

**CORPORATION OF THE CITY OF COURTENAY
COUNCIL MEETING AGENDA**

Date: September 21, 2020
Time: 4:00 p.m.
Location: City Hall Council Chambers

AMENDED AGENDA

We respectfully acknowledge that the land on which we gather is the *unceded traditional territory of the K'ómoks First Nation*

Due to the Coronavirus COVID-19 emergency, the City of Courtenay with the authority of Ministerial Order No. M192 Local Government Meetings & Bylaw Process (COVID-19) Order No. 3 implemented changes to its open Council meetings.

In the interest of public health and safety, and in accordance with section 3(1) of Ministerial Order No. 3 M192, in-person attendance by members of the public at Council meetings will not be permitted until further notice. Council meetings are presided over by the Mayor or Acting Mayor with electronic participation by Council and staff via live web streaming.

K'OMOKS FIRST NATION ACKNOWLEDGEMENT

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- 7.6 Councillor Theos
- 7.7 Mayor Wells

8. RESOLUTIONS OF COUNCIL

8.1 In Camera Meeting

That a Special In-Camera meeting closed to the public will be held September 21st, 2020 at the conclusion of the Regular Council Meeting pursuant to the following sub-sections of the *Community Charter*:

- 90 (1) (c) labour relations or other employee relations;
- 90 (1) (e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality.

9. UNFINISHED BUSINESS

10. NOTICE OF MOTION

11. NEW BUSINESS

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12. BYLAWS

12.1 For First and Second Reading

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(A bylaw to amend Official Community Plan Bylaw No. 2387, 2005 to change the land use designation from Industrial to Multi Residential and amend Map #2 Land Use Plan - 2700 Mission Road)

- | | | |
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| 12.1.2 | Zoning Amendment Bylaw No. 2997, 2020 (2700 Mission Road) | 517 |
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(A bylaw to amend Zoning Bylaw No. 2500, 2007 to rezone property from Industrial Two Zone (I-2) to Residential Four Zone (R-4); and that Schedule No. 8, Zoning Map be amended accordingly - 2700 Mission Road)

13. ADJOURNMENT

Minutes of a Regular Council Meeting

Meeting #: R22/2020
Date: September 08, 2020
Time: 4:00 pm
Location: City Hall, Courtenay, BC, via video/audio conference

Attending:

Mayor: B. Wells, via video/audio conference
Councillors: W. Cole-Hamilton, via video/audio conference
D. Frisch, via video/audio conference
D. Hillian, via video/audio conference
M. McCollum, via video/audio conference
W. Morin, via video/audio conference
M. Theos, via video/audio conference

Staff: T. Kushner, Interim CAO, via video/audio conference
W. Sorchta, Corporate Officer, via video/audio conference
I. Buck, Director of Development Services, via video/audio conference
C. Davidson, Director of Engineering Services, via video/audio conference
J. Nelson, Director of Financial Services, via video/audio conference
D. Snider, Director of Recreation and Cultural Services, via video/audio conference
M. Fitzgerald, Manager of Development Planning via video/audio conference
K. Collins, Manager of Recreation Programming, via video/audio conference
C. Millar, Manager of Recreation Facility Operations, via video/audio conference
E. Gavelin, Network Technician, via video/audio conference
R. Matthews, Executive Assistant/Deputy Corporate Officer

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1. ADOPTION OF MINUTES

1.1 Adopt August 17th, 2020 Regular Council meeting minutes

Moved By Theos

Seconded By McCollum

That the August 17th, 2020 Regular Council meeting minutes be adopted.

Carried

2. INTRODUCTION OF LATE ITEMS

2.1 Comox Valley Regional District (CVRD) Development Referral - 3L Developments Inc.

Moved By Morin

Seconded By McCollum

That the referral process to regional local governments from the Comox Valley Regional District (CVRD) to consider an Official Community Plan bylaw amendment and Zoning bylaw amendment related to a development application from 3L Developments Inc. for 780 new housing units by be added to the September 8th, 2020 Council agenda under section *11.00 New Business*.

Defeated

In favour: Councillors McCollum and Morin

Opposed: Councillors Cole-Hamilton, Hillian, Theos and Mayor Wells

Councillor Frisch was temporarily disconnected from the video conference meeting due to technical difficulties and was not available to vote

3. DELEGATIONS

VARY AGENDA

Moved By McCollum

Seconded By Cole-Hamilton

That Council vary the September 8th, 2020 regular Council agenda to move item 6.2 Briefing Note - 5th Street Bridge Rehabilitation Update ahead on the agenda to be addressed before item 4.1.1 5th Street Bridge Rehabilitation Project - Traffic Management Strategy Presentation under section *4.00 Staff Reports/Presentations - (a) Engineering Services*.

Carried

6.2 Briefing Note - 5th Street Bridge Rehabilitation Update (5335-20/5400-02)

Moved By Hillian

Seconded By Cole Hamilton

That the September 8th, 2020 Briefing Note, “5th Street Bridge Rehabilitation Update”, be received for information.

Carried

4. STAFF REPORTS/PRESENTATIONS

4.1 Engineering Services

4.1.1 5th Street Bridge Rehabilitation Project - Traffic Management Strategy Presentation

Moved By Frisch

Seconded By Hillian

That the 5th Street Bridge Rehabilitation - Traffic Management Strategy presentation provided by Dan Casey and Eric Sears, Urban Systems and Katie Hamilton, Tavola Strategy Group, be received for information.

Carried

Dan Casey, Transportation Planner, and Eric Sears, Municipal Engineer, Urban Systems, and Katie Hamilton, Principal, Tavola Strategy Group, presented information to Council about the 5th Street Bridge Rehabilitation project and Traffic Management Strategy.

4.2 Recreation and Cultural Services

4.2.1 COVID-19 Recovery Plan Policy: Indoor Recreation Facility Use (8000-21)

Moved By Hillian

Seconded By McCollum

That based on the September 8th, 2020 staff report “COVID-19 Recovery Plan Policy: Indoor Recreation Facility Use”, Council approves OPTION 1 as follows:

That per orders and requirements of the provincial and federal authorities to maintain physical distancing and restrict public gatherings related to the spread of the COVID-19; and, as imposed by extraordinary powers adopted March 18th, 2020 under the BC provincial state of emergency; and,

Whereas, the provincial BC Restart Plan (COVID-19) has entered Phase 3 which, under enhanced protocols allows the return to provision of certain services including preschool childcare, indoor recreational programming and facility rentals;

Therefore be it resolved that effective immediately, Council authorizes the re-opening of the City's recreation facilities for the purpose of preschool childcare, indoor recreational programming and facility rentals with the following conditions:

- a. That in the interest of public health and safety, staff amend facility use agreements and indoor use waiver forms to include COVID-19 language regarding provincial and federal guidelines.
- b. That Worksafe BC Employee Safety Plans for City staff engaged in the provision of this service has been prepared under public health aligned industry guidelines and Worksafe BC regulations.
- c. That a COVID-19 Safety Plan is completed and readily available to participants and has been prepared under public health aligned industry guidelines including orders issued by the public health officer, the Minister of Public Safety and Solicitor General and Worksafe BC regulations.
- d. That re-opening of the recreation facilities for the purposes of indoor recreation facility use and facility rentals comply with existing applicable City policies or bylaws.
- e. That City staff will review operations on a regular basis to ensure the re-opening of the recreation facilities, recreational program offerings, facility rentals and supporting facility operations are in compliance with the City of Courtenay COVID-19 Indoor Recreation Facility Use Plan Policy.

That the City of Courtenay COVID-19 Indoor Recreation Facility Use Plan Policy during the COVID-19 pandemic be effective immediately and may be subject to change:

- a. as directed under the authority of the provincial or federal governments through the Emergency Program Act or Emergencies Act Canada,
- b. until such time as the provincial state of emergency for the COVID-19 pandemic has been rescinded and local governments may resume regular operations, or
- c. by resolution of Council.

Carried

4.2.2 COVID-19 Recovery Plan Policy: Wellness Centre and Video Presentation (8000-25)

Moved By Hillian

Seconded By Frisch

That based on the September 8th, 2020 staff report “COVID-19 Recovery Plan Policy: Wellness Centre”, Council approves OPTION 1 as follows:

That per orders and requirements of the provincial and federal authorities to maintain physical distancing and restrict public gatherings related to the spread of the COVID-19; and, as imposed by extraordinary powers adopted March 18th, 2020 under the BC provincial state of emergency; and,

Whereas, the provincial BC Restart Plan (COVID-19) has entered Phase 3 which, under enhanced protocols allows the return to provision of certain services including fitness centres;

Therefore be it resolved that effective immediately, Council authorizes the re-opening of the Wellness Centre with the following conditions:

- a. That in the interest of public health and safety, staff amend Wellness Centre user waiver forms to include COVID-19 language regarding provincial and federal guidelines.
- b. That Worksafe BC Employee Safety Plans for City Staff engaged in the provision of this service has been prepared under public health aligned industry guidelines and Worksafe BC regulations.
- c. That a COVID-19 Safety Plan is completed and readily available to participants and has been prepared under public health aligned industry guidelines including orders issued by the Public Health Officer, the Minister of Public Safety and Solicitor General and Worksafe BC regulations.
- d. That the re-opening of the Wellness Centre complies with existing applicable City policies or bylaws.
- e. That City Staff will review operations on a regular basis to ensure the re-opening of the Wellness Centre and supporting facility operations are in compliance with the City of Courtenay COVID-19 Wellness Centre Recovery Plan Policy.

That the City of Courtenay COVID-19 Wellness Centre Recovery Plan Policy during the COVID-19 pandemic be effective immediately and may be subject to change:

- a. as directed under the authority of the provincial or federal governments through the Emergency Program Act or Emergencies Act Canada,
- b. until such time as the provincial state of emergency for the COVID-19 pandemic has been rescinded and local governments may resume regular operations, or
- c. by resolution of Council.

Carried

The September 8th, 2020 video presentation “COVID-19 Recovery Plan Policy: Wellness Centre”, was received for information.

4.3 Development Services

4.3.1 Zoning Amendment Bylaw No. 3012 to Allow for a Secondary Suite at 1520 Thorpe Avenue (3360-20-2009)

Moved By McCollum

Seconded By Morin

That based on the September 8th, 2020 staff report, “Zoning Amendment Bylaw No. 3012 to allow for a secondary suite at 1520 Thorpe Avenue” Council approve OPTION 1 and proceed to First and Second Readings of Zoning Amendment Bylaw No. 3012, 2020; and,

That Council considers Zoning Amendment Bylaw No. 3012, 2020 consistent with the City’s Official Community Plan; and

That Council waives the requirement to hold a public hearing with respect to Zoning Amendment Bylaw No. 3012, 2020 pursuant to Section 464 (2) of the *Local Government Act* and directs staff to give notice of the waiver of the public hearing pursuant to Section 467 of the *Local Government Act* in advance of considerations of Third Reading of the bylaw.

Carried

**4.3.2 Zoning Amendment Bylaw No. 2989 - 4070 Fraser Road
(3360-20-1915)**

Moved By Frisch

Seconded By Hillian

That based on the September 8th, 2020 Staff report, "Zoning Amendment Bylaw No. 2989 to allow for a subdivision of 4070 Fraser Road" Council approve OPTION 1 and complete the following steps:

1. That Council give First and Second Reading of Zoning Amendment Bylaw No. 2989, 2020 to rezone the subject property to CD-21 and PA-2;
2. That Council considers Zoning Amendment Bylaw No. 2989, 2020 consistent with the City's Official Community Plan;
3. That Council waives the requirement to hold a public hearing with respect to Zoning Amendment Bylaw No. 2989, 2020 pursuant to Section 464 (2) of the *Local Government Act* and directs staff to give notice of the waiver of the public hearing pursuant to Section 467 of the *Local Government Act* in advance of consideration of Third Reading of the bylaw;
4. That Final reading of the bylaw be withheld pending the completion of the park land disposal process; and
5. That Final Reading of the bylaw be withheld pending the registration of a Section 219 covenant on the subject property.

Defeated

New motion:

Moved By Hillian

Seconded By Cole Hamilton

That based on the September 8th, 2020 Staff report, "Zoning Amendment Bylaw No. 2989 to allow for a subdivision of 4070 Fraser Road" Council approve OPTION 2 and proceed to First and Second Readings of Zoning Amendment Bylaw No. 2989, 2020;

That Council direct staff to schedule and advertise a statutory public hearing with respect to Zoning Amendment Bylaw No. 2989, 2020 when regular Council meetings resume or an alternative public hearing format is approved by Council;

That Final reading of the bylaw be withheld pending the completion of the park land disposal process; and;

That Final Reading of the bylaw be withheld pending the registration of a Section 219 covenant on the subject property.

Carried

5. EXTERNAL REPORTS AND CORRESPONDENCE FOR INFORMATION

6. INTERNAL REPORTS AND CORRESPONDENCE FOR INFORMATION

6.1 Briefing Note - Recreation Fall Registration & Comox Valley Recreation Guide (8000-04)

Moved By Hillian

Seconded By Frisch

That the September 8th, 2020 Briefing Note, “Recreation Fall Registration & Comox Valley Recreation Guide”, be received for information.

Carried

7. REPORTS/UPDATES FROM COUNCIL MEMBERS INCLUDING REPORTS FROM COMMITTEES

7.1 Councillor Hillian

Councillor Hillian participated in the following events:

- Comox Valley Water Committee meeting
- CVRD Committee of the Whole meeting
- Meeting with developers regarding proposed development at Copperfield Road
- Comox Valley Elected Officials weekly teleconference briefing with Dr. Charmaine Enns, Medical Health Officer
- Lunch and Learn session with staff and Council
- Meeting with citizen regarding 6th Street Multi-Use Active Transportation Bridge
- Meeting with residents regarding proposed development on Mission Road
- CVRD Board meeting
- Meeting with representatives of Unite Here! Local 40 regarding impact of COVID-19 on employment in the hospitality industry
- Comox Valley Coalition to End Homelessness meeting

7.2 Mayor Wells

Mayor Wells reviewed his attendance at the following events:

- Meeting with representatives of Unite Here! Local 40 regarding impact of COVID-19 on employment in the hospitality industry
- Meeting with MP Gord Johns

8. RESOLUTIONS OF COUNCIL

8.1 Councillor Morin Resolution - Home Occupation Business

Moved By Morin

Seconded By Frisch

Whereas the onset of COVID-19 has created significant challenges for local businesses, and in some cases, has contributed to their permanent closures;

Whereas businesses are adapting to these challenges by reducing costs such as rent by working from home, and the City's zoning bylaw is considered restrictive in the types of allowable home occupations, particularly in relation to other local jurisdictions; and

Whereas the City of Courtenay has joined with other local governments to implement a COVID economic recovery task force, and has identified economic growth as a strategic priority;

Therefore be it resolved that Council expand support of small business by directing staff to look at options for an amendment to the zoning bylaw to expand permitted home occupations to include (but is not limited to) hairdressing, dog grooming, counselling, massage, and acupuncture; and other such businesses that do not create additional noise and parking challenges.

Carried

8.2 Councillor McCollum Resolution - Air Quality - Wood Burning

Moved By McCollum

Seconded By Frisch

Whereas, the impact of wood smoke to local air quality and health is a major concern in our community; and

Whereas, the proper storage of wood and operation of a wood burning appliance significantly reduces the negative impacts on local air quality;

Therefore be it resolved, that Council direct staff to prepare a report to consider options for a bylaw to address nuisance wood burning and ensure responsible storage of wood and operation of wood burning appliances.

Carried

8.3 In Camera Meeting

Moved By Frisch

Seconded By Theos

That a Special In-Camera meeting closed to the public will be held September 8th, 2020 at the conclusion of the Regular Council Meeting pursuant to the following sub-sections of the *Community Charter*:

- 90 (1) (c) labour relations or other employee relations;
- 90 (1) (g) litigation or potential litigation affecting the municipality;
- 90 (1) (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.

Carried

9. UNFINISHED BUSINESS

10. NOTICE OF MOTION

11. NEW BUSINESS

12. BYLAWS

12.1 For First and Second Reading

12.1.1 Zoning Amendment Bylaw No. 2989, 2020 (4070 Fraser Road)

Moved By Frisch

Seconded By Hillian

That "Zoning Amendment Bylaw No. 2989, 2020" pass first and second reading.

Carried

12.1.2 Zoning Amendment Bylaw No. 3012, 2020 (1520 Thorpe Avenue)

Moved By Cole-Hamilton

Seconded By McCollum

That "Zoning Amendment Bylaw No. 3012, 2020" pass first and second reading.

Carried

7:30 p.m. Councillors Hillian and Morin recused themselves citing a possible conflict of interest as Councillor Hillian is involved with one of the one of the organizations applying for the permissive tax exemption in 2020; and, Councillor Morin is employed by one of the organizations applying for the permissive tax exemption in 2020.

12.2 For First, Second and Third Reading

12.2.1 Tax Exemption 2021 Bylaw No. 3019, 2020

Moved By Frisch

Seconded By McCollum

That "Tax Exemption 2021 Bylaw No. 3019, 2020" pass first, second and third reading.

Carried

7:32 p.m. Councillors Hillian and Morin returned to the meeting.

12.2.2 Tax Exemption Churches 2021 Bylaw No. 3020, 2020

Moved By Frisch

Seconded By Cole-Hamilton

That "Tax Exemption Churches 2021 Bylaw No. 3020, 2020" pass first, second and third reading.

Carried

13. ADJOURNMENT

Moved By Hillian

Seconded By Cole-Hamilton

That the meeting now adjourn at 7:33 p.m.

Carried

CERTIFIED CORRECT

Corporate Officer

Adopted this 21st day of September, 2020

Mayor

The Junction

Program Overview

The Junction is a Supportive Housing Program that The John Howard Society of North Island (JHSNI) operates in the City of Courtenay. We work collaboratively with a number of community partners who provide service to individuals who are experiencing chronic homelessness. We have implemented a Coordinated Access and Assessment Committee (CAA) which meets regularly to ensure individuals who are experiencing chronic street or shelter homelessness are being assessed and prioritized for housing. The committee is composed of leaders from community organizations who work directly with the target population. The intent is to provide a comprehensive “community lens” that is able to make informed decisions based on individual needs, local resources and community needs. The committee will help to inform priorities as people move from homelessness into housing. Current membership includes a representative from: The John Howard Society of North Island, Comox Valley Transition Society, Comox Bay Care Society Care-a-van, Waichay Friendship Centre, Salvation Army Pidcock Shelter, Mental Health and Substance Use Services, Aids Vancouver Island (AVI), Dawn to Dawn Action on Homelessness Society. The committee sets the criteria for access to the housing program based on community need and priority. This information may come from Point in Time Counts and outreach workers who are providing service to marginalized, homeless individuals in our community. Our priority for housing are individuals who have been chronically street or shelter homeless and who are Comox Valley residents.

The Junction has 46 suites for single accommodation. The suites are furnished, have a bathroom and kitchenette. We provide a meal program, building security, programming and 24/7 staffing.

Program Demographics

Between April 1, 2019 and September 11, 2020 we have provided housing for 73 individuals. Of these 30 have been discharged from the program. 14 moved on to other housing or decided The Junction program was not a fit for their lifestyle, 6 individuals have deceased (one from an overdose during the COVID-19 emergency protocols), and 10 have been discharged to homelessness due to aggressive or violent behavior, and/or drug dealing. We currently have 3 empty suites which will be filled by October.

In this time frame 58% of our residents have been male, 41% female and 1% identified as non-binary. Of these 15% are indigenous and 85% are non-indigenous. We have housed 23% in the 60-69 age range; 39% have been 50-59; 16% between 40-49; 19% between 30-39 and 3% in the 19-29 age range. As these numbers show, we are providing housing to an older population, 62% who are between 50-69 years old, and who have been experiencing chronic homelessness. As a result many of our residents have significant health issues.

Program Goals and Philosophy

Our primary goal is to keep individuals housed. We do this by engaging from a client centered perspective, utilizing relationship and trust building strategies. Our staff receive training in psycho-social frameworks including harm reduction, least harm, non-violent intervention, trauma informed practice, and cultural competency. We implement structured risk assessments for residents who have more challenging behaviours to help mitigate potential risk to staff, neighbours and other residents. I am confident that the training and procedures we have in place are adequate to ensure safety for staff, community and other residents.

Our program expectations outline a staged process for consequences for problematic behaviour. Our intent with consequences are to primarily work with residents in the first stage. This includes identification of problematic behaviour, taking responsibility for it and working with staff to develop strategies which support change. It is important to understand that behavioural changes are a process that take place over time. Exiting an individual from our program to homelessness is not a decision we make lightly, nor one that will necessarily lessen the impact of any given individual's behaviour on the larger community.

Mayor Wells and Council
City of Courtenay
830 Cliffe Avenue
Courtenay, BC V9N 2J7

June 29, 2020

Dear Mayor Wells and Council,

Re: Presentation from Kiwanis Village

As the executive director of The John Howard Society of North Island, I am writing to provide a response to the presentation by Pamela Willis, Kris Anderson, and Kiwanis Village residents to Courtenay City Council on June 8, 2020.

Firstly, I would like to acknowledge the general concerns of the residents of Kiwanis Village. I'm sure it can be difficult to live in that neighbourhood, not only because of The Junction, but also because of historic problems in that location. Prior to the construction of The Junction, the neighbourhood was coping with a mini tent city on the site and incursions by homeless campers into the Village, including hooking up electrical cables and hosepipes, and leaving large amounts of garbage, needles, and other unpleasant detritus.

Listening to the presentation, I recognized that many of the complaints clearly preceded the existence of The Junction or were unrelated to The Junction. For example, one lady explained that she had been unable to sleep for three years (although The Junction has only been open for just over a year); there was a complaint that people are sleeping in the bus stop (residents of The Junction are very grateful to have their own beds and no longer need to sleep outside).

Some of the complaints are from the earlier weeks when we were settling in 46 new residents. For example, a female resident with significant mental illness was rapping on people's windows. She is no longer living at The Junction. I can understand that, when describing the challenges they have faced, a senior in Kiwanis Village will reference all the problems they have experienced including those that are no longer occurring. Given that, as we solve one problem, another may crop up, it can certainly feel as though the problems don't go away. However, it is not necessarily due to inaction on our part but may be a fresh problem that we are working on.



We are aware that drug dealing goes on in the neighbourhood, particularly along the corridor of the train tracks. Residents of The Junction may well be involved in purchasing or selling drugs. We are able to monitor whether this is taking place inside our building and on our grounds but we are not able to police the entire neighbourhood. If we see a suspicious vehicle, we take a photo of the license plate and call it into the RCMP. If we suspect we are witnessing drug dealing, we telephone the RCMP.

We have had a number of calls regarding noise from radios or televisions in the building. If we get a call, we take steps to identify where the noise is coming from, usually by walking around the exterior of the building. It seems sound travels from an open window more than it travels inside the building but, when we identify noise that we consider excessive, we ask the resident to turn the sound down or off and they typically comply immediately. Some near neighbours have let us know that they can sometimes hear 'music/TV but it is faint'. Other neighbours are clearly more bothered by this. In addition to responding to direct complaints, staff do an hourly walk around the interior and exterior of the building to listen for noise and/or disturbances. Unfortunately, as anyone who has lived in apartment blocks knows, sound from neighbours' televisions and radios is not uncommon.

We get some complaints in which the caller makes an incorrect assumption that the individual they are calling about is a resident of The Junction. For example, a very abusive caller told us that an ambulance had come to the tracks to attend to a "small indigenous man who was smoking crack" and who she believed must be one of our residents. In fact, the man taken up by ambulance was not a resident. We nevertheless thanked the caller for the information until she began to swear and speak disrespectfully at which point our staff was obliged to hang up the call.

Many of our residents have significant health challenges which go hand in hand with many years of neglect and living on the street, for example, diabetes, cancer, epilepsy, emphysema, bronchitis, and mental illnesses. We are obliged to call ambulances quite frequently but the least common reason is a drug overdose. We have health care professionals attending The Junction regularly to support the residents including doctors, nurses, and home care.

One of the impact statements suggested that a Kiwanis Village resident had suffered a physical assault. I certainly hope that was reported to the RCMP. We have no records of assaults by the residents of The Junction. It is a concern to us to hear this reported along with the implication that the offender was a resident of The Junction when there is no evidence to back this up. We find this a very damaging allegation, particularly when it is picked up by the local media.

The community advisory committee has met regularly since May 2019 except for unusual weather events (heavy snowfall) and a recent gap as a result of COVID-19. A meeting is scheduled for June 2020.

In closing, we understand the concerns of the residents of the Kiwanis Village and are doing everything we can think of to keep the area as safe and comfortable as we can, including move the smoking shelter that

was a source of noise and disruption. When we get complaints, we take action as quickly as we can. However, we are not able to police the entire area nor solve some of the problems that existed before The Junction and will no doubt continue so long as society does not have the resources to provide very vulnerable people with all the help they need. As an additional note, we have been approached by several neighbours who live directly across from The Junction to inform us that the complaints sent to council are not representative of all Kiwanis residents but, in fact, the presence of The Junction has improved the local situation.

We remain willing to work with neighbourhood residents through our community advisory committee, which includes a City representative, and any other recommended processes, and to speak directly with City Council on request.

Sincerely,



Wendy Richardson
Executive Director

The Junction

988 8th Street Courtenay

The intent of The John Howard Society of North Island is to deliver a program that will help you to achieve stability in housing while supporting you in accessing community based services that will optimize health and wellness. We are committed to operating a program that is accessible and maintains an atmosphere of dignity and respect for all residents and staff.

Our program will operate from the belief that safety and security are critical components of creating a program that will foster stability, growth, and development. The rules we have in place will help to support our commitment to respect, dignity, safety, and security for residents, staff, and the larger neighbourhood in which we live and work.

Program Expectations

Quiet time

It is expected that all residents will respect and follow a quiet time from 11:00 p.m. to 6:00 a.m. daily. This includes no loud music, excessive noise, or loud talking that can be reasonably construed to impact the enjoyment of another program participant's right to quiet enjoyment of their residence.

Respectful Behaviour

All residents, staff, and guests are expected to behave in a manner that is respectful and courteous to other residents, staff, and members of the larger neighbourhood. Violence and threats will not be tolerated.

Guests

A guest policy will be in place. All residents must accept and follow this policy as a condition of housing.

Pets

A pet policy is in place. All residents will be informed of this policy and expected to accept and follow this policy as a condition of housing.

Good Neighbour Policy

A good neighbour policy is in place. All residents will be informed of this policy and expected to accept and follow this policy as a condition of housing.

Smoking

To ensure the building is compliant with WorkSafeBC rules around second hand smoke, and with the intent of protecting staff and residents the following rules apply to smoking. Smoking includes the use of tobacco, marijuana, herbal products, and vaping.

- Smoking is permitted in the designated, outdoor area only. All cigarette type products must be disposed of in appropriate containers to reduce the risk of fire.

Note that smoking in your room is likely to set off the smoke alarm which will trigger a building evacuation and send a call to the Fire Department.

Medication Management and Substance Use

Residents will be responsible for managing their own prescription and over the counter medication. Staff can offer support to access services regarding medication but will not suggest, dispense, administer or store medication for residents. We will support you to follow through on self-administering required medications when requested.

We will operate from a harm reduction and health promotion perspective. Residents may use their drug of choice within their private suites, and staff will be available to support you with safety plans around your use.

Illegal Activity

The program will not permit illegal activity to occur either in the building or on the grounds. Illegal activity is defined as any behaviour or action that is contrary to the criminal code of Canada.

Wellness Checks

Staff will be responsible for ensuring wellness checks are conducted at regular intervals. To do this, we will be noting times when we see residents leaving and arriving from the building and grounds. If we have concerns we will initiate a “room check”. This will involve visiting your suite and making reasonable attempts to communicate with you by knocking on your door and calling to you. If you have a phone, we will try to reach you by phone. If we do not receive a response, we reserve the right to enter your suite to ensure your well-being.

If you have not been seen in a 48 hour period and have not let us know that you plan to be away, staff will begin procedures to locate you through your emergency contacts and service providers. After one week of no contact, and no reliable information from your friends, family, or service providers, we will report you as missing to the local RCMP detachment.

If you expect to be away for more than 24 hours, please inform staff so we do not begin to search for you.

Room Cleanliness

Program staff will conduct weekly room inspections. The intent is to ensure your living space remains clean and meets safety requirements. Room checks can be reduced over time as you demonstrate an ability to maintain an acceptable level of cleanliness, tidiness, and safety.

Use of Common Areas

- Common areas are for the sole use of residents. Please be respectful of other residents and do not leave personal items, garbage, or dishes lying around.
- Residents are asked to keep the laundry room clean and tidy and report any broken machines to program staff. Clothes, detergents, baskets etc. left in the laundry room for more than 24 hours may be removed or disposed of. Clothes left in the machines for longer than ½ hour can be removed.
- Residents will not be allowed in the kitchen without permission and must be accompanied by program staff.
- There will be no excessive noise (loud gatherings, stereos, yelling, or raised voices, etc.) in the outdoor areas.
- Resident vehicles will require a parking permit, must be licensed and secured, and cannot be used for any purpose other than transportation (for example, it cannot be used for sleeping).
- Residents must ensure that all exterior doors are closed firmly behind them, and are not wedged open for any reason.

Keys and Locks

Each tenant will be issued a key card which will grant access to the main entry, and their suite. Residents are not permitted to attach additional locking devices to their suite doors or windows.

Suite Alterations and Decorating

Residents may attach pictures, paintings and other small objects to walls but will be responsible for filling holes and repairing any damage caused by their decorations. Residents will not be allowed to paint their rooms, renovate, or put up structures on the outside of the building.

Consequences

The approach to residents not following rules will be an escalating response.

1. Staff will inform residents when they are not following a rule. The rule will be named and the problematic behaviour identified. Staff will work with residents on ways they can be supported to commit to program expectations.

2. Continued instances of the behaviour will result in a formal warning letter. This letter will identify the instances of non-compliance. Residents will be invited to meet with staff, program manager, and community supports to explore how the resident can recommit to program expectations and rules. At this time a discharge plan will be developed with the resident in the event of exit from program.
3. Continued infraction after the warning letter will result in exit from program. Depending on the severity of behaviour, the resident may have up to 30 days to vacate their suite.
4. Violence towards residents, staff, or neighbours may result in immediate eviction and may also result in RCMP involvement and criminal charges.

Community Advisory Committee THE JUNCTION

988 - 8th Avenue, Courtenay, BC

APPLICATION FOR COMMUNITY MEMBERS

You are invited to apply for the role of **Community Representative** on the Community Advisory Committee (CAC) for The Junction. The purpose of The Junction's CAC is to:

- Build and maintain positive relationships amongst the community, the building operators and the housing program partners
- Facilitate information sharing and dialogue
- Support the identification and resolution of issues, opportunities and concerns related to building operations
- Support the success of the supportive housing project

In order for the CAC to be effective, it is important to limit overall committee size while maintaining a balance of voices at the table. Therefore, CAC membership is comprised of approximately eleven individuals representing the following groups:

- 5 x **community members** (local resident and community organizations, businesses, neighbouring residents, etc.)
- 1 x **The John Howard Society of North Island** representative
- 1 x **RCMP Comox Valley Detachment** representative
- 1 x **City of Courtenay** representative
- 1 x **BC Housing** representative
- 1 x **Salvation Army Pidcock Shelter** representative
- 1 x **Comox Valley Recovery Centre** representative

Community member representation (5 seats) will be filled through an application process with preference given to a person who:

- is willing to abide by the Committee Terms of Reference and required time commitment
- is currently affiliated with multiple community organizations
- has experience representing their community on other committees/boards, etc.
- lives and/or works within a five-block radius of the housing site

John Howard will designate community members and representative alternates from the list of applicants. The DRAFT **Terms of Reference** is attached. All Committee members will be required to sign the Terms of Reference at the first meeting to confirm their participation.

