88	88.0%
60	4	4.0%	92	92.0%
61	1	1.0%	93	93.0%
62	2	2.0%	95	95.0%
63	2	2.0%	97	97.0%
64	1	1.0%	98	98.0%
65	0	0.0%	98	98.0%
66	0	0.0%	98	98.0%
67	1	1.0%	99	99.0%
68	0	0.0%	99	99.0%
69	0	0.0%	99	99.0%
70	0	0.0%	99	99.0%
71	0	0.0%	99	99.0%
72	0	0.0%	99	99.0%
73	0	0.0%	99	99.0%
74	0	0.0%	99	99.0%
75	1	1.0%	100	100.0%
76	0	0.0%	100	100.0%
77	0	0.0%	100	100.0%
78	0	0.0%	100	100.0%
79	0	0.0%	100	100.0%
80	0	0.0%	100	100.0%
81	0	0.0%	100	100.0%
82	0	0.0%	100	100.0%
83	0	0.0%	100	100.0%
84	0	0.0%	100	100.0%
85	0	0.0%	100	100.0%
86	0	0.0%	100	100.0%
87	0	0.0%	100	100.0%

51	48	Regular
52	52	Regular
53	50	Regular
54	60	Regular
55	60	Regular
56	63	Regular
57	45	Regular
58	47	Regular
59	47	Regular
60	50	Regular
61	51	Regular
62	53	Regular
63	50	Regular
64	59	Regular
65	51	Regular
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74	55	Regular
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87	59	Regular
88	46	Regular
89	58	Regular
90	45	Regular
91	44	Regular
92	75	Regular
93	46	Regular
94	60	Regular
95	49	Regular
96	60	Regular
97	45	Regular
98	53	Regular
99	52	Regular
100	43	Regular

88	0	0.0%	100	100.0%
89	0	0.0%	100	100.0%
90	0	0.0%	100	100.0%
91	0	0.0%	100	100.0%
92	0	0.0%	100	100.0%
93	0	0.0%	100	100.0%
94	0	0.0%	100	100.0%
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96	0	0.0%	100	100.0%
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113	0	0.0%	100	100.0%
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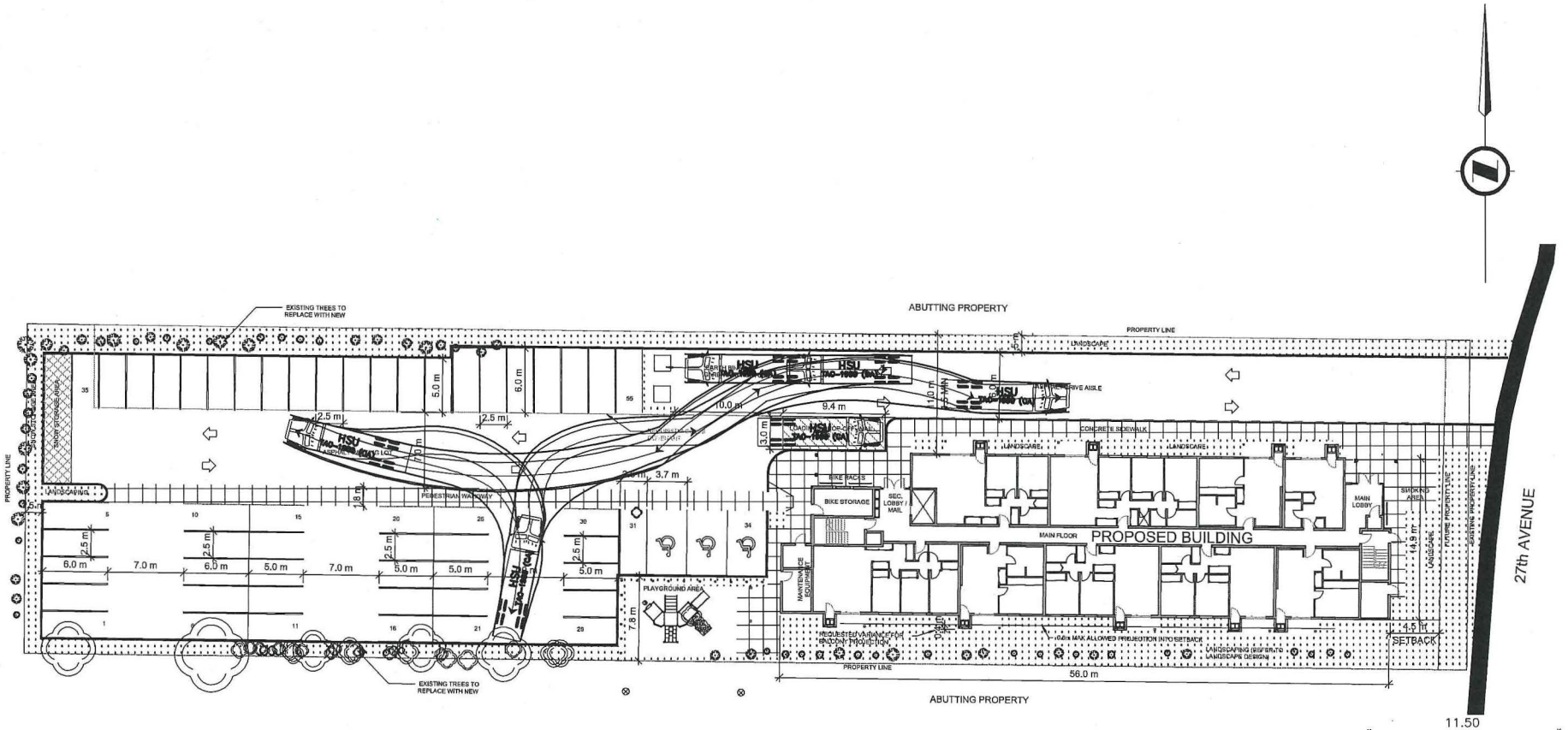
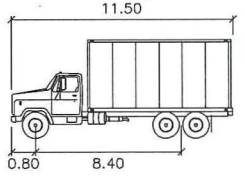
132	0	0.0%	100	100.0%
133	0	0.0%	100	100.0%
134	0	0.0%	100	100.0%
135	0	0.0%	100	100.0%
136	0	0.0%	100	100.0%
137	0	0.0%	100	100.0%

APPENDIX C

AUTOTURN ANALYSIS

BINNIE





HSU

meters

Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

BINNIE
The people behind your infrastructure.

R.F. BINNIE & ASSOCIATES LTD.
300 - 4940 Canada Way,
Burnaby, BC V5G 4M5
TEL 604 420 1721
BINNIE.com

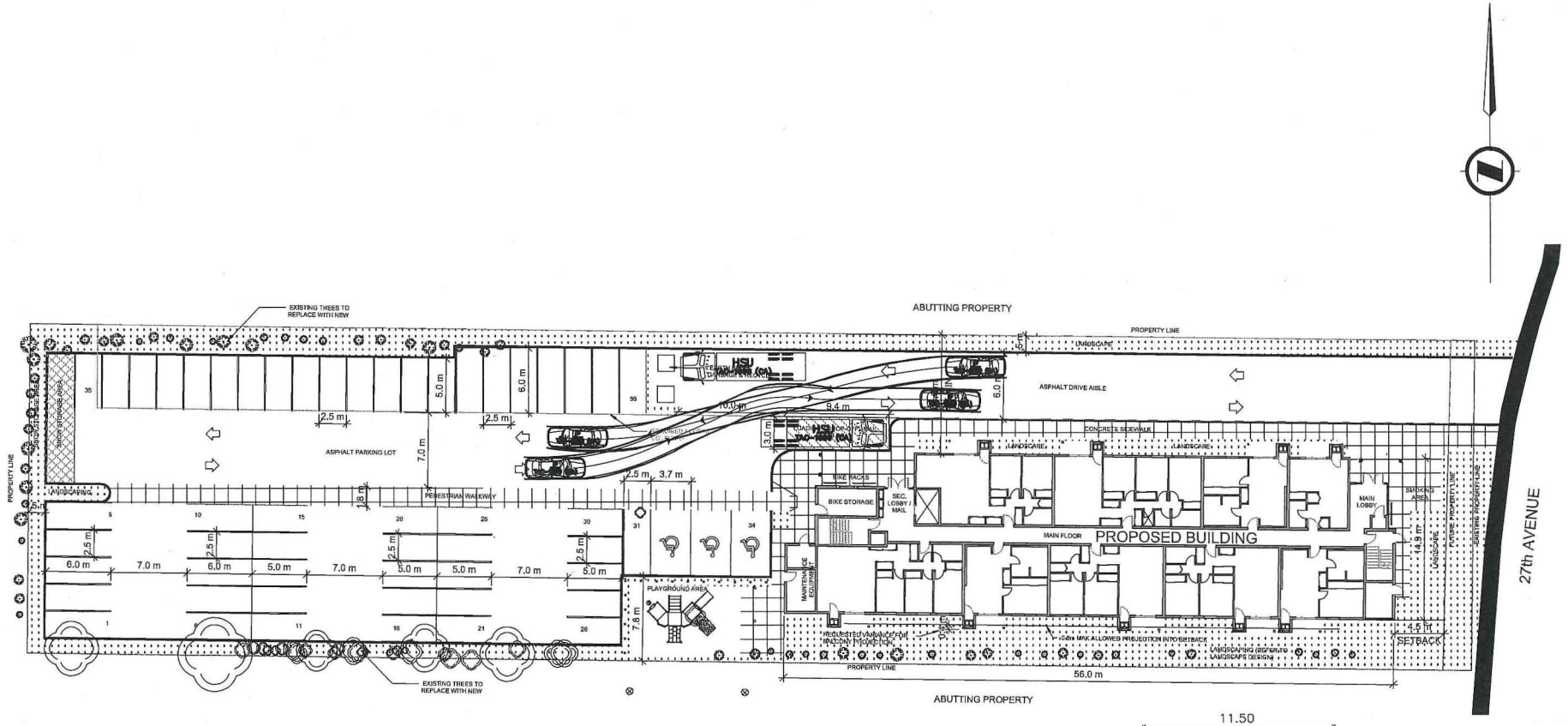
TITLE :

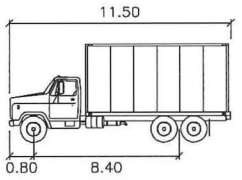
5545 27TH AVENUE AUTOTURN - GARBAGE COLLECTION

DATE : MAY 2, 2018

DWG. No. : 17-0234-01

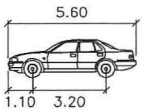
SCALE : NOT TO SCALE





HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

BINNIE
The people behind your infrastructure.

R.F. BINNIE & ASSOCIATES LTD.
300 - 4940 Canada Way,
Burnaby, BC V5G 4M5
TEL 604 420 1721
BINNIE.com

TITLE :

5545 27TH AVENUE AUTOTURN - PASSENGER VEHICLE

DATE :	MAY 2, 2018
DWG. No. :	17-0234-02
SCALE :	NOT TO SCALE

APPENDIX D

LETTER: PARKING VARIANCE RATIONALE

BINNIE

NEW TOWN

PARKING VARIANCE RATIONALE

5545 27TH Avenue

VERNON NATIVE HOUSING SOCIETY CONDOMINIUM

Background:

The Vernon Native Housing Society is seeking to construct a non-market housing project to provide residences to individuals and families within a special needs sector of the Vernon community. This application is to amend the land use zoning and acquire a development permit for the construction of a 38 unit condominium.

Parking Quantity Variance Request:

The application forecasts the development to provide surface parking at the rear of the site. This parking area includes a pedestrian connection to the rear entrance, area for snow storage and an edge landscape buffer to the adjacent uses. The required parking is 61 parking stalls. However, the maximum design capability of the site is 55 stalls. We propose to designate 5 stalls as 'visitor only' parking while the balance of 50 stalls are shared among the 38 residences.