To be considered for the role of **Community Representative**, please complete the form below and email to Natalie.meredith@jhsni.bc.ca by **4:00 pm on May 24, 2019**

THE JUNCTION CAC Community Member Application Form

Name: _____
(First) (Last)

Home address: _____

Email address: _____

Primary phone number: _____

Please tell us which local community organizations or businesses you are currently, or have been, involved with and your role:

Organization/Business	Role

What other experience do you have representing your community?

Organization	Role

Please tell us why you would like to participate on the CAC:

Please tell us how would your contribution support the success of the CAC?

Thank you for your interest in THE JUNCTION's Community Advisory Committee.

We will contact selected applicants by telephone or with a follow up email no later than May 27, 2019 to invite them to the first meeting on June 5, 2019 at 3:30 pm, location TBD.

THE JUNCTION

Community Advisory Committee

Terms of Reference

1. Overview

The Junction is managed by The John Howard Society of North Island, a very experienced, non-profit housing operator that staffs and manages the building 24 hours/day and provides tenants with supports to help them lead healthy and safe lives.

To support the successful integration of the building and tenants into the surrounding community, BC Housing and The John Howard Society of North Island is establishing a Community Advisory Committee (CAC) for The Junction.

2. Purpose

The purpose of the CAC is to provide the project team and a broad cross-section of the community with a mechanism to:

- Build and maintain positive relationships amongst the community, the building operators and the program partners
- Facilitate information sharing and dialogue
- Identify and resolve any issues, opportunities and concerns related to building operations
- Support the success of the supportive housing project

The purpose of this Terms of Reference is to ensure members of the CAC are aware of expectations, commitments and their advisory role.

3. Committee Membership

a) Representation

In order for the CAC to be effective, it is important to limit overall committee size while maintaining a balance of voices at the table. Therefore, CAC membership is comprised of approximately eleven individuals representing the following groups:

- 5 x **community members** (local resident and community organizations, businesses, neighbouring residents, etc.)
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- 1 x **RCMP Comox Valley Detachment** representative
- 1 x **City of Courtenay** representative
- 1 x **BC Housing** representative
- 1 x **Salvation Army Pidcock Shelter** representative
- 1 x **Comox Valley Recovery Centre** representative

b) Selection process

Community member representation (5 seats) will be filled through an application process with preference given to a person who:

- is willing to abide by the Committee Terms of Reference and required time commitment
- is currently affiliated with multiple community organizations
- has experience representing their community on other committees/boards, etc.
- lives and/or works within a five-block radius of the housing site

The John Howard Society of North Island will designate community members and representative alternates from the list of applicants who meet the membership criteria.

The program partners will designate their own Committee members and one alternate.

4. Time commitment

Initially, the CAC will meet on a monthly basis. The meetings may then shift to a less frequent basis unless determined otherwise by the Committee members. In addition to regular meetings, there may be occasions when special meetings may be called for a particular reason. As much advance notice as possible will be given to ensure members can make necessary arrangements. Regular Committee meetings will be limited to 90 minutes and adhere to the meeting agenda.

5. Participation

The Committee serves as an advisory group, not a decision making body.

To ensure CAC meetings have the full spectrum of community perspectives, attendance at all regular meetings is required by all community representatives or their alternate. Should more than two regular meeting be missed, the member will be contacted by the facilitator to determine whether he or she still wishes to continue as a CAC member or to discuss whether a new representative and/or alternate is appropriate.

When appropriate, specialists may be invited to participate in meetings to address specific agenda items.

Committee membership is on a volunteer basis and members will not be remunerated for their participation.

6. Term

The Junction CAC will operate until December 2020. At the end of this term, the Committee's utility and the relevance of the Terms of Reference will be reviewed. Should the Committee members agree that it should continue, this review and consideration of continuance, adjustment or cessation will be conducted annually.

7. Meeting Structure and Committee Resources

The meetings will be facilitated using a neutral process facilitator who will serve as an impartial individual to guide the process, facilitate respectful dialogue, handle difficult situations and behaviours, and maintain an environment conducive to sharing information and encouraging all members to contribute. They are responsible for keeping the advisory committee on time and on task, and working with the meeting Secretary to prepare advisory Committee agendas and unbiased and accurate meeting summaries.

The facilitator will develop and follow a structured agenda, including:

- The John Howard Society of North Island building update and discussion
- Building tenant update and discussion
- Program partners update and discussion
- Community members update and discussion
- Review of action items and follow up

The John Howard Society of North Island will provide a meeting Secretary to assist with scheduling and liaising with Committee members, provide notetaking, including tracking key discussion points, responses, action items and follow up details, and oversee the distribution of

the meeting agendas and summaries. The Secretary is not a representative on the Committee and will solely support meeting logistics and record proceedings.

The meeting summaries will not be verbatim recordings but will attempt to capture the essence of comments and responses. The summaries will attribute comments to The John Howard Society of North Island and the other agencies, however attribution of community input will be generic (i.e. *Community Comment*) and will not identify the individual or organization they may be representing. While the facilitator and The John Howard Society of North Island will ensure that privacy standards are maintained, there may be occasions where sensitive matters need to be discussed. When such matters are part of the discussion, there will also be an open CAC discussion of how to appropriately present the essence of the matter in the minutes while respecting any sensitivity.

All action items will be noted in the minutes including who will be responsible for follow-up and a deadline for completion.

Recording of the meetings (audio or visual) by members other than the note-taker is not permitted unless agreed to by all present.

The meetings will be structured to encourage free and open discussion of relevant issues, within the constraints of planned agendas. The goal is not to seek consensus or majority opinion, but to discuss and note views and opinions, propose solutions, and work toward constructive outcomes. The John Howard Society of North Island commits to seriously considering the CAC's comments, as relevant, in making decisions or taking actions.

The John Howard Society of North Island will be responsible for securing meeting space, and providing the process facilitator.

8. Rules of Conduct

In order to ensure that the CAC is maintained as a forum for The John Howard Society of North Island, the housing partners, and the site's neighbours to freely exchange information, discuss issues, and work towards constructive outcomes, members and alternates must:

- agree to operate in accordance to the Terms of Reference;
- participate regularly or arrange alternate representation at scheduled CAC meetings;
- be respectful of the expression of diverse opinions which may be similar or different than those of other CAC members;
- respect that The John Howard Society of North Island and the housing partners reserve the right to protect the privacy of individual tenants and staff – personal information will not be shared with the CAC;
- be prepared to work constructively and collaboratively with members of CAC and The John Howard Society of North Island to address areas of mutual concern;

- listen actively to others. Avoid interrupting and one-on-one side conversations while other people are speaking;
- manage personal participation by sharing speaking time, debating ideas not individuals, and actively providing focused input, comments and questions;
- refrain from using language or acting in a way that is threatening, abusive, racist or otherwise disrespectful;
- bring any concerns regarding the operation of the [type of housing/shelter project] buildings to the attention of the [name of non-profit housing operator] Building Manager according to the contact protocol as soon as possible; the concerns may then be brought to the attention of the CAC; and
- not act as a spokesperson for CAC. This is not meant to fetter the ability of any CAC member to speak with the media as a private citizen.

In the event that a member is unwilling to abide by the Terms of Reference, The John Howard Society of North Island reserves the right to rescind the membership of that person and seek a new member to replace the role.

9. Terms of Reference Revision

From time to time, it may be necessary to amend The Junction CAC Terms of Reference. This will be agreed upon, with active involvement of The John Howard Society of North Island, CAC members, and BC Housing to ensure that the changes are supported and that CAC members understand and continue to commit their membership under the changed conditions.

I have read and agree to abide by these Terms of Reference:

Name: _____

Committee Role: _____

Signature: _____

Date: _____

THE JUNCTION

Community Advisory Committee

Terms of Reference

1. Overview

The Junction is managed by The John Howard Society of North Island, a very experienced, non-profit housing operator that staffs and manages the building 24 hours/day and provides tenants with supports to help them lead healthy and safe lives.

To support the successful integration of the building and tenants into the surrounding community, BC Housing and The John Howard Society of North Island is establishing a Community Advisory Committee (CAC) for The Junction.

2. Purpose

The purpose of the CAC is to provide the project team and a broad cross-section of the community with a mechanism to:

- Build and maintain positive relationships amongst the community, the building operators and the program partners
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- Identify any opportunities and concerns related to building operations
- Support the success of the supportive housing project

The purpose of this Terms of Reference is to ensure members of the CAC are aware of expectations, commitments and their advisory role.

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a) Representation

In order for the CAC to be effective, it is important to limit overall committee size while maintaining a balance of voices at the table. Therefore, CAC membership is comprised of approximately eleven individuals representing the following groups:

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- 1 x **RCMP Comox Valley Detachment** representative
- 1 x **City of Courtenay** representative
- 1 x **BC Housing** representative
- 1 x **Salvation Army Pidcock Shelter** representative
- 1 x **Comox Valley Recovery Centre** representative
- 1 x Kiwanis representative-Board member or staff

b) Selection process

Community member representation (5 seats) will be filled through an application process. If there are not enough individuals putting their names forward the CAC can look at ways to increase community participation. Community members will be considered independent.

Preference given to a person who:

- is willing to abide by the Committee Terms of Reference and required time commitment
- is currently affiliated with multiple community organizations
- has experience representing their community on other committees/boards, etc.
- lives and/or works within a five-block radius of the housing site

Applicants for membership will be reviewed by the CAC. The CAC will designate community members and representative alternates from the list of applicants who meet the membership criteria. The John Howard Society of North Island will have final decision making

The program partners will designate their own Committee members and one alternate.

4. Time commitment

Initially, the CAC will meet on a monthly basis. The meetings may then shift to a less frequent basis unless determined otherwise by the Committee members. In addition to regular meetings, there may be occasions when special meetings may be called for a particular reason. As much advance notice as possible will be given to ensure members can make necessary arrangements. Regular Committee meetings will be limited to 90 minutes and adhere to the meeting agenda.

5. Participation

The Committee serves as an advisory group, not a decision making body.

To ensure CAC meetings have the full spectrum of community perspectives, attendance at all regular meetings is required by all community representatives or their alternate. Should more than two regular meeting be missed, the member will be contacted by the facilitator, or operator, to determine whether he or she still wishes to continue as a CAC member or to discuss whether a new representative and/or alternate is appropriate.

When appropriate, specialists may be invited to participate in meetings to address specific agenda items.

Committee membership is on a volunteer basis and members will not be remunerated for their participation.

6. Term

The Junction CAC will operate until December 2020. At the end of this term, the Committee's utility and the relevance of the Terms of Reference will be reviewed. Should the Committee members agree that it should continue, this review and consideration of continuance, adjustment or cessation will be conducted annually.

7. Meeting Structure and Committee Resources

The meetings will be chaired by a committee member selected by the CAC, an independent facilitator or by a representative of the operator. The chair will act impartially to facilitate respectful dialogue, handle difficult situations and behaviours, and maintain an environment conducive to sharing information and encouraging all members to contribute. They are responsible for keeping the advisory committee on time and on task, this could be done by the secretary.

The facilitator will develop and follow a structured agenda, which may include discussion points on:

- The John Howard Society of North Island building update and discussion
- Building tenant update and discussion
- Program partners update and discussion
- Community members update and discussion
- Review of action items and follow up

The CAC will designate a meeting recorder who will provide notetaking, including tracking key discussion points, relevant responses, action items and follow up details, and oversee the distribution of the meeting agendas and summaries.

The meeting summaries will not be verbatim recordings but will attempt to capture the essence of comments. The summaries will attribute comments to The John Howard Society of North Island and the other agencies, however attribution of community input will be generic (i.e. *Community Comment*) and will not identify the individual or organization they may be representing. While the facilitator and The John Howard Society of North Island will ensure that privacy standards are maintained, there may be occasions where sensitive matters need to be discussed. When such matters are part of the discussion, there will also be an open CAC discussion of how to appropriately present the essence of the matter in the minutes while respecting any sensitivity.

All action items will be noted in the minutes including who will be responsible for follow-up and a deadline for completion.

Recording of the meetings (audio or visual) by members other than the note-taker is not permitted unless agreed to by all present.

The meetings will be structured to encourage free and open discussion of relevant issues, within the constraints of planned agendas. The goal is not to seek consensus or majority opinion, but to discuss and note views and opinions, propose solutions, and work toward constructive outcomes. The John Howard Society of North Island commits to seriously considering the CAC's comments, as relevant, in making decisions or taking actions.

8. Rules of Conduct

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- be respectful of the expression of diverse opinions which may be similar or different than those of other CAC members;
- respect that The John Howard Society of North Island and the housing partners reserve the right to protect the privacy of individual tenants and staff – personal information will not be shared with the CAC;
- be prepared to work constructively and collaboratively with members of CAC and The John Howard Society of North Island;

- listen actively to others. Avoid interrupting and one-on-one side conversations while other people are speaking;
- manage personal participation by sharing speaking time, debating ideas not individuals, and actively providing focused input, comments and questions;
- refrain from using language or acting in a way that is threatening, abusive, racist or otherwise disrespectful and
- not act as a spokesperson for CAC. This is not meant to fetter the ability of any CAC member to speak with the media as a private citizen.

In the event that a member is unwilling to abide by the Terms of Reference, The John Howard Society of North Island reserves the right to rescind the membership of that person and seek a new member to replace the role.

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From time to time, it may be necessary to amend The Junction CAC Terms of Reference. This will be agreed upon, with active involvement of The John Howard Society of North Island, CAC members, and BC Housing to ensure that the changes are supported and that CAC members understand and continue to commit their membership under the changed conditions.

I have read and agree to abide by these Terms of Reference:

Name: _____

Committee Role: _____

Signature: _____

Date: _____

Community Response

The Vancouver Island Crisis Line
24-hour Crisis Line Service
1-888-494-3888

Island Health
Mental Health & Substance Use
ICMT
1-250-331-8548

Care-a-Van
Comox Bay Care Society
Mobile Health Clinic
250-702-7011

Homelessness Outreach Response
via comoxvalleyhousing@gmail.com

Information on Safe Handling for Needles
AVI 250-338-7400

Poison Control
1-800-567-8911

Call 211

Provides information and referral regarding community, government and social services in BC, 24 hours a day, 7 days a week, in over 100 languages.

Includes:

- Alcohol and Drug Information and Referral Service (ADIRS)
- Problem Gambling Help Line
- VictimLink BC
- Youth Against Violence Line

To report or inquire about:

- Non-911 concerns related to site operations.
- Request support for neighborhood clean-up close to site 988—8th Street.
- Concerns regarding activities that may be related to The Junction.

Call The Junction (24/7)

250-871-8510

Please note that at certain times, staff may not be able to respond immediately.

If you have a concern or complaint that does not need immediate attention, please leave a message for Natalie Meredith, Program Manager, or Carly Ferguson, Assistant Program Manager.

OUR MISSION

The John Howard Society of North Island is a charitable organization whose mission is to provide programs and support to help children, youth, adults, and families lead safer and healthier lives.

JohnHoward
The John Howard Society of North Island

COMMUNITY SAFETY

WHO TO CALL

8th Street Neighbourhood



JohnHoward

***Building Safer and
Healthier Communities***

Phone 250-871-8510

www.jhsni.bc.ca

Shelters

The Salvation Army , Pidcock Shelter
(Mixed Shelter)
250-338-2533

Comox Valley Transition Society
(Women)
250-987-0511

John Howard Housing

The Station
Youth Transitional Housing
250-338-7341

The Junction
Adult Supportive Housing
250-871-8510

Housing Outreach

Wachiay Friendship Centre
250-338-7793

Dawn to Dawn
250-941-2233

Comox Valley Transition Society
250-897-0511

Courtenay City Hall

General inquiries about city services:
830 Cliffe Avenue
Courtenay, BC, V9N 2J7
250-334-4441
info@courtenay.ca

City Bylaw Enforcement

To Report:

- Parking issues
- Aggressive panhandling downtown
- Squatters downtown
- Security matters on downtown public property
- Bylaw matters (noise, unsightly, nuisance activities)
- Unsightly/nuisance properties
- Unlicensed dogs
- Dogs at large

Monday to Friday 8 am to 4:30 pm
250-334-4441

bylaw@courtenay.ca

Evenings and weekends

Call RCMP 250-338-1321

Public Works

If you find a discarded needle,
call for proper disposal:

24 hours a day, 7 days a week
250-338-1525

publicworks@courtenay.ca

Courtenay Fire Rescue

To Report:

- Burning complaints
- Burning permits
- Information bout smoke alarms and carbon monoxide detectors
- General fire safety information

24 hours a day, 7 days a week
250-334-2513

fire@courtenay.ca

Afterhours and weekends call 911

RCMP

Non-Emergency Assistance

The non-emergency assistance can be used to report suspicious behaviour including a crime after it has happened or illegal drug activity.

To report a non-emergency:
250-338-1321

Emergency Assistance

An emergency is any immediate threat to you or to anyone else. An emergency might be violence and/or threats of violence, someone with a weapon, a serious car crash, a crime in progress or any other situation where you feel an immediate threat.

To report an emergency: 911

GOOD NEIGHBOUR AGREEMENT

By signing this agreement the Provider agrees to:

- Be accountable while showing leadership and commitment to supportive housing existing in all communities
- Have a complaints process in place for Program Participants and community members
- Hold regular meetings where we can hear feedback about community concerns
- Work with Program Participants, neighbors, and community members to address any concerns

By signing this agreement the Program Participant agrees to:

- Treat your neighbours and the community with consideration and respect
- Not make excessive noise at any time or cause unnecessary disturbances
- Understand that vulnerable persons share this address; and the Program Participant will not to participate in any activities that put the community of [Building] at risk
- Not to engage in activities that can affect the personal or emotional well-being of other Program Participants or any other persons
- Make sure that the security doors are closed properly and that you do not let people through the communal entry system that you do not know
- Put your garbage in the bins as provided – please do not throw anything from your windows
- Clean up after your animals as you are walking them around the neighborhood
- Ensure you leave community spaces, including playgrounds and parks, clean.
- Comply with all rules, standards of conduct, directions and notices of the Provider.
- Not smoke cigarettes in common spaces including but not limited to the lobby, elevator, hallways and front entrance of the building as per the city by-laws.

Good Neighbour Agreement Declaration:

I, _____, the Program Participant of the [Building], have read the information contained in this agreement, the terms of which have been explained to me by:

Provider staff member print name Provider staff signature

By signing below I agree to follow the good neighbour guidelines.

Program Participant print name: _____

Signature: _____

Date: _____

BUILDING AND PERIMETER WALK THROUGH

BUILDING WALK THROUGH	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00PM	1:00 AM
STAFF INITIAL						
	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	
STAFF INITIAL						

PERIMETER WALK/VIEW	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00PM	1:00 AM
STAFF INITIAL						
	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	
STAFF INITIAL						

DATE: _____

BUILDING WALK THROUGH	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00PM	1:00 AM
STAFF INITIAL						
	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	
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STAFF INITIAL						
	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	
STAFF INITIAL						

Date: _____

Please initial when you have completed a walk-through of the building and done an outside perimeter check. It is important to listen for noise levels and unnecessary traffic in the halls. For the outside check please view video cameras and only go outside if it is safe. Please go to the sidewalk at front and listen for loud music, noise etc. Also watch for unnecessary action at front of building.

Memorial and Resident Gardens – The Junction (988 – 8th Street)





THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council

File No.: 1760-02

From: Chief Administrative Officer

Date: September 21, 2020

Subject: 2020 - 5th Street Bridge Rehabilitation - Alternative Approval Process (AAP)

PURPOSE:

The purpose of this report is to proceed with the Alternative Approval Process (AAP) for "5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020" for long term borrowing to complete construction of the 5th Street Bridge rehabilitation project.

CAO RECOMMENDATIONS:

That based on the September 21st, 2020 staff report "2020 - 5th Street Bridge Rehabilitation - Alternative Approval Process (AAP)", Council seek the approval of the electors for 5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020 through the Alternative Approval Process (AAP);

That Council establish elector response forms as attached to this report;

That Council determine 20,162 as the total number of electors to which the approval process applies; and

That Council establish the deadline for receiving responses for this alternative approval process as November 16th, 2020 at 4:30 p.m.

Respectfully submitted,

Trevor Kushner, BA, DLGM, CLGA, PCAMP
Interim Chief Administrative Officer

BACKGROUND:

Council was presented with and approved the 5th Street Bridge Rehabilitation project through the regular budget process in early 2020. This project is slated for construction in 2021 and requires new borrowing to proceed.

At its regular meeting held April 20th, 2020 Council passed the following resolution:

“Moved by Hillian and seconded by McCollum that based on the April 20th, 2020 staff report “5th Street Bridge Loan Authorization Bylaw 2978”, Council approve OPTION 1 and endorse the 5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978;

That Bylaw No. 2978 proceed to first, second and third reading; and,

That Council direct staff to proceed with the Alternative Approval Process (AAP) to gain approval of the electors.”

Bylaw No. 2978 received three readings at the same meeting.

Bylaw No. 2978, along with supporting documentation was forwarded to the Inspector of Municipalities on April 21st, 2020

DISCUSSION:

The Inspector of Municipalities provided statutory approval of Bylaw No. 2978 on May 5th, 2020.

Council may now proceed with the Alternative Approval Process (AAP) pursuant to section 86 of the *Community Charter*.

Council is required to take the following steps regarding the Alternative Approval Process:

- Establish a deadline by which elector responses are to be submitted, which must be at least 30 days after the second publication of public notice. The public notice of the alternative approval process must be published in a newspaper once each week for 2 consecutive weeks;
- Establish elector response forms and make them available to the public from the time of the first publication until the deadline; and
- Make a fair determination of the number of electors to which the alternative approval process applies. In the case of Bylaw No. 2978, the process applies to all electors in the City. The recommendation of 20,162 electors is based on list of electors from the 2018 local general election plus new registrations.

Council may proceed with the adoption of Bylaw 2978 unless at least 10%, or 2,017 of the electors indicate that Council must obtain the assent of the electors (referendum) before proceeding, prior to the deadline of November 16th, 2020 at 4:30 p.m.

Timelines:

Table 2 outlines the estimated schedule that would be followed in order to adopt the loan authorization bylaw and secure funding for the 5th Street Bridge Rehabilitation for spring 2021 construction. This schedule is subject to change depending on how long it takes to receive approvals from the Province. The schedule will be updated throughout the process and Council will be updated during each phase of the process as necessary.

Table 2: 2020 - 5th Street Bridge Rehabilitation Capital Loan Authorization Bylaw Schedule:

Date	Charter Section	Action
April 20, 2020	179	Three readings by Council
May 5, 2020	180	Send to Inspector of Municipalities
September 21, 2020	86, 135, 180	Establish elector response forms Determine total number of electors Establish deadline for responses as November 16, 2020
October 7, 2020	94	First of two notices published Make response forms available to public at City Hall
October 14, 2020	94	Second and last notice published (must be at least 30 days prior to the deadline of November 16, 2020)
November 16, 2020	86	Deadline for elector responses
December 7, 2020	86	Council Meeting - Report to Council regarding elector responses If 10% threshold not reached, final adoption of bylaw
January 8, 2021	623,760 LGA	Send to Inspector for certificate of approval after quashing period
February 8, 2021	CC S.122&182	Council passes Security Issuing Resolution
February 19, 2021		Forward to Regional District and the MFA

FINANCIAL IMPLICATIONS:

There are no financial implications related to the AAP process itself.

Council approved the 2020-2024 General Fund Operating and Capital Financial Plans on March 2nd, 2020 which includes the 5th Street Bridge Rehabilitation project.

The 5th Street Bridge Rehabilitation project is estimated to cost \$6,300,000 and is funded in the 2020-2024 Financial Plan using \$262,700 of DCC reserves, \$268,300 in Reserves, \$404,100 in Unexpected Funds, and \$1,964,900 in funding from the Federal and Provincial Governments New Building Canada Fund – Small Communities Fund.

Annual debt servicing costs for this project are estimated at \$233,293 and have been calculated using Municipal Finance Authority interest rates with amortization over 20 years. This will result in an impact of an approximately 1% increase to the debt levy for property taxation purposes. The impact to the average residential property valued at \$453,000 would be approximately \$13/year, based on 2020 assessments and tax rates.

Project description	2021					2021 Debt
	2021 Proposed Budget	2021 Reserve	Unexpended Funds	2021 DCC Reserve	2021 Fed / Prov Funding	
MAJOR ROAD CONS - 5th St Bridge Rehabilitation	6,300,000	268,300	404,100	262,700	1,964,900	3,400,000

ADMINISTRATIVE IMPLICATIONS:

Staff will report back to Council in early December regarding the outcome of the AAP process. If less than 2,017 elector responses are received in opposition, the loan authorization bylaw may proceed to final adoption. Once adopted there is a one month quashing period before the bylaw is sent back to the Inspector of Municipalities for the final certificate of approval. Staff expect to receive final approval in late January, 2021.

ASSET MANAGEMENT IMPLICATIONS:

There are no asset management implications for the AAP process. As outlined in the April 20th, 2020 staff report, the 5th Street Bridge project is included in the City's asset management plan and is a high priority project as one of the City's most valuable assets.

STRATEGIC PRIORITIES REFERENCE:

In addition to being identified one of Council's five "NOW" Priorities, the following Strategic Priorities are relevant to the 5th Street Bridge Project:

We focus on organizational and governance excellence

- Communicate appropriately with our community in all decisions we make
- Responsibly provide services at levels which the people we serve are willing to pay

We proactively plan and invest in our natural and built environment

- Focus on asset management for sustainable service delivery
- ▲ Look for regional infrastructure solutions for shared services

We actively pursue vibrant economic development

- ▲ Work with the business and development sectors to mutually improve efficiencies

We support diversity in housing and reasoned land use planning

- Continue to develop and revisit all infrastructure master plans

We continually invest in our key relationships

- ▲ Support improving accessibility to all City services

- **AREA OF CONTROL:** The policy, works and programming matters that fall within Council's jurisdictional authority to act
- ▲ **AREA OF INFLUENCE:** Matters that fall within shared or agreed jurisdiction between Council and another government or party
- **AREA OF CONCERN:** Matters of interest that are outside Council's jurisdictional authority to act

OFFICIAL COMMUNITY PLAN REFERENCE:

In regards to the Official Community Plan for Courtenay, the following goals of Section 5.0 Transportation are relevant:

5.2 Goals

1. Integrate land use changes with transportation planning to coordinate changes and increases to traffic patterns.
2. Development of a transportation system that provides choices for different modes of travel including vehicle, transit, pedestrian, cycling and people with mobility impairments.
3. Protect the integrity of the road classification system to facilitate the purpose and function of the specific road types.
4. Support an integrated transportation system that works towards reducing travel distances and congestion.
5. Support a transportation system that recognizes the importance of the character and overall appearance of the City.
6. Provide an effective transportation system that facilitates the movement of vehicles throughout the community and the Comox Valley to major regional services such as the Little River Ferry System and the Comox Valley Airport.

REGIONAL GROWTH STRATEGY REFERENCE:

The 5th Street Bridge Rehabilitation Project is aligned with the transportation network goal from the Regional Growth Strategy:

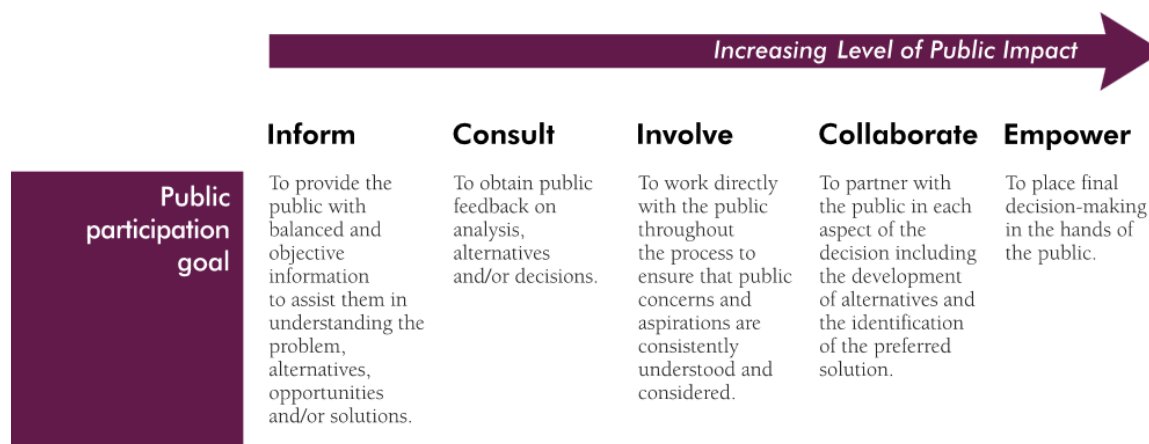
Goal 4 - Transportation:

Develop an accessible, efficient and affordable multi-modal transportation network that connects Core Settlement Areas and designated Town Centres and links the Comox Valley to neighbouring communities and regions.

CITIZEN/PUBLIC ENGAGEMENT:

Section 180 of the *Community Charter* requires that a council gain approval of the electors before a loan authorization bylaw can be adopted. The City will **empower** the public based on the IAP2 Spectrum of Public Participation: This is the highest level of public participation in decision making under this practice. Information about the IAP2 Core Values can be found at:

<https://iap2canada.ca/Resources/Documents/0702-Foundations-Core-Values-MW-rev1.pdf>



OPTIONS:

OPTION 1: (Recommended)

That based on the September 21st, 2020 staff report “2020 - 5th Street Bridge Rehabilitation - Alternative Approval Process (AAP)”, Council seek the approval of the electors for 5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020 through the Alternative Approval Process (AAP);

That Council establish elector response forms as attached to this report;

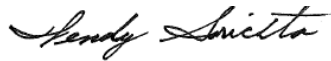
That Council determine 20,162 as the total number of electors to which the approval process applies; and

That Council establish the deadline for receiving responses for this alternative approval process as November 16th, 2020 at 4:30 p.m.

OPTION 2: That Council not proceed with the AAP process.

OPTION 3: That Council refer this item back to staff for further consideration.

Prepared by:



Wendy Sorichta
Corporate Officer

Concurrence by:



Trevor Kushner, BA, DLGM, CLGA, PCAMP
Interim Chief Administrative Officer

Attachments: *#1: Staff report dated April 20, 2020*
#2: Excerpt from 2020- 2024 Financial Plan
#3: Elector Response Form



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council
From: Chief Administrative Officer
Subject: 5th Street Bridge Loan Authorization Bylaw 2978

File No.: 1760-02
Date: April 20, 2020

PURPOSE:

The purpose of this report is to begin the process of borrowing funds to complete the rehabilitation of the 5th Street Bridge.

POLICY ANALYSIS:

Council adopted the Consolidated Financial Plan Bylaw No. 2967, 2019 on May 6, 2019 and recently approved the 2020-2024 General Capital Financial Plan on March 2, 2020. The 5th Street Bridge Rehabilitation project is identified in both documents and is partially funded by new debt. Section 179 of the *Community Charter* provides Council with the authority to incur a liability by borrowing funds for any capital nature. Section 180 of the *Community Charter* requires elector approval of a loan authorization bylaw before it can be adopted.

EXECUTIVE SUMMARY:

The 5th Street Bridge Rehabilitation Project is one of the City of Courtenay's top Strategic Priorities, and was identified in November 2019 as one of Council's five "NOW" Priorities and forms a part of several staff Operational Strategies. This project's scope has been reviewed in detail with Council on several occasions throughout 2019 and early 2020. On February 3, 2020 Council provided staff with direction to proceed with the project excluding the construction of cantilevers and to use the Alternate Approval Process to obtain elector approval for the loan authorization bylaw required to proceed. This project is slated to begin in the spring of 2021 and the statutory borrowing process is estimated to take upwards of eight months, therefore starting early to ensure all approvals are in place in 2020 is recommended.

CAO RECOMMENDATIONS:

That based on the April 20, 2020 staff report "5th Street Bridge Loan Authorization Bylaw 2978", Council approve OPTION 1 and endorse the 5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978; that Bylaw No. 2978 proceed to 1st, 2nd, and 3rd reading; and,

That Council direct staff to proceed with the Alternative Approval Process (AAP) to gain approval of the electors.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David Allen".

David Allen, BES, CLGEM, SCLGM
 Chief Administrative Officer

BACKGROUND:

On January 27, 2020 Council was presented with updated scope and financial implication information regarding the 5th Street Bridge rehabilitation project and passed a resolution on February 3, 2020 to direct staff not to include cantilevers in the final design of the project.

In addition, Council was presented and approved the proposed 2020-2024 General Capital Financial Plan on March 2, 2020. Table 1 identifies the 5th Street rehabilitation project included in the financial plan and requires completion of the statutory borrowing process to commence construction:

Table 1: 5th Street Bridge Rehabilitation Project Funded with Debt

Project description	2021 Proposed Budget	2021 Reserves	2021 Unexpended Funds	2021 DCC Reserve	2021 Fed / Prov Funding	2021 Debt
MAJOR ROAD CONS - 5th St Bridge Rehabilitation	6,300,000	268,300	404,100	262,700	1,964,900	3,400,000

The borrowing process can take up to eight months to complete, therefore starting the process as soon as possible will ensure the funds are approved and secured to allow for timely tendering and construction in the spring of 2021 without delay. This project must be complete by March 31, 2022 in order to meet Federal grant requirements.

DISCUSSION:

On February 3, 2020 Council passed the following resolution:

Moved by Frisch and seconded by McCollum that based on the January 27th, 2020 staff report “5th Street Bridge Rehabilitation” that Council direct staff to obtain elector approval for a loan authorization bylaw for the 5th Street Bridge Rehabilitation Project through the Alternate Approval Process.

Carried

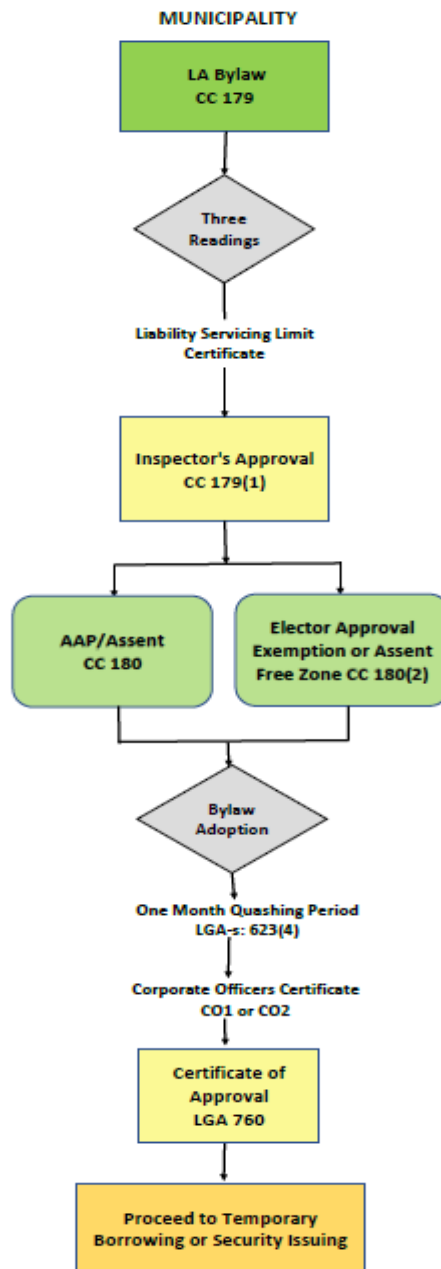
Borrowing Process:

Section 179 of the *Community Charter* provides Council with the authority to incur a liability by borrowing funds for any purpose of a capital nature. The local government borrowing process is highly regulated and closely monitored by the Province. All loan authorization bylaws must be approved by the Inspector of Municipalities and approval of the electors is required before adoption of the bylaw. In addition, sections 623 and 760 of the *Local Government Act* require a one month quashing period after approval of the electors has been received, where an application can be made to the Supreme Court to set aside the loan authorization bylaw before final approval will be provided by the Inspector of Municipalities.

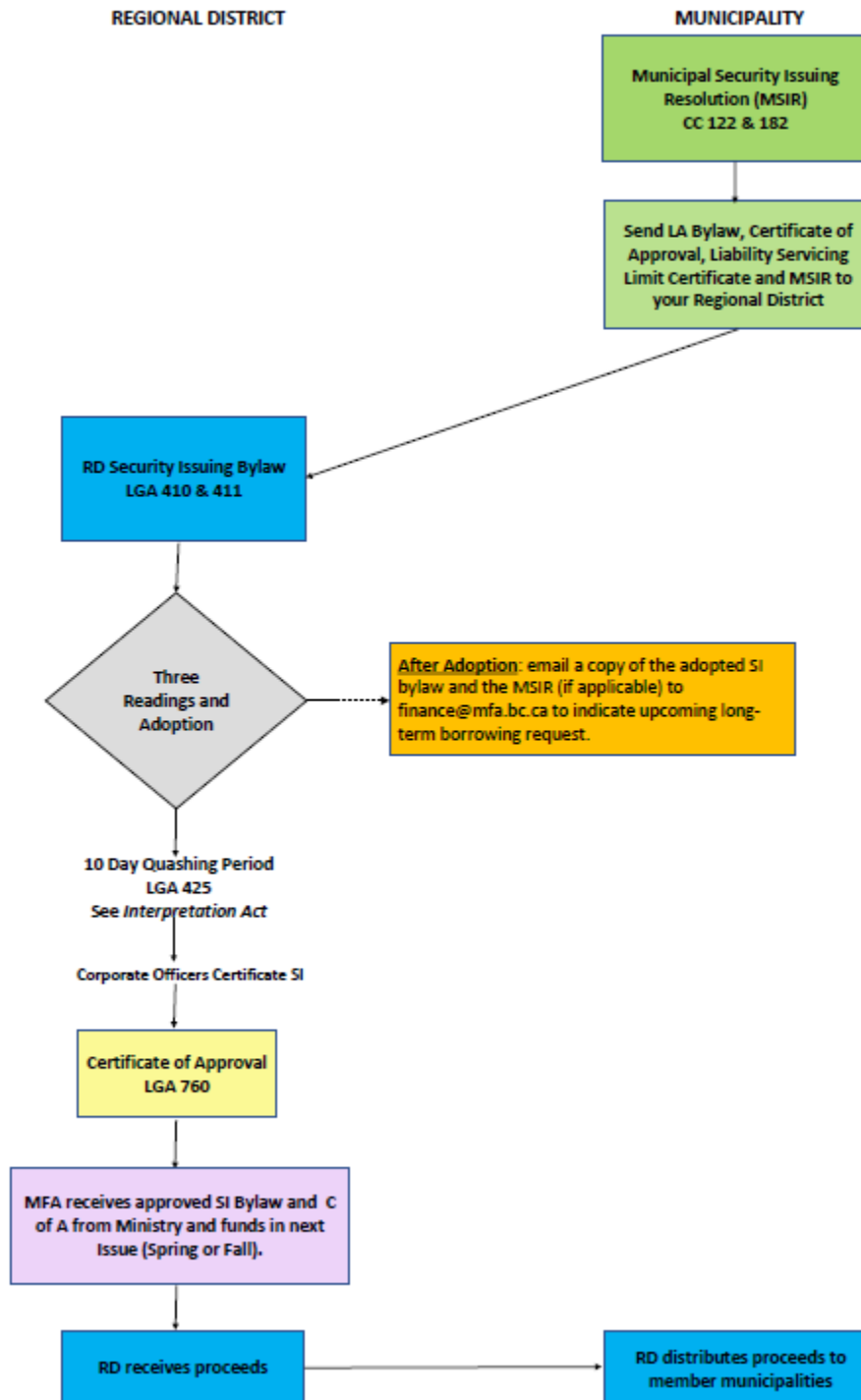
Finally, Section 182 of the *Community Charter* restricts local governments to financing long term debt with their local regional district through the Municipal Finance Authority of British Columbia (MFA). Once a certificate of approval has been received by the Inspector of Municipalities, Council must then pass a Municipal Security Issuing Resolution and forward it to the Comox Valley Regional District to be included in the next Regional District Security Issuing Bylaw that will go through further adoption at the regional level.

The borrowing process can take several months to complete, therefore it is recommended to begin the process as early as possible to ensure all the appropriate approvals are in place before projects are ready for construction. The following flowcharts provided by the Municipal Finance Authority outlines the steps involved for a loan authorization bylaw:

Loan Authorization Bylaw Procedures



Security Issuing Procedures



Elector Approval:

Section 180 of the *Community Charter* requires elector approval of a loan authorization bylaw before it can be adopted. There are two options available to gain elector approval as follows:

Alternative Approval Process (AAP) – (Approved by Council on February 3, 2020)

An AAP requires that ten percent or more of the eligible electors must sign and submit response forms in opposition to the proposed loan authorization bylaw to the local government to obtain assent of the electors in order to proceed. If ten percent of the electors sign forms in opposition to the AAP, there are two choices; proceed to referendum within eighty days, or the loan authorization bylaw could be put on hold and consider alternatives.

Referendum

A referendum involves asking electors to cast their vote in relation to the loan authorization bylaw. Assent of the electors is achieved if a majority of votes counted are in favour of proceeding with the bylaw. If elector assent is not granted the loan authorization bylaw could not be adopted and Council would need to consider alternatives.

A referendum is much more costly and time consuming than the Alternative Approval Process, therefore gaining elector approval through the AAP process for this loan authorization bylaw is recommended.

Timelines:

Table 2 outlines the estimated schedule that would be followed in order to adopt the loan authorization bylaw and secure funding for the Fifth Street Bridge for spring 2021 construction. This schedule is subject to change depending on how long it takes to receive approvals from the Province. The schedule will be updated throughout the process and Council will be updated during each phase of the process as necessary.

Table 2: 5th Street Bridge Rehabilitation Loan Authorization Bylaw Schedule:

Date	Charter Section	Action	Date Completed
April 20, 2020	179	Three readings by Council	
April 30, 2020	180	Send to Inspector of Municipalities	
August 4, 2020	86, 135, 180	Establish elector response forms Determine total number of electors Establish deadline for responses as September 28, 2020	
August 19, 2020	94	First of two notices published Make response forms available to public at City Hall	
August 26, 2020	94	Second and last notice published (must be at least 30 days prior to the deadline of September 28, 2020)	
September 28, 2020	86	Deadline for elector responses	
October 5, 2020	86	Council Meeting - Report to Council regarding elector responses If 10% threshold not reached, final adoption of bylaw	
November 6, 2020	623,760 <i>LGA</i>	Send to Inspector for certificate of approval after quashing period	
December 7, 2020	CC S.122&182	Council passes Security Issuing Resolution	
December 18, 2020		Forward to Regional District and the MFA	

FINANCIAL IMPLICATIONS:

Rehabilitation of the Fifth Street Bridge is estimated to cost \$6,300,000 and will be funded using \$1,964,900 of grant funding from the New Build Canada – Small Communities Fund, \$262,700 of DCC reserves, \$404,100 of unexpended debt reserve funds, 268,300 of infrastructure reserve funds, and \$3,400,000 from new borrowing. Debt servicing costs for this project were calculated using the Municipal

Finance Authority annual interest rates with a 20 year amortization. Annual debt servicing costs are estimated to be \$233,293 per year. This would result in an impact of an approximately 1% increase to the debt levy for property taxation purposes beginning in 2022 when the first payments would be due. The impact to the average residential property based on 2019 assessments and tax rates would be approximately \$13 per year.

The Province regulates how much debt a municipality can carry. The total annual debt servicing costs cannot exceed 25% of the previous year's revenue and is known as the Liability Servicing Limit. The City's current liability servicing limit is calculated at \$12,259,513 per year of which only \$1,555,910 or 13% of the available borrowing is actually being utilized. Borrowing an additional \$3,400,000 would bring the total annual servicing costs up to \$1,955,187 or 16% of the available borrowing room for the City.

ADMINISTRATIVE IMPLICATIONS:

After three readings of the loan authorization bylaw staff will send it, along with all supporting documentation to the Inspector of Municipalities for a first review. Once this review is complete, staff will report back to Council on the next steps to begin the Alternative Approval Process (AAP). The borrowing process involves several departments and is estimated to take approximately eighty hours of staff time from start to finish.

ASSET MANAGEMENT IMPLICATIONS:

The 5th Street Bridge is one of the City's most important assets, providing a critical connection between the east and west parts of the community, and it is an emergency route for fire, police and ambulance services. It remains an essential means to cross the Courtenay River for the many residents and businesses from adjacent communities as well as other out of area travelers using BC Ferries, the regional airport, regional hospital, 19 Wing Comox and BC Highway 19A to other destinations.

On-going maintenance is periodically required to maintain the asset at its intended level of service thereby reducing the risk of catastrophic failure, severe transportation disruptions and increased costs resulting from reactive rather than planned maintenance. The bridge is inspected annually under contract and routine maintenance and repairs are undertaken at approximately \$20,000 a year in the Public Works Services operation budget.

In Asset Management practice, the rehabilitation of this asset is actually maintenance that is periodically necessary to return the asset to its intended level of service. While the rehabilitation project cost surpasses the financial threshold from operating to capital, this is indeed maintenance of an existing asset providing an existing level of service. Therefore, the rehabilitation and its associated funding source is a practice and cost of doing business.

STRATEGIC PRIORITIES REFERENCE:

The following 2019-2022 Council strategic priorities relate to the 5th Street Bridge Rehabilitation Loan Authorization Bylaw:

We focus on organizational and governance excellence

- Communicate appropriately with our community in all decisions we make
- Responsibly provide services at levels which the people we serve are willing to pay

We proactively plan and invest in our natural and built environment

- Focus on asset management for sustainable service delivery

● **AREA OF CONTROL:** The policy, works and programming matters that fall within Council's jurisdictional authority to act

▲ **AREA OF INFLUENCE:** Matters that fall within shared or agreed jurisdiction between Council and another government or party

■ **AREA OF CONCERN:** Matters of interest that are outside Council's jurisdictional authority to act

Operational Strategies:

DIRECTOR LEGISLATIVE & CORPORATE SERVICES

3. Borrowing Bylaw: Approval Process Jan'20

DIRECTOR FINANCIAL SERVICES

2. Draft Borrowing Bylaws: Prepare Jan'20

DIRECTOR ENGINEERING SERVICES

2. 5th St. Bridge/6th St. Bridge: Open House Nov'19

OFFICIAL COMMUNITY PLAN REFERENCE:

Regarding the Official Community Plan for Courtenay, the following goals of Section 5.0 Transportation are relevant:

5.2 Goals

1. Integrate land use changes with transportation planning to coordinate changes and increases to traffic patterns.
2. Development of a transportation system that provides choices for different modes of travel including vehicle, transit, pedestrian, cycling and people with mobility impairments.
3. Protect the integrity of the road classification system to facilitate the purpose and function of the specific road types.
4. Support an integrated transportation system that works towards reducing travel distances and congestion.
5. Support a transportation system that recognizes the importance of the character and overall appearance of the City.
6. Provide an effective transportation system that facilitates the movement of vehicles throughout the community and the Comox Valley to major regional services such as the Little River Ferry System and the Comox Valley Airport.

REGIONAL GROWTH STRATEGY REFERENCE:

The Fifth Street Bridge Rehabilitation Project is aligned with the transportation network goal from the Regional Growth Strategy:

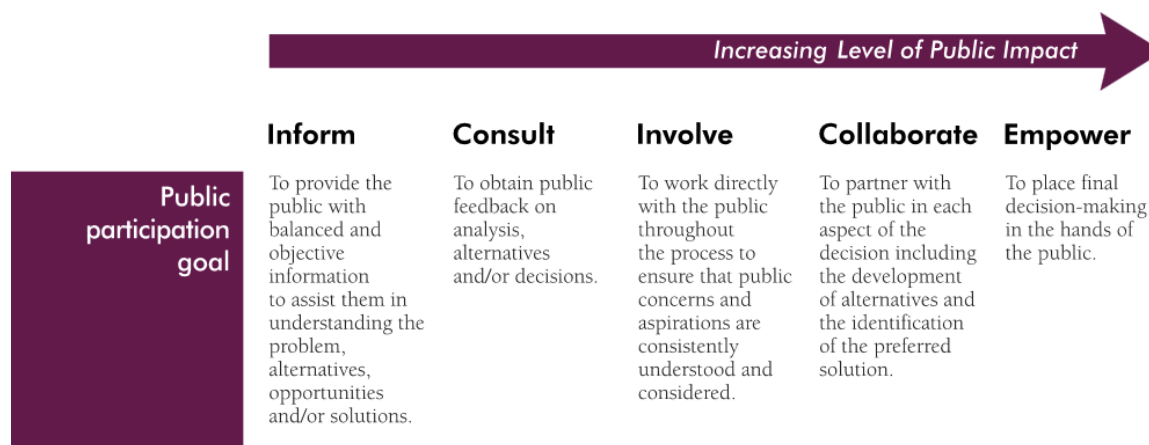
Goal 4 - Transportation:

Develop an accessible, efficient and affordable multi-modal transportation network that connects Core Settlement Areas and designated Town Centres and links the Comox Valley to neighbouring communities and regions.

CITIZEN/PUBLIC ENGAGEMENT:

Section 180 of the *Community Charter* requires that a council gain approval of the electors before a loan authorization bylaw can be adopted. The City will **empower** the public based on the IAP2 Spectrum of Public Participation:

http://c.ymcdn.com/sites/www.iap2.org/resource/resmgr/imported/IAP2%20Spectrum_vertical.pdf



OPTIONS:

OPTION 1: That Council endorse the Fifth Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020;

That Council proceed to 1st, 2nd, and 3rd reading of the Fifth Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020; and

That Council direct staff to proceed with the Alternative Approval Process (AAP) to gain approval of the electors for the Fifth Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020. **[Recommended]**

OPTION 2: That Council defer endorsing the Fifth Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020 to allow for further discussion.

OPTION 3: That Council not endorse the Fifth Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020.

Prepared by:



Jennifer Nelson, CPA, CGA
Director of Financial Services

Concurrence:



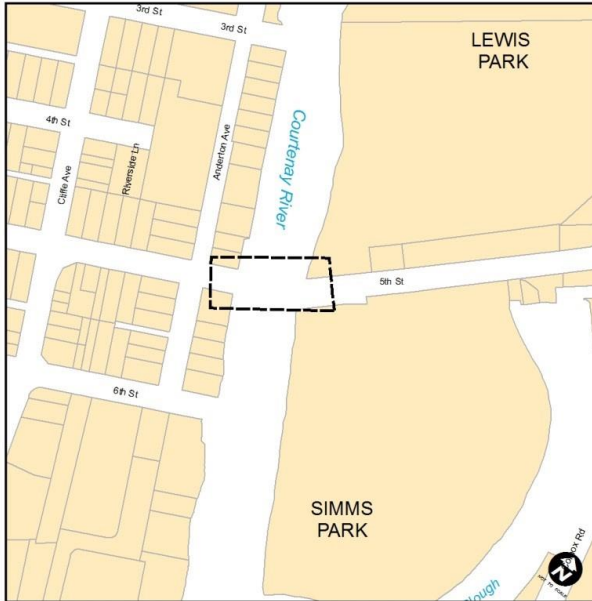
Chris Davidson, P. Eng
Manager of Engineering Projects

Attachments: #1: Engineering Capital Projects 2021 (excerpt from 2020-2024 Financial Plan)
#2: 5th Street Bridge Rehabilitation – Capital Asset Dashboard (excerpt 2020 Budget)
#3: January 27, 2020 5th St Bridge Rehabilitation Report to Council
#4: 5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020

EXCERPT FROM 2020-2024 FIVE-YEAR FINANCIAL PLAN
ENGINEERING PROJECTS - 2021

Department	Project description	2021 Proposed Budget	2021 Reserves	2021 Unexpended Funds	2021 DCC Reserve	2021 Fed / Prov Funding	2021 Debt
Engineering	MAJOR ROAD CONS - 5th St Bridge Rehabilitation	6,300,000	268,300	404,100	262,700	1,964,900	3,400,000
	STORM DRAINAGE - Willemar Culvert	180,000	-	180,000	-	-	-
	TRAFFIC PROJECTS - Signal Controller Renewal - 8th St and Cliffe Ave	160,000	160,000	-	-	-	-
	TRAFFIC PROJECTS - Signal Controller Renewal - 5th St and Cliffe Ave	20,000	20,000	-	-	-	-
	TRAFFIC PROJECTS - Signal Controller Renewal - Old Island Highway at Comox Road	20,000	20,000	-	-	-	-
	TRAFFIC PROJECTS - Signal Controller Renewal - 8th and Fitzgerald	180,000	180,000	-	-	-	-
Engineering Total	Infrastructure	6,860,000	648,300	584,100	262,700	1,964,900	3,400,000

ENGINEERING – INFRASTRUCTURE – MAJOR ROAD CONSTRUCTION



- 5TH STREET BRIDGE DECK RENEWAL AND PAINTING
- FULL REMOVAL / RECOAT OF ALL STRUCTURAL STEEL COATING
- INSTALL CATHODIC PROTECTION SYSTEM
- FULL REPLACEMENT OF DECK OVERLAY
- STRUCTURAL REPAIRS TO ENDS OF DECK BEAMS
- DESIGN COMPLETION 2020, CONSTRUCTION 2021
- COMBINATION OF FUNDING: BUILDING CANADA GRANT, NEW DEBT, RESERVE AND DCC



Project Budget

Year	Approved Budget	Total Spent	Carry Forward	Requested Budget	Total Budget
2019	\$423,000	\$320,649	\$102,351		
2020				\$375,000	
					\$375,000



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council
From: Chief Administrative Officer
Subject: 5th St Bridge Rehabilitation

File No.: 5335-20; 5400-02
Date: January 27, 2020

PURPOSE

The purpose of this report is to move forward with the 5th Street Bridge Rehabilitation Project to ensure completion of the project by the March 31, 2022 funding deadline through the following steps:

1. Update on the actions taken since September 2019, including: the public engagement process (Attachment 1); construction staging and scheduling future options (Attachment 2); and information regarding cycling and walking connectivity (Attachment 3).
2. Confirm the final design for the 5th St Bridge Rehabilitation Project, which currently includes the addition of cantilevers to provide two 3 metre wide multi-use pathways; or

Alternatively, direct staff to proceed with a final design that does not include cantilevers.

3. Confirm whether to obtain approval for a loan authorization bylaw for the 5th St Bridge Rehabilitation Project by assent of the electors (i.e. referendum), or by the Alternate Approval Process, as required by sections 85 and 86 of the *Community Charter*.

EXECUTIVE SUMMARY

The 5th St Bridge plays an important role in the entire Comox Valley transportation network serving 20,000 vehicles, 650 pedestrians and 500 cyclists each day. Completed in 1960, the 72-metre steel truss bridge has two vehicle lanes and 1.5 metre sidewalks on both sides of the bridge. The bridge requires rehabilitation of various elements to maximize its service life for all users.

At the June 24th Council meeting, staff were directed "...to proceed with the associated next steps to rehabilitate the 5th Street Bridge, including the upgrade of adding cantilevered multi-use pathways...". Recall that rehabilitation of the bridge is estimated to take approximately 6 months, with an estimated cost of \$6.3 million dollars. Including the upgrade of adding cantilevered multi-use pathways will add approx. 2 months to project duration, and an additional \$2 million dollars the estimated cost of the project.

The 5th Street Bridge Rehabilitation Project is one of City of Courtenay's top Strategic Priorities, was identified in November 2019 as one of Council's five "NOW" Priorities and forms a part of several staff Operational Strategies in the near term.

Since September, the City has undertaken a public consultation process for the 5th Street Bridge that included in-person meetings with several local stakeholder groups, an open house with 97 attendees and an online survey that resulted in 671 respondents, of which 67% were Courtenay residents. The public engagement process resulted in extensive awareness of the need to rehabilitate the 5th St Bridge and

solicited extensive input to help inform construction planning, connectivity and communications preferences.

Additional technical work has also been completed since September to understand potential traffic implications during different stages of the project, confirm the environmental/regulatory requirements, utility considerations, and how to best manage traffic and emergency response during construction.

In September 2019 a report titled “Project Scope for Bridge Rehabilitation, and New Cantilevered Pathways” was included in the staff report presented to Council on September 16th. The previous report highlighted a number of considerations for the project including; Bridge Upgrade Scope, Expected Bridge Closure Geometry, Rehabilitation and Staging Considerations; and Sample Bridge Cross Sections.

This report provides supplemental details to the information provided in September, including further details about what to expect during construction, and reviews of the various construction staging scenarios that may be contemplated with respect to the construction sequencing. This report also provides supplemental information on the following four critical considerations comparison:

- Accommodation of vehicle traffic,
- Accommodation of active transportation,
- Cost Implications; and
- Schedule Implications.

In terms of improving multi-modal amenities and connections across the Courtenay River, the project team has developed options for 5th Street Multi-use pathway connections, outlining potential multi-modal amenities and connectivity, as well as associated costs and construction considerations for connecting the multi-use pathways to existing pedestrian and cycling networks on both sides of the bridge.

Connection improvements include three metre pathways connecting to adjacent bike lanes and sidewalks on the west and east approaches, new let downs, wayfinding and regulatory signage, and a bike wheel channel on the south-west approach stairway. The recommended connection improvements are included in the existing project budget.

After factoring in grant contributions and infrastructure reserves, the City will need to borrow funds over the long term to rehabilitate the bridge, as well as any multi-modal upgrades. **Once the project scope is given final approval, a loan authorization bylaw process must be commenced this spring to meet the construction schedule, and the federal grant requirement that the bridge must be completed by March 31, 2022.** A draft bylaw has been prepared that outlines the specific scope and borrowing amount as per section 179(2) of the *Community Charter*. An associated communications plan will also be prepared in early 2020 once final decisions have been made on scope, borrowing and other factors.

CAO RECOMMENDATIONS:

Rationale Regarding Cantilevers

RECOMMENDATION ONE is presented as a choice between two options for the 5th St Bridge Rehabilitation Project (add cantilevers, or do not add cantilevers) rather than as a recommendation from the CAO.

The original CAO recommendation, which was included in a June 24, 2019 staff report, was to not include cantilevers. A copy of this report is provided for reference as Attachment 4.

At Council's direction, in the last several months the project team has undertaken additional work that is intended to assist Council in making a final decision on project design (yes or no to cantilevers). This is essential in order for construction to complete prior to the March 31st 2022 grant completion date in order to receive the \$1.96 million grant. Therefore, the following is provided for Council's consideration:

RECOMMENDATION ONE

OPTION 1:

That Council reaffirm its decision to include cantilevers in the final design of the 5th St Bridge Rehabilitation Project.

OPTION 2:

That Council direct staff not to include cantilevers in the final design of the 5th St Bridge Rehabilitation Project.

Rationale Regarding Elector Assent Process

RECOMMENDATION TWO is presented as choice on how to proceed with obtaining Elector Assent for long term borrowing for the 5th St Bridge Rehabilitation Project, through either the Alternate Approval Process or by Referendum.

A loan authorization bylaw process must be commenced this spring to meet the construction schedule, and the federal grant requirement that the 5th St Bridge project must be completed by March 31, 2022. This requires Elector Assent which can be obtained through either the Alternate Approval Process (AAP) or by Referendum. **Staff are recommending the Alternate Approval Process as it is the least costly and time consuming, and if successful will have less impact on the project schedule.**

RECOMMENDATION TWO

OPTION 1 (Recommended):

That Council direct staff to obtain elector approval for a loan authorization bylaw for the Fifth Street Bridge Rehabilitation Project through the Alternate Approval Process.

OPTION 2:

That Council direct staff to obtain elector approval for a loan authorization bylaw for the Fifth Street Bridge Rehabilitation Project through the Referendum Process.

Respectfully submitted,



David Allen, BES, CLGEM, SCLGM
Chief Administrative Officer

BACKGROUND

The following council resolutions respecting the 5th Street Bridge Project, have provided direction to staff and informed the information outlined in this staff report.

June 24th, 2019

That based on the June 24th, 2019 staff report “5th Street Bridge Rehabilitation Project” Council approve OPTION 2 that Council direct staff to proceed with the associated next steps to rehabilitate the 5th Street Bridge, including the upgrade of adding cantilevered multi-use pathways plus development of detailed traffic management and public engagement plans, and report back to Council no later than September 16, 2019; and

That staff simultaneously prepare a supporting draft Borrowing Bylaw for Council consideration.

Subsequent Motion:

That staff bring forward a report providing options for exploring a 6th Street multi-use pedestrian-bike bridge at a future Council meeting.

September 16th, 2019

That Council direct staff to expedite delivery of a range of options and stakeholder engagement for the 6th Street multi-use pedestrian-bike bridge concept to provide greater information related to the design cost, public safety features and funding source options simultaneously with the 5th Street Bridge rehabilitation project update, and bring forward for consideration at a future Council meeting in January 2020.

DISCUSSION

The 5th St Bridge plays an important role in the entire Comox Valley transportation network serving 20,000 vehicles, 650 pedestrians and 500 cyclists each day. Completed in 1957, the 72-metre steel truss bridge has two vehicle lanes and 1.5 metre sidewalks on both sides of the bridge. Four important utilities are suspended beneath the bridge and are discussed below.

The City was successful in receiving \$1.96 million in funding from the New Building Canada – Small Communities Fund, which requires rehabilitation of the bridge to occur by March 31, 2022. Construction is planned for 2021.

To address the structural condition and safety of the current bridge, the original scope of the 5th St Bridge Rehabilitation Project includes:

- Bridge deck replacement and cathodic protection systems,
- Structural repairs to the steel bridge structure,
- New handrails
- Removal of rust and existing lead-based coating
- Recoating of all steel to prevent corrosion

Recognizing the important role the bridge plays in the City's transportation network, there are several elements to consider when planning how best to safely rehabilitate the bridge in a timely manner while maintaining access for all modes of traffic.