Support Rationale*

(*Reference -PIBC, Plan West, Fall 2017, Innovative Parking Solutions)

The following points are offered for consideration in support of the requested parking stall quantity variance:

- The user group are individuals of very low income and have historically low multiple vehicle ownership as compared to the conventional occupancy model of middle income society on which the standards are founded,
- Not all residents will own vehicles,
- Alternative transportation by cycling is accounted for with secure & sheltered bike parking,
- Transit service is convenient with Route 7 fronting the site and Route 8 on OK Landing Road,
- The site has high walkability with services, jobs and shopping at the adjacent OK Landing Plaza,
- As time goes by, future residents are likely to have options for on-demand transportation such as Uber, Car to Go, driverless vehicles, etc., and,
- The requested variance is only 10% less than the bylaw standard.

NEW TOWN

Parking Stall Size Variance Request

The parking layout offers 62% of the parking stalls suitable for smaller vehicles while the City's bylaw set the maximum number of smaller stalls at 40% of the proposed parking.

Support Rationale

The following points are offered for consideration in support of the requested parking stall proportion variance:

- Smaller vehicles are generally more affordable for lower income residents,
- Operating costs for smaller vehicles are lower and preferred for budget conscious residents,
- Market trends are to cross-over models and small or mid-sized SUVs, and
- The top selling large vehicles and pickup trucks made up only 23% of the Canadian new vehicle market in 2017*. (*Drive.ca)

APPENDIX E

SYNCHRO ANALYSIS RESULTS

BINNIE

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	86	142	19	49	66
Future Volume (Veh/h)	51	86	142	19	49	66
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	93	154	21	53	72
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	175				368	164
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	175				368	164
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				91	92
cM capacity (veh/h)	1414				612	885

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	148	175	53	72
Volume Left	55	0	53	0
Volume Right	0	21	0	72
cSH	1414	1700	612	885
Volume to Capacity	0.04	0.10	0.09	0.08
Queue Length 95th (m)	0.9	0.0	2.2	2.0
Control Delay (s)	3.0	0.0	11.4	9.4
Lane LOS	A		B	A
Approach Delay (s)	3.0	0.0	10.3	
Approach LOS			B	

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	113	192	35	33	45
Future Volume (Veh/h)	100	113	192	35	33	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	123	209	38	36	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	247				569	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	247				569	228
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				92	94
cM capacity (veh/h)	1331				447	816

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	232	247	36	49
Volume Left	109	0	36	0
Volume Right	0	38	0	49
cSH	1331	1700	447	816
Volume to Capacity	0.08	0.15	0.08	0.06
Queue Length 95th (m)	2.0	0.0	2.0	1.5
Control Delay (s)	4.1	0.0	13.8	9.7
Lane LOS	A		B	A
Approach Delay (s)	4.1	0.0	11.4	
Approach LOS			B	

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	52	87	144	19	50	67
Future Volume (Veh/h)	52	87	144	19	50	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	95	157	21	54	73
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	178				376	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	178				376	168
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				91	92
cM capacity (veh/h)	1398				599	877

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	152	178	54	73
Volume Left	57	0	54	0
Volume Right	0	21	0	73
cSH	1398	1700	599	877
Volume to Capacity	0.04	0.10	0.09	0.08
Queue Length 95th (m)	1.0	0.0	2.2	2.1
Control Delay (s)	3.1	0.0	11.6	9.5
Lane LOS	A		B	A
Approach Delay (s)	3.1	0.0	10.4	
Approach LOS			B	

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	115	195	36	33	46
Future Volume (Veh/h)	102	115	195	36	33	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	111	125	212	39	36	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	251				578	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	251				578	232
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				92	94
cM capacity (veh/h)	1314				437	808

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	236	251	36	50
Volume Left	111	0	36	0
Volume Right	0	39	0	50
cSH	1314	1700	437	808
Volume to Capacity	0.08	0.15	0.08	0.06
Queue Length 95th (m)	2.1	0.0	2.0	1.5
Control Delay (s)	4.1	0.0	14.0	9.8
Lane LOS	A		B	A
Approach Delay (s)	4.1	0.0	11.5	
Approach LOS			B	

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	56	94	155	21	54	72
Future Volume (Veh/h)	56	94	155	21	54	72
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	102	168	23	59	78
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	191				404	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	191				404	180
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				90	91
cM capacity (veh/h)	1383				576	863

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	163	191	59	78
Volume Left	61	0	59	0
Volume Right	0	23	0	78
cSH	1383	1700	576	863
Volume to Capacity	0.04	0.11	0.10	0.09
Queue Length 95th (m)	1.1	0.0	2.6	2.3
Control Delay (s)	3.1	0.0	12.0	9.6
Lane LOS	A		B	A
Approach Delay (s)	3.1	0.0	10.6	
Approach LOS			B	

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	124	210	38	36	49
Future Volume (Veh/h)	109	124	210	38	36	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	118	135	228	41	39	53
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	269				620	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	269				620	248
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				91	93
cM capacity (veh/h)	1295				411	790

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	253	269	39	53
Volume Left	118	0	39	0
Volume Right	0	41	0	53
cSH	1295	1700	411	790
Volume to Capacity	0.09	0.16	0.09	0.07
Queue Length 95th (m)	2.3	0.0	2.4	1.6
Control Delay (s)	4.2	0.0	14.7	9.9
Lane LOS	A		B	A
Approach Delay (s)	4.2	0.0	11.9	
Approach LOS			B	

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	101	167	22	58	78
Future Volume (Veh/h)	60	101	167	22	58	78
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	110	182	24	63	85
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	206				434	194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	206				434	194
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				89	90
cM capacity (veh/h)	1365				551	847

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	175	206	63	85
Volume Left	65	0	63	0
Volume Right	0	24	0	85
cSH	1365	1700	551	847
Volume to Capacity	0.05	0.12	0.11	0.10
Queue Length 95th (m)	1.1	0.0	2.9	2.5
Control Delay (s)	3.1	0.0	12.4	9.7
Lane LOS	A		B	A
Approach Delay (s)	3.1	0.0	10.8	
Approach LOS			B	

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	118	133	226	41	39	53
Future Volume (Veh/h)	118	133	226	41	39	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	145	246	45	42	58
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	291				670	268
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	291				670	268
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				89	92
cM capacity (veh/h)	1271				380	770

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	273	291	42	58
Volume Left	128	0	42	0
Volume Right	0	45	0	58
cSH	1271	1700	380	770
Volume to Capacity	0.10	0.17	0.11	0.08
Queue Length 95th (m)	2.5	0.0	2.8	1.9
Control Delay (s)	4.3	0.0	15.6	10.1
Lane LOS	A		C	B
Approach Delay (s)	4.3	0.0	12.4	
Approach LOS			B	

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	91	145	19	50	68
Future Volume (Veh/h)	54	91	145	19	50	68
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	99	158	21	54	74
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	179				386	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179				386	168
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				91	92
cM capacity (veh/h)	1397				591	876

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	158	179	54	74
Volume Left	59	0	54	0
Volume Right	0	21	0	74
cSH	1397	1700	591	876
Volume to Capacity	0.04	0.11	0.09	0.08
Queue Length 95th (m)	1.0	0.0	2.3	2.1
Control Delay (s)	3.1	0.0	11.7	9.5
Lane LOS	A		B	A
Approach Delay (s)	3.1	0.0	10.4	
Approach LOS			B	

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	139	211	2	6	10
Future Volume (Veh/h)	2	139	211	2	6	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	151	229	2	7	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	231				385	230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231				385	230
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1337				617	809

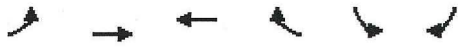
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	153	231	18
Volume Left	2	0	7
Volume Right	0	2	11
cSH	1337	1700	722
Volume to Capacity	0.00	0.14	0.02
Queue Length 95th (m)	0.0	0.0	0.6
Control Delay (s)	0.1	0.0	10.1
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	104	117	201	36	33	48
Future Volume (Veh/h)	104	117	201	36	33	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	127	218	39	36	52
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	257				590	238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	257				590	238
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				92	94
cM capacity (veh/h)	1308				429	801

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	240	257	36	52
Volume Left	113	0	36	0
Volume Right	0	39	0	52
cSH	1308	1700	429	801
Volume to Capacity	0.09	0.15	0.08	0.06
Queue Length 95th (m)	2.2	0.0	2.1	1.6
Control Delay (s)	4.2	0.0	14.2	9.8
Lane LOS	A		B	A
Approach Delay (s)	4.2	0.0	11.6	
Approach LOS			B	

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	217	241	8	4	5
Future Volume (Veh/h)	7	217	241	8	4	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	236	262	9	4	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	271				518	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	271				518	266
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1292				514	772

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	244	271	9
Volume Left	8	0	4
Volume Right	0	9	5
cSH	1292	1700	631
Volume to Capacity	0.01	0.16	0.01
Queue Length 95th (m)	0.1	0.0	0.3
Control Delay (s)	0.3	0.0	10.8
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	10.8
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	98	156	21	54	73
Future Volume (Veh/h)	58	98	156	21	54	73
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	107	170	23	59	79
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	193				414	182
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	193				414	182
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				90	91
cM capacity (veh/h)	1380				567	861

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	170	193	59	79
Volume Left	63	0	59	0
Volume Right	0	23	0	79
cSH	1380	1700	567	861
Volume to Capacity	0.05	0.11	0.10	0.09
Queue Length 95th (m)	1.1	0.0	2.6	2.3
Control Delay (s)	3.1	0.0	12.1	9.6
Lane LOS	A		B	A
Approach Delay (s)	3.1	0.0	10.7	
Approach LOS			B	

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	150	227	2	6	10
Future Volume (Veh/h)	2	150	227	2	6	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	163	247	2	7	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	249				415	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249				415	248
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1317				593	791

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	165	249	18
Volume Left	2	0	7
Volume Right	0	2	11
cSH	1317	1700	700
Volume to Capacity	0.00	0.15	0.03
Queue Length 95th (m)	0.0	0.0	0.6
Control Delay (s)	0.1	0.0	10.3
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	111	126	216	38	36	51
Future Volume (Veh/h)	111	126	216	38	36	51
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	121	137	235	41	39	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	276				634	256
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	276				634	256
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				90	93
cM capacity (veh/h)	1287				401	783

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	258	276	39	55
Volume Left	121	0	39	0
Volume Right	0	41	0	55
cSH	1287	1700	401	783
Volume to Capacity	0.09	0.16	0.10	0.07
Queue Length 95th (m)	2.4	0.0	2.4	1.7
Control Delay (s)	4.2	0.0	14.9	9.9
Lane LOS	A		B	A
Approach Delay (s)	4.2	0.0	12.0	
Approach LOS			B	

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	233	259	8	4	5
Future Volume (Veh/h)	7	233	259	8	4	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	253	282	9	4	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	291				556	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	291				556	286
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1271				489	753

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	261	291	9
Volume Left	8	0	4
Volume Right	0	9	5
cSH	1271	1700	607
Volume to Capacity	0.01	0.17	0.01
Queue Length 95th (m)	0.1	0.0	0.3
Control Delay (s)	0.3	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	105	168	22	58	79
Future Volume (Veh/h)	62	105	168	22	58	79
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	114	183	24	63	86
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	207				443	195
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	207				443	195
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				88	90
cM capacity (veh/h)	1364				544	846

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	181	207	63	86
Volume Left	67	0	63	0
Volume Right	0	24	0	86
cSH	1364	1700	544	846
Volume to Capacity	0.05	0.12	0.12	0.10
Queue Length 95th (m)	1.2	0.0	3.0	2.6
Control Delay (s)	3.1	0.0	12.5	9.7
Lane LOS	A		B	A
Approach Delay (s)	3.1	0.0	10.9	
Approach LOS			B	

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	161	245	2	6	10
Future Volume (Veh/h)	2	161	245	2	6	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	175	266	2	7	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	268				446	267
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	268				446	267
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1296				569	772

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	177	268	18
Volume Left	2	0	7
Volume Right	0	2	11
cSH	1296	1700	678
Volume to Capacity	0.00	0.16	0.03
Queue Length 95th (m)	0.0	0.0	0.6
Control Delay (s)	0.1	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

1: 27th Avenue & Allenby Way

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	120	135	232	41	39	55
Future Volume (Veh/h)	120	135	232	41	39	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	147	252	45	42	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	297				682	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297				682	274
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				89	92
cM capacity (veh/h)	1264				373	764

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	277	297	42	60
Volume Left	130	0	42	0
Volume Right	0	45	0	60
cSH	1264	1700	373	764
Volume to Capacity	0.10	0.17	0.11	0.08
Queue Length 95th (m)	2.6	0.0	2.9	1.9
Control Delay (s)	4.3	0.0	15.9	10.1
Lane LOS	A		C	B
Approach Delay (s)	4.3	0.0	12.5	
Approach LOS			B	

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

4: 27th Avenue

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	251	279	8	4	5
Future Volume (Veh/h)	7	251	279	8	4	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	273	303	9	4	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	312				596	308
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	312				596	308
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1248				463	732

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	281	312	9
Volume Left	8	0	4
Volume Right	0	9	5
cSH	1248	1700	582
Volume to Capacity	0.01	0.18	0.02
Queue Length 95th (m)	0.1	0.0	0.4
Control Delay (s)	0.3	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

THE CORPORATION OF THE CITY OF VERNON
REPORT TO COUNCIL

SUBMITTED BY: Craig Broderick
Manager, Current Planning
Hazel Christy
Planner

COUNCIL MEETING: REG ☒ COW ☐ I/C ☐
COUNCIL MEETING DATE: June 11, 2018
REPORT DATE: May 14, 2018
FILE: ZON00291

SUBJECT: **REZONING APPLICATION FOR 5770 PLEASANT VALLEY ROAD**

PURPOSE:

To review the rezoning application which proposes to rezone portions of the subject property located at 5770 Pleasant Valley Road from R1 NORD to RH1 (Low Rise Apartment Residential) and P1 (Parks and Open Space) in order to construct three 72 unit apartment buildings and an amenity building, and to accommodate the extension of BX trail adjacent to BX Creek.

RECOMMENDATION:

THAT Council support the application (ZON00291) to rezone Lot 6, Plan 939, Section 11, Township 8, ODYD (5770 Pleasant Valley Road) from R1 NORD to RH1 (Low Rise Apartment Residential) and P1 (Parks and Open Space) in order to construct three 72 unit apartment buildings and an amenity building) and to accommodate the extension of BX trail adjacent to BX Creek, subject to the following conditions:

1. a) Provision of a Statutory Right of Way to accommodate sanitary and water mains;
   b) Provision, design and construction of an emergency access route to connect this property to Lot A Plan EPP56407;
   c) Dedication and construction of a 15 m wide corridor adjacent to the east side of BX Creek to allow for the extension of the BX trail;
   d) The design and construction of all on-site and off-site works and services necessary to service the property; and
   e) Dedication and construction of road right of way adjacent to Deleenher Road, including a cul de sac turnaround, the extension or replacement of the bridge structure in Deleenher Road adjacent to the subject property, and improvements to the extension of the BX trail through the subject property;

2. Return to crown of lands below the high water mark of BX Creek; and

3. Completion of environmental enhancement and mitigation as recommended in the Riparian Area Reports prepared by Sage Environmental and dated July 2017 and March 2018 respectively.

ALTERNATIVES & IMPLICATIONS:

1. THAT Council support the application (ZON00291) to rezone Lot 6, Plan 939, Section 11, Township 8, ODYD (5770 Pleasant Valley Road) from R1 NORD to RH1 (Low Rise Apartment Residential) and P1 (Parks and Open Space) in order to construct three 72 unit apartment buildings and an amenity building) and to accommodate the extension of BX trail adjacent to BX Creek, subject to the following conditions:

   1. a) Provision of a Statutory Right of Way to accommodate sanitary and water mains;
      b) Provision, design and construction of an emergency access route to connect this property to Lot A Plan EPP56407;

c) Dedication and construction of a 15 m wide corridor adjacent to the east side of BX Creek to allow for the extension of the BX trail;
d) The design and construction of all on-site and off-site works and services necessary to service the property; and
e) Dedication and construction of road right of way adjacent to Deleenher Road, including a cul de sac turnaround, the extension or replacement of the bridge structure in Deleenher Road adjacent to the subject property, and improvements to the extension of the BX trail through the subject property;

2. Return to crown of lands below the high water mark of BX Creek;

3. Completion of environmental enhancement and mitigation as recommended in the Riparian Area Reports prepared by Sage Environmental and dated July 2017 and March 2018 respectively; and

4. *Any other conditions as cited by Council.*

Note: This alternative supports the rezoning application as submitted with the addition of any other conditions that Council may wish to add.

2. THAT Council NOT support the application (ZON00291) to rezone Lot 6, Plan 939, Section 11, Township 8, ODYD (5770 Pleasant Valley Road) from R1 NORD to RH1 (Low Rise Apartment Residential) and P1 (Parks and Open Space)in order to construct three 72 unit apartment buildings and an amenity building, and to accommodate the extension of BX trail adjacent to BX Creek.

Note: This alternative does not support the rezoning application, and as a result the application as submitted would not be able to proceed.

ANALYSIS:

A. Committee Recommendations:

At its meeting of May 29, 2018, the Advisory Planning Committee passed the following resolution:

" "

B. Rationale:

1. The subject property is located at 5770 Pleasant Valley Road (Figures 1 and 2). The land is designated as Residential Medium Density within the Official Community Plan and is within the R1 NORD zoning district as shown on the attached zoning map excerpt (Attachment 1).

2. The subject property is approximately 2.1 hectares (5.3 acres). The westerly section is fairly flat and slopes up to Pleasant Valley Road to the east.

3. The surrounding land uses include the Regency Retirement Resort to the north; rural and agriculture to the east; townhouses to the south; and BX Creek and Park to the west.

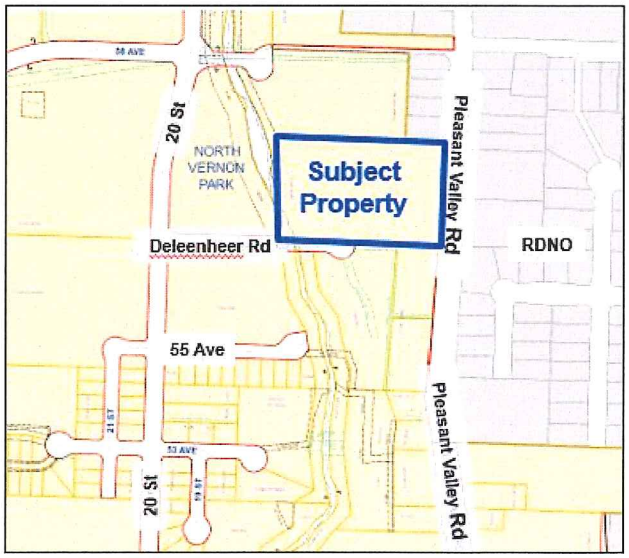


Figure 1 – Property Location Map

4. The subject property, as well as the site to the north, (Regency Retirement Resort), were annexed into the City of Vernon on September 2, 2009. The Official Community Plan designation was amended to Residential Medium Density on September 26, 2011 (Bylaw #5328). The subject property retains its previous R1 zoning under the Regional District until such time that a rezoning is approved by Council.

Figure 2 – Aerial Map of Property

5. The application to rezone the subject property is consistent with the OCP land use designation of Residential Medium Density. The OCP designation allows for a maximum base density of 110 units per ha (44.5 units per acre). The RH1 zoning district was recently amended to use Floor Space Ratio (FSR) as a measure of density. The maximum density permitted in the RH1 zoning district is 1.50 FSR, and the proposal as submitted has a density of 0.97 FSR. Although no longer used as a measure of density in the RH1 zone, for comparison purposes, the current proposal of 216 units calculates to 103 units per hectare or 41 units per acre.

6. As shown on Attachment 2, a portion of the property is proposed to be rezoned to the RH1 Low Density Apartment Residential Zone to accommodate the proposed development, and the portion of the property adjacent to BX Creek is proposed to be rezoned to the P1 Parks and Open Space Zone to accommodate the extension of the BX trail.

7. Development Permit Application (DP00748) and Development Variance Permit Application (DVP00425) were submitted concurrently with this rezoning application. Development Variances requested based on the current Development Permit application pertain to the number of parking and loading spaces and the height of retaining walls. The site plan, and form and character illustrations of the proposed development are included with this report for information purposes only, as there are a number of Development Permit and Development Variance permit details yet to be resolved, including:

    a) Accommodation of the proposed extension of the BX trail;
    b) Enhancement and mitigation of anticipated impacts of the development on BX Creek;
    c) Vehicle and pedestrian circulation; and
    d) Parking and loading zones.

    Modifications to the site plan and development proposal may be required. Should Council give this application favourable consideration, DVP00425 would be brought forward for Council's consideration following Third Reading of the zoning amendment bylaw.

8. Administration supports the rezoning application as the proposed use and density conforms to the OCP and allows for multiple family housing in close proximity to commercial and personal services, parks/trails, infrastructure and transit.

9. Approval of the rezoning application allows for the opportunity to improve the transportation and utility network in the area, as well as extending the BX trail and providing an alternate emergency access for this area.

10. Details of site layout, landscaping, parking and loading areas, access, and building design and finish are to be governed by the development permit review and approval process.

C. Attachments:

Attachment 1 – Current Zoning
Attachment 2 – Proposed Zoning
Attachment 3 – Existing Subdivision Plan of Subject Property
Attachment 4 – Existing Topographic Plan of Subject Property
Attachment 5 – Proposed Site Plan of Development
Attachment 6 – Proposed Cross Section of Development
Attachment 7 – Proposed Form and Character Illustrations
Attachment 8 – Proposed RH1 Low Rise Apartment Residential Zone
Attachment 9 – Existing R.1 NORD Residential Single Family Zone
Attachment 10 – Excerpts from Riparian Area Reports prepared by Sage Environmental dated July 2017 and March 2018

D. Council's Strategic Plan 2015 – 2018 Goals/Deliverables:

The subject application involves the following objectives in Council's Strategic Plan 2015 – 2018:

- Support sustainable neighbourhoods by implementing neighbourhood plans and the OCP

E. Relevant Policy/Bylaws/Resolutions:

1. Official Community Plan:

7.3 Support the development of the City Centre District, neighbourhood centres, and designated multiple family areas to the densities outlined in the OCP to build compact, complete neighbourhood areas within the community and to achieve the maximum use of municipal infrastructure.

13.1 Maintain a clear and consistent approach to environmental management and ecosystem protection throughout the city in accordance with the Environmental Management Areas Strategy.

13.8 Work to enhance community access to lakeshore areas, hiking and walking paths and park space through the development process and in conjunction with municipal operations and other agencies as appropriate.

13.11 Ensure ecosystem conservation, enhancement, mitigation and restoration are undertaken as opportunities arise or as required as part of the development process.