The bridge rehabilitation project also presented the opportunity to consider improved multi-modal amenities across the Courtenay River. The current project scope includes cantilevering new three-metre-wide multi-use pathways on both sides of the bridge. The current bridge provides narrow sidewalks on either side of the bridge and does not provide a safe connection for cyclists as they are expected to merge with traffic in a single file manner across the bridge. The cantilevered walkways will improve the user experience while on the bridge however users will revert to bike lanes and sidewalks as they move away from the bridge. Cost estimates for new three-metre-wide multi-use pathways on both sides of the bridge are provided in FINANCIAL IMPLICATIONS below.

Public Input Process

Public and stakeholder consultation occurred in November and December 2019, engaging with a variety of organizations across the Comox Valley and hundreds of residents in conversation about the bridge rehabilitation project. A detailed *What We Heard* report outlining the public engagement process undertaken and input received is provided as Attachment 1. Some highlights are listed here:

- The most important considerations related to mitigating construction are reducing congestion, maintaining access for all modes during construction and duration of construction. There is a high interest in improving pedestrian and cycling connections, however there is much debate about how or where to best improve amenities.
- The majority of respondents indicated they would take an alternate route during construction, followed by planning for more time and driving outside of peak travel periods
- If priority for connections must be considered, the west side is seen as a higher priority with connection to downtown, Cliffe Avenue, existing bike lanes and sidewalks receiving highest mentions. The highest mention on the east side was Lewis Park Recreation Centre.
- Overall, there was low interest in a colour change, however, should the colour change, respondents expressed stronger thoughts about what should guide the colour choice.
- The interests of downtown businesses were mentioned often, as were ensuring emergency services had priority access.
- The need to rehabilitate the bridge was widely understood, however many respondents would like an investment made into increasing the capacity for vehicles crossing the river.
- Several expressed relief that the bridge would remain open to traffic and accommodate all modes during construction.
- Residents expressed interest in staying informed about the project through signage, local newspaper and radio, City of Courtenay Facebook, and project emails. Those who attended the open house also preferred open houses.

Utilities

Four utilities are suspended beneath the 5th St Bridge:

- 1) City of Courtenay water main
- 2) Comox Valley Regional District (CVRD) water main
- 3) Fortis gas line
- 4) Telus telecommunications line

Preliminary consultation has occurred with the Comox Valley Regional District, Fortis and Telus to ensure awareness of the planned construction, and to identify considerations for safeguarding all utilities during construction. On-going discussions with all stakeholders will be required throughout design and construction phases.

Environmental and Regulatory Permitting

As the construction work will be conducted above the Courtenay River, there are a number of important environmental considerations including permits and plans that will be required. The two main components will be:

- An application will need to be submitted to the BC Ministry of Forests, Lands and Natural Resource Operations (FLNRO) under Section 11 of the Water Sustainability Act for works in and about a stream. In addition, a Request for Review will need to be prepared and submitted to Fisheries and Oceans Canada (DFO).
- The Courtenay River is important habitat for all species of Pacific salmon, steelhead and resident fish species such as rainbow trout, Dolly Varden and cutthroat trout. As such, an Environmental Management Plan (EMP) will be prepared to support the BC Water Sustainability Act and DFO applications. The EMP will provide recommendations and best management practices to minimize the potential for adverse impacts to the Courtenay River as a result of the bridge works.

The regulatory and EMP applications should be completed and submitted once the final scope of work is confirmed. It will be important to ensure any timing windows are understood and the permits can be incorporated into any tender packages. Permit windows can range from two to six months depending on the perceived impact of the project.

Other additional permits that may be required depending on the scope are:

FortisBC Gas – Depending on the pressure class of the existing FortisBC gas main suspended beneath the bridge, a permit issued by Fortis will be required to work around the main or make any adjustments to it for project purposes. Preliminary consultation has occurred with FortisBC and they will need to be consulted once the final scope of the work is confirmed.

BC Heritage Conservation Act – Due to the proximity to the river and known registered archeological sites in the area, a ground disturbance (site alteration) permit from the Province may be required for any excavation work required in and around the bridge. This could include work on the approaches for the new cantilevers. The permit review and approval period can take from three to six months. An application for a ground disturbance permit should be submitted as soon as the final scope is confirmed, and any potential ground excavation locations are definitively identified.

Traffic Management

In order to protect the Courtenay River from exposure to the lead paint being removed, the bridge must be scaffolded and wrapped in plastic for an extended duration of construction. The scaffolding reduces the geometry (clearances) of the bridge, narrowing the height and width available for all modes of travel. Construction can be completed while maintaining access for vehicles, BC Transit and SD71 buses, cyclists and pedestrians. However, there is a vertical height limitation of 3.6 metres that will limit some large vehicles, including the City's fire department ladder truck.

The project team has had discussions with local emergency services, BC Transit, 19 Wing, and School District 71 to evaluate height limitations, service impacts, and potential alternatives. Outreach to the local contractors and construction community will be required to communicate the temporary height restrictions during construction. Maintaining emergency access for police, fire and ambulance services, including volunteer firefighters living and/or working in west Courtenay, reporting to the station will be a priority during construction. Options for maintaining access may also include alternate routes (for example Condensory/Dove Creek Bridges, and the 17th St Bridge).

Courtenay Fire/Rescue Services, the Comox Valley Emergency Program, Engineering Services and Public Works Services will work together to explore opportunities to identify volunteers and staff crossing the bridge for a response and various means to accommodate this need.

Since September, work has advanced on understanding the current travel patterns associated with the bridges in Courtenay, estimating bridge capacity and demand, and projecting the traffic impact due to the bridge work. The findings are guiding the detailed options for traffic management to minimize negative impacts to the network, where feasible.

Staging of Work

The scope of the bridge improvements includes varying requirements for bridge closures and staging. While it is expected that all these will be undertaken under a single contract, it may be possible in future to entertain various options of bridge closures by trading increased public convenience against increased cost.

The various staging options are provided in Attachment 2 to this report: *Construction Sequencing and Bridge Closure Considerations* memo. The prospective options will only become relevant once the decision has been made regarding the inclusion of cantilevers in the Project Scope and then may serve to inform and refine the information provided the public during the Alternative Approval Process.

The financial information contained in Attachment 2 is to be considered supplemental and subordinate to the information provided in the table provided in the FINANCIAL IMPLICATIONS section below.

Multi-modal connections to the 5th St Bridge multi-use pathways

The current project scope includes cantilevering three metre wide multi-use pathways on both sides of the bridge. The proposed cantilevers inherently provide a better experience and improved safety for non-motorized, multi-use travellers than the current 1.5 metre wide pathways because they are further separated from cars. They will also allow cyclists to avoid having to share the roadway with vehicles and provide more space for all active users. The current scope of work for connectivity includes immediate tie-in to the pre-existing network as presented in Figure 1 below.

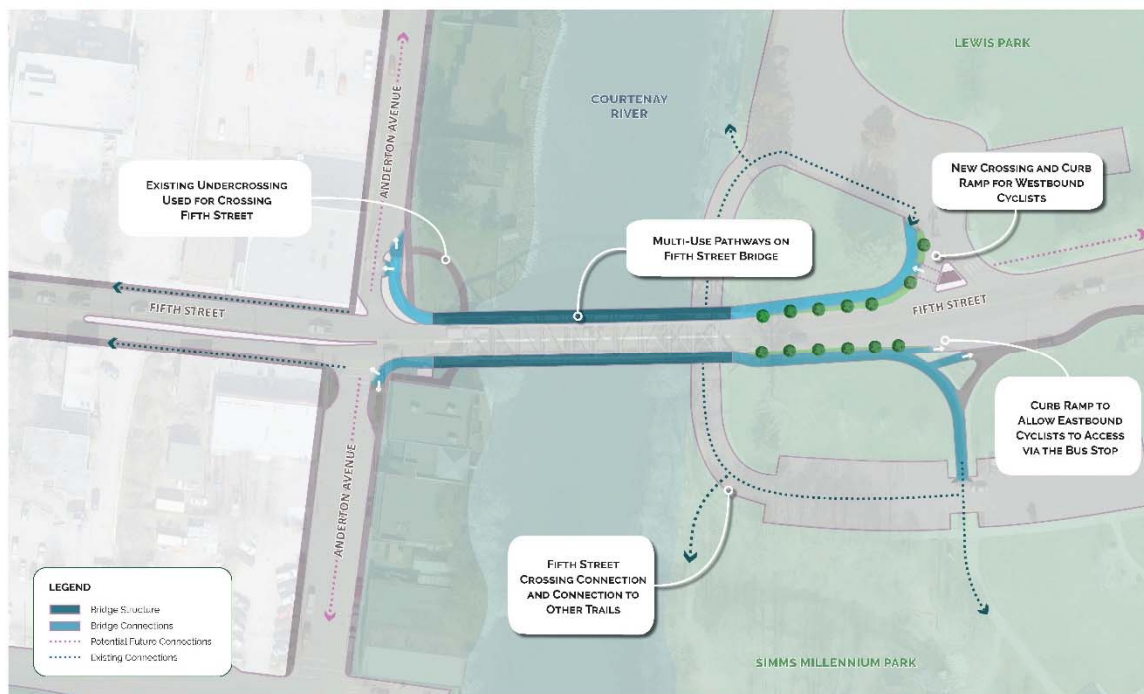


Figure 1 – 5th St Bridge Multi-Use Pathway Connectivity

Opportunities to increase the safety, comfort and experience for pedestrians and cyclists connecting have been considered using the following criteria.

- Pedestrian Safety
- Cyclist Safety
- Pedestrian Connectivity to existing networks
- Cyclist Connectivity to existing networks
- Pedestrian Comfort/Experience
- Cyclist Comfort/Experience
- Vehicle Impact
- Integration into existing and future park infrastructure
- Value for money

A concept design has been developed identifying the preferred option for connecting the proposed cantilever facilities on both sides of the bridge.

The Class D estimate for the recommended multi-modal connections is \$400,000 and is included within the current project budget for the cantilever option. The 5th St Bridge Connectivity memo is provided as Attachment 3 to this report.

PROJECT TIMELINE (including cantilever option)

The milestone project schedule remains the same with borrowing, design and planning occurring in 2020. Construction will commence in spring 2021 and is planned to be completed by the end of 2021. For grant compliance, all works must be completed prior to March 31, 2022.

City of Courtenay Fifth Street Bridge - Summary Schedule										
	2019	2020				2021				2022
	Sep-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar
Communications and Public Consultation										
Complete Design										
Borrowing Bylaw										
Contract Tender										
Construction										
Project Close-out										

FINANCIAL IMPLICATIONS:

After factoring in grant contributions and infrastructure reserves, the City will need to borrow funds over the long term to rehabilitate the bridge, as well as any multi-modal upgrades. Once the project scope is given final approval, a loan authorization bylaw process must be commenced this spring to meet the construction schedule, and to meet the federal grant requirement that the bridge must be completed by March 31, 2022.

Project Element	1) Original Scope - Rehabilitation	2) Rehabilitation + Cantilever Upgrade
Outcome	Rehabilitated crossing with 20-year updated useful service life with full utilization of the grant and cathodic protection versus deck replacement.	A rehabilitated crossing with extended service life that provides improved cycling and walking amenities, with full utilization of the grant.
Bridge Recoating & Deck Renewal	\$4.1 million	\$4.1 million
Structural and Traffic	\$2.2 million	\$2.2 million
Cantilever Pathway	n/a	\$2 million
Total	\$6.3 million	\$8.3 million
Fed/Provincial Grant	\$1.96 million	\$1.96 million
Reserves	\$0.94 million	\$0.94 million
City Borrowing Amount	\$3.4 million	\$5.4 million
Tax Implications (based on 2019 assessments and tax rates)	Average residential property \$13 per year Average commercial property \$82* per year	Average residential property \$20 per year Average commercial property \$130*per year

**Note: Commercial Class 6 encompasses a wide range of businesses and assessment valuations.*

Borrowing Bylaw Process

The statutory borrowing process is estimated to take upwards of eight months, therefore starting early to ensure all approvals are in place for the fall of 2020, is recommended to facilitate tendering. Once a certificate of approval has been received by the Inspector of Municipalities, Council must then pass a Municipal Security Issuing Resolution and forward it to the Comox Valley Regional District to be included in the next Regional District Security Issuing Bylaw that will go through further adoption at the regional level.

Elector Approval:

Section 180 of the *Community Charter* requires elector approval of a loan authorization bylaw before it can receive final adoption. There are two options available to gain elector approval as follows:

1. Alternative Approval Process (AAP)

An AAP requires that ten percent or more of the eligible electors must sign and submit response forms in opposition to the proposed loan authorization bylaw to the local government to obtain assent of the electors in order to proceed. If ten percent of the electors sign forms in opposition to the AAP, there are two choices: proceed to referendum within eighty days, or the loan authorization bylaw could be put on hold and Council may consider alternatives.

2. Referendum

A referendum involves asking electors to cast their vote in relation to the loan authorization bylaw. Assent of the electors is achieved if a majority of votes counted are in favour of proceeding with the bylaw. If elector assent is not granted the loan authorization bylaw could not be adopted and Council would need to consider alternatives. It should be noted that if a bylaw that requires the assent of the electors does not receive that assent, a bylaw for the same purpose may not be submitted to the electors within a period of 6 months.

A referendum is a much more costly and time consuming activity than the Alternative Approval Process, therefore staff recommend gaining elector approval through the AAP process for this loan authorization bylaw. It is estimated that an AAP process would cost \$1,200 whereas a referendum would cost at least \$40,000 to perform. An AAP process takes approximately 8 months, whereas a referendum would take approximately 10 months.

ADMINISTRATIVE IMPLICATIONS:

The 5th St Bridge Rehabilitation Project will be led by Engineering Services, with support from most other City Departments. Consultants with technical knowledge specific to this work will be utilized to develop and implement detailed designs and processes. Estimated costs associated with external consultants are included in the project capital budget.

ASSET MANAGEMENT IMPLICATIONS:

The 5th St Bridge is one of the City's most valuable assets providing a critical service of connecting the east and west parts of the community and it is an emergency route for fire, police and ambulance services. In addition, it remains an essential means to cross the Courtenay River for the many residents and businesses from adjacent communities as well as other out of area travellers using BC Ferries, the regional airport, regional hospital, 19 Wing Comox and BC Highway 19A to other destinations.

On-going maintenance is periodically required to maintain the asset at its intended level of service thereby avoiding catastrophic failure, severe transportation disruptions and increased costs resulting from reactive rather than planned maintenance. The bridge is inspected annually under contract and routine maintenance and repairs are undertaken at approximately 20,000 a year in PWS operational budget

In Asset Management practice and parlance, the rehabilitation of this asset is actually maintenance that is periodically necessary to return the asset to its intended level of service. While the rehabilitation project cost surpasses the financial threshold from operating to capital, this is indeed maintenance of an existing asset providing an existing level of service. Therefore, the rehabilitation and its associated funding source is a practice and cost of doing business.

Also in Asset Management practice and parlance, adding cantilevers to the existing asset is outside the bounds of present capital asset renewal and maintenance planning. It is therefore, a Council discretionary service upgrade for which new capital funding and other unanticipated lifecycle expenses must be found.

STRATEGIC PRIORITIES REFERENCE:

Strategic Priorities 2019 - 2022

In addition to being identified one of Council's five "NOW" Priorities, the following Themes and Operational Strategies are relevant to the 5th St Bridge Rehabilitation Project:

Strategic Priorities:

We focus on organizational and governance excellence

- Communicate appropriately with our community in all decisions we make
- Responsibly provide services at levels which the people we serve are willing to pay

We proactively plan and invest in our natural and built environment

- Focus on asset management for sustainable service delivery

Operational Strategies:

DIRECTOR LEGISLATIVE & CORPORATE SERVICES

2. Borrowing Bylaw: Approval Process Jan '20

DIRECTOR FINANCIAL SERVICES

2. Draft Borrowing Bylaws: Prepare Jan '20

DIRECTOR ENGINEERING SERVICES

1. 5th St. Bridge/6th St. Bridge: Open House Nov '19

OFFICIAL COMMUNITY PLAN REFERENCE:

The OCP sets out the following policies in Part 4 Land Use Designations and Part 5 Transportation:

4.6.6.3 Policies

1. Wherever possible, the walkway portion of the Riverway system will be adjacent to the foreshore of the Courtenay River, slough and estuary. Where necessary or desirable, land acquisitions or easements will be sought to accomplish this objective while considering the integrity of these areas.
2. Council will investigate the feasibility of a pedestrian/bicycle bridge crossing of the Courtenay River, to link the west bank downtown with Lewis Park and/or Simms Millennium Park (for example, a suggested pedestrian/bicycle bridge from 6th Street to the east bank).

5.3 Policies

7. The City will continue to pursue the development of a continuous, integrated bicycle network in order to promote and encourage cycling as a commuting alternative to the automobile and as a means of active recreation. The Bicycle Planning Strategy adopted in 1995 will be reviewed and updated.

REGIONAL GROWTH STRATEGY REFERENCE:

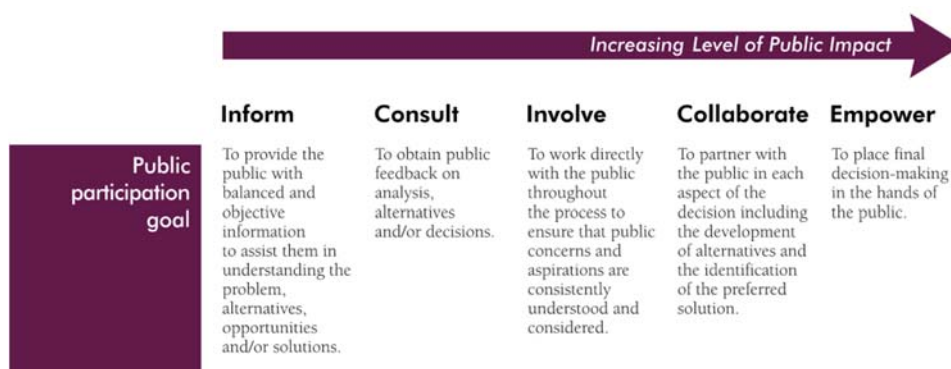
The 5th St Bridge Rehabilitation Project is aligned with “Goal 4: TRANSPORTATION” of the RGS:

Supporting Policies:

- 4B-1 Promote and encourage cycling plans and programs through ongoing local and regional initiatives and actions.
- 4B-4 OCPs should identify regionally important, priority street connections for pedestrian and cycling improvements and require that connections be established as a condition of redevelopment.

CITIZEN/PUBLIC ENGAGEMENT:

In addition to the legislative requirements for advertising a borrowing bylaw, a proactive communications strategy including media, social media, and online and print advertising will be undertaken to support the Borrowing Bylaw process. Staff would Inform the public based on the IAP2 Spectrum of Public Participation as the project progresses, but will Empower the public regarding the borrowing bylaw process:



OPTIONS:

RECOMMENDATION ONE

OPTION 1:

That Council reaffirm its decision to include cantilevers in the final design of the 5th St Bridge Rehabilitation Project.

OPTION 2:

That Council direct staff not to include cantilevers in the final design of the 5th St Bridge Rehabilitation Project.

RECOMMENDATION TWO

OPTION 1 (Recommended):

That Council direct staff to obtain elector approval for a loan authorization bylaw for the Fifth Street Bridge Rehabilitation Project through the Alternate Approval Process.

OPTION 2:

That Council direct staff to obtain elector approval for a loan authorization bylaw for the Fifth Street Bridge Rehabilitation Project through the Referendum Process.



Prepared by:

Chris Davidson, P.Eng
Manager of Engineering Projects

ATTACHMENTS (5):

Attachment 1 – *What We Heard* Public Engagement Summary

Attachment 2 – *Construction Sequencing and Bridge Closure Considerations* memo

Attachment 3 – 5th St Bridge Connectivity Memo

Attachment 4 – Staff Report “5th Street Bridge Rehabilitation Project” dated June 24, 2019.

What We Heard

Fifth Street Bridge Rehabilitation Project Phase 1 Public Engagement Summary




CITY OF
COURTENAY
Engineering Services

About The Project

The City is planning for the rehabilitation of the Fifth Street Bridge, including improving cycling and pedestrian accessibility across the Courtenay River. New widened pathways will improve pedestrian and cycling connectivity across the river, access to downtown, and help accommodate continued growth in the number of people who walk, cycle and use mobility aids.

Originally constructed in 1960, the Fifth Street Bridge is an important piece of transportation infrastructure spanning the Courtenay River. The bridge requires structural improvements, new coating and paint to repair and prevent corrosion and deck repairs. The last significant investment in the bridge, including seismic upgrading, was completed in 2012.



On-going public engagement is an important project objective with opportunities for people to learn more and provide feedback throughout the various phases of the project.

Overview

In November and December 2019, the City reached out to the community for input and offered a variety of ways for residents to review project plans, speak with project staff, and provide feedback about what is important to consider as the City plans for ways to mitigate impacts wherever possible during construction. A survey (online and print), stakeholder meetings, and a public open house took place.

- 1) Overview of Fifth Street Bridge
- 2) Description of the Fifth Street Bridge Rehabilitation Project
- 3) Connecting Courtenay: Transportation Master Plan
- 4) Sixth Street Multi-Use Bridge
- 5) Where we are in the process
- 6) Project budget and funding impacts
- 7) What to expect during construction
- 8) What else to expect during construction
- 9) Traffic Mitigation

A drop-in style open house provided opportunity for the community to learn more and provide feedback about the project on Thursday, November 21, 2019 from 5 p.m. – 7 p.m. at the Florence Filberg Centre. 98 people attended. Print surveys, Informational display boards and a series of interactive boards to solicit input from the public were present. A multi-disciplinary team of staff and consultants was on-hand to answer questions.



SURVEY:

Available from Tuesday, November 12 – Friday, December 6, 2019, through SurveyMonkey.com online and print, 643 responded to the survey.

STAKEHOLDER MEETINGS:

Letters were sent out to over 20 stakeholders in the region inviting them to a one-on-one meeting with City staff and project consultants. To date, meetings with the following stakeholder groups has occurred and outreach to others continues.

- | | |
|---|---|
| 1) CFB 19 Wing Comox | 6) BC Transit |
| 2) Cycling Coalition | 7) Comox Valley Regional District |
| 3) BC Ambulance | 8) Province of British Columbia
Ministry of Transportation |
| 4) Comox Valley Chamber of
Commerce | 9) Courtenay Fire Department |
| 5) The Downtown Courtenay Business
Improvement Association (DCBIA) | |

Promotion and Awareness-Raising

- Letters were sent via mail and email to key stakeholder groups
- Media release was distributed to local media
- Social media posts were shared by City of Courtenay via Twitter and Facebook and promoted throughout the awareness campaign
- Print ads appeared in the Comox Valley Record and the CV Collective
- Emails sent via project e-newsletter

Promotional print ad >

Learn More About Plans to Rehabilitate and Upgrade the Fifth Street Bridge



The City of Courtenay is planning for the rehabilitation of the 60-year-old Fifth Street Bridge, including upgrading cycling and pedestrian connections across the Courtenay River.

Learn more, ask questions of the project team, and provide feedback at an upcoming open house. If you can't make the open house, the same information and opportunities to provide input are available online.

OPEN HOUSE:
Thursday, November 21, 2019
5 p.m. – 7 p.m.
Florence Filberg Centre, Rotary Hall (downstairs)

Other ways to share your feedback: Complete the online survey by Friday, December 6, 2019 - www.courtenay.ca/fifthstreetbridge

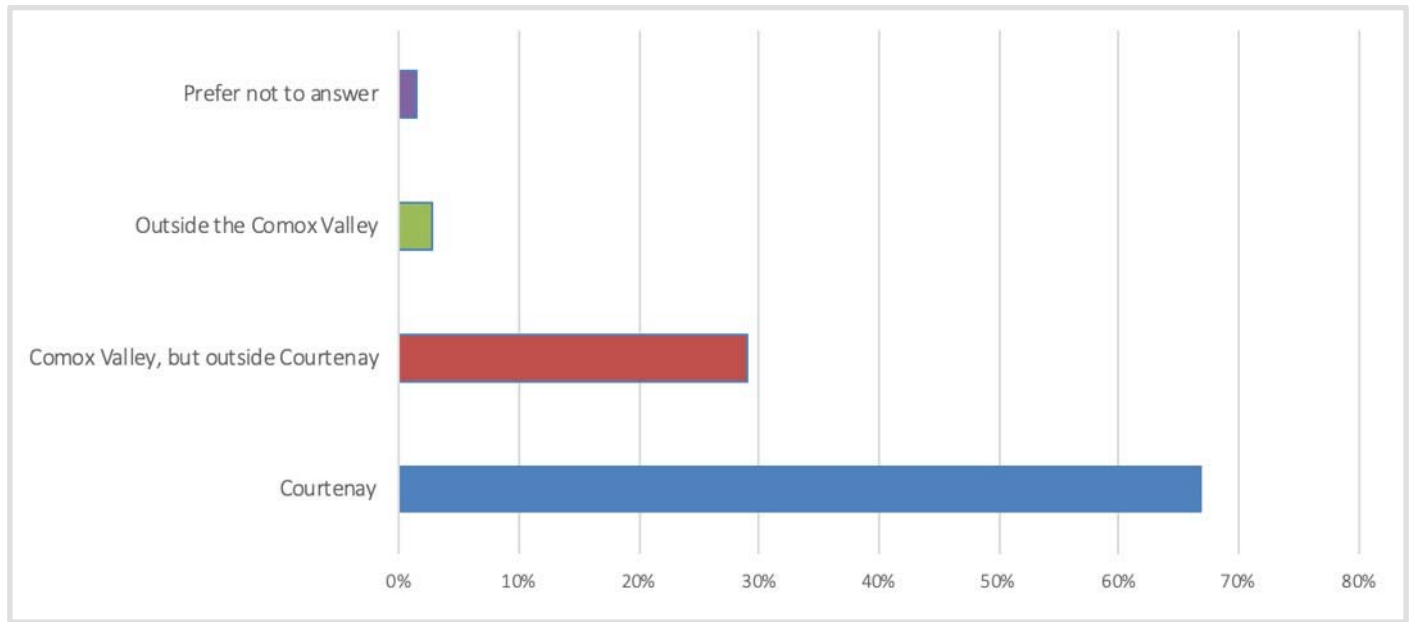


CITY OF
COURTENAY
Engineering Services

Email: fifthstreetbridge@courtenay.ca
Phone: 250.703.4838

Who Participated

2/3 of the respondents to the online survey lived in the City of Courtenay.



What We Heard

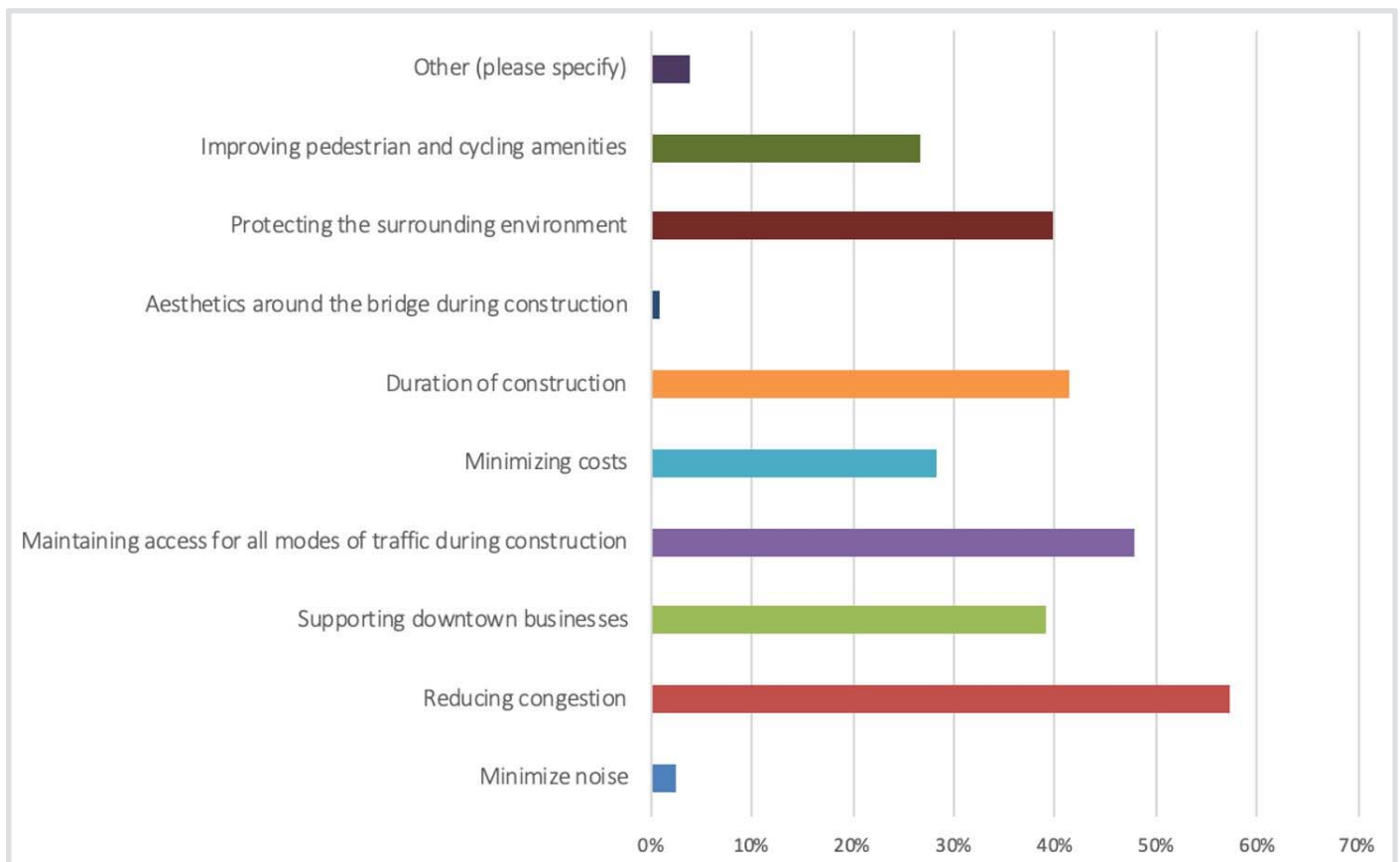
A number of themes emerged from the stakeholder meetings, 631 completed surveys, and the comments received at the open house.

- During construction, respondents are most interested in seeing congestion reduced, maintaining access for all modes, and minimizing the duration of construction. Respondents are concerned about how congested the area will be during construction and about potential construction delays.
- When asked about travel behaviours, respondents are most likely to take an alternate route, plan for additional time, or travel outside of peak periods. 20% indicated they may not change their travel behaviour.
- When asked about the importance of improving connections to and from the bridge, there were strong polar views about whether connections to the bridge were needed. Those who cycle and those who attended the open house ranked the need for improving connections higher.