BUDGET/RESOURCE IMPLICATIONS:

N/A

Prepared by:

Right-click to sign with DocuSign

Craig Broderick
Manager, Current Planning

Approved for submission to Council:

_____
Will Pearce, CAO

Date: _____

Right-click to sign with DocuSign

Kim Flick
Director, Community Infrastructure and Development

REVIEWED WITH

- ☐ Corporate Services
  - ☐ Bylaw Compliance
  - ☐ Real Estate
- ☐ RCMP
- ☐ Fire & Rescue Services
- ☐ Human Resources
- ☐ Financial Services
- ☒ COMMITTEE: (APC May 29/18)
- ☐ OTHER:

- ☐ Operations
  - ☐ Public Works/Airport
  - ☐ Facilities
  - ☐ Utilities
- ☐ Recreation Services
- ☐ Parks

- ☐ Current Planning
- ☐ Long Range Planning & Sustainability
- ☐ Building & Licensing
- ☐ Engineering Development Services
- ☐ Infrastructure Management
- ☐ Transportation
- ☐ Economic Development & Tourism

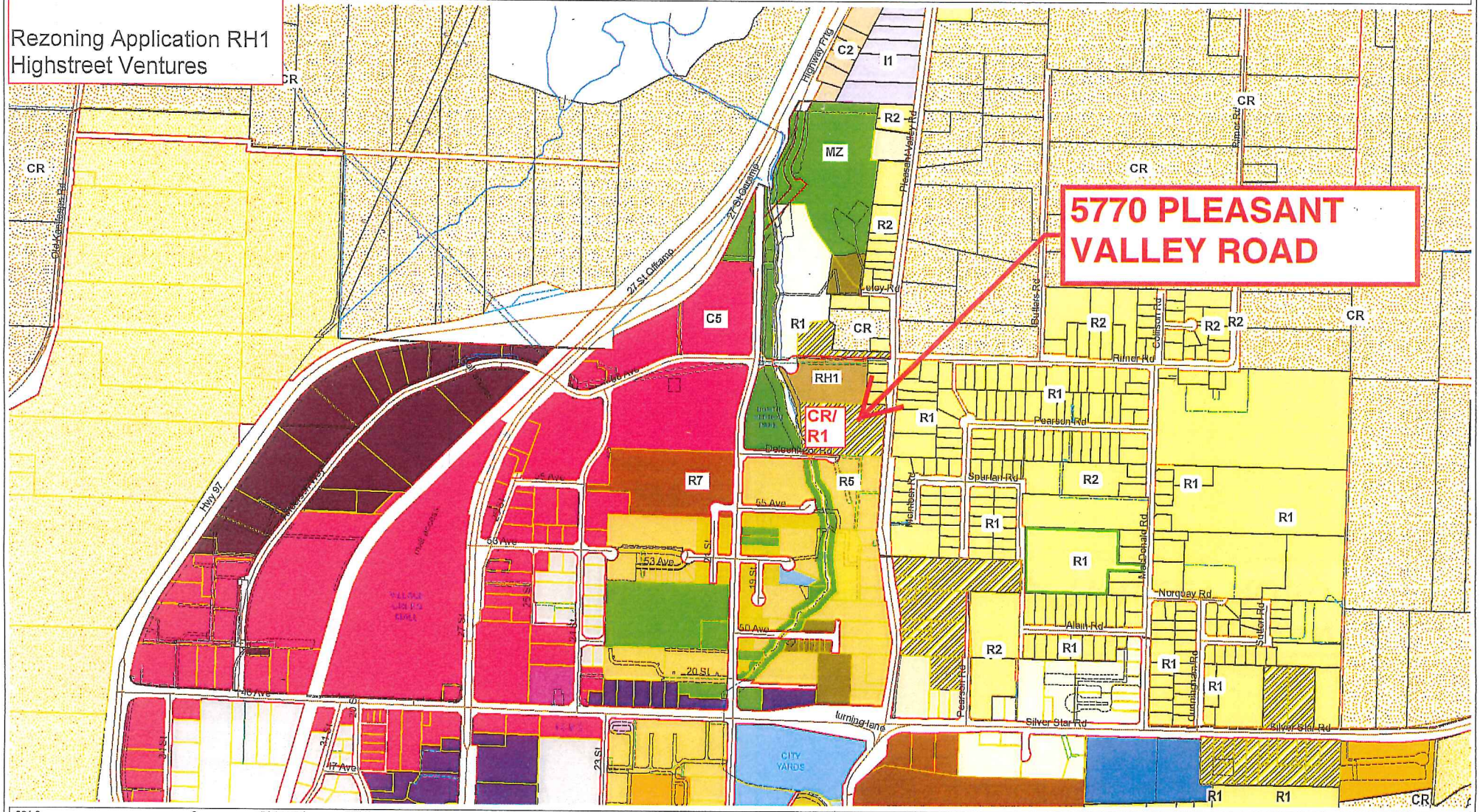
\\gw1\groups\3000-3699 LAND ADMINISTRATION\3360 ZONING AND REZONING\20 Applications\ZON00291\2 PROC\Rpt\180514 cb APC Council Rpt_ZON291.docx

Attachment 1

5770 Pleasant Valley Rd
Vernon, BC

Rezoning Application RH1
Highstreet Ventures

North Okanagan Map **Current Zoning**



391.3 0 Distance / 391.3 Meters

Scale = 1: 7,703

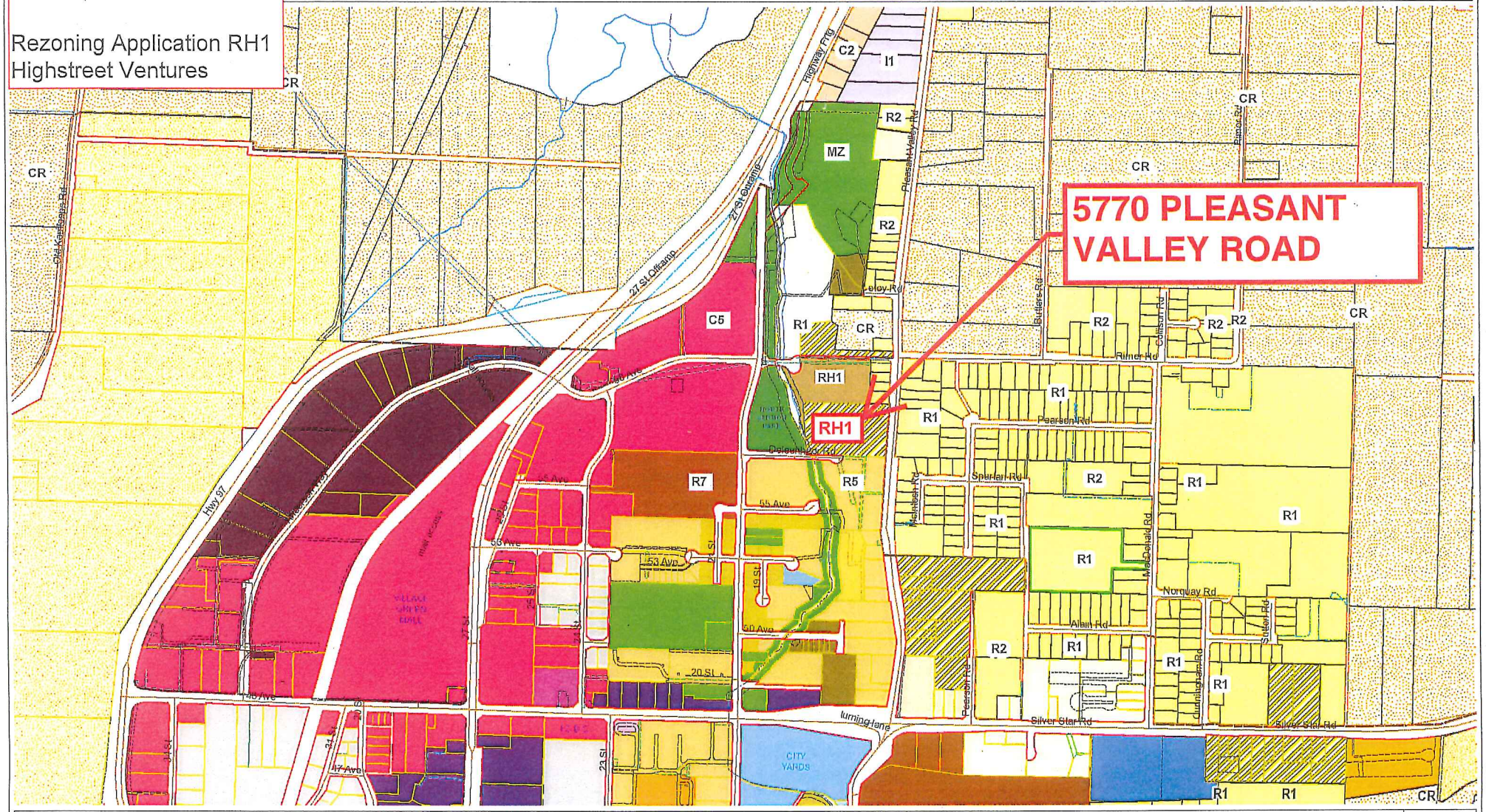
November 17, 2017

Attachment 2

5770 Pleasant Valley Rd
Vernon, BC

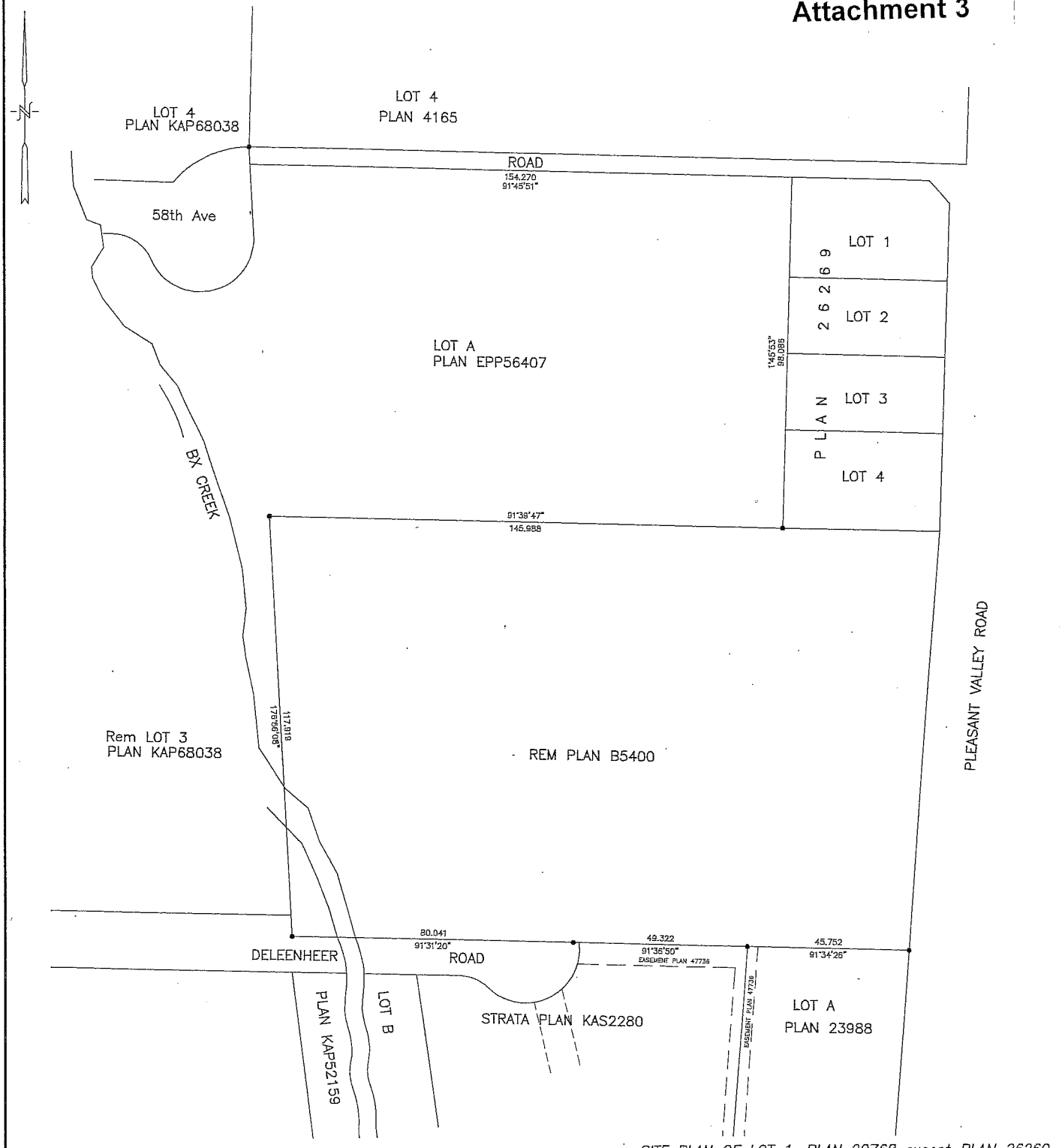
Rezoning Application RH1
Highstreet Ventures