- When asked about placing priority on connections on the west or east side of the river, the west was preferred.
- The majority of respondents did not feel strongly about changing the colour of the bridge. However, if it is decided that the colour will change, there are stronger feelings about what colour it should be or what should guide that decision.
- In terms of communications preferences, construction signage, newspaper and radio and City of Courtenay Facebook were preferred. Several respondents indicated interest in an app or text service that would deliver updates to a mobile device. Of those who attended the open house, there was higher interest in open houses and a project e-newsletter.
- The importance of priority access for emergency vehicles was mentioned several times. Discussions with Courtenay Fire Department also highlighted the importance of priority access for fire department volunteers responding to the station in an emergency.
- Stakeholder meetings with BC Transit, School District and emergency services, highlighted the need for ongoing dialogue in relation to impacts to tall vehicles and scheduled routing.
- When the public was asked what they like most about the rehabilitation project, respondents indicated the improved amenities and access for cycling and walking and mobility aids, improved aesthetic of the bridge and that the work is overdue. Several noted the iconic or landmark role of the bridge within the community.
- A common concern expressed is that the investment doesn't address the current vehicle congestion and several questioned whether vehicles lanes could be expanded or whether money is better spent building a new vehicle bridge at Fifth Street or at a different crossing. Several questioned whether the multi-use pathways are needed and whether the additional construction time was worth the impact to the community and downtown businesses.

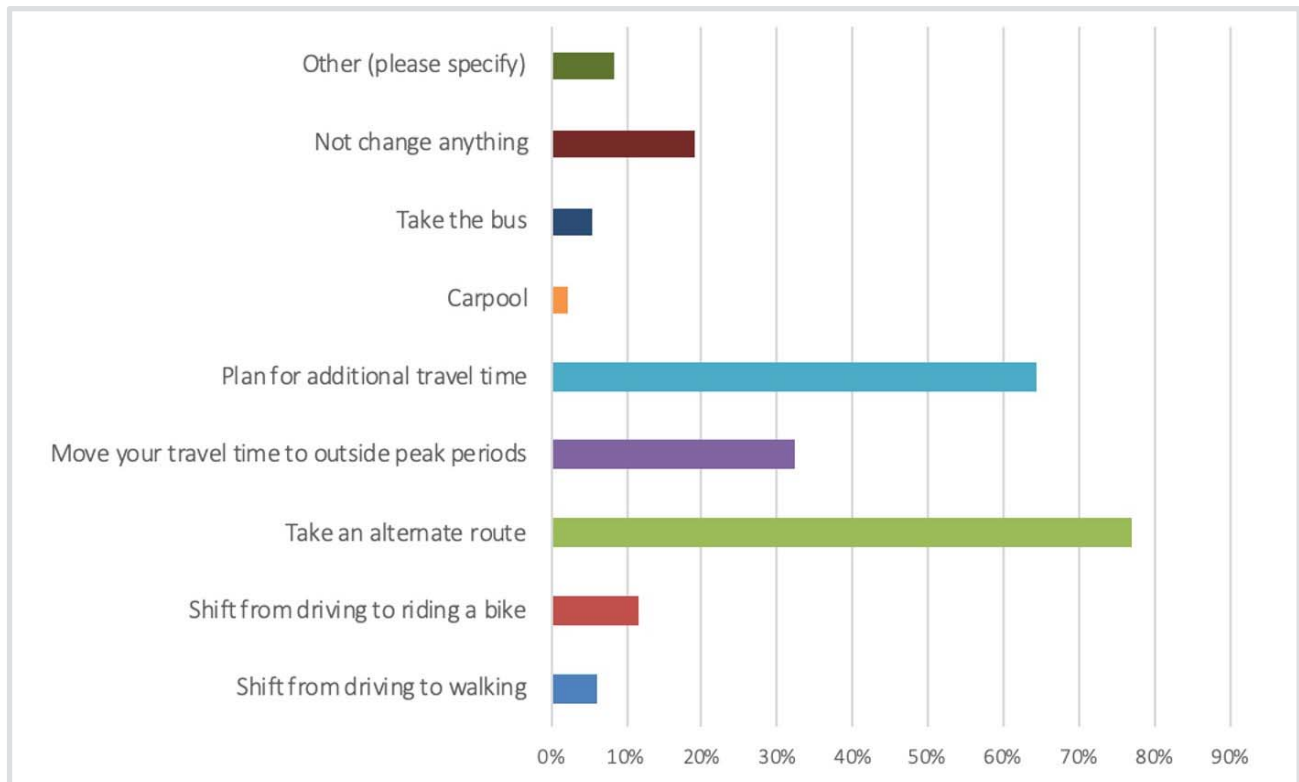
What Was Heard By Question:

1) *Rehabilitating and upgrading a bridge while remaining open to traffic requires a number of considerations. The safety of both work crews and public will always be top priority. Of the following considered, please select three that the most important to you:*

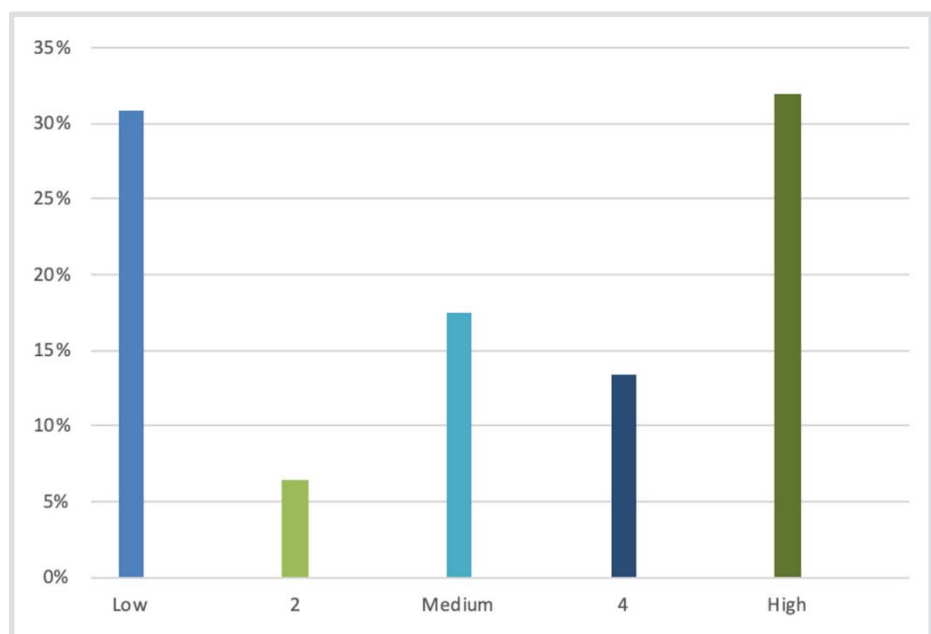


Note: of those who attended the open house the most important considerations during construction were protecting the surrounding environment and improving pedestrian and cycling amenities.

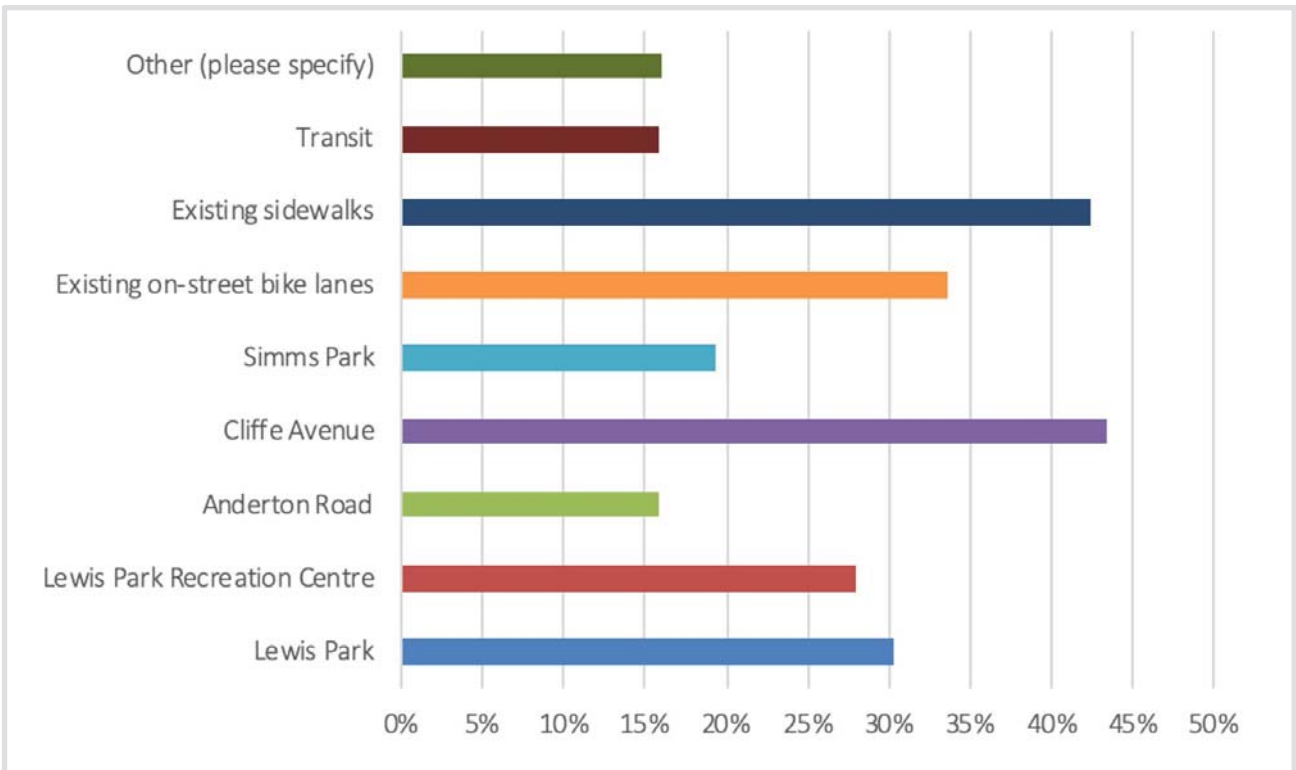
2) *The construction required to safely rehabilitate the Fifth Street Bridge will causes traffic disruption in adjacent areas for several months. In terms of your own travel behaviours, during construction are you most likely to:*



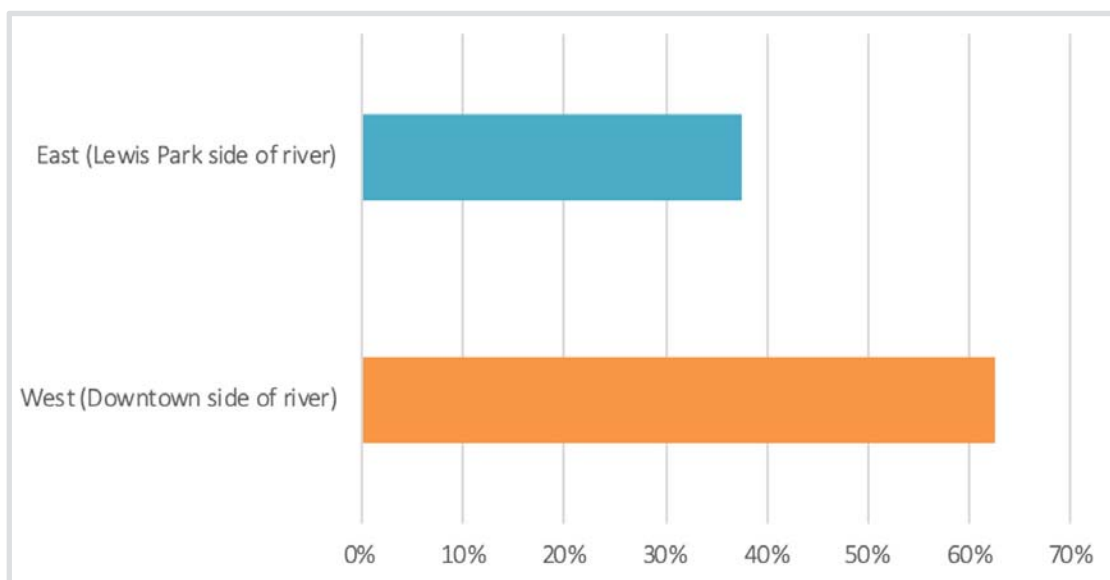
3) *How important is improving the connections to and from the Fifth Street Bridge for people who walk, cycle, and use strollers or mobility aids?*



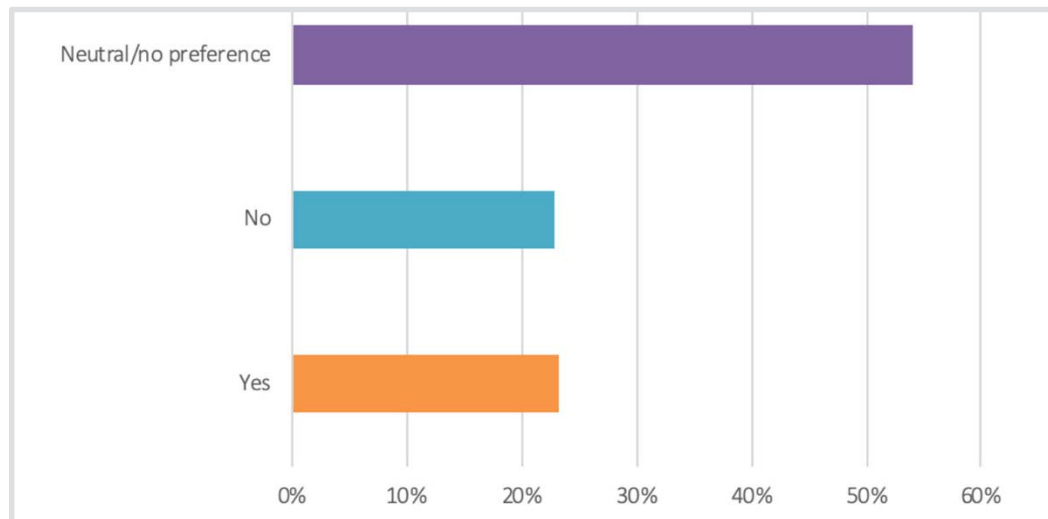
4) Which walking and cycling destinations are most important to connect to, from the Fifth Street Bridge?



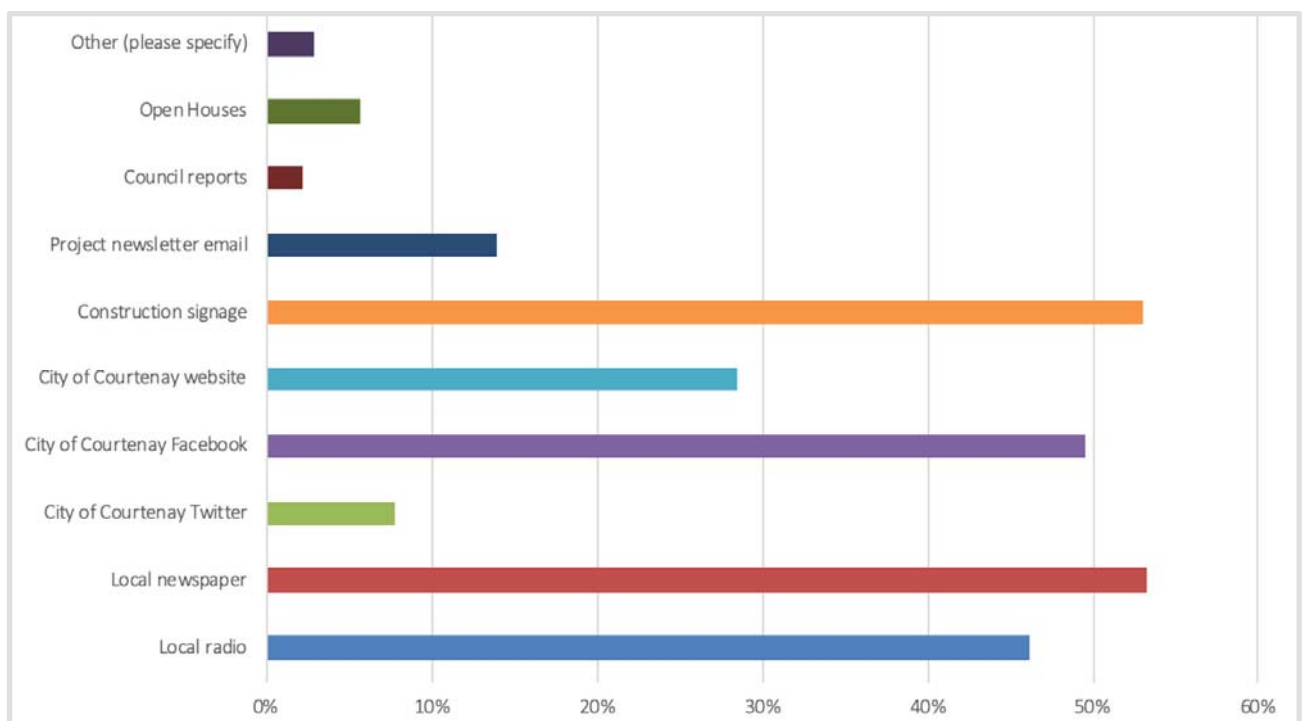
5) If priority needed to be placed on improving connectivity for pedestrians and cyclists on either side of the bridge, which would you prioritize higher?



- 6) *The Fifth Street Bridge Rehabilitation project includes moving all of the existing lead paint and recoating the bridge to protect the steel from corrosion. They are may be an opportunity to change the colour of the bridge. Do you feel the Fifth Street Bridge should be recoated a different colour?*



- 7) *We recognize that regular and proactive communications during construction are important to mitigating impacts to the public. What is the best way to keep you informed?*



Note: open house respondents rated the project email and open houses higher.

Next Steps

All input collected within Phase 1 of the public engagement process will be considered in detail and will further inform overall project and traffic management planning. The results of the public engagement process will be presented to Courtenay City Council in early 2020 and will be shared on the City of Courtenay website.

MEMORANDUM

Date: January 21, 2020
To: Chris Davidson, Manager of Engineering Projects
From: Eric Sears
File: 3222.0045.02
Subject: Fifth Street Bridge – Construction Sequencing and Bridge Closure Considerations

BACKGROUND

As a result of the expected upgrades that will be undertaken on the Fifth Street Bridge, during the construction phases there will be the need to limit traffic across the bridge resulting in the travelling public experiencing traffic delays and loss of parking in adjacent areas. While these traffic limitations are necessary to the project there are considerations that would either reduce the overall time of the disruptions or accommodate longer periods during construction where these disruptions would be minimized. Based on stakeholder and public feedback we understand that the potential for traffic delays and the length of the delays are major concerns to the public perceptions of the project.

As such, over the past number of months the project team has explored the various impacts associated with construction sequencing in order to start to understand the impacts and plan for mitigation. This assessment has been led by the two following criteria:

- One lane on the bridge will be required to be maintained open for alternating single lane vehicular traffic (SLAT) during the construction; and
- Cycling and pedestrian access must be accommodated in some form over the bridge during the construction.

In September 2019 a report titled “Project Scope for Bridge Rehabilitation, and New Cantilevered Pathways” was prepared by Hatch and was provided to council as part of a staff report that that was then presented to council on September 16th. The report highlighted several considerations for the project including:

- Bridge Upgrade Scope,
- Expected Bridge Closure Geometry,
- Rehabilitation and Staging Considerations; and
- Sample Bridge Cross Sections.

This memo provides supplemental details to the information provided in that memo that aims to provide addition details on what to expect during construction, and a review of the various scenarios that may be contemplated with respect to the construction sequencing. This report also provides supplemental information on the 4 critical considerations comparison:

- Accommodation of vehicle traffic during construction,
- Accommodation of active transportation users during construction,
- Cost Implications; and
- Schedule Implications.

MEMORANDUM

Date: January 21, 2020
File: 3222.0045.02
Subject: Fifth Street Bridge – Construction Sequencing and Bridge Closure Considerations
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In addition, this memo provides further details on what to expect during construction with respect to existing infrastructure on the bridge.

BRIDGE RESTRICTIONS AND LANE CLOSURE EXPECTATIONS

The scope of work for the bridge improvements includes 3 specific elements that all come with varying requirements for bridge closures and staging. While it is expected that all these elements will be undertaken under one contract, based on the needs, it is possible to undertake some of these elements concurrently or under dictated individual timeframes. This sequencing of the repair elements will have varying implications on traffic disruptions, overall project timing and cost implications.

The three main repair elements are:

- The addition of multi-use paths – The removal of existing cantilevered paths and replacement with 3.0 m paths.
- Structural and coating repairs – Structural repairs to the underside of the bridge and a complete re-coating of the steel structure
- Deck replacement – Removal and replacement of the concrete bridge deck.

There are other minor elements that fall between or slightly outside the above three elements however these are considered the elements that will dictate the project schedule and traffic disruptions.

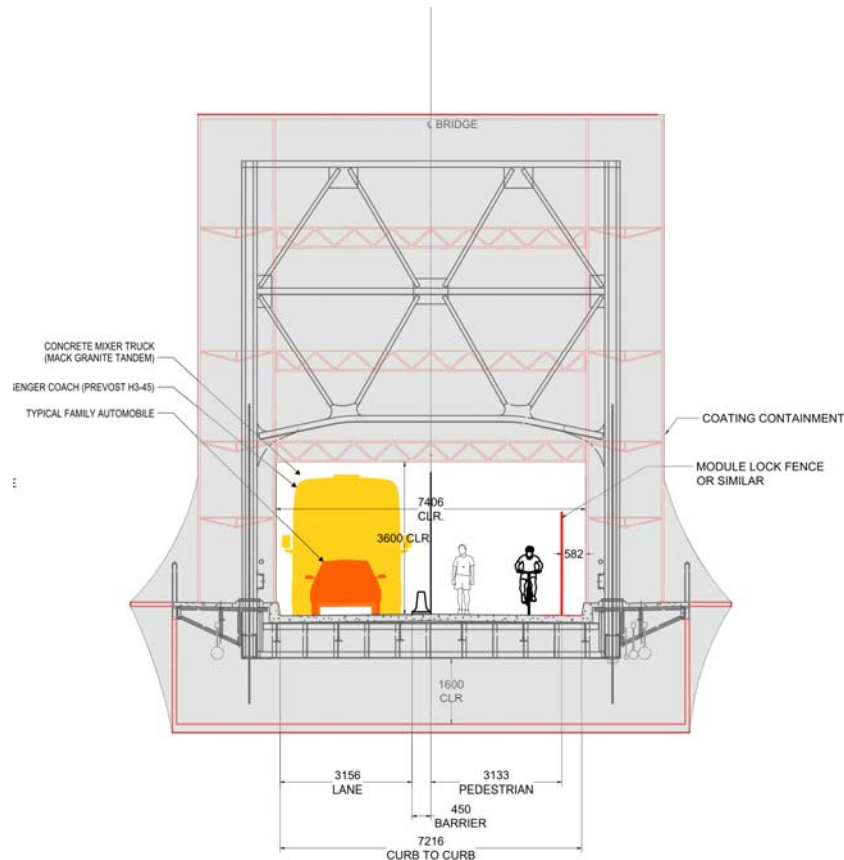
With the above in mind we have reviewed possible sequencing scenarios that could be expected, and that the City would have an opportunity to dictate to a certain degree during construction. The scenarios have been prepared based on the following overall assumptions:

- 1) The existing bridge vertical clearance is in the order of 4.6 m. During construction the scaffolding required to facilitate the recoating could potentially reduce the clearance to 3.6 m.
- 2) The Existing lane widths are approximately 3.6 m. During construction the minimum lane width may be reduced at times to 3.1 m.
- 3) Pedestrian traffic during construction would need to be accommodated either on new wider multi use paths or within the bridge roadway itself as per **Figure 1** below. It is not expected that the scaffolding required to facilitate the recoating would allow for pedestrians to use the existing cantilevered paths during the recoating phase of the project.
- 4) During the deck repairs, if the scaffolding were removed pedestrians could use the new or existing cantilevered pathways. A single lane closure would however still be necessary to facilitate the deck replacement work.

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Figure 1 - Sample Concept of Bridge Cross-Section Durign Rehabilitation with Cyclists and Pedestrians Using Travel Lane



Based on the above, we are presenting the below 4 possible scenarios that may be considered with respect to construction sequencing. The timeframes represented are estimated based on the overall expected length of the project but may require adjustments based on the eventual mobilization and construction needs and the schedules brought forward by the contractor.

Scenario 1 – Full Bridge and Decking Repairs and Addition of Multi Use Paths Completed Concurrently

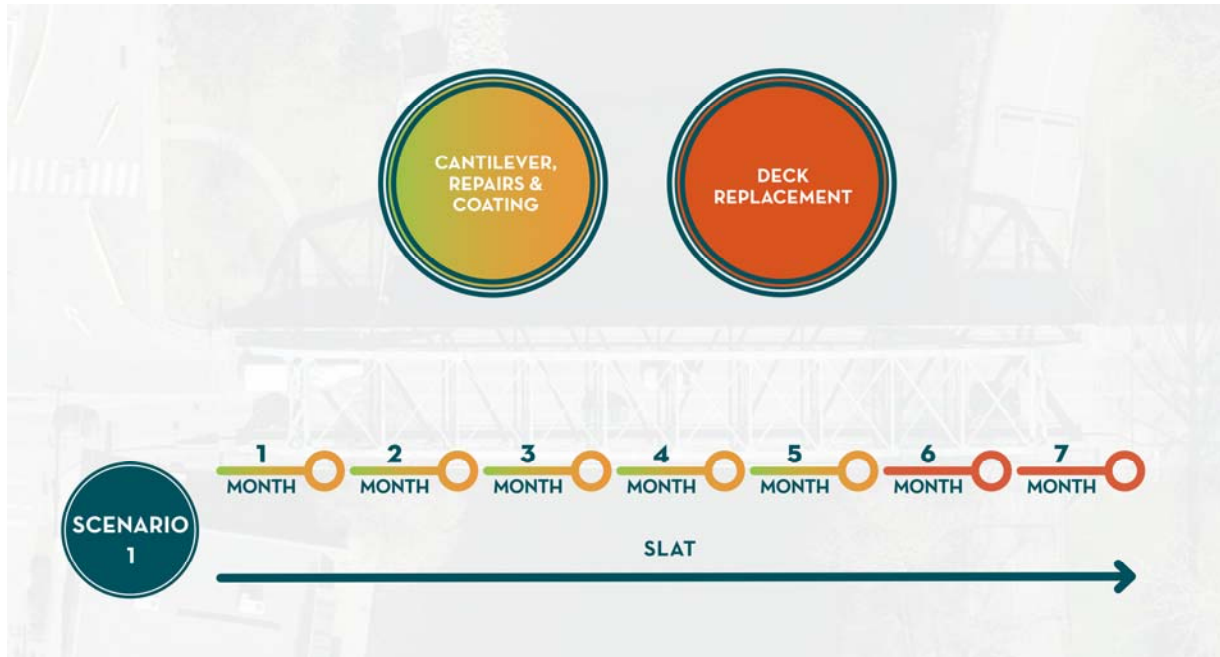
This scenario would see the full scope of the project being undertaken concurrently. The overall project timeline for this scenario is expected to be 6 to 7 months. In this scenario the contractor would be able dictate and adjust their own schedule and sequence of the elements based on the needs of the project.

During construction we would expect the bridge closures to generally follow the sequence shown in **Figure 2**, however, the contractor would be able to adjust this based on what they feel would be the most efficient sequence.

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Figure 2 – Scenario 1 Construction Timeline



It would be expected that bridge shutdowns for this scenario would primarily include single lane alternating traffic (SLAT) for most of the project, with possible periods of two-way traffic.

Advantages:

- Accommodates full scope of the project with the shortest length of overall construction.
- Would provide the most cost-effective scenario as the contractor would be free to dictate schedule.

Disadvantages:

- SLAT during much of the project timeframe.

Scenario 2 – Installation of Multi Use Paths Followed by Full Bridge Coating and Decking Repairs

Installing the multi-use paths first, without any other works, would result in a slightly longer construction period but would allow for a longer period where traffic disruptions could be minimized. This is something that the City could dictate as part of the construction phasing. With the new paths added, pedestrians and cyclist would be able to use them during the coating phase of the project allowing the bridge lanes to be utilized for two-way traffic for large portions of the schedule. This concept is shown in **Figure 3** below. During the deck replacement the traffic would need to revert to SLAT to accommodate the work. During construction we would expect the bridge closures to generally follow the sequence shown in **Figure 4**. It should be noted that during the timeframe that is shown as two-lane traffic there may still be periods where SLAT would need to be used.

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The above scenario would be expected to come at a slight cost premium to Scenario 1 due to the longer construction length. This premium would be expected to be in the 5 to 10% range.

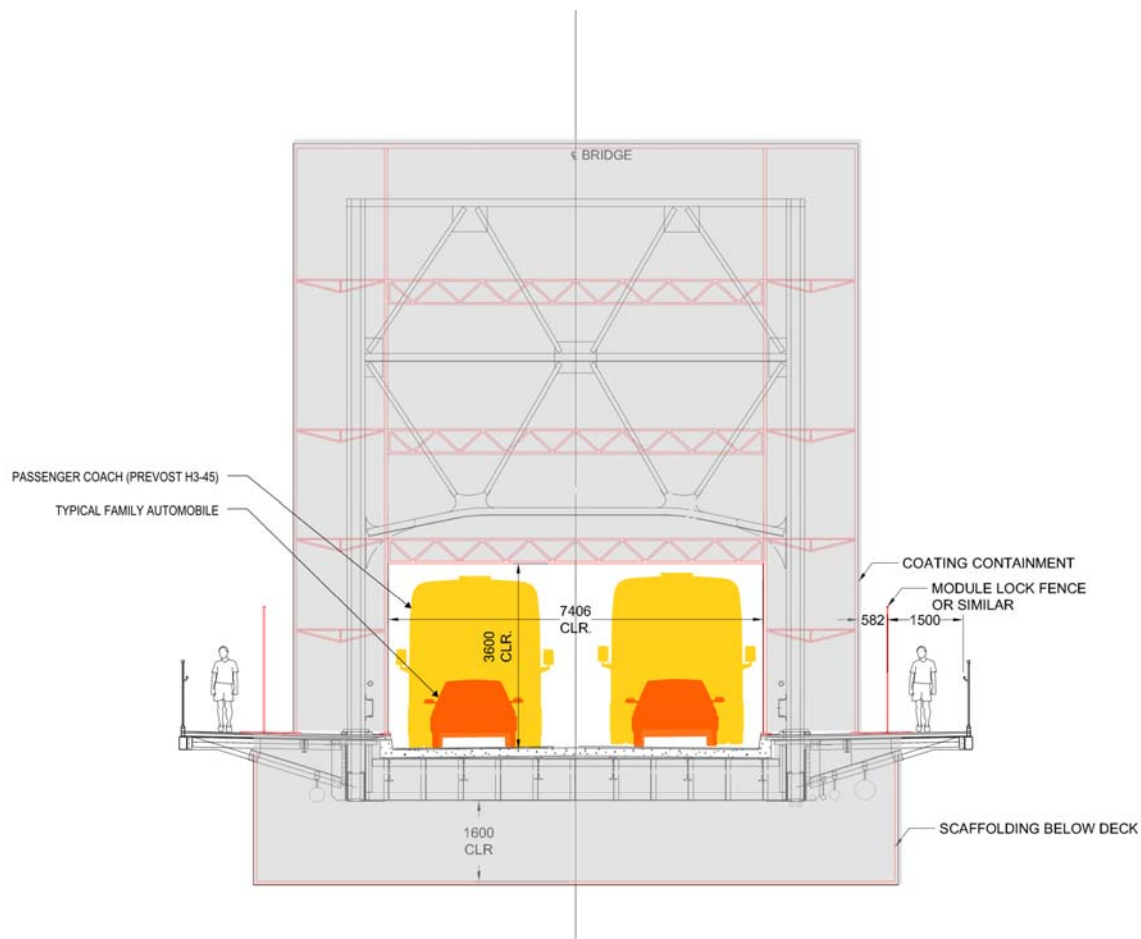
Advantages:

- Accommodates the full scope of the project.
- Allows for two-way traffic during most of the bridge coating work.