North Okanagan Map **Proposed Zoning**



This drawing has been produced by the City of Vernon's and the Regional District of North Okanagan's Geographic Information Systems. The data provided is derived from a variety of sources with varying levels of accuracy. The City of Vernon and the Regional District of North Okanagan make no warranty or representation, expressed or implied, with the regard to the correctness, accuracy and/or reliability of the information contained herein.

Attachment 3



SITE PLAN OF LOT 1, PLAN 20768 except PLAN 26269, SEC 11, TP 8, ODYD AND THAT PART OF LOT 6 OUTLINED IN RED ON PLAN B5400; SEC 11, TP 8, ODYD PLAN 939 except PLAN 20768

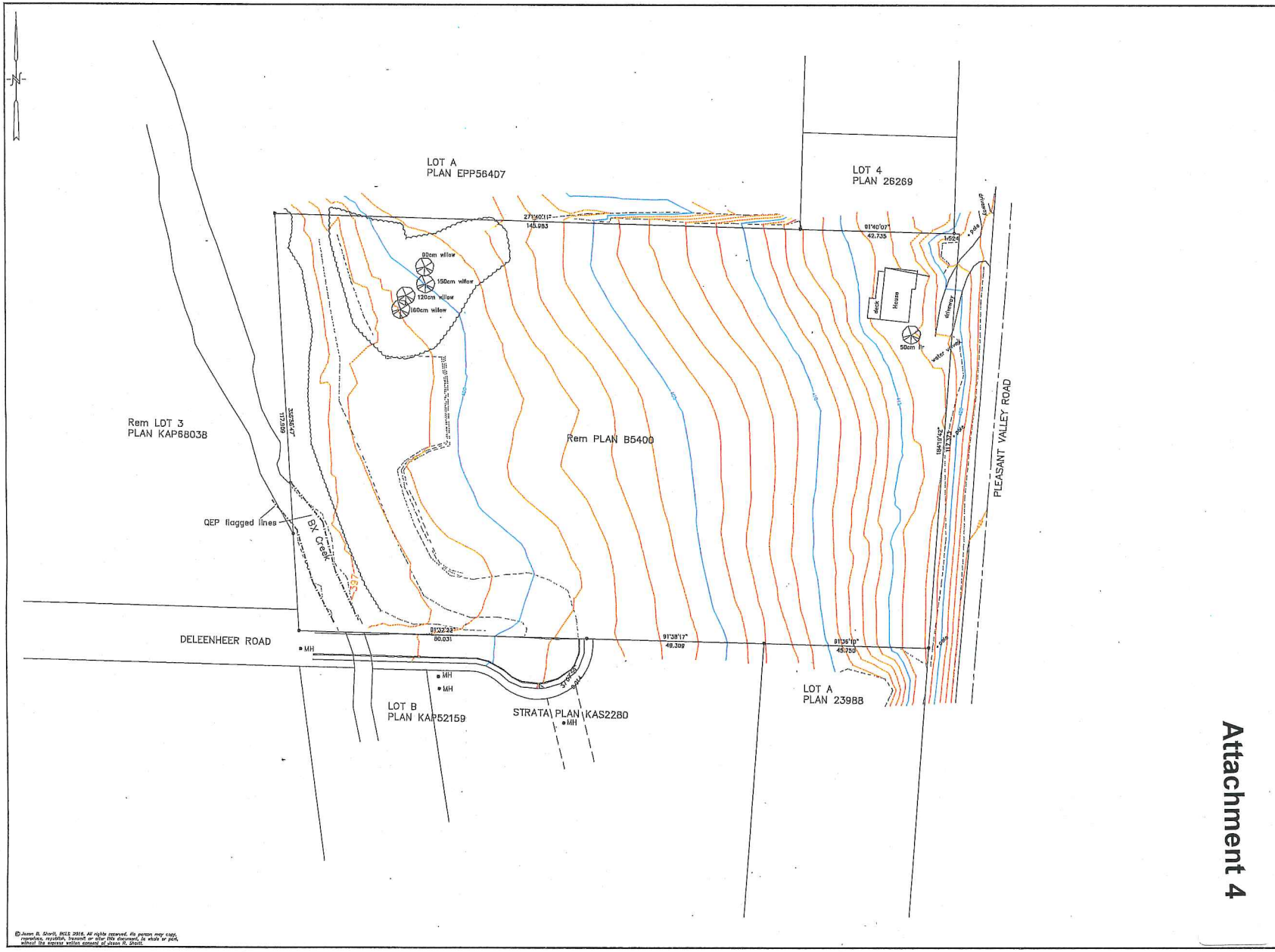
SCALE 1: 750 (ALL DISTANCES IN METRES)

AUG 6, 2017
SEP. 24 2014
JULY 15, 2009

THIS PLAN IS PREPARED FOR THE USE OF:
KUPKA

FAX: 545-2741
FILE No. 25997site
F.B. 1155 Pg. 30
19951120.1044

RUSSELL N. SHORTT
British Columbia Land Surveyor
2801-32nd STREET, VERNON, B.C. Phone 545-0511



Site Plan of That Pt of Lot 6 outlined red on Plan B5400, Sec 11, Tp 8, ODYD, Plan 939, except Plan 20768.

Client: High Street Living

SCALE 1: 500

10m 0m 10m 20m 30m

The intended plot size of this plan is 864mm in width by 559mm in height (ANSI D) when plotted at a scale of 1:500

This plan was prepared for design purposes and is for the exclusive use of High Street Living.

No visible encroachments exist on the property from any improvements situated on an adjoining property unless noted otherwise.

Distances are shown in metres and decimals thereof.

Parcel dimensions are derived from Plan B5400/ field survey.

This plan shows horizontal ground level distances except where otherwise noted. To compute grid distances multiply ground level distances by the combined factor of 0.9998520.

Bearings and distances are derived from field survey observations and are referred to the central meridian of UTM zone 11N, NAD83 CSRS

This plan has been prepared based on Land Title and Survey Authority records and a field survey completed on Sept. 13, 2017. Unregistered interests have not been included or considered.

The Certificate of Title PID 011-956-585 was searched on Aug. 24, 2017.

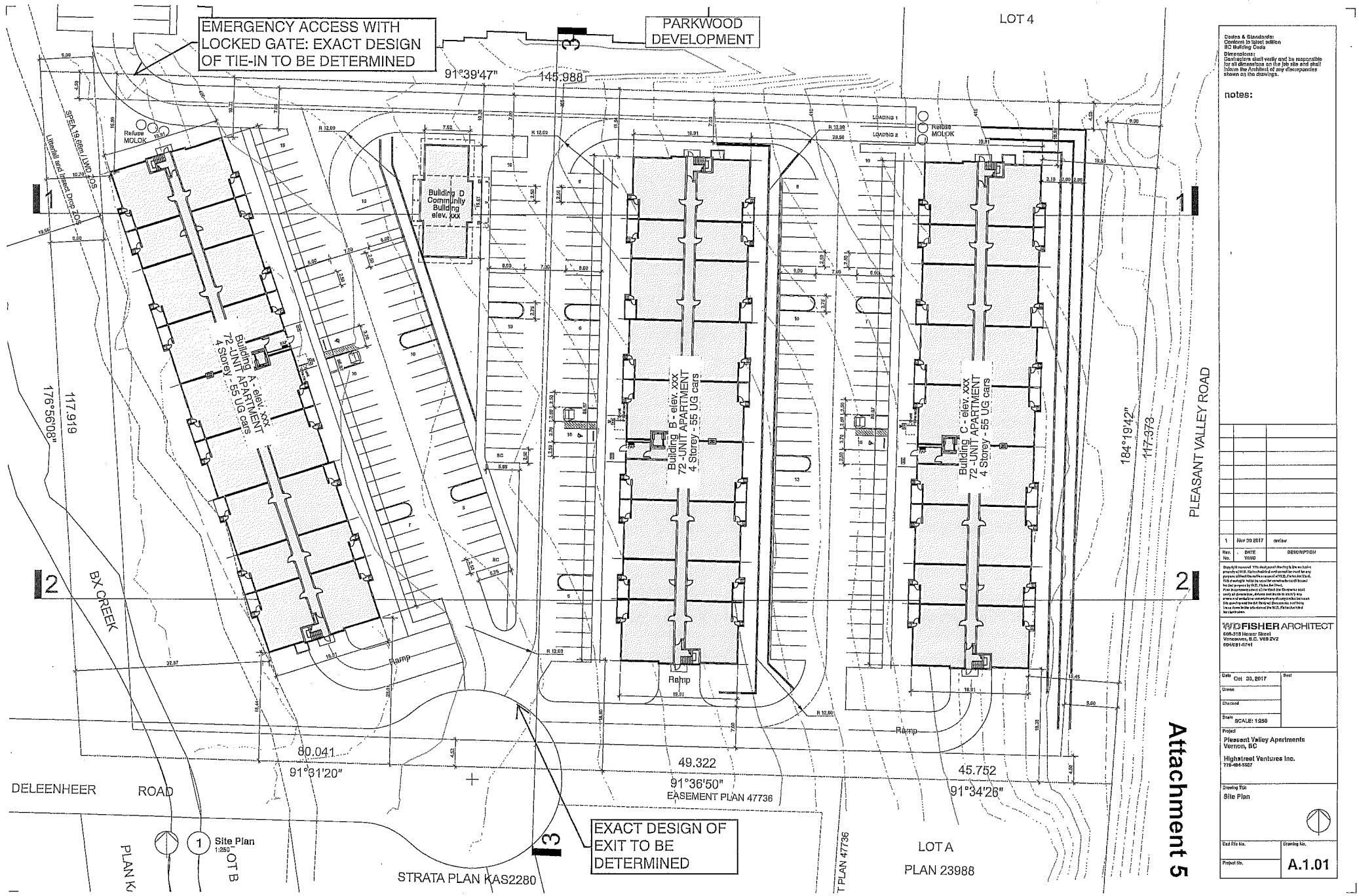
This document shows the relative location of the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or property corners.

Jason R. Shortt accepts no responsibility for and hereby disclaim all obligations and liabilities for damages including, but not limited to, direct, indirect, special, and consequential damages arising out of or in connection with and direct or indirect use or reliance upon the Plan beyond its intended use.

Attachment 4

russell shortt
land SURVEYORS
2801-32nd STREET, VERNON, B.C. Phone 545-0511

FILE: 28766
F.B. 1205 p91



Codes & Standards:
Conform to latest edition BC Building Code

Dimensions:
Contractors shall verify and be responsible for all dimensions on the job site and shall inform the Architect of any discrepancies shown on the drawings.

notes:

Rev. No.	DATE YMM	DESCRIPTION
1	Nov 29 2017	review

W.D FISHER ARCHITECT
606-318 Homer Street
Vancouver, B.C. V6B 2V2
604/681-5741

Date: Oct 30, 2017
Drawn:
Checked:
Scale: SCALE: 1:250

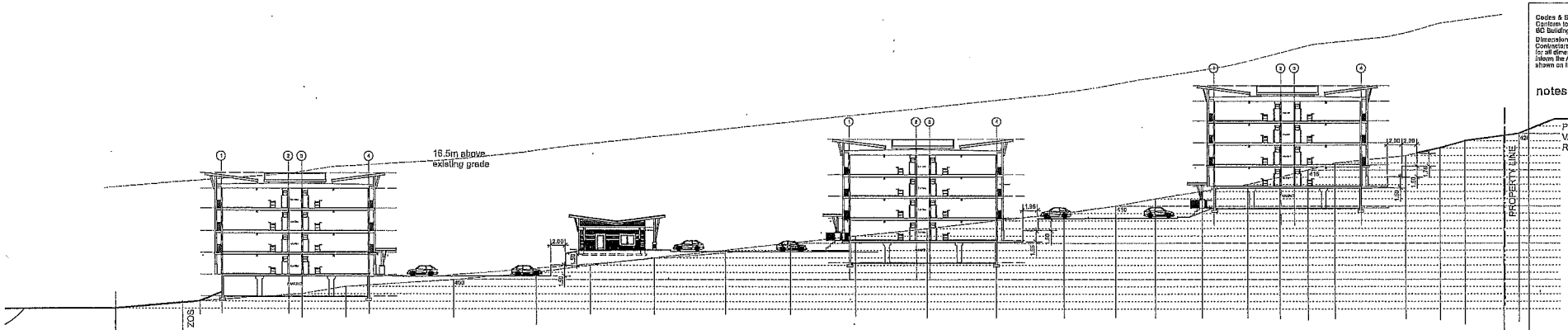
Project:
Pleasant Valley Apartments
Vernon, BC

Highstreet Ventures Inc.
778-484-5507

Drawing Title:
Site Plan

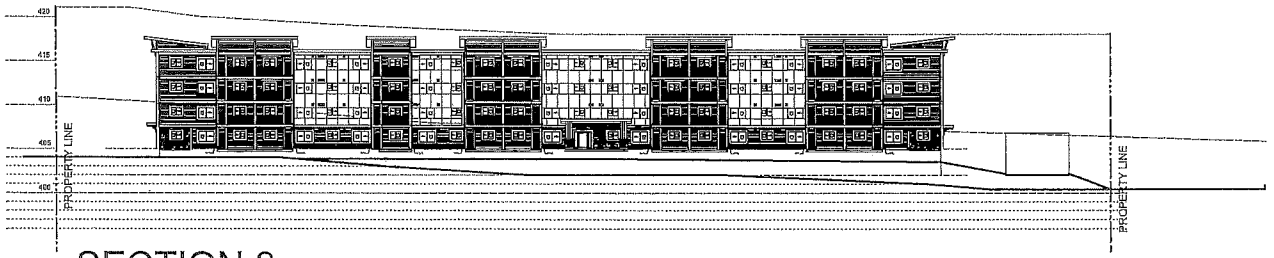
Cad File No.:
Project No.:
Drawing No.: A.1.01

Attachment 5



SECTION 1

1 Site Section
1:250



SECTION 3

2 Site Section
1:250

Project Data

Legal Description: REM PLAN B5400

Zoning:	CR/R1 rezone to RH1
Site area:	2.14 Hectares (21,447.9 sq.m.)
Address:	5770 Pleasant Valley Road, Vernon, BC
Density Proposed:	235 units max. (110 units / hectare) 216 units (100.85 units / hectare)
Height - Permitted:	16.5m max. 4.5 storeys
Front Yard:	4.5m
Rear Yard :	6.0m
side Yard:	4.5 m
Impermiable Surfaces:	85% permitted (buildings, driveways, parking) (12,329 + 21,447.9) 57.4% provided
Site coverage:	65% permitted 24.9% provided
Private open Space Required:	10 sq.m/1-bed + 15 sq.m/ 2-bed (510 + 2475) = 2,985 sq.m
Provided:	decks: 1,317.5 sq.m community building: 199.4 sq.m usable landscape area: 3,528 sq.m Total: 5,045 sq.m

Building Areas:

Building 1	Ground floor:	18,174 sq.ft (1,688.4 sq.m)
	2nd floor:	18,174 sq.ft
	3rd floor:	18,174 sq.ft
	4th floor:	18,174 sq.ft
	Total:	72,696 sq.ft (6,753.6 sq.m.)
Building 2	Ground floor:	18,174 sq.ft (1,688.4 sq.m)
	2nd floor:	18,174 sq.ft
	3rd floor:	18,174 sq.ft
	4th floor:	18,174 sq.ft
	Total:	72,696 sq.ft (6,753.6 sq.m.)
Building 2	Ground floor:	18,174 sq.ft (1,688.4 sq.m)
	2nd floor:	18,174 sq.ft
	3rd floor:	18,174 sq.ft
	4th floor:	18,174 sq.ft
	Total:	72,696 sq.ft (6,753.6 sq.m.)
Community Building:		1,715.7 sq.ft (159.4 sq.m.)
Building Foot Prints:		5,224.8 sq.m.
F.A.R :		(20,420.2 sq.m. + 21,447.9 sq.m.) = 0.95

Parking

Building A:	55 (2 bedroom) 17 (1 bedroom)
72 Units	
Building B:	55 (2 bedroom) 17 (1 bedroom)
72 Units	
Building C:	55 (2 bedroom) 17 (1 bedroom)
72 Units	

(51 X 1.25) + (165 x 1.5) = 311.25 spaces

visitor spaces (216 ÷ 7) = 30.85 spaces

Visitor Parking: 216 ÷ 7 = 30.85 spaces

Parking - Required:	342
Parking - Provided:	336 spaces (171 surface / 165 under
Loading - Required:	7 spaces
Loading - Provided:	2 space (variance required)
Bicycle - Required:	216 x 0.5 = 108 Class I 216 x 0.25 = 54 Class II
Bicycle - Provided:	108 Class I 54 Class II

Attachment 6

Codes & Standards:
Conform to latest edition
BC Building Code

Dimensions:
Contractors shall verify and be responsible for all dimensions on the job site and shall inform the Architect of any discrepancies shown on the drawings.

notes:

Rev. No.	DATE YMD	DESCRIPTION
1	Nov 03 2017	review

W.D FISHER ARCHITECT
808-319 Homer Street
Vancouver, B.C. V6B 2V2
604/681-3741

Date: Oct 30, 2017
Drawn:
Checked:
Scale: SCALE: 1:250
Seal:

Project:
Pleasant Valley Apartments
Vernon, BC

Highstreet Ventures Inc.
772-484-3597

Drawing Title:
Project Data
Site Sections

Cad File No.:
Project No.:
Drawing No.: A.1.02

Attachment 7

9.12 RH1 : Low-Rise Apartment Residential

RH1

9.12.1 Purpose

The purpose is to provide a **zone** primarily for medium **density** apartments on urban services.

9.12.2 Primary Uses

- **apartment housing**
- **care centres, major**
- **group home, major**
- **seniors assisted housing**
- **seniors housing**
- **seniors supportive housing**
- **stacked row housing**

9.12.3 Secondary Uses

- **home based businesses, minor**
- **real estate sales centres** (in apartment housing only)

9.12.4 Subdivision Regulations

- Minimum **lot width** is 30.0m.
- Minimum **lot area** is 1400m^2, or 10,000m^2 if not serviced by a **community sewer system.**

9.12.5 Development Regulations

- With a housing agreement pursuant to Section 4.9, the maximum **density** shall be 110.0 units per gross hectare (44.5 units/gross acre).
- Where **parking spaces** are provided completely beneath habitable space of a primary **building** or beneath useable common amenity areas, providing that in all cases the **parking spaces** are screened from view, the maximum **density** shall be 125.0 units per gross hectare (51 units/gross acre). Where all the required parking is not accommodated completely beneath the habitable space of a primary **building** or useable common amenity areas, the additional density permitted shall be determined through multiplying the additional 25.0 units per gross hectare (10 units/gross acre) by the percentage of parking proposed to be provided beneath habitable space of a primary **building** or useable common amenity areas.
- Maximum **site coverage** is 65% and together with driveways, parking areas and **impermeable surfaces** shall not exceed 85%.
- Maximum **height** is the lesser of 16.5m or 4.5 **storeys**, except it is 4.5m for **secondary buildings** and **secondary structures.**
- Minimum **front yard** is 4.5m.
- Minimum **side yard** is 4.5m, except it is 4.5m from a **flanking street.**
- Minimum **rear yard** is 9.0m, except it is 1.0m for **secondary buildings.**
- Maximum **density** is 100.0 units per gross hectare (40.5 units/gross acre).

9.12.6 Other Regulations

- A minimum area of 5.0m^2 of private open space shall be provided per **bachelor dwelling, congregate housing bedroom** or group home **bedroom**, 10.0m^2 of

private open space shall be provided per 1 **bedroom dwelling**, and 15.0m^2 of private open space shall be provided per **dwelling** with more than 1 **bedroom**.

- No continuous **building frontage** shall exceed 40.0m for a 3 to 4.5 **storey building**, or 65.0m for a 2 **storey building**. If the frontage is interrupted by an open courtyard equivalent in depth and width to the **building height**, the maximum continuous 4.5 **storey building frontage** may be 80.0m provided that no **building** section exceeds 40.0m.
- For multi-unit residential housing, one **office** may be operated for the sole purpose of the management and operation of the multi-unit residential **development**. *(Bylaw 5440)*
- For **seniors assisted housing, seniors housing and seniors supportive housing,** a safe drop-off area for patrons shall be provided on the **site.**
- In addition to the regulations listed above, other regulations may apply. These include the general **development** regulations of Section 4 (secondary **development**, **yards**, projections into **yards**, lighting, agricultural setbacks, etc.); the specific use regulations of Section 5; the **landscaping** and fencing provisions of Section 6; and, the parking and loading regulations of Section 7. *(Bylaw 5339)*
- As per Section 4.10.2 - All **buildings** and **structures**, **excluding perimeter fencing (garden walls and fences)** on **lots abutting** City Roads as identified on Schedule "B" shall not be sited closer to the City Road than the setback as per the appropriate zone measured from the offset Rights of Way as illustrated on Schedule "B". *(Bylaw 5440)*

DIVISION SEVEN - RESIDENTIAL ZONES

701 Residential Single Family Zone (R.1)

1. Permitted Uses of Land, Buildings, and Structures

Subject to the provisions of Divisions Three and Four of this bylaw, the following uses and no others shall be permitted in the *Residential Single Family Zone (R.1):*

a. Accessory residential buildings including domestic garages, free standing carports, covered swimming pools, residential storage buildings, greenhouses, gazebos, etc.
b. Boarding house use subject to the provisions of Section 701.10.a. of this bylaw
c. Community care facilities (if they are permitted to be carried out pursuant to the provisions of the *Community Care and Assisted Living Act* notwithstanding zoning bylaw requirements to the contrary) subject to the provisions of Section 402 of this bylaw
d. Home occupation use subject to the provisions of Section 403 of this bylaw
e. Public parks and playgrounds
f. Restricted agricultural use subject to the provisions of Sections 401.2. and 701.10.b. of this bylaw
g. Single family dwellings

2. Buildings Per Lot

The number of buildings allowed per lot shall be not more than:

a. one (1) single family dwelling; and

b. one (1) domestic garage or free standing carport or covered swimming pool and one (1) other accessory residential building; or two (2) accessory residential buildings other than garages, carports or covered pools.