Disadvantages:

- Longer construction timeframe
- Would result in a cost premium to Scenario 1

Figure 3 - Sample Concept of Bridge Cross-Section Durign Rehabilitation with Cyclists and Pedestrians Using New Multi Use Paths



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Figure 4 – Scenario 2 Construction Timeline



Scenario 3 – Full Bridge and Decking Repairs with No Multi-Use Pathway Addition

Scenario 3 is similar to Scenario 1 but without the addition of the multi-use paths. With the paths removed from the project the overall construction length is reduced from other scenarios to approximately 6 months. This scenario would generally require the bridge to operate under SLAT conditions for the entire length of the project. This concept is shown in **Figure 5**.

Figure 5 - Scenario 3 Construction Timeline



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During the coating and structural works, while the bridge is contained, pedestrians would be using the inside lanes to cross the bridge.

Advantages:

- Provides the shortest overall construction length and lowest capital cost.

Disadvantages:

- Would require SLAT traffic for the duration of the project.
- Does not include the addition of multi-use paths.

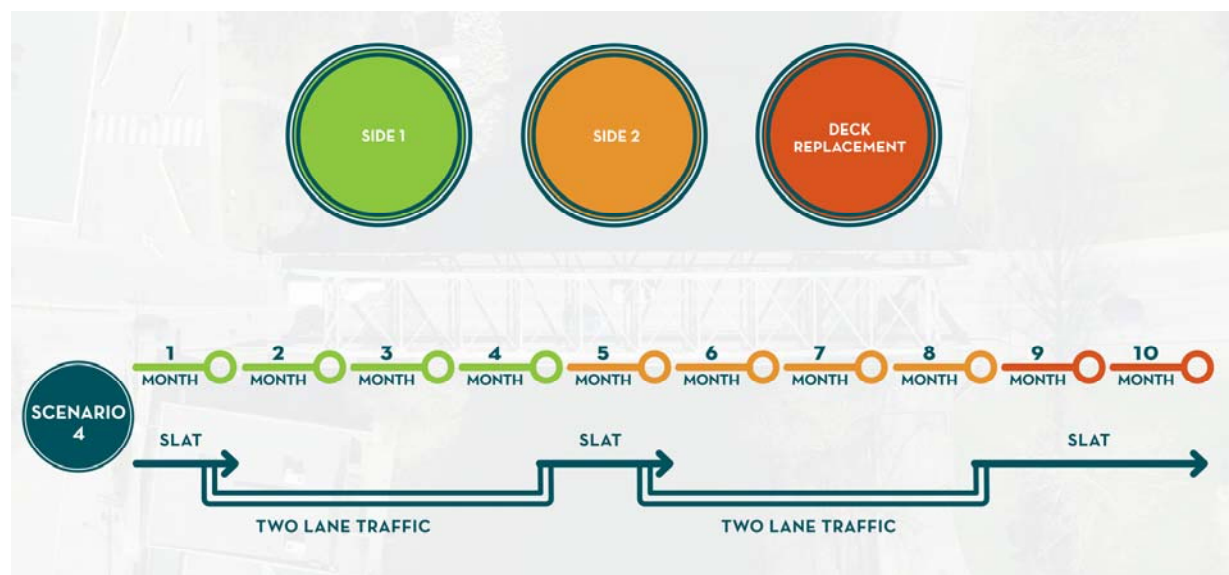
Scenario 4 – Installation or work split up between north and south sides.

This option was discussed in a previous report to council. In this option the contractor would be required to upgrade the bridge work in two phases, the north side and then the south side (or vice versa). Scaffolding and containment would be erected on half the bridge at a time so that pedestrians and cyclists would be able to use the existing walkways on the side of the bridge that wasn't being improved.

It would require two separate scaffolding and containment set ups and could include or not include new multi-use paths. This scenario would result in the ability to have 2-way traffic through the bridge for a large portion of the project. This concept is shown in **Figure 6**.

The complication of this scenario would however increase the overall project timing of the work to up to 10 months. The extended timing and addition efforts would also be expected to result in a costs premium of up to 20% to the base costs.

Figure 6 - Scenario 4 Construction Timeline



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Advantages:

- Accommodation of 2-way traffic during large portions of the project. This advantage is most beneficial to a scenario where the pathways are not included in the project.

Disadvantages:

- We would expect a cost premium of approximately 20% for the additional efforts for staging this scenario
- Would significantly increase the overall timing of the project
- Dictation of the construction sequencing in this way may detract contractors from bidding on the project.

Comparison

The following table provides a comparison of the four options:

	Scenario	Advantages	Disadvantages	Estimated Capital Cost
1.	Full bridge and decking repairs and addition of multi-use paths completed concurrently	<ul style="list-style-type: none"> • Accommodates full scope of the project with the shortest length of overall construction. • Provides the most cost-effective scenario as the contractor would be free to dictate schedule. 	<ul style="list-style-type: none"> • SLAT traffic during much of the project timeframe. 	<ul style="list-style-type: none"> • \$8.3 Million
2.	Installation of multi-use pathways followed by bridge coating and decking repairs	<ul style="list-style-type: none"> • Accommodates the full scope of the project. • Allows for two-way traffic during much of the bridge coating work. 	<ul style="list-style-type: none"> • Longer construction timeframe • Would result in a cost premium to Scenario 1. 	<ul style="list-style-type: none"> • \$8.7 to 9.1 Million
3.	Full bridge and decking repairs with no multi-use pathways	<ul style="list-style-type: none"> • Provides the shortest overall construction length and lowest capital cost. 	<ul style="list-style-type: none"> • Would require SLAT traffic for the duration of the project. • Does not include the addition of pathways. 	<ul style="list-style-type: none"> • \$6.3 Million

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	Scenario	Advantages	Disadvantages	Estimated Capital Cost
4.	Installation or work split up between north and south sides	<ul style="list-style-type: none"> Accommodation of 2-way traffic during large portions of the project. This advantage is most beneficial to a scenario where the pathways are not included. 	<ul style="list-style-type: none"> We would expect a cost premium of approximately 20% for the additional efforts for staging this scenario Would significantly increase the overall timing of the project Dictation of the construction sequencing in this way may detract contractors from bidding on the project. 	<ul style="list-style-type: none"> \$7.6 to \$10 Million (no Paths / including Paths)

BRIDGE INFRASTRUCTURE CONSIDERATIONS

Four utilities are housed underneath the Fifth Street Bridge:

- 1) City of Courtenay water main,
- 2) Comox Valley Regional District (CVRD) water main,
- 3) Fortis gas line; and
- 4) Telus telecommunications lines

Some of these utilities are located under the current cantilevered sidewalks which may need to be adjusted or supported as part of the new multi-use paths.

Preliminary consultation has occurred with the Comox Valley Regional District, Fortis and Telus to ensure awareness of the planned construction, and to identify considerations for safeguarding all utilities during construction. Regarding Fortis and CVRD, respective opportunities to piggyback coating of the gas line and adding pipe protection to the water main are being explored. On-going discussions will be required throughout design and construction phases.

Based on the above we feel that the proposed scenarios provide several different options for the City in being able to manage and minimize traffic impacts due to the required works on the bridge. Once a direction has been confirmed the above scenarios can be advanced to technical stages for implementation during construction.

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Sincerely,

URBAN SYSTEMS LTD.

Eric Sears, P.Eng
Project Manager

MEMORANDUM

Date: January 20, 2020
 To: Chris Davidson, Manager of Engineering Projects
 From: Eric Sears
 File: 3222.0045.02
 Subject: Fifth Street Bridge Active Transportation Connection | Concept Design

As part of the Transportation Master Plan (TMP) that was recently adopted by Council, it was identified that widening the cantilevered sidewalks on both the north and south side of the Fifth Street Bridge would have significant connectivity and safety impacts across the Courtenay River for all active modes of transportation. This lack of connectivity was a key constraint brought forward in the TMP.

The City of Courtenay is considering the replacement of existing cantilever pedestrian sidewalks on the bridge as part of the maintenance work in order to utilize the expected closures during the construction period. The current bridge provides narrow sidewalks on either side of the bridge and does not provide a safe connection for cyclists as they are expected to merge with traffic in a single file manner across the bridge. The City hopes that the wider cantilevers would improve the walking and cycling conditions across the bridge from a safety, connectivity, and comfort standpoint and would tie into the proposed networks on either side of the bridge as developed as part of the TMP and the Parks and Recreation Master Plan.

The following memorandum identifies opportunities to transition the proposed cantilever facilities to surrounding pedestrian and cycling facilities. This document is a continuation of the September 09, 2019 memorandum that describes the high-level approach to connectivity.

1. Concept Design

Connectivity options have been developed and reviewed against various criteria to analyze which option would be the best for the City to pursue. The criteria set out is primarily focused on active transportation users while also considering other impacts. The criteria are as follows:

- Pedestrian Safety
- Cyclist Safety
- Pedestrian Connectivity to existing networks
- Cyclist Connectivity to existing networks
- Pedestrian Comfort/Experience
- Cyclist Comfort/Experience
- Vehicle Impact
- Integration into existing and future park infrastructure
- Value

The goal of the connections is to increase the safety, comfort and experience for pedestrians and cyclists. The proposed cantilevers inherently provide a better experience than the current condition because they provide a wider pathway and are further separated from cars. They also allow for cyclists to avoid having

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to share the roadway with vehicles and provide more space for all active users. Beyond the bridge it will be important that this comfort is extended to the various connections to existing and future networks.

A concept design has been developed identifying the preferred option for connecting the proposed cantilever facilities on both sides of the bridge. The concept design noted in **Figure 1** and key features are summarized below.

Overall

- Multi-use pathways are provided at each end of the bridge with appropriate transitions to nearby walking and cycling facilities.
- All pathways are 3.0m wide, which is consistent with the proposed cantilever facility width and is sufficiently wide to accommodate both pedestrian and cyclist activities.
- Multi-use pavement markings are provided on all pathway segments. Appropriate regulatory, warning, and wayfinding signage should also be included.

West Side of Bridge

Southwest Corner:

- The southwest corner pathway will connect to Fifth Street and Anderton Avenue via a letdown at the intersection of Anderton Avenue and Fifth Street.
- The existing stairs to the path under the bridge will remain to provide pedestrian connectivity to the north side of the bridge. It is recommended that a bike wheel channel (i.e., a groove adjacent the staircase to facilitate rolling bikes up/down the staircase) along the stairs to allow cyclists access to the stairs.
- The existing CVRD water valve kiosk will need to be relocated out of the pathway and a retaining wall will need to be constructed to support this extension and relocation.

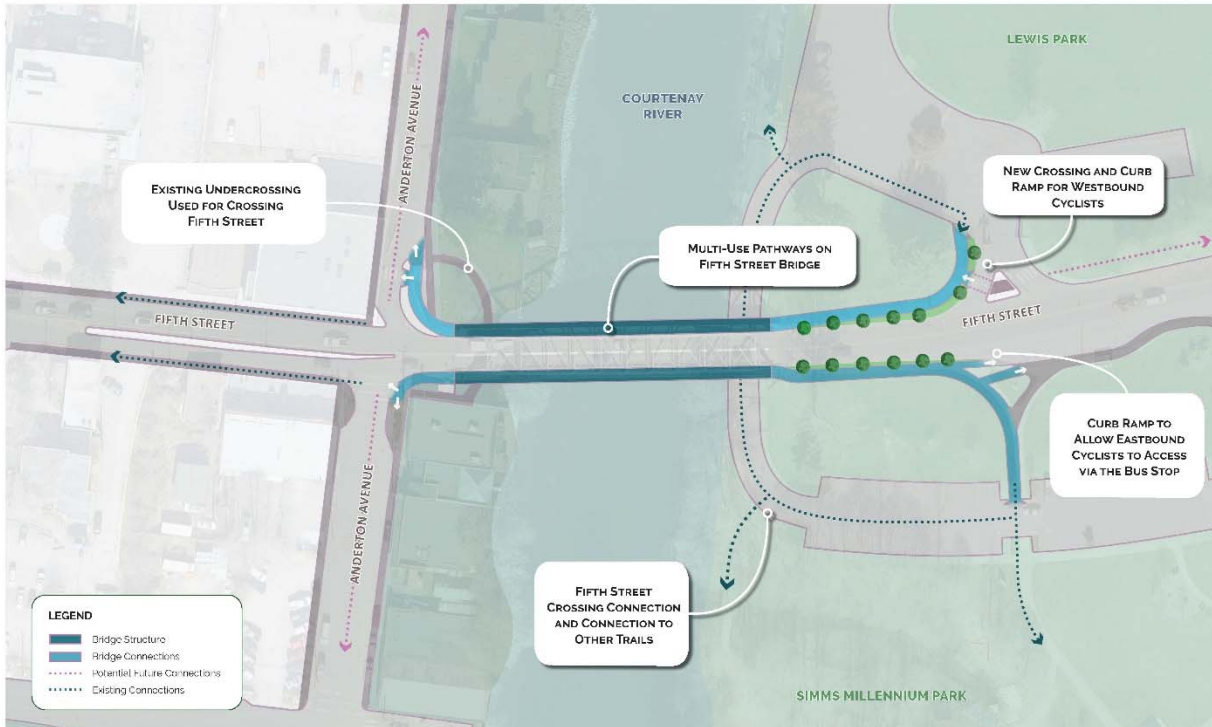
Northwest Corner:

- The northwest corner pathway will turn to the north and connect to Anderton Avenue via the existing crosswalk and a new letdown at the curb extension. These letdowns will allow cyclists to continue north along Anderton Avenue.
- The pathway will connect to the existing sidewalk and pathway under the bridge to provide connectivity for pedestrians and cyclists looking to cross 5th Street.

The existing underpass could be used by pedestrians and cyclists to connect under Fifth Street, but cyclists would be required to dismount and walk under the bridge. The underpass is also susceptible to localized flooding during high-tide or heavy rainfall events, which would impact walking / cycling during peak events.

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An alternative for cyclists seeking to cross Fifth Street on the west side of the bridge would be to utilize the existing underpass on the east side of the bridge. Wayfinding signage and education would be necessary to direct users that are approaching from the east on which side of the bridge will be most effective to get them to their desired locations.

East Side of Bridge

Southeast Corner:

- The southeast corner pathway runs along Fifth Street and connect to the parking lot in Simms Millennium Park. A boulevard space is provided between the pathway and roadway to increase comfort on the pathway and provide opportunities for new street trees.
- An eastbound cycling access ramp to Fifth Street is provided to allow cyclists to enter the bus stop and then merge with vehicular traffic in a safe manner.

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Northeast Corner:

- The northeast corner pathway runs along Fifth Street and terminates at the access point to Lewis Park. A letdown is provided at the existing crosswalk and median island to allow westbound cyclists to merge onto the pathway.
- Another letdown is provided to the Lewis Park parking lot to provide connectivity to the park.

On the east side of the bridge connectivity between the north and south cantilevers will be achieved via the current roadway underpass. Cyclists and pedestrians would utilize this underpass in both directions to connect between the north and south sides of Fifth Street. Wayfinding signs and education would be needed to illustrate this connection as it is not intuitive. Utilizing the underpass is susceptible to localized flooding during high-tide or heavy rainfall events, which would impact connectivity during these events.

An alternative option is to extend the pathway on the north side of Fifth Street east to the Fifth Street and Comox Road intersection. This would allow for an at-grade crossing for pedestrians and cyclists at this intersection. This option would enhance crossing opportunities, particularly for longer distance cycling trips along this corridor, but would add an additional cost of \$150,000 to \$200,000.

2. Long-Term Considerations

The Transportation Master Plan (TMP) outlines the proposed cycling and pedestrian networks for the City. On the west side of the bridge, Anderton Avenue and Sixth Street are identified as the preferred cycling connections on the west side of the bridge. The Sixth Street crossing is also discussed as a desired option in the City of Courtenay Downtown Playbook that was created in 2016, and the Parks and Recreation Master Plan that was adopted in 2019. For the east side of the bridge, the TMP calls for a multi-use path along the north side of Fifth Street/Old Island Highway connecting to the Lewis Centre and east Courtenay. The TMP also designates bike paths through Lewis Park and Simms Millennium Park. Figure 2 indicates the Medium Term (10 Year) Cycling Improvement Priorities map that is included in the TMP and includes the above noted network connections.

These future connections have been reviewed and considered during the development of the connectivity options to the new cantilevers on the Fifth Street Bridge.

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Figure 2 - Medium Term (10 Year) Cycling Improvement Priorities



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Cost Estimates

Order-of-magnitude cost estimates were prepared for the proposed concept design. The estimated cost is approximately **\$400,000**, distributed as follows:

Southwest corner	\$110,000
Northwest corner	\$70,000
Northeast corner	\$110,000
Southeast corner	\$110,000

The above costs include all works required for the connections discussed in this report including, concrete works, abutments modifications, signage and surface markings. The estimates include a 40% allowance for Contingency and Engineering and are presented in costs that would be expected based on construction in 2021.

These costs are consistent with costs previously associated with the cantilevers in the overall project costs estimates.

Next Steps

Based on the above we feel that the proposed connectivity concepts will begin to provide pedestrian and cycling links to existing and future networks on both sides of the bridge. Once a direction has been confirmed the above connectivity concepts should be advanced to detailed design technical stages.

Sincerely,

URBAN SYSTEMS LTD.

Eric Sears, P.Eng
Project Manager

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THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT TO COUNCIL

To: Council
From: Chief Administrative Officer
Subject: 5th Street Bridge Rehabilitation Project

File No.: 5335-20 / 5400-02
Date: June 24, 2019

PURPOSE:

This report is intended to describe for Council the scope and costs of near-term rehabilitation of the 5th Street Bridge so as to restore it to its intended functional condition and achieve an updated useful life lasting until at least the year 2040.

This report also contains supplementary information on a potential level of service increase and capital upgrade to the 5th Street Bridge as an alternative to constructing a new Pedestrian Bridge at a 6th St location, should Council choose to consider such an unfunded capital upgrade or new capital construction.

BACKGROUND:

Built in 1960, the 5th Street Bridge acts as a gateway to downtown Courtenay and requires rehabilitation to maintain the level of service for various modes of transportation. Over the years, multiple engineering assessments of the bridge have identified the need for structural repairs and re-coating to slow normal deterioration during service. Routine maintenance and periodic rehabilitation is important to ensure the asset's intended level of service and life-cycle can be achieved.

In 2016, the City engaged Hatch Mott Macdonald (HMM) and Urban Systems to complete a scoping study to determine the rehabilitation requirements. A field investigation and evaluation report recommended that the City repair several structural deficiencies, refurbish the bridge decking and recoat the bridge steel within the next five to seven years. The Class D estimate provided at that time was \$2.94M less \$1.96M from a successful New Building Canada Fund – Small Communities Fund (NBCF-SCF) grant application.

Urban Systems Technical Memorandum dated January 22, 2019 "5th Street Bridge Rehabilitation - Project Cost Escalation Summary" (Attachment 1) provides a 20-year chronology of rehabilitation needs, options and costs as they have evolved since 1999. For reasons provided below, the most recent estimate to meet the same intended scope of work and level of service until at least 2040 as well as continue to meet the existing grant approvals is \$6.3M. This estimate was received in November 2018 and reconfirmed in March 2019. Furthermore, repeated inquiries of the granting authority have confirmed that additional funding to accommodate cost escalations(s) are not available.

The detailed scope of work and funding options to achieve the planned rehabilitation are provided below in the body of this report.

Aside: while not yet presented to nor adopted by Council, staff can indicate that the draft Transportation Master Plan (TMP) identifies opportunities to improve east-west connectivity and safety for people who bike and walk. One, for example, is to consider an upgrade to the 5th Street Bridge by installing 3.0 metre cantilevered multi-use pathways on both sides of the existing bridge structure. Alternatively, construction of a new pedestrian-cycling bridge could be considered at 6th Street in future. Either option would require additional analysis and substantially more funding (see Financial Considerations below). As the former is an upgrade and the latter new construction, neither is included within the current scope of 5th Street Bridge rehabilitation nor may the City expend approved NBCF-SCF grant funding on these prospective initiatives.

These opportunities are included in the Options available to Council, but are not recommended for reasons provided below related to Asset Management principles suggesting mindfulness of unanticipated capital costs and the lack of full life-cycle cost information within an organization-wide context.

CAO RECOMMENDATION:

That based on the June 24th, 2019 staff report “5th Street Bridge Rehabilitation Project” Council approve OPTION 1 and OPTION 4:

OPTION 1 - That Council direct staff to proceed with the associated next steps to rehabilitate the 5th Street Bridge within its original scope including development of detailed traffic management and public engagement plans, and report back to Council no later than September 16, 2019; and

That staff simultaneously prepare a supporting draft Borrowing Bylaw for Council consideration.

OPTION 4 - That staff bring forward a report providing options for exploring a 6th Street multi-use pedestrian-bike bridge as an alternative to an upgrade to the 5th Street Bridge of adding cantilevered multi-use pathways; and

That a decision to explore and report on further development of a 6th Street multi-use pedestrian-bike bridge be subsequent to Council’s receipt and adoption of the forthcoming Transportation Master Plan.

Respectfully submitted,



David Allen, BES, CLGEM, SCLGM
Chief Administrative Officer

DISCUSSION:

Original Project Scope:

For more than a decade the scope of rehabilitation of the 5th Street Bridge has been to repair structural deficiencies, refurbish the bridge decking and recoat the bridge steel within the next five to seven years. Specifically:

- Removal of the lead-based paint and application of new coating;
- Steel repairs to the end of the deck beams underneath the bridge;
- Recoating the steel (4,200 m²);
- Removal of the hand rails and hot dip galvanizing the railings and rub rails;
- Removal of existing concrete overlay;
- Deck concrete removal to a partial depth;
- Placement of a new concrete overlay; and
- new road markings.

In March 2018, a conceptual design investigation was completed confirming the previous scope of work remains accurate. However, the investigation noted that the deck requires more extensive repair than earlier anticipated. Due to the deteriorated condition of the deck, two full-scale improvements were considered: cathodic protection or full deck replacement.

Cathodic protection is a well-proven technique originating in the marine environment used to protect metal from corrosion. By making the protected metal the cathode in a small DC electrical circuit, with sacrificial metal blocks added to the exterior of the structure to act as an anode causing the softer metal anodes to corrode while the cathode – the structural steel of a ship – does not. Though its application to reinforcing steel embedded in the concrete structure of the 5th Street Bridge is more complex, the intended technique will yield the same benefit. Therefore, cathodic protection is preferred to full deck replacement as it will protect the deck from further corrosion for the remaining life of the bridge. While only a partial deck replacement is immediately necessary (~\$240K), the life-cycle costs of cathodic protection are far less expensive than a full deck replacement that will very likely be required early in the intervening 20 years.

The project team has reviewed several other bridge projects on Vancouver Island, in particular the recent bridge rehabilitation projects in Campbell River and Duncan. Figure 1 highlights the recent Campbell River bridge rehabilitation which also required “wrapping” the steel structure for recoating which allowed the bridge to remain open to traffic. Understanding market conditions and drawing on these recent experiences has informed our thinking on the options, estimates and alternatives for our own project. However, when considered within the context of the City’s needs for maximizing the life of the bridge, traffic management and community impacts, and the original grant requirements, many alternatives explored to date are not considered feasible.

Therefore, the updated budget for deck rehabilitation includes cathodic protection (rather than full or partial deck replacement) and traffic management costs to ensure the bridge remains open to single lane traffic throughout the approximate six month construction period. To protect the marine environment from the lead paint removal process, the bridge will be wrapped during construction, which may reduce the access height of the bridge, but a detailed traffic management plan will be developed to mitigate traffic impacts where possible. The traffic management plan will review the current crossing and alternate routes and recommend strategies for addressing safety and traffic flow amongst all transportation modes and types of vehicles. Although temporary closures may be required at scheduled times, a full closure of the bridge is no longer being contemplated.

Cost escalation:

Since 2016, construction cost estimates for the original proposed scope of rehabilitation have increased significantly.

The original cost estimate of \$2.9 million contemplated cost-sharing of \$1.96 million (Province/Federal) and \$0.94 million (City of Courtenay) from the City’s reserve funds. The new cost estimate is \$6.3 million. This figure was received in November 2018 and reconfirmed in March 2019.

Representatives with the New Build Canada – Small Communities Fund have confirmed that the original grant amount of \$1.96 million would not be increased due to cost escalation. As a result, the City’s portion of the budget to rehabilitate the bridge (with no new pedestrian or cycling amenities) has increased to \$4.3 million.

Despite numerous cost estimates prepared over the last 20 years, which informed the grant application, the cost escalations over the last four years has been significant. The largest cost escalations occurred between 2014 and 2018, which have been record years for the value of construction on Vancouver Island,

increasing the cost of many municipal projects. Therefore, the cost impacts are in addition to conventional escalation (e.g. inflation), which is typical of construction trends, in combination with continuing deterioration of the bridge deck that requires a more intensive repair than originally estimated.

Opportunities for multi-modal amenities

The draft City of Courtenay Transportation Master Plan recommends a number of strategies for improving pedestrian and cycling connectivity across the Courtenay River. While a network of trails and access routes exist on the east and west sides of the 5th Street Bridge, the existing 1.5 metre sidewalks on the bridge are limited in their ability to accommodate travellers and respond to expected growth in walking and cycling. Cyclists crossing the bridge are currently required to either use the centre of the vehicle lane or walk their bike on the sidewalk. The TMP outlined two options for improving connectivity across the River: an upgrade to the 5th Street Bridge by adding cantilevered multi-use pathways on both sides of the bridge or the construction of a new, dedicated pedestrian and cycling bridge at 6th Street.

Cantilevered Multi-Use Pathway: As part of the rehabilitation project, 3.0 metre multi-use pathways can be cantilevered on both sides of the bridge to improve the level of service for people who walk and bike across the bridge. Cost estimates for the cantilevered pathway are preliminary, as the extent of trail and pathway upgrades in the vicinity of the bridge have not been studied, preventing development of full life-cycle cost estimates. Preliminarily, the cost for cantilevered pathways is \$2 million including tie-ins to existing pathways. However, further study would be required to refine estimates and maximize cross-river connectivity. Also, undertaking this capital upgrade will extend the duration of the rehabilitation project by several months and introduce new risk due to these unknown design and cost uncertainties.

Dedicated Multi-Use Bridge at 6th Street: The draft TMP also explores the concept of a dedicated pedestrian-cyclist bridge at 6th Street as an alternative to upgrading the 5th St Bridge with cantilevered multi-use pathways. This proposal was also referenced in the draft Parks and Recreation Master Plan (PRMP). Preliminary cost estimates for this facility are \$2 million - \$4 million. Urban Systems Technical Memorandum dated January 31, 2019 "6th Street Pedestrian and Cycling Bridge Cost Comparison Summary and Analysis" (Attachment 2) provides further details.

Should this be a preferred option, further analysis including level of service and full life-cycle costs for detailed design, maintenance, extent of pathway tie-ins, environmental considerations, approach improvements for access around 6th Street, and other Asset Management implications of a new, unfunded and unanticipated capital asset will need to be explored. Choosing this option will not affect the 5th Street Bridge rehabilitation project as long as they are not undertaken simultaneously.

FUNDING

Table 1 summarizes the original project estimate prepared in 2015 for the grant as well as the revised project costs in 2019 dollars.

Table 1: 5th Street Bridge Rehabilitation – 2015 vs. 2019 Project Costs

2015 Project Cost Estimate: \$2.9 million
<ul style="list-style-type: none">• Provincial/Federal Funding (grant): \$1.96 million• City reserves: \$0.94 million
2019 Project Cost Estimate: \$6.3M
<ul style="list-style-type: none">• Provincial/Federal Funding (grant): \$1.96 million

- City reserves \$0.94 million
- City Borrowing amount: \$3.4 million

Table 2: Rehabilitation elements and associated costs

Rehabilitation Element	COST (2019 \$)
Removal and replacement of Protective Coating	\$4.1 million
Cathodic Protection System to Extend Life of Bridge Deck	\$1.05 million
Structural Improvements	\$0.8 million
Traffic Management	\$0.35 million
Total	\$6.3 million

A contingency is built into the project budget for costs such as engineering, communications, project financing, construction capital costs, inspection and contract administration.

OPTIONS

Four options are presented below for Council consideration and are summarized in the following table:

Project Element	1) Original Scope - Rehabilitation	2) Rehabilitation + Cantilevers	3) Defer Project	4) New 6 th St. Pedestrian Bridge
Outcome	Rehabilitated crossing with 20-year updated useful service life with full utilization of the grant and cathodic protection versus deck replacement.	A rehabilitated crossing with extended service life that provides improved cycling and walking amenities, with full utilization of the grant.	Further deterioration and related liability of an important infrastructure asset.	Dedicated multi-use pedestrian-cyclist bridge at 6 th Street.
Duration	6 months	8 months	N/A	N/A
Bridge Recoating & Deck Renewal	\$4.1 million	\$4.1 million	TBD	N/A
Structural and Traffic	\$2.2 million	\$2.2 million	TBD	TBD
Cantilever Pathway	n/a	\$2 million	TBD	N/A
Total	\$6.3 million	\$8.3 million	TBD	\$2 million to \$4 million
Reserves	\$0.94 million	\$0.94 million		
City Borrowing Amount	\$3.4 million	\$5.4 million	N/A	ALL
Borrowing Costs*	\$233,300	\$370,550	N/A	N/A
Tax Impact**	1%	1.6%	N/A	N/A

Borrowing Costs*	\$233,300	\$370,550	N/A	N/A
Tax Impact**	1%	1.6%	N/A	N/A

* Borrowing costs calculated at standard MFA 20 year rate of 3.14%

** Tax Impact calculated based on 2019 tax rates.

FINANCING IMPLICATIONS

Project costs beyond grant funding and use of reserve funds would need to be financed as per municipal borrowing procedures for capital works (Municipal Finance Authority 3.14%, 20 year amortization). If Option 1 is chosen – the original scope of work – it would require borrowing \$3.4M and result in an estimated annual servicing cost of @\$233,000 per year, equaling approximately a 1% increase to the debt levy for property taxation purposes beginning in 2021 when the first payments would be due.

In order for the City to be included in the Fall 2020 long term borrowing issued through the Municipal Finance Authority, the borrowing process must begin no later than October 31, 2019. Steps to complete this process include bylaw preparation and three readings by Council, review and approval by the Province, elector approval, final adoption by Council with a one month quashing period, then issuance of a certificate of approval by the Province. The process can take up to eight months before funds are received.