3. Floor Area

a. The floor area for a single family dwelling shall be not less than 85 square metres (914.9 square feet) on one (1) floor, except that the floor area on one (1) floor may be reduced to 60 square metres (645.8 square feet) where there are two (2) floor levels exclusive of the basement floor.

b. The gross floor area for accessory residential buildings shall be not greater than 80.3 square metres (864.37 square feet) having a horizontal dimension of not more than 11 metres (36.09 feet) for domestic garages and free standing carports; 80.3 square metres (864.37 square feet) having a horizontal dimension of not more than 12.2 metres (40.06 feet) for covered swimming pools; and be not larger than 15 square metres (161.5 square feet) for all other accessory residential buildings and structures.

701 4. Height of Buildings and Structures

a. The height of residential dwellings shall not exceed the lesser of 9 metres (29.53 feet) or two (2) storeys except where the average natural slope of the lot exceeds five percent (5%), in which case the height of residential dwellings on the downhill side of a road shall not exceed a height of 5 metres (16.40 feet) above the centre line of the road immediately adjacent to the center of the front of the residence and residential dwellings located on the uphill side of the road shall not exceed a height of 5 metres (16.40 feet) above the mid point of the rear property line on which the residence is located. In no case shall the height of residential dwellings exceed a height of 11 metres (36.09 feet) on lots that exceed five percent (5%) average natural slope; and

b. The height of garages and free standing carports shall not exceed 5 metres (16.40 feet) above the driveway at the entrance to the garage or carport. All other accessory buildings shall be constructed with a maximum height of 5 metres (16.40 feet).

5. Lot Area

Lots that are proposed to be subdivided within this zone shall have an area of not less than 560 square metres (6028 square feet) where the lot is serviced by community sewer and community water and not less than 1 hectare (2.471 acres) where the lot is serviced with an on-site septic tank effluent disposal system.

There shall be no minimum lot area required for lots created for public parks and playgrounds.

Where a lot is a panhandle lot, that access strip or panhandle shall not be calculated as part of the minimum lot area.

6. Lot Coverage

Lot coverage shall be not greater than thirty five percent (35%) of the lot area for all buildings and structures.

7. Lot Frontage

Where serviced with community water and community sewer systems, lots that are proposed to be subdivided within this zone shall have a lot frontage of not less than:

a. for interior lots, the greater of one-tenth of the perimeter of the proposed lot or 18 metres (59.06 feet); and

b. for corner lots, the greater of one-tenth of the perimeter of the proposed lot or 21 metres (68.90 feet); and

701 7. c. for lots located at the turnabout area of cul-de-sacs, not less than 9 metres (29.53 feet) provided that the average lot frontage throughout a depth of 30 metres (98.42 feet) measured along a perpendicular line commencing at the centre of the property on the frontage street complies with the required minimum lot frontages cited in 7.a. and 7.b. above; and

d. for lots located on the outside curve of a road having a radius of not more than 120 metres (393.70 feet), the lot frontages cited in 7.a. and 7.b. above may be reduced by not more than 3 metres (9.842 feet) provided that the average lot frontage throughout a depth of 30 metres (98.42 feet) measured along a perpendicular line on the centre of the property on the frontage street complies with the required minimum lot frontages cited in 7.a. and 7.b. above.

Where serviced with on-site septic tank effluent disposal systems, lots that are proposed to be subdivided within this zone shall have a lot frontage of not less than one-tenth of the perimeter of the lot.

There shall be no minimum lot frontage required for lots created for public parks and playgrounds.

8. Off-Street Parking

Two (2) off-street parking spaces shall be provided and maintained in accordance with the provisions of Schedule B of this bylaw.

9. Setbacks

a. Exterior Side Yard

Where applicable, exterior side yards free of all buildings and structures shall be provided with a depth of not less than 5 metres (16.40 feet) **except where a greater setback is required pursuant to the provisions of Section 406 of this bylaw**.

b. Front Yard

Except where a greater setback is required pursuant to the provisions of Section 406 of this bylaw, a front yard free of all buildings and structures shall be provided with a depth of not less than:

i. 7.5 metres (24.61 feet) except that;

ii. garages or carports may be setback not less than 4.5 metres (14.76 feet) from the front lot line on lots exceeding twenty percent (20%) average natural slope.

701 9. c. Rear Yard

A rear yard free of buildings and structures shall be provided with a depth of not less than:

i. 7.5 metres (24.61 feet) for single family dwellings; and

ii. 2 metres (6.562 feet) for accessory residential buildings and structures.

d. Side Yards

Side yards free of all buildings and structures shall be provided with a width of not less than 2 metres (6.562 feet).

e. ~~Water Bodies~~

~~Flood Construction Levels and Floodplain Setbacks of buildings and structures must conform with the provisions of Schedule H of this bylaw.~~

Water Bodies

Flood Construction Levels and Floodplain Setbacks of buildings and structures and Riparian Assessment Area setbacks for all development must conform with the provisions of Schedule H of this bylaw.

(B/L 2141/07)

10. Other Requirements

a. Boarding House Use

A boarding house use shall be contained wholly within the dwelling unit and shall comply with the following regulations:

i. A boarding house use shall not be permitted to be carried out within a dwelling unit larger than 425 square metres (4575 square feet) in living area; and

ii. Shall not be permitted on lots smaller than 1 ha (2.471 acres) where the lot is serviced with on-site septic tank effluent disposal systems; and

iii. Shall not contain more than five (5) sleeping units; and

iv. Meals shall not be prepared within the sleeping or rental units; and

v. There shall be no indication, from the outside, that the dwelling unit is being used for boarding house purposes; and

701 10. a. vi. Notwithstanding the provisions of this bylaw relating to off-street parking requirements, a boarding house use shall not be carried on within a dwelling unit unless off-street parking spaces are provided on the lot on which the dwelling unit is located, sufficient to meet the following requirements:

a. The number of off-street parking spaces that would be required for such dwelling unit under the off-street parking requirements of this bylaw applicable to a dwelling unit if no boarding house use was carried on within the dwelling unit; plus

b. one (1) additional off-street parking space for each bedroom within the dwelling unit used or reserved for the boarding house use; and

vii. Not more than one (1) motor vehicle shall be parked within any off-street parking space provided in conjunction with a boarding house use, and no motor vehicles shall be parked on the lot on which the boarding house use is carried on, unless such motor vehicle is parked within an off-street parking space provided in conjunction with such use.

viii. The owner of the boarding house use must obtain the following:

a. an access permit from the *Ministry of Transportation*; and

b. an on-site septic tank effluent disposal permit from the *Interior Health Authority*, to provide for the discharge of effluent from any combined residential/boarding house use of the subject property where the site is not serviced by a community sewer system. If the subject property is serviced by a community sewer system then the owner must obtain the permission of the authority having jurisdiction to discharge effluent from the combined residential/boarding house use of the land to the sewer system; and

c. where applicable, the permission of any applicable domestic water purveyor to draw water from their respective community water system in order to supply additional water to the boarding house facility; and

d. obtain the permission of the *Building Inspector* and the *Fire Prevention Officer* for the *Regional District* for the proposed boarding house facility.

701 10. b. Restricted Agricultural Use

A Restricted Agricultural use shall not be permitted on lots smaller than 1 hectare (2.471 acres) and all buildings and structures used for restricted agricultural use shall be provided with setbacks in accordance with the provisions of Section 701.9.e. and Schedule G (agricultural use) of this bylaw.

c. Unenclosed parking and storage

No person at any time shall park or store any commercial vehicle, truck, bus, self-propelled camper, travel trailer, tow truck (or parts of any of the above) or any equipment or building material per dwelling unit in a residential zone, except:

i. one (1) truck or commercial vehicle not exceeding 6,350 kg G.V.W. (14,000 pounds G.V.W.) rated capacity; and/or

ii. one (1) self-propelled camper or travel trailer provided that the overall length does not exceed 10 metres (32.81 feet); and/or

iii. trucks or equipment required for construction, repair, servicing, or maintenance of the premises when parking during normal working hours; and/or

iv. one (1) boat or vessel not exceeding a length of 10 metres (32.81 feet); and/or

v. building materials when the owner, lessee, or occupier of the premises is in possession of a valid building permit, provided that the materials stored are in connection with the construction or development of the building situated on the same property as which the material is stored pursuant to the building permit.

d. ***Notwithstanding the permitted uses listed under Section 701(1) and subject to the commercial requirements of Schedule B - Off-Street Parking and Schedule F - Screening and Landscaping of this bylaw, Dog Accommodation and a Dog Day-Care Facility shall be permitted on that property legally described as Lot 5, Section 23, Township 8, ODYD, Plan 2728, Except Plans 16975, 21405, 28462 and H433 and located at 7432 Pleasant Valley Road, Electoral Area 'B'.***

Dog Accommodation and Dog Day-care means a use providing for the daytime and overnight boarding of dogs. During the daytime dogs may roam outdoors within the property, without being confined to kennels. Dogs will be enclosed within a confined area of the property during the night time. The boarding of dogs is permitted in concentrations of 89 dogs or less per hectare (36 dogs per acre). (B/L 2546/12)

sage environmental

LIMITED PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

5770 Pleasant Valley Road

THAT PART OF LOT 6 PLAN 939 OUTLINED RED ON PLAN B5400 SECTION 11 TOWNSHIP 8 OSOYOOS DIVISION YALE DISTRICT EXCEPT PLAN 20768.PID

PID 011-956-585

LATITUDE: 50°17'15.96" NORTH
LONGITUDE: 119°15'18.87" WEST

FOR
HIGHSTREET VENTURES INC.
702-1708 DOLPHIN AVE.
KELOWNA, BC V1Y 9S4
SEC FILE: 17C013

EXECUTIVE SUMMARY

Highstreet Ventures Inc. of Kelowna, BC (the Client), retained Sage Environmental Consulting Ltd. (SEC) to carry out a Limited Phase 1 Environmental Site Assessment (ESA). The Subject Site consists of one legal lot at 5770 Pleasant Valley Road.

SEC understands that the Client requires this Phase 1 to identify potential environmental liabilities relating to the Site. SEC understands that the purpose and use of this Phase 1 is a due diligence measure to assess the environmental quality of the Site prior to sale.

Based on the completion of this Phase 1 ESA on the Site, SEC concludes that no Areas of Potential Environmental Concern (APECs) were identified at the Site.

Based on the available information, it is our opinion that further contaminated sites investigations are not warranted at this time.