ADMINISTRATIVE IMPLICATIONS

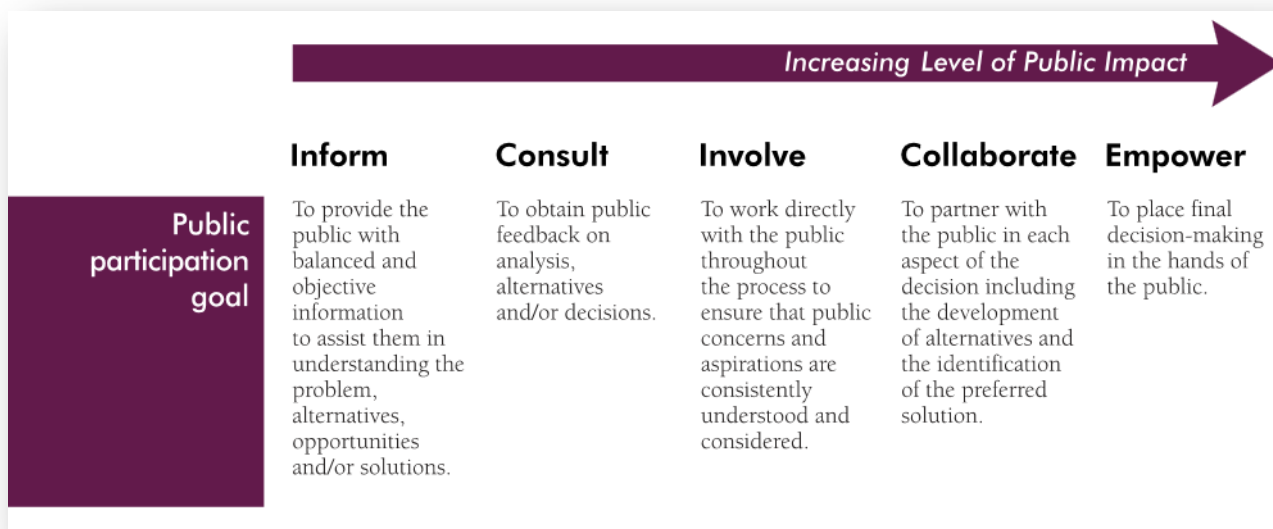
This will vary substantially depending upon the Option chosen, the method of project management and other factors that will be identified in the follow-on report of September 16, 2019.

PUBLIC ENGAGEMENT

The 5th Street Bridge is a critical community asset which affects and supports a variety of stakeholders and users. There is a need for extensive engagement amongst residents, businesses, river users, recreational groups, commercial drivers, and transit service providers, among others.

Proactive communications efforts about the scope and timing of the project, the implications to traffic and pedestrian/cycling movements and the travel alternatives that can be utilized to limit delays during periods of construction is essential to supporting the community. A detailed engagement plan for the lead-up period, ongoing during construction and reporting out to the public on completion will be prepared for Council consideration once an Option has been selected by Council.

The levels of public engagement based on the IAP2 Spectrum of Public Participation will likely vary for each phase of the project.



ASSET MANAGEMENT IMPLICATIONS

These are yet to be determined until an Option has been chosen.

STRATEGIC PRIORITIES, OCP AND TMP REFERENCE

Strategic Priorities 2019 - 2022

As part of the Strategic Priorities for 2019 – 2022 the following are relevant to the 5th Street Bridge Rehabilitation project:

We proactively plan and invest in our natural and built environment

- Focus on asset management for sustainable service delivery
- ▲ Look for regional infrastructure solutions for shared services
- ▲ Advocate, collaborate and act to reduce air quality contaminants
- ▲ Support social, economic and environmental sustainability solutions

We plan and invest in methods of multi-modal transportation

- Move forward with implementing the City's Transportation Master Plan
- ▲ Collaborate with regional and senior government partners to provide cost-effective transportation solutions

Transportation Master Plan

In relation to the working draft of the TMP the following transportation vision was stated:

The City of Courtenay supports a transportation network that prioritizes connectivity and access to daily destinations and, through a balanced approach to transportation planning, provides all road users safe choices in their mode of transportation.

The supporting values to achieve the transportation vision include:

Values

1. Sustainability, livability & health
2. Safety + efficiency

3. Economic Prosperity
4. Connectivity
5. Affordability
6. Sustainable Land Use

Official Community Plan

In regards to the Official Community Plan for Courtenay, the following goals of Section 5.0 Transportation are relevant:

5.2 Goals

1. integrate land use changes with transportation planning to coordinate changes and increases to traffic patterns.
2. development of a transportation system that provides choices for different modes of travel including vehicle, transit, pedestrian, cycling and people with mobility impairments.
3. protect the integrity of the road classification system to facilitate the purpose and function of the specific road types.
4. support an integrated transportation system that works towards reducing travel distances and congestion.
5. support a transportation system that recognizes the importance of the character and overall appearance of the City.
6. provide an effective transportation system that facilitates the movement of vehicles throughout the community and the Comox Valley to major regional services such as the Little River Ferry System and the Comox Valley Airport.

CONCLUSION

Given the need for rehabilitation and the increasing cost escalation that will continue should work be delayed, City staff recommend that Council direct staff to proceed with Option 1 and the associated next steps to rehabilitate the 5th Street Bridge, including developing a traffic management plan that maintains single lane vehicles access during construction, and comprehensive public engagement strategy. Staff also recommend that a draft Borrowing Bylaw for Council be prepared for Council consideration and staff will report back to Council in September 2019.

OPTIONS

Option 1 & Option 4 (Recommended):

Option 1 - That Council direct staff to proceed with the associated next steps to rehabilitate the 5th Street Bridge within its original scope including development of detailed traffic management and public engagement plans, and report back to Council no later than September 16, 2019; and

That staff simultaneously prepare a supporting draft Borrowing Bylaw for Council consideration.

Option 4 - That staff bring forward a report providing options for exploring a 6th Street multi-use pedestrian-bike bridge as an alternative to an upgrade to the 5th Street Bridge of adding cantilevered multi-use pathways; and

That a decision to explore and report on further development of a 6th Street multi-use pedestrian-bike bridge be subsequent to Council's receipt and adoption of the forthcoming Transportation Master Plan.

Option 2:

That Council direct staff to proceed with the associated next steps to rehabilitate the 5th Street Bridge including the upgrade of adding cantilevered multi-use pathways plus development of detailed traffic management and public engagement plans, and report back to Council no later than September 16, 2019; and

That staff simultaneously prepare a supporting draft Borrowing Bylaw for Council consideration.

Option 3:

That Council direct staff to defer the 5th Street Rehabilitation Project to a future date of their choosing.

Prepared by:



Ryan O'Grady, P.Ag., P.Eng.
Director of Engineering Services

Prepared by:



David W. Love, CD, BA, LGM(Dip), MM, PE, PCAM
Senior Advisor, Strategic Initiatives

ATTACHMENTS (2):

1. Urban Systems Technical Memorandum dated January 22, 2019 "5th Street Bridge Rehabilitation - Project Cost Escalation Summary".
2. Urban Systems Technical Memorandum dated January 31, 2019 "6th Street Pedestrian and Cycling Bridge Cost Comparison Summary and Analysis"

APPENDIX A: FIGURES (2)

1. Fully Wrapped Bridge Accommodating Traffic
2. Conceptual Plan View of Cantilever-Pathway and Network

THE CORPORATION OF THE CITY OF COURTENAY

BYLAW NO. 2978

A bylaw to authorize the borrowing of the estimated cost of rehabilitation of the Fifth Street Bridge.

WHEREAS it is deemed desirable and expedient to rehabilitate the Fifth Street Bridge.

AND WHEREAS the estimated cost of rehabilitating the Fifth Street Bridge including expenses incidental thereto is the sum of \$6,300,000 of which the sum of \$3,400,000 is the amount of debt intended to be borrowed by this bylaw;

NOW THEREFORE, the Council of the Corporation of the City of Courtenay in open meeting assembled, enacts as follows:

1. The Council is hereby empowered and authorized to undertake and carry out or cause to be carried out the rehabilitation to the Fifth Street Bridge generally in accordance with general plans on file in the municipal office and to do all things necessary in connection therewith and without limiting the generality of the foregoing:
 - a) To borrow upon the credit of the Municipality a sum not exceeding \$3,400,000.
 - b) To acquire all such real property, easements, rights-of-way, licenses, rights or authorities as may be requisite or desirable for or in connection with the rehabilitation to the Fifth Street Bridge.
2. The maximum term for which debentures may be issued to secure the debt created by this bylaw is twenty years.
3. This bylaw may be cited as “**Fifth Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978**”.

Read a first time this day of , 20 .

Read a second time this day of , 20 .

Read a third time this day of , 20 .

Received the approval of the Inspector of Municipalities this day of , 20 .

Received the approval of the electors of City of Courtenay on the day of , 20 .

Reconsidered and finally passed and adopted this day of , 20 .

Mayor

Corporate Officer

Certified a true copy of Bylaw No. as at third reading.

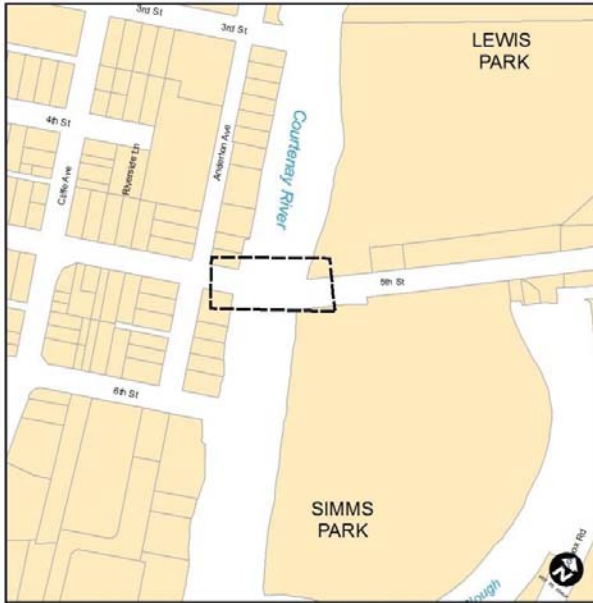
Corporate Officer

Certified a true copy of Bylaw No. as adopted.

Corporate Officer

Department Responsible	Department	Category	Project description	2020 Proposed Budget	2021 Proposed Budget	2022 Proposed Budget	2023 Proposed Budget	2024 Proposed Budget	Total 2020-2024 Budget
PW - Parks	Walkways & Bikeways	Buildings	Lagoon Walkway Lookouts - Roof Replacement	-	-	30,000	-	-	30,000
		Land and improvements	Pedestrian Bridges replacement program	35,000	35,000	35,000	35,000	35,000	175,000
			Millard Trail Boardwalk Replacement	20,000	-	-	-	-	20,000
			Valleyview Greenway Erosion Remediation	50,000	50,000	-	-	-	100,000
		New	Buckstone to Island Hwy Trail	110,000	-	-	-	-	110,000
	PW - Parks Total				400,000	400,000	457,000	545,000	255,000
Engineering	Major Road Construction	New	MAJOR ROAD CONS - 6th St Bridge	-	-	4,000,000	-	-	4,000,000
		Renewal	MAJOR ROAD CONS - Cousins Ave - 20th to Willemar	-	-	-	-	3,224,000	3,224,000
	Road Paving	MAJOR ROAD CONS - 5th St Bridge Rehabilitation	375,000	6,300,000	-	-	-	6,675,000	
		Renewal	MAJOR ROAD CONS - 13 St - Burgess to Willemar Road Reconstruction	-	-	25,000	570,000	-	595,000
	Storm Drainage	Renewal	Braidwood Road Design - Storm & Road	93,200	-	-	3,250,000	-	3,343,200
		STORM DRAINAGE - Willemar Culvert	-	180,000	1,500,000	-	-	1,680,000	
		STORM DRAINAGE - 13 St - Burgess to Willemar Storm Reconstruction	-	-	25,000	570,000	-	595,000	
		STORM DRAINAGE - Woods Ave Out Fall Renewal	-	-	-	-	850,000	850,000	
		STORM DRAINAGE - 200 Back Rd Storm Inlet improvement	175,000	-	-	-	-	175,000	
	Traffic Projects	Renewal	TRAFFIC PROJECTS - Signal Controller Renewal - 8th St and Cliffe Ave	-	160,000	-	-	-	160,000
		TRAFFIC PROJECTS - Signal Controller Renewal - 5th St and Cliffe Ave	-	20,000	220,000	-	-	240,000	
		TRAFFIC PROJECTS - Signal Controller Renewal - Old Island Highway at Comox Road	-	20,000	75,000	-	-	95,000	
		TRAFFIC PROJECTS - Signal Controller Renewal - 8th and Fitzgerald	-	180,000	-	-	-	180,000	
		Bike Lane	New	Bike Lane Hobson Neighbourhood Route	50,000	-	-	-	-
Engineering Total				693,200	6,860,000	5,845,000	4,390,000	4,074,000	21,862,200
Rec & Culture	Filberg Centre	Buildings	FILBERG CENTRE - Drive Thru Repair / Renovation	35,000	-	-	-	-	35,000
		Lewis Centre	Equipment	LEWIS CENTRE - Equipments > 5k	45,000	45,000	45,000	45,000	45,000
	New		LEWIS CENTRE - Shower Lift (accessibility funding)	20,000	-	-	-	-	20,000
	Museum	Buildings	MUSEUM - Loading Dock Storage & Fencing	-	-	-	-	50,000	50,000
	Parks	Land and improvements	Tarling Park gate, fencing and Hydro service	8,100	-	-	-	-	8,100
		Marina Storage Compound Relocation	10,000	110,000	-	-	-	120,000	
		New	Park Development - McPhee Meadows	50,000	-	-	-	-	50,000
		Rotary Trail Extension North 5th St to McPhee Meadows	-	20,000	-	-	-	20,000	
		Partners in Parks	50,000	50,000	50,000	50,000	50,000	250,000	
		Totem Pole at the Airpark	10,000	-	-	-	-	10,000	
	Sid Theatre	Buildings	SID THEATRE - Future year estimation	-	20,000	20,000	20,000	20,000	80,000
		SID THEATRE - LIGHTING UPGRADE - LED THEATRE LIGHTS	25,000	-	-	-	-	25,000	
		SID THEATRE - THEATRE CAPITAL EQUIPMENT	10,000	10,000	10,000	-	-	30,000	
	Walkways & Bikeways	New	Access and Parking to McPhee Meadows	-	-	30,000	200,000	-	230,000
		Courtenay Riverway South Extension Sandpiper to Beachwood - Phase 1	302,200	-	-	-	-	302,200	
		Courtenay Riverway South Extension Beachwood to City Park - Phase 2	-	45,000	400,000	-	-	445,000	
		Courtenay Riverway South Extension City Park to Regional Trail - Phase 3	-	-	-	100,000	400,000	500,000	
		Dingwall to Muir Road trail development - stairs	25,000	250,000	-	-	-	275,000	
Rec & Culture Total				590,300	550,000	555,000	415,000	565,000	2,675,300

ENGINEERING – INFRASTRUCTURE – MAJOR ROAD CONSTRUCTION



- 5TH STREET BRIDGE DECK RENEWAL AND PAINTING
- FULL REMOVAL / RECOAT OF ALL STRUCTURAL STEEL COATING
- INSTALL CATHODIC PROTECTION SYSTEM
- FULL REPLACEMENT OF DECK OVERLAY
- STRUCTURAL REPAIRS TO ENDS OF DECK BEAMS
- DESIGN COMPLETION 2020, CONSTRUCTION 2021
- COMBINATION OF FUNDING: BUILDING CANADA GRANT, NEW DEBT, RESERVE AND DCC



Project Budget

Year	Approved Budget	Total Spent	Carry Forward	Requested Budget	Total Budget
2019	\$423,000	\$320,649	\$102,351		
2020				\$375,000	
					\$375,000



City of Courtenay Elector Response Form

Legislative & Corporate Services Department
830 Cliffe Avenue, Courtenay, B.C. V9N 2J7
250-334-4441 | info@courtenay.ca
www.courtenay.ca/AAP

2020 - 5th Street Bridge Rehabilitation

5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020

Elector Approval: Alternative Approval Process (AAP)

By completing this elector response form, I am indicating that I oppose the adoption of “5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020”, which authorizes the borrowing of up to \$3,400,000 to be repaid over a period not exceeding 20 years in order to finance the costs of construction of the 5th Street Bridge Rehabilitation project, unless a vote is held.

Print Full Name _____

Residential address _____

Signature (original signature required) _____

Choose one:

- ☐ I am a *resident elector* - I have been a resident of the City of Courtenay for at least 30 days
- ☐ I am a *non-resident property elector* who lives in another community and has owned property in the City of Courtenay for at least 30 days located at _____.

I am

- A Canadian citizen and at least 18 years of age or older,
- I am a resident of British Columbia and have been for at least 6 months,
- I am not disqualified by law from voting,
- I have not previously signed an elector response form with respect to this bylaw.

The Council may proceed with the adoption of “5th Street Bridge Rehabilitation Loan Authorization Bylaw No. 2978, 2020” unless 2,017 electors sign and submit a completed elector response form to the City by the deadline.

DEADLINE: November 15, 2020 at 4:30 p.m.

Elector response forms must be submitted by the deadline to **Wendy Sorichta, Corporate Officer, at City Hall, 830 Cliffe Avenue, Courtenay B.C., V9N 2J7**. This form will be considered submitted in confidence.

Additional information about this alternative approval process can be found at City Hall or on the City of Courtenay website at www.courtenay.ca/AAP

Elector Eligibility

In order to sign an elector response form in relation to the alternative approval process, a person must either be a *resident elector* or a *non-resident property elector*.

RESIDENT ELECTOR

A resident elector is an individual who is entitled to sign an elector response form during an AAP by virtue of living within that jurisdiction. When signing an elector response form, a resident elector must:

- Be 18 years of age or older,
- Be a Canadian citizen,
- Have lived in British Columbia for at least six months,
- Have lived in the City of Courtenay for at least 30 days,
- Not be disqualified under the *Local Government Act*, or any other enactment from voting in a local election, or be otherwise disqualified by law.

NON-RESIDENT PROPERTY ELECTOR

A non-resident property elector is an individual that **does not live in the City of Courtenay** and who is entitled to sign an elector response form during an AAP by virtue of owning property in that jurisdiction. When signing an elector response form, a non-resident property elector must:

- Be 18 years of age or older,
- Be a Canadian citizen,
- Have lived in British Columbia for at least six months,
- Have owned property in the City of Courtenay for at least 30 days,
- Not be disqualified under the *Local Government Act*, or any other enactment from voting in a local election, or be otherwise disqualified by law.

Note: Only one non-resident property elector may sign an elector response form per property, regardless of how many people own the property. That owner must have the written consent of a majority of the other property owners to sign the response form on their behalf. Property owned in whole or in part by a corporation does not qualify under the non-resident property elector provisions. The City of Courtenay has forms available for non-resident property electors to use when gaining written consent from the other property owners for this AAP.

Notice: Freedom of Information and Protection of Privacy

Personal information on this form is collected under the authority of section 26(a) the *Freedom of Information and Protection of Privacy Act*. The personal information on this form will be used to determine whether elector assent has been received for Bylaw 2985 and is considered to be supplied in confidence.

If you have any questions about the collection of this information, contact Wendy Sorichta, Corporate Officer, at the address on this form, by email at info@courtenay.ca, or by phone at 250-334-4441. Personal information will only be disclosed in accordance with the *Freedom of Information and Protection of Privacy Act*.



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council

File No.: 6480-00

From: Chief Administrative Officer

Date: September 21, 2020

Subject: Official Community Plan (OCP) – Neighbourhood Consultations in Phase 3

PURPOSE:

The purpose of this report is to provide Council with options for consideration regarding the neighbourhood consultation planned in phase 3 of the OCP update and obtain direction from Council.

CAO RECOMMENDATION:

THAT based on the September 21st, 2020 staff report “Official Community Plan (OCP) – Neighbourhood Consultation in Phase 3”, Council approve OPTION 1 and direct staff to undertake neighbourhood consultation through a “hybrid” method – combination of neighbourhood walking tours and virtual workshops.

Respectfully submitted,

Trevor Kushner, BA, DLGM, CLGA
Interim Chief Administrative Officer

BACKGROUND:

The OCP project is at the stage of conducting neighbourhood consultation. This work was originally planned for early summer in the form of conventional public engagement (i.e. open houses, workshops and neighbourhood walking tours), however, due to the COVID-19 pandemic, the plan was revised in the spring and the consultation schedule was postponed to the fall. Neighbourhood consultation is an important milestone that will identify area specific challenges and opportunities in selected geographical areas; sharing long-range planning vision and goals with property owners and residents at the neighbourhood level; and developing detailed planning policies and design guidelines for each area. Public feedback collected through the neighbourhood consultation will also have significant impact on the tasks in the next phases of the OCP.

The project team is committed to being flexible to overcome challenges caused by the pandemic and creating methods to effectively deliver public engagement activities under the restricted circumstance. The health and safety of the community and staff is paramount and has been considered in the development of the options presented in this report.

The purpose of this report is to present Council two possible delivery options (i.e. ‘hybrid’ and ‘virtual only’) and seek support from Council on the recommended hybrid form of neighbourhood consultation that staff consider will provide the best level of engagement. Irrespective of the methodology, the engagement is planned to take place in October and November in order to keep the project on track for completion mid-2021.

DISCUSSION:

Overview of virtual consultation

All previously planned OCP public consultation events have shifted from conventional approaches to virtual meetings through ZOOM and digital communication tools such social media and online surveys due to the pandemic. Despite a number of challenges, the project team, community stakeholders, and the OCP-Advisory Committee members have quickly adapted and become capable of conducting meetings virtually without major obstacles. Staff conducted virtual stakeholder sessions during the last week of July with great success. The sessions were well received by participants and staff were able to collect valuable thoughts from the participants. The ability to create virtual breakout rooms to manage discussion in smaller groups followed by the breakout groups reporting back to the entire session worked very well at mimicking in person working sessions. Having undertaken this approach the project team feel confident with carrying out online public consultation without major issues.

There are also some lessons learned with respect to virtual meetings. For example, as Council is aware from the virtual council meetings over the last number of months a strong and stable internet connection is critical to participation and seamless communication. Staff have also learned that it is particularly important to share basic rules with participants prior to meeting. The shared rules and protocols ensure effective discussions and allow each individual to have sufficient time to contribute during the sessions. As virtual meetings will likely remain a primary form of public consultation for the foreseeable future, staff continue to look for ways to enhance our capabilities.

Merits of conventional public consultation

Although in-person consultation is the preferred form of public consultation and the Ideas Fair held in February, just prior to the pandemic was a great success, face to face consultation has been limited over the last 6 months. However, as economic and social activities have gradually reopened, staff see value in considering limited in person consultation events. In addition, considering neighbourhood consultation is a crucial milestone of the project staff is of the opinion that opportunities for the public to have personal dialogue with staff on the OCP is beneficial. Any in person activities would be conducted outdoors and follow current public health guidelines including use of appropriate personal protective equipment.

Two possible neighbourhood consultation approaches going forward

The project team have researched and evaluated alternative public consultation methods that have been practiced elsewhere and may be considered applicable in Courtenay. Two scenarios are possible. The first scenario assumes that some degree of in-person engagement is desirable and accommodated. The second assumes that no in-person engagement is desirable at this point. The table below presents a high level overview of the two scenarios that staff consider possible. Detailed plans will be finalized once staff receive directions from Council.

SCENARIO 1: WALKSHOP AND VIRTUAL WORKSHOP “Hybrid” Model example

“WALKSHOP” (outdoor) - facilitated by City staff

- A small group of participants (e.g. up to 10 people to ensure social distancing requirements and efficiency are achieved) walk along a pre-determined route through a neighbourhood / growth area with City staff.

- Someone from community co-leads and assists in building a better understanding of the neighbourhood.
- Participants are encouraged to identify unique assets of the neighbourhood, issues, and aspirations.
- “Walkshop” leaders will help inform the discussion by providing insights from planning work, what we have heard to date and different lived experiences.

VIRTUAL WORKSHOP – facilitated by consulting team

- The first online workshop will be tailored to individuals who could not participate in the “walkshop”. The same topics/questions will be covered that were covered in the “walkshop”. An interactive map with streetview capabilities will be provided, to mimic the experience of being “on the ground”.
- The second online workshop will be dedicated to exploring different potential form and character approaches for new growth within the neighbourhood / growth area. This will be tailored to everyone, including those who participated in the “walkshop”.
- The virtual workshops will be conducted through Zoom. Virtual break out rooms will be available to allow for focused discussion with small facilitated groups, if necessary.
- The workshops will be recorded for review.

SOME CONSIDERATIONS:

- Benefits
 - It provides space for generative in-person conversations.
 - It offers multiple streams of engagement, enabling residents to select how they want to participate.
 - More effectively facilitates community building than virtual engagement alone.
- Challenges
 - “Walkshop” may require additional staff to monitor COVID-19 health recommendations are kept in all times.
 - A record of the names and contact information of the people who attended the “walkshop” needs to be kept for contact tracing (participants must agree to provide the information at the time of registration).
 - Unpredictable future as it relates to COVID-19 and public health orders.

SCENARIO 2: “Virtual” Model - SOUNDING BOARDS AND VIRTUAL WORKSHOP

SOUNDING BOARDS – not facilitated

- Interactive boards are to be stationed in different locations within neighbourhoods / growth areas. Passersby will have the opportunity to explore the same topics as in the Scenario 1 “walkshop” by reviewing information and offering input through interactive materials (e.g. maps, images) and/or by submitting photos and commentary electronically.
- Interactive boards can be as small as QR codes to avoid vandalism.

VIRTUAL WORKSHOP – approx. 2 hours – facilitated by consulting team

- This will run as described in Scenario 1, though it is expected that all participants will join the full 2 hours session since the “walkshop” is not being offered here.

SOME CONSIDERATIONS:

- Benefits
 - Focusses efforts on virtual engagement methods, ensuring implementation regardless of COVID-19 health recommendations

- Challenges
 - Virtual engagement ultimately limits participation to only those that have access to, and knowledge of, online technology
 - Sounding boards will require some upfront financial and time investment from the City to design, install, and maintain

Staff and the consulting team have considered the scenarios and found both are operationally feasible. However, wherever practical, staff support in person engagement and neighbourhood walking tours to better understand the local perspective. Accordingly, staff recommend the Hybrid option at this time.

ADMINISTRATIVE IMPLICATIONS:

There are no significant administrative implications to both options other than further refinements of the work plan and resource allocations. The original scope of the project contemplated eight (8) “walkshops” and sufficient staff and consultant resources have been allocated for this. Staff also have the capacity to add additional sessions if necessary, however these would be led solely by City staff and not the consultants.

FINANCIAL IMPLICATIONS:

All costs associated with neighbourhood consultation are included in the approved 2020 Community and Sustainability Planning department operation budget. The proposed options are considered and planned within the range of the approved budget.

ASSET MANAGEMENT IMPLICATIONS:

There are no direct asset management implications with respect to the neighbourhood consultation process. Long-term planning policies in specific neighbourhoods will be guided by asset management principles of sustainable service delivery and reducing infrastructure lifecycle costs.

2019 - 2022 STRATEGIC PRIORITIES REFERENCE:

November 2019 Strategic Priority Chart: Number 1 (NOW) Priority

- OCP – Consultation Process (public input/consult report)

Strategic Priorities 2019 - 2022

We continually invest in our key relationships

- Complete an update of the City’s OCP and Zoning Bylaw

OFFICIAL COMMUNITY PLAN REFERENCE:

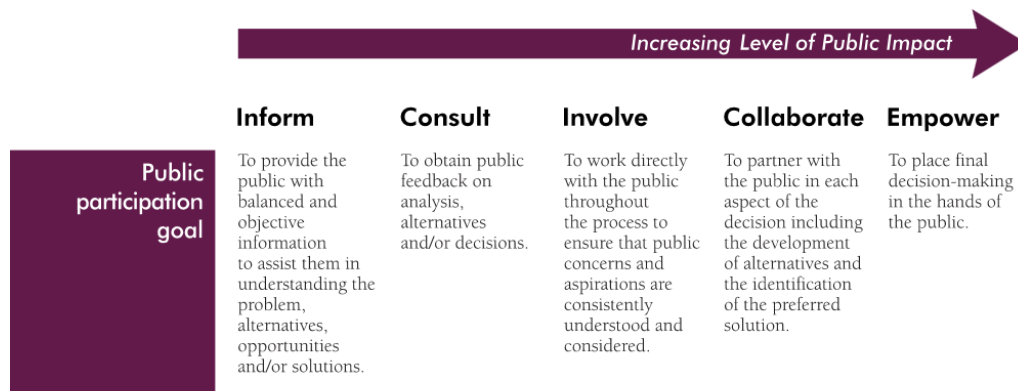
Neighbourhood consultation is part of the OCP update process. Therefore it is not referenced in the current OCP.

REGIONAL GROWTH STRATEGY REFERENCE:

Not referenced.

CITIZEN/PUBLIC ENGAGEMENT:

Staff will “**Collaborate**” the community based on the IAP2 Spectrum of Public Participation during the development of the OCP.



Staff note that neighbourhood consultation in targeted areas is an essential part of the OCP update in order to better understand the form and character of the neighbourhoods; challenges and opportunities of the neighbourhoods; and to build strong consensus among property owners and residents on long-term planning vision, goals, and policies.

OPTIONS:

- OPTION 1:** That Council direct staff to undertake neighbourhood consultation through a “hybrid” method – combination of neighbourhood walking tours and virtual workshops. **(Recommended)**
- OPTION 2:** That Council direct staff to undertake the planned neighbourhood consultation through virtual workshops only.
- OPTION 3:** That Council defer decisions and direct staff to consider other options.

Prepared by:

Tatsuyuki Setta, MCIP, RPP
Manager of Community and Sustainability Planning

Reviewed by:

Ian Buck, MCIP, RPP
Director of Development Services

Concurrence by:

Trevor Kushner, BA, DLGM, CLGA
Interim Chief Administrative Officer



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council

File No's: 3360-20-2003; 6480-20-2001

From: Chief Administrative Officer

Date: September 21st, 2020

Subject: Official Community Plan (OCP) Amendment Bylaw No. 2996 and Zoning Amendment Bylaw No. 2997 - 2700 Mission Road

PURPOSE:

The purpose of this report is for Council to consider an Official Community Plan and Zoning Bylaw amendment application to change the land use designation and rezone the property legally described as Lot A, District Lot 236, Comox District, Plan 43411. The proposed amendments will 1) Redesignate the subject property from "Industrial" to "Multi-Residential" and 2) to rezone the subject property from I-2 and R-1B to R-4.

CAO RECOMMENDATIONS:

That based on the September 21st, 2020 staff report entitled "Official Community Plan (OCP) Amendment Bylaw No. 2996 and Zoning Amendment Bylaw No. 2997 – 2700 Mission Road" Council approve OPTION 1 and complete the following steps:

1. That Council give First and Second Reading of "OCP Amendment Bylaw No. 2996" to redesignate the subject property from "Industrial" to "Multi-Residential";
2. That Council give First and Second Reading of "Zoning Amendment Bylaw No. 2997" to rezone the subject property from R1-B and I-2 to R-4;
3. That Council direct staff to schedule and advertise a statutory Public Hearing with respect to the above referenced bylaws following the resumption of regular Council meetings or upon approval of an alternative process; and,
4. That Final Reading of the bylaws be withheld pending the registration of a Section 219 covenant on the subject property.