SAGE
ENVIRONMENTAL CONSULTING LTD

RIPARIAN AREAS ASSESSMENT REPORT

5770 Pleasant Valley Road and 5900 Rimer Road
Vernon BC

Lot 6, Plan 939, Section 11, Township 8, ODYD - except Plan 20768 that part outlined red on plan B5400
PID: 011-956-585

Lot 1, Plan 20768 except Plan 26269, Section 11, Township 8, ODYD
PID: 002-848-015

119°15'21" west
50°17'18" north

Prepared for:
Karl August Fürst von Sayn-Wittgenstein
1236 Pridham Avenue
Kelowna, BC V1Y 6B4

July 17, 2009
Amended September 24, 2009

SEC File: KAVN09-01

SAGE ENVIRONMENTAL CONSULTING LTD
2503 35th Ave Vernon BC V1T 2S6
Phone (250)558-0627
Fax (250)558-0697
email info@sageenvironmental.ca
web www.sageenvironmental.ca

EXECUTIVE SUMMARY

Karl August Fürst von Sayn-Wittgenstein, Land Owners of 5770 Pleasant Valley Road and 5900 Rimer Road, Vernon BC (subject site or properties) retained Sage Environmental Consulting Ltd (SEC) to complete a riparian areas assessment as required for an official community plan (OCP) amendment for an undeveloped property in Vernon BC. SEC understands that the riparian area assessment is to meet the requirements outlined in the British Columbia, Riparian Areas Regulation (RAR)[1]. Submission of this assessment is to be made to the City of Vernon for preliminary evaluation of the proposed activities and mitigation measures by the Environmental Development Review Group (EDRG) with a subsequent submission to the British Columbia provincial riparian areas regulation notification system for approval.

The subject site is comprised of to two adjacent lots at 5770 Pleasant Valley Road and 5900 Rimer Road, Vernon BC. The site is comprised of an approximately 3.6 hectare agricultural and residential parcel. This report pertains to an OCP amendment for the subject site. Construction activities are not to be undertaken at this time.

Riparian habitat exists on the subject property along BX Creek, a ditch and a wetland area. The riparian length of BX Creek within 30 m of the subject site is 184m in length. The ditch is 115m long and the wetland covers and area of 754m^2. Sensitive habitat concerns for this site are BX Creek which provides Rainbow Trout habitat. The streamside protection and enhancement area (SPEA) for BX Creek is set at 15m above the high water mark (HWM) for this location. The ditch which is not connected by surface flow to BX Creek has a 2m wide SPEA placed on both sides. The wetland SPEA varies from 15 to 26.2 m in width above the HWM.

SPEA recommendations for this report are focuses on enhancement measures with limited protection measures provided at this time. Once a rezoning, subdivision and construction scheme have been established for this location an amended riparian areas assessment or new submission may be require to mitigate the potential damages from proposed activities. Issues of concern outlined for the SPEA are erosion and sedimentation, protection of trees, and encroachment into protected areas. The primary sensitive receptor for this location is BX Creek. The greatest threat to water quality during construction is sediment loading caused by erosion of exposed soils. To mitigate this threat, erosion and sediment control measures will be applied to the subject site during and after construction phases. Measures to protect

[1] http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/regulation.pdf

2.3.2 Specific Activities

Initial activity will be limited to environmental assessment, surveying, and design work to prepare the information necessary for the OCP amendment. This work is non intrusive and non disruptive of the natural site features. Currently the OCP amendment is the extent of work to be undertaken by this proponent.

3.0 RIPARIAN AREAS ASSESSMENT

3.1 Assessment

The Riparian Areas Assessment was carried out based on the assessment criteria provided by the British Columbia, Ministry of Environment (MoE), Environmental Stewardship Division[4]. The subject site consists partially of the riparian area of the eastern bank of BX Creek in Vernon, BC. The site potential vegetation type (SPVT) is trees (TR) for this location. Based on the SPVT and channel width, the Zone of Sensitivity (ZOS) for large woody debris and bank stability (LWD) was determined to be 11.7m above the HWM. The litter fall and insect drop ZOS was determined to be 15m above the HWM for this location based on the SPVT. The shade ZOS was determined based on channel width and SPVT with a width of 11.7m. The litter fall and insect drop ZOS was the determining factor for the width of the streamside protection and enhancement area (SPEA) setback for this property of 15m above the HWM. The ditch on site has been constructed to drain a groundwater seepage on the property. The ditch flows in two directions from a high point near the centre of the north lot. The ditch is not connected to BX Creek by surface flow, but flows into a wetland which then reaches BX Creek. A SPEA of 2m was placed on either side of the 115m long ditch above the HWM. The wetland near the western property boundary appears to have predominately subsurface flow to BX Creek. The wetland covers 754m^2 and would be classified as a swamp with a low potential for seasonal flooding. SPEA placement for the wetland varies from 15m on the north side up to 26.2m on the south side. The wetland SPEA covers 2332.9m^2. The total area covered by SPEA at this location is 4989.6m^2. The HWM for all features was marked in the field by a QEP (M. Davidson) and surveyed in place by a BCLS (J. Shortt). See Appendix A – Riparian Areas Assessment Forms and the Attached Site Plan for more detail.

4.0 MEASURES TO PROTECT AND MAINTAIN THE SPEA

The following measures are outlined to protect, enhance and maintain the SPEA as required by the Riparian Areas Regulation. For this stage of the project no construction activities are proposed. It is likely that a supplementary or amended riparian areas assessment will be necessary for this site once subdivision and

[4] http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/ImplementationGuidebook.pdf

construction plans are proposed. At that time a QEP can outline more plan specific protection measures to suit the construction proposal at the subject location.

4.1 Danger Trees

Danger trees were not observed within the assessed SPEA, no recommendation is provided at this time.

4.2 Windthrow

The established riparian vegetation showed no signs of significant windthrow. The established riparian areas are not to be disturbed by these and future activities, no recommendation is provided at this time.

4.3 Slope Stability

The subject property has no slopes greater than 30%. No areas of slope instability were noted on the subject site. Slope stability is not considered to be an issue at this location. No recommendation is provided.

4.4 Protection of Trees

No construction is proposed at this time. No Trees in the SPEA are proposed for removal.

Future development work may encroach upon some trees in the SPEA, for all of these trees the following measures apply:

- Ground level should not be altered around the trees
- Work and equipment should be kept away from the trees whenever possible, heavy equipment can damage tree root systems
- Storage of construction material and equipment should be done at a 5m minimum distance from trees in the development area or SPEA
- Wastes from the project are not to be discharged in or near the SPEA
- Communicate the protection measures to contractors and workers

Any trees in the SPEA that are within 5m of the working area boundary should be assessed by a certified arborist for additional protective measures, should they be necessary.

4.5 Encroachment

The proposed site design is to be developed including all SPEA setbacks established in this assessment. Development based on such a plan should not encroach on the established SPEA. A QEP environmental monitor should be consulted prior to rezoning or subdivision planning and application submission to ensure SPEA locations and measures have been appropriately applied on the subject site. Prior to initiation of land development a QEP environmental monitor should be consulted to ensure

proper placement of SPEA boundary locations and appropriate application of protection and enhancement measures.

4.5.1 NATURALIZATION OF THE SPEA

The riparian area on both sides of the ditch has been historically disrupted by the excavation of the ditch and deposition of the excavated soils in the riparian area. The historic disturbance has allowed invasive plants to cover the riparian area. Thistle spp. and morning glory spp. are prolific along portions of the ditch. Treatment to remove and reduce these invasive plants is recommended as a condition of development. Removal of the weeds and removal or treatment of the soil may be necessary prior to establishment of native species that would be suitable to SPEA. The SPEA around the wetland is in poor condition on the south side with a primary cover of agricultural grass species and weeds. The area outlined as wetland SPEA should have native vegetation restoration planting carried out from the HWM to the top of the SPEA. Treatment to remove agricultural and weed species may be necessary as well as treatment or replacement of the top soil layer from this area to encourage native vegetation establishment.

An average planting density of 1.5 m on center for all species should be applied with tree spacing at 3 m on center. This property is in the Interior Douglas Fir very hot dry biogeoclimatic Zone (IDF xh1). Species suitable to this zone and naturalization restoration initiatives include: tree species such as Paper Birch (*Betula papyrifera*), Interior Douglas Fir (*Pseudotsuga menziesii var. glauca*), Douglas Maple (*Acer glabrum*), and shrubs such as Tall Oregon Grape (*Mahonia aquifolium*), Snowberry (*Symphocarpos albus*), Red Osier Dogwood (*Cornus sericea*), and various Willow (*Salix* spp.). A mulching layer or native grasses should be applied between the installed plants to further protect against long term erosion concerns.

4.6 EROSION AND SEDIMENT CONTROL

As part of the riparian areas assessment an erosion and sediment control (ESC) plan is required. The goals of the ESC plan are to reduce the erosion potential and to capture and treat waters with suspended sediment before entering SPEA. While the proposed scope of work at this time is not intrusive or disruptive to on site soils the following if provided as guidance for erosion and sediment control during future development phases.

4.6.1 Areas Sensitive to Erosion

The proposed activities for this submission will not produce an erosion risk as the purpose at this time is an OCP amendment for the property. There are no specific recommendations provided for the activities of the OCP amendment application submission.

Future development will likely include the excavation of soils and removal of vegetation to provide space for construction. These activities have potential to cause or initiate soil erosion processes. The following outlines basic erosion and sedimentation protection practices. A complete erosion and sedimentation control plan should be prepared and implemented once development plans have been determined for the subject site.

4.6.2 Erosion and Sediment Control Measures

Recommended ESC controls include: scheduling and staging; soil treatment such surface protection and retention of top soil; barrier protection measures such as silt fencing or berms; and dust control measures. The following measures are provided for protection of soils and prevention of erosion during construction for this location. These measures should be reviewed in detail prior to development at this location with site specific measure provided by a QEP to ensure erosion and sedimentation protection.

4.6.2.1 Scheduling and Staging

Vegetation removal should be limited to the footprint of the project wherever possible. To limit the soil exposure time, vegetation should not be cleared until just prior to work commencing in the construction area. Work scheduling should be planned to allow for exposed soil piles to be removed from the project site or covered as quickly as possible to reduce the threat to erosion and sediment transport into the SPEA. Soil work should be delayed on site during precipitation events.

4.6.2.2 Soil Treatment

Any exposed soils after construction at this location are to be vegetated. This will provide long term protection from erosion and sedimentation. Where possible top soils removed during construction activities should be set aside for reuse in the landscaping phase of the project. During construction exposed soil piles should be covered with polyethylene sheeting or a similar cover as short term erosion protection when not in use.

4.6.2.3 Barrier Protection Measures

Silt Fencing and, or berming may be installed above the SPEA to prevent the transport of sediment into the SPEA from potential upland erosion events. The barrier will provide the added benefit of a visual obstruction to SPEA encroachment during the construction phase. The barrier should be placed on approximately level ground and should span the length of the lower work area boundary to ensure containment. Appropriate short term berming materials are organic mulches such as wood chips or geotextile wrapped soils. If silt fencing is used it must be properly installed to manufacturers specifications to ensure effective sediment control. All

controls should be placed prior to construction activity or excavation at this location and remain in place until all construction activities are completed.

4.6.2.4 Dust Control

Dust control may be necessary during the construction phase. Suppression with water is a suitable method of dust control. During dust suppression with water, the water must not be allowed to accumulate in pools or start to run down the slope. Running water within the work area may initiate erosion and sedimentation processes.

4.7 Stormwater Management

The proposed activities will not affect the stormwater regime at this location. No recommendation provided at this time.

Future development and construction activities will likely affect the stormwater regime for the subject site. A detailed stormwater management plan should be developed by a QEP based on the proposed construction development plan once available.

4.8 Floodplain Concerns

The SPEA starts at the visible HWM and extends up to 15m lateral distance above HWM. The property grades upward from the HWM of BX Creek in an eastward direction. Floodplain provisions for this area are set at 15m above the HWM of any watercourse[5]. The SPEA matches and exceeds this setback distance so floodplain concerns are considered low risk. Development is not to occur within the SPEA at this location. No further recommendation is provided.

[5] Division Seventeen Floodplain Management Provisions – Schedule H 1701 Floodplain Management Provisions, http://www.rdno.ca/publications/bylaws/1888/1888_schedule_h.pdf