Respectfully submitted,

Trevor Kushner, BA, DLGM, CLGA, PCAMP
Interim Chief Administrative Officer

BACKGROUND:

The subject property is 2.37ha. (5.9ac.) in area. It is largely vacant with the exception of an older house and accessory buildings in the eastern corner of the property. There are also patches of trees throughout the property and a denser cluster on the northern corner of the property. A significant power line corridor crosses the south-western edge of the property with one of the towers being a significant and dominant feature of the property. Surrounding the subject property is a mix of housing types and densities, forested ALR land, as well as light industrial businesses and institutional uses including Queneesh Elementary School, North Island College and the Comox Valley Regional Hospital.



Figure 1: Subject Property and Context

The City's Official Community Plan (OCP) designates the subject property as "Industrial" which is a designation that accommodates a range of uses from heavy industrial and manufacturing to light industrial uses such as contractor's offices, equipment storage, and warehousing. The property is split zoned between residential and industrial zoning. Approximately 1ha of the property is zoned I-2 (Industrial 2 Zone) which reflects the property's industrial land use designation. Much of the remainder (1.2 ha) is zoned R-1B (Residential One B Zone) and allows for single family residential dwellings, accessory buildings and home occupation use. A 10m wide strip of land zoned PA-2 (Public Assembly Two Zone) extends along the northwest property boundary as shown below and will remain within this zone as part of this proposal. This strip of land is intended for a future walkway.

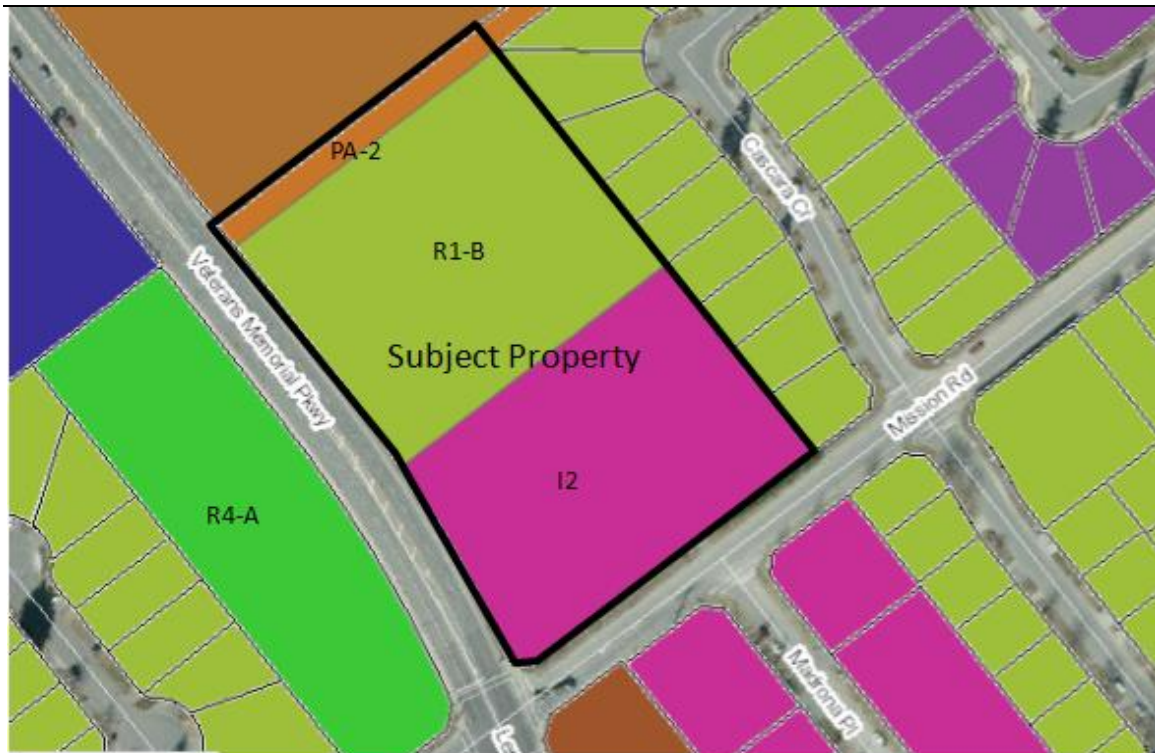


Figure 2: Subject Property's Split Zoning

Proposed is an amendment to the property's zoning and land use designation to facilitate the development conceptually shown as 137 residential units. The development is broken into three general components shown in Figure 3 below. Area 1 is comprised of 28, two storey townhomes, Area 2 contains a three storey, 72 unit apartment building and Area 3 contains a 37 unit apartment building up to three storeys in height. Regarding tenure, the 28 townhomes are proposed to be strata units offered at market value, the 72 unit apartment building is intended to be market rental units managed by a property management company and the 37 unit apartment building will be below market long term rental units offered through an agreement with BC Housing. There is a purchase agreement between the developer and BC Housing where BC housing will be granted ownership of the building once it is constructed. The applicant has indicated that rents will be subsidized for occupants of the building, however, they exact rental rates have not be determined by BC Housing.

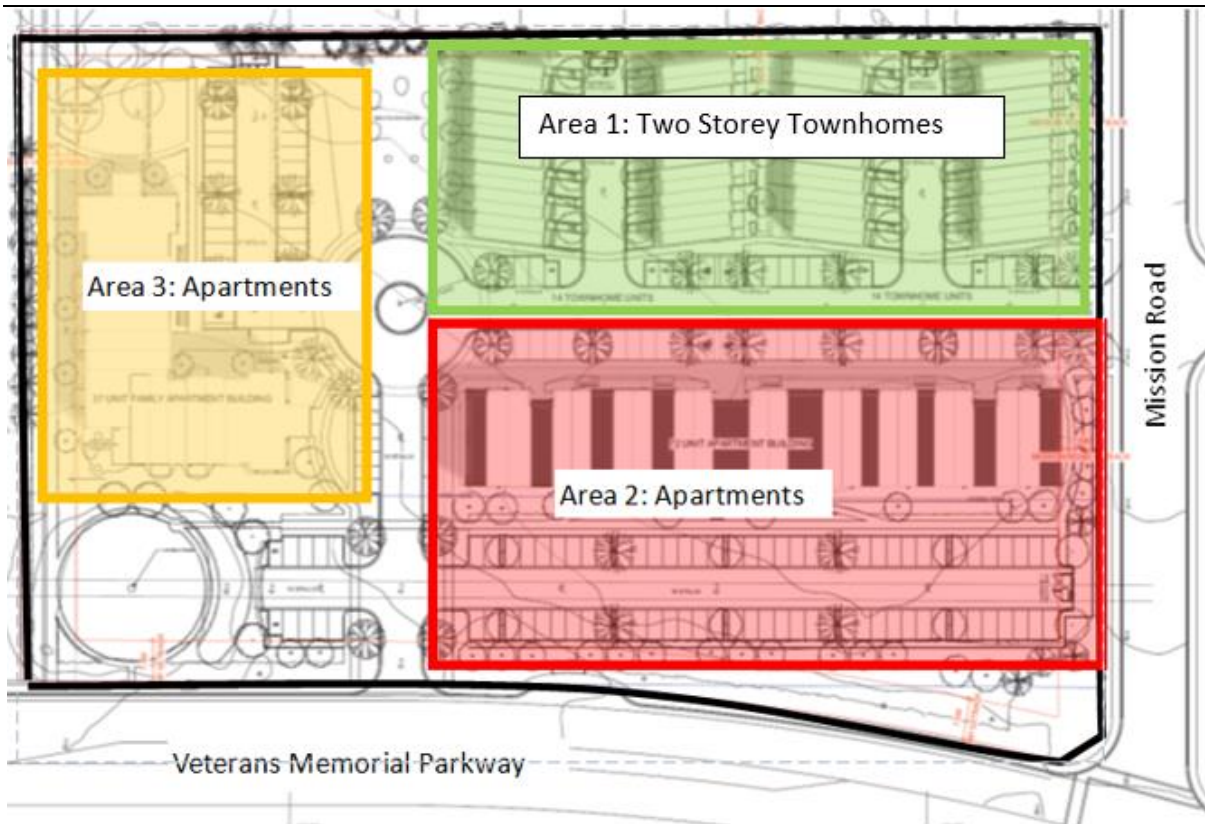


Figure 3: Key Components of the Proposal

The buildings will be accessed by a common roadway connecting with surface parking located throughout the site with large parking lots situated under the power lines. Based on the unit count, 206 off-street parking spaces including fifteen small car parking spaces are proposed which meets bylaw requirements in Division 7, *Zoning Bylaw No. 2500*. Pedestrian connections to and from the site will be provided through a new sidewalk constructed adjacent to Veterans Memorial Parkway and a new municipal trail (walkway) along the north property boundary in the area currently zoned PA-2.

Vehicular access to the property is from Mission Road, a two-lane residential collector road with a speed limit of 50km/hr. A new right-in/right-out access is proposed to access the site from Veterans Memorial Parkway, a four-lane arterial road with a speed limit of 60km/hr.

A traffic impact assessment (TIA) was completed for this proposal which details little change to the current base level conditions and does not recommend any changes to existing traffic patterns. The TIA includes a sightline analysis of each driveway which concludes that sightlines for both accesses have been met with the exception of the proposed transit stop located to the south of the Veterans Memorial Parkway access. The project's traffic engineer considers this sightline blockage to be infrequent and acceptable.

With this proposal new sidewalks will be provided along both road frontages. Driveway crossings will emphasize pedestrian and bicycle use priority on the site through paint markings with the sidewalks traversing the driveways and the bike lane painted green with markings through the driveway crossing. These design elements will highlight the presence of pedestrians and cyclists utilizing the site for driver awareness and improved safety.

Future residents will have access to a meadow/treed outdoor area and a play environment on the northeast portion of the site; a play garden on the northwest portion of the site and multiple walkways and lawn areas throughout the development. Both the apartment building and the townhome units provide private amenity space for residents in the form of private patios.



Figure 4: Development Concept

As introduced, to accommodate this development, the applicant is proposing to rezone to Residential Four Zone (R-4) zone in conjunction with redesignating the property "MultiResidential". The applicant's plans for the property are summarized in **Schedule No. 1**. In addition to the Traffic Impact Assessment, the City has also been supplied with a Site Servicing report for the proposal.

Zoning Review

The proposed development requires bylaw amendments as the current I-2 and R-1B zone do not permit multi residential uses (town home or apartment dwellings) or the density the applicant is proposing.

Residential uses in the I-2 zone are only allowed in limited situations such as for caretakers and the R-1B zone limits residential use to single family dwellings. Table No. 1 below summarizes the proposal relative to the existing R-1B zones as well as the zone the applicant is proposing, the Residential Four Zone (R-4 Zone), a zone typically used for medium and higher density multi-family proposals.

	Current R-1B Zone	R-4 Zone (Proposed Zone)	Applicant's Proposal
Density	1 unit per lot	Floor Area Ratio: Apartments -1.2 All other residential -.70	Floor Areas Ratio: 0.47
Lot Coverage	40%	N/A	19%
Useable Open Space	Not Applicable	20m ² /dwelling unit (for apartment buildings) 30m ² /for one bedroom dwelling units and 50 m ² /for dwelling units with two or more bedrooms (1,425m ² or 51m ² /unit)*	1,567m ² or 23m ² /unit 1,425m ² or 51m ² /unit
Front Yard (Mission Road) Setback	7.5m	7.5m	Buildings in Area 1 and 2 – 7.5m
Rear Yard Setback	9.0m	9.0m (except for apartments) <u>Apartments:</u> 9.0m (first storey) 10m (third storey) 13.5m (fourth storey) (10m three storey apartment)*	Apartment building in Area 3 – 10m
Side Yard Setback Adjacent to the single family homes on Cascara Crescent)	4.5m total with a minimum of 1.5m on one side 4.5m (if flanks a street)	4.5m (two storeys or less) 6.0m (3 storeys) 7.5m (4 storeys) 6.0m if back of building faces a side lot line	Townhomes in Area 1 – 4.5m Apartment Building in Area 3 – 28m
Side Yard Corner (adjacent to Veterans Memorial Parkway			Apartment Building in Area 2 – 36m
Building Height	8.0m	Town homes, single family dwellings, duplexes – 9m Apartments -14m	Area 1 Town homes – 8.01m (26.3 ft) Area 2 Apartment Building (72 unit apartment) – 11.95m (39.2ft) Area 3 Apartments –11. 31m (37.11ft)

Minimum Lot Size	750m ² and 875m ² for corner lots)	1250m ²	1250m ²
Parking stalls (Residential)	2 stalls per unit	1.5 stalls per unit	206 parking stalls (including 10% small car parking)

Table No 1: Zoning Comparison

DISCUSSION:

The Comox Valley Regional Growth Strategy (RGS) provides a vision for managing growth in urban and rural communities in the Comox Valley. The RGS is implemented within the City through the policies and regulations contained in the Official Community Plan (OCP), Local area Plans (LAP) and zoning. The RGS directs 90 percent of all new residential growth and development to core settlement areas, one core area being the City of Courtenay. The RGS also supports residential infill, intensification and the redevelopment of lands within City boundaries that are close to existing services as opposed to supporting new developments outside municipal boundaries or in neighborhoods on the fringes of the City.

The RGS supports the provision of a range of housing types with a focus on medium and high density development and promotes multi-family conversions as a way to increase housing opportunities in existing neighborhoods. As such, the City's OCP supports the intensification and development of existing sites and multi-family housing with a broad range of densities. Also, the development concept is weighed against criteria in the plan including the proposal's proximity to services, public facilities, shopping and employment as well as other relevant policies in the LAP.

The subject property is located within the Mission Road LAP. Originally adopted in 1995 the LAP's focus is primarily on site and building design for single family residential neighborhoods. While the area has largely been built out in alignment with the original single family vision of the plan there have been various amendments to the OCP in this plan area over the last 25 years. In particular single family lands were redesignated to facilitate the construction of Queneesh Elementary, the Fortis building, and create an industrial site between Queneesh and Fortis that was further amended to permit a mixed use commercial/residential development. The subject property itself has changed since the original adoption of the plan from a Public Areas designation to the current industrial one.

In assessing this proposal five key themes emerged to guide the evaluation of the development proposal:

1. Land Use Compatibility;
2. Location and Connectivity;
3. Housing Needs and Diversity;
4. Residential Intensification;
5. Use of existing services; and
6. Site and Building Design

Land Use Compatibility

The subject property is situated adjacent to a mix of land uses as shown in Figure 2 below. To the east and southeast of the site are single family residential neighbourhoods established along Cascara Crescent, Elderberry Crescent and Huckleberry Place. These neighbourhoods support single family residential uses with some lots along Cascara Crescent zoned to accommodate secondary suites.

Lands to the immediate south along Madrona Place support industrial uses and a number of businesses currently operate out of this neighborhood including contractor's workshops, offices, equipment storage, a fitness facility and equipment sales, service, rental and repair businesses.

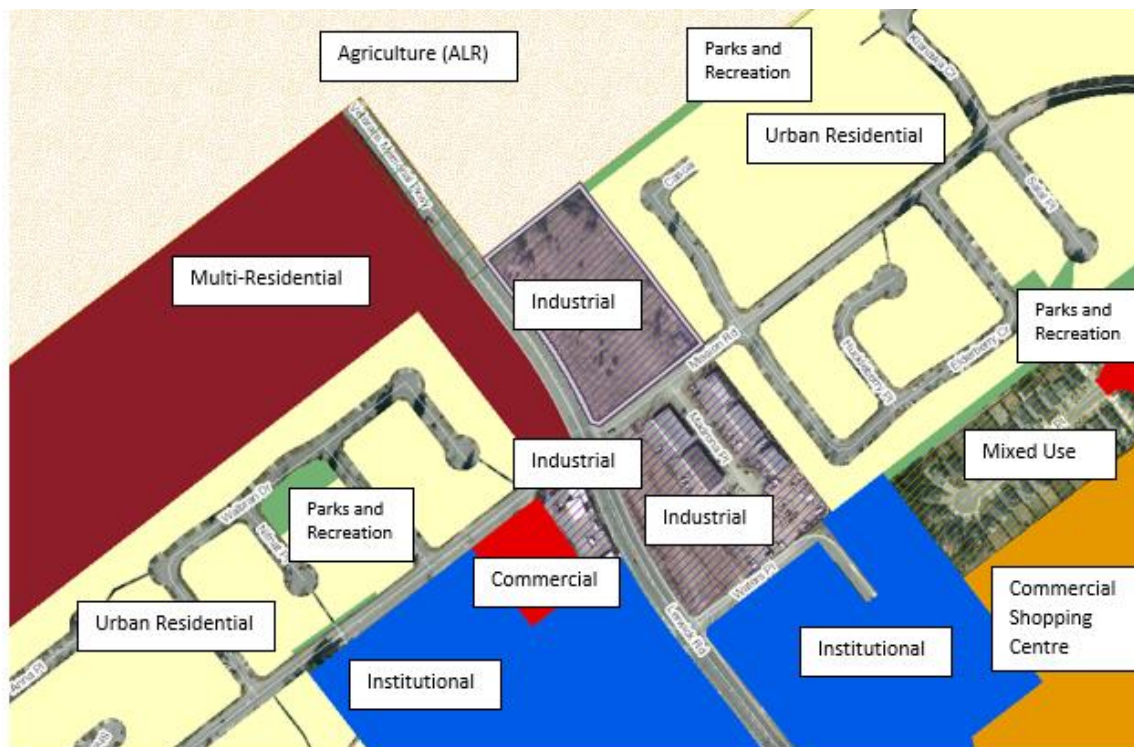


Figure 5: OCP Land Use Designations

Agricultural lands are located to the north of the site and are within the Agricultural Land Reserve (ALR). The City's OCP contains policies that aim to preserve agricultural lands and minimize conflicts between farm and non-farm uses. The development has been designed to reduce potential conflicts between residential uses and adjacent farmland by providing a transition zone (buffer) between the farmland and the proposed residential uses. The proposal provides a 20m wide buffer (transition zone) between the 37 unit multifamily apartment building proposed on the north portion of the site and the agricultural lands. This buffering is achieved through a 10m municipal trail (dedicated City land) in addition to the 10m rear yard setback for the apartment building in Area 3. The provision of the 20m transition zone is consistent with the subdivision approved on Cascara Crescent where a buffer of 19m was allocated through the dedication of a 10m municipal trail combined with the 9m rear yard building setbacks for residential dwellings.

Lands to the south and west of the site across VMP have seen recent growth with the construction of the Comox Valley Regional Hospital and the approval of two higher density multifamily residential infill projects located at 2600 and 2525 Mission Road. The property at 2600 Mission Road recently received zoning and development permit approval for a four storey, 94 unit development. A mixed use development at 2525 Mission Road was approved in 2018 and will provide 60 rental units and over 12,000 ft² of commercial space over two buildings and is in the final stages of construction.

The most sensitive surrounding land use is the single family homes immediately east of the proposal. Based on early feedback and engagement with the neighbourhood the applicant adjusted the proposal to transition the site's density with the lowest density and shortest building located adjacent to this property line. At two storeys the two-storey townhomes in Area 1 are at a comparable scale and height to the adjacent single family houses. The apartment building in Area 3 is also adjacent to the single family homes. In this case the applicant has shifted the building to be setback 28m from those homes. To ensure the building scale and

location reflects the site plan presented during this process, staff are recommending that a covenant is required stipulating the maximum building height in Area 1 and the location of the buildings in Area 3 is required as a condition of rezoning.

Location and Connectivity

The development site is located in East Courtenay at the intersection of Veterans Memorial Parkway (VMP) and Mission Road, adjacent to one of the City's commercial areas that provides employment opportunities for office workers, hospital workers and those working in the retail and service industries.

Within 500m of the development residents can access grocery stores, restaurants, banks and health and medical services including pharmacies, medical clinics and the Comox Valley Regional Hospital. Residents in the development also have access to a variety of recreational opportunities in close proximity to the site including fitness centers, the Aquatic Centre, Crown Isle Golf Course and City Parks (Elderberry Park, Walbran Park and Sandwick Park). The site is also within walking distance to childcare facilities and schools including Queneesh Elementary School and North Island College.

The proposal's location provides excellent transportation options for residents and is located along one of the City's major transportation corridors, Veterans Memorial Parkway. A traffic impact assessment (TIA) was prepared in support of this proposal and discusses opportunities for alternative and active forms of transportation including transit and cycling.

Within 800m of the property there are a number of well-connected transit stops that provide connection to locations throughout the City and region. These include stops on both sides of VMP and the North Island College transit exchange.

As part of the development the application will have to reconstruct the bus stop along Veterans Memorial Parkway adjacent to this development. The enhanced bus stop will include a pull out queuing area for the bus so that it does not obstruct traffic when loading/unloading riders.

Locating higher density developments and intensifying residential development close to major commercial corridors such as Veterans Memorial Parkway creates efficiencies in the transit system by making better use of existing transit network service levels and capacity.

An interior bicycle parking storage facility has been provided within the basement level of the apartment building in Area 2 and an additional eight exterior bike racks have been placed throughout the development providing approximately 50 bicycle parking stalls. The City's 2019 Cycling Network Plan's long term cycling network map identifies Veterans Memorial Parkway for a full build-out bicycle network. Once fully implemented, cyclists will have convenient access to routes to other cycling corridors established throughout the City.

Exploring opportunities for Electric Vehicle Charging Stations is a strategic priority for Council. At the zoning stage the applicant did not show EV charging stations but this is something that staff will include as a requirement of the development in the covenant to be registered prior to zoning bylaw adoption.

Housing Needs and Diversity

According to the Canadian Mortgage Housing Corporation's latest report on apartment vacancy rates, the City of Courtenay's vacancy rate remains low at 1.4% (October 2019). This rate is low and is only up 0.7% from the previous year (2018). Low vacancy rates indicate a reduction in both the affordability and

availability of housing units in the community and also reflect the need for more affordable housing units to be made available.

In recent years the City is has experienced increases in the demand for affordable rental accommodation. This is attributed to in part from increases in population growth as more low to moderate income earners and families move to the Comox Valley. These residents face reduced buying power due to stagnant incomes coupled with high costs associated with home ownership including raising property values and interest and mortgage rates.

More recently the development community has responded to the need for housing affordability and availability with purpose-built rental projects. Recent rental projects include the development located at 911 Braidwood Road (79 units), 2525 Mission Road (60 units), 2600 Mission Road (94 units), 1025 Ryan Road (118 units) 1850 Cliffe Ave (94 units), 605 Crown Isle (56 units), and on Aspen Road in the Town of Comox (208 units) in addition to hundreds more in earlier stages of the development approval process. Some of these units are now complete with others under construction or about to begin construction. Staff expect that as these units enter the market they will dramatically increase the vacancy rate which should then relieve pressure to increase rents and potentially result in lower rents.

This proposal offers 37 units of purpose built rental housing including one, two and three bedroom units in a three-storey apartment building situated on the north portion of the site. These units will appeal to a wide variety of demographics including single households, two person households, and seniors with a primary target on family living, as summarized in Table 2.

Regarding tenure, the townhomes are proposed to be strata units offered at market value, the seventy-two unit apartment building will be long term market rental units managed by a property management company and the thirty-seven unit family apartment building will be below market long term rental units resulting from a purchase agreement between the developer and BC Housing.

Purpose-built rentals are designed and built expressly as longer term rental accommodation. It is different from other types of rentals, such as condominiums, which may be available in the rental pool one year and not the next.

Unit Type	Number of Units	Unit Size (Approx.)
Studio	18	350+ ft ²
One Bedroom	28	490 ft ² -550 ft ²
Two Bedroom	67	800 ft ² - 1200 ft ²
Three Bedroom	24	937 ft ²

Table 1: Unit Composition and Size

The City's affordable housing policy directs staff to work with the development industry to provide affordable housing opportunities. This proposal is consistent with the City's policy on affordable housing which includes: increasing the supply of affordable rental housing within the City; providing affordable housing options and a mix of unit sizes and types (see table 2 above); ensuring that affordable housing meets evolving demographics and coordinating opportunities for developers to provide market and non-market affordable housing with rezoning applications.

Residential Intensification

This development proposes to intensify an underutilized property within an existing neighborhood through redevelopment and infill. Because this neighbourhood is located within a mixed use area, is well serviced by transit and active transportation options and is located in close proximity to many employment

opportunities, recreational opportunities and education facilities, this site is an appropriate location for considering higher density development.

Locating higher density developments within existing neighbourhoods that are serviced: maximizes the use of land, increases housing opportunities, supports the existing transportation system, leads to healthier transportation choices and results in a more efficient investment in and use of City infrastructure as discussed below.

Use of Existing Infrastructure

The development site is vacant with access to all City services without extensions to the existing systems. Approving developments that intensify existing residential neighbourhoods and promote infill on underutilized sites, such as this property, is beneficial in that it directs growth to areas where infrastructure for water, sanitary and stormwater and utilities are already in place. This reduces both the City's and ultimately the community's cost in providing and maintaining new services (road, service infrastructure, and facilities) associated with sprawl development. Should any capacity constraints exist within the existing services it will be the responsibility of the developer to upsize them as necessary to adequately service the site.

Site and Building Design

The development is comprised of two, three storey apartment buildings and two storey townhome units, providing a total of 137 multi-family units. The buildings have been sited so that they are oriented towards adjacent streets.

The townhome buildings in Area 1 on the eastern portion of the site have been designed to be two storeys in height so that they are compatible with the two-storey single family homes on Cascara Crescent. During construction the developer will be grading the site so that a lower elevation is achieved for the townhomes to ensure their scale is similar to the existing height of the adjacent dwellings. To reduce privacy impacts and shadowing the townhome units have been setback 4.5m from the eastern property boundary and landscape buffering provided along the eastern property line.

The apartments in Area 3 are also adjacent to the single family homes on Cascara Crescent. In this case the building is proposed to be three storeys. To reduce the impact the building has been setback 28m from the single family lots which is nearly four times the required setback of 6.0m. Again this assists in reducing impacts on the single family homes in terms of shadowing and loss of privacy.

Common outdoor amenity spaces including a children's play areas have been incorporated into the site design and provides active and passive recreational activities for future residents. Staff note that these spaces are provided in visible areas that are accessible without vehicular interference.

The site has been designed to retain existing tree stands on the northeast portion of the site as well as provide street trees and sidewalks along adjacent streets. Continuous landscape buffering has also been provided along the inside of all property lines adjacent to Mission and Veteran's Memorial Parkway as well as approved access points.

Although the site contains surface parking, parking areas have been broken down into smaller areas, where feasible, and have been screened by landscaping.

Because the property is adjacent to the ALR on its northern boundary a landscaped buffer area of 10 metres in width has been provided inside of the north property line.

The proposed buildings have a modern design and include a diversity of materials which provide variation to facades and assist in reducing the mass of individual buildings. Rooflines and pitches have been articulated and varied to avoid a box-like appearance. Visual interest and diversity is accomplished through the use of horizontal and vertical articulation, the use of varying building materials, and different colour treatments. As indicated by the applicant's submissions the buildings will be built to Step 3 of the BC Building Code.

Subsequent to the rezoning the development will require a form and character development permit. Staff note that the proposed development does not contain variances, therefore the permit will be processed internally and approved by the Director of Development Services. Based on the plans submitted in support of the zoning and OCP amendment, the building and site design are generally consistent with the guidelines.

Official Community Plan Rewrite

The City is currently undertaking a rewrite of the OCP. This immediate area has been identified as a candidate growth node as it is located on arterial roads with access to transportation options that will assist reducing greenhouse gas emissions. This area has, and will likely continue to attract higher density development. Later this year, the City will be engaging this neighbourhood to gain their input and direction for how the community envisions their immediate surroundings growing and maturing. Given that this application includes an amendment to the current OCP and that the community will be consulted in the near future on the area's growth, Council may wish to defer consideration of this application pending the results of the neighbourhood consultation and the adoption of the new OCP. This has been listed as an option for consideration.

Local Government Act – s.477 (3)

The proposed OCP amendment has been reviewed in relation to the City's Financial Plan and the Regional Waste Management Plan. Staff have found the bylaw to be complementary to these plans.

Other Related Regulations

Amenity Contributions

Amenity contributions to the City's Affordable Housing Amenity Reserve Fund and the City's Parks, Recreation Culture and Senior's Facilities Amenity Reserve Fund will be required as part of this proposal in accordance with section 7.7 of the OCP.

Form and Character Development Permit

Subsequent to the rezoning application the applicant will require a development permit. Based on the plans submitted in support of the rezoning application, the building design and site design are generally consistent with the policies contained within the Multi-family Development Permit Guidelines.

Tree Cutting Permit

A tree assessment was not provided with this application. If any of the trees being removed on the property are larger than 20cm diameter at breast height (dbh) a tree cutting permit application will be required in advance of any tree removal on the property.

Covenant Requirement

Final Reading of the bylaws be withheld pending the registration of a Section 219 covenant on the property. The covenant will address amenity contributions including: the preservation of the greenbelt forested area on the northwest corner of the site; controls on the building location and height relative to the single family homes on Cascara Crescent, the construction of a (walkway) and contributions towards the Affordable

Housing Amenity Reserve Fund and the City's Parks, Recreation Culture and Senior's Facilities Amenity Reserve Fund.

The applicant's requirements for the new site access on Veterans Memorial Parkway, frontage improvements for both roads and the transit bus bay on Veterans Memorial Parkway will be detailed in the covenant.

FINANCIAL IMPLICATIONS:

The development is subject to City and Comox Valley Regional District Development Cost Charges. Amenity contributions as outlined in Section 7.7 of the OCP will be required.

ADMINISTRATIVE IMPLICATIONS:

Processing zoning bylaw amendments is a statutory component of the corporate work plan. Staff has spent 48 hours processing and reviewing this application, conducting a site visit and communicating with the applicant to request additional information.

There were a number of technical elements in this development that added time and resources to processing the zoning amendment application including: the traffic impact assessment, site servicing, revisions to development plans and negotiating amenities. Resolving these technical details resulted in additional processing time.

Should the proposed bylaws receive First and Second Readings, staff will spend an additional five hours in preparation for the public hearing, preparation of the covenant, final reading of the bylaw, and updating the bylaws and maps.

ASSET MANAGEMENT IMPLICATIONS:

The rezoning application has no asset management implications, but it would facilitate development that would require water, sanitary sewer and storm service connections and servicing infrastructure built to City Standards and incorporated into the City's asset register for ongoing maintenance.

Frontage improvements are also required for both the Veterans Memorial Parkway and Mission Road frontages including new sidewalks, curbing, boulevard, road dedication and a painted and buffered bike lane.

2019 – 2022 STRATEGIC PRIORITIES REFERENCE:

- Communicate appropriately with our community in all decisions we make
- Move forward with implementing the City's Transportation Master Plan
- ▲■ Support actions to address Climate Change mitigation and adaptation
- ▲■ Identify and support opportunities for lower cost housing
- ▲ Encourage and support housing diversity
- ▲ Explore opportunities for Electric Vehicle Charging Stations

OFFICIAL COMMUNITY PLAN REFERENCE:**Official Community Plan****3.1 Growth Management:****3.1.2 Goals**

1. provide for managed growth
2. ensure equitable taxation for services provided and received
3. support efficient infrastructure development
4. protect environmentally sensitive areas
5. support sustainable development practices

3.2 Regional Context Statement**3.2.2 Goals**

Goal 1: Housing: Ensure a diversity of housing options to meet evolving demographics and needs.

Principles:

- (1) balance land uses to create a vibrant and diverse neighbourhood and community.
- (2) create neighbourhoods that will offer a variety of transportation choices.
- (5) lead in creating inclusive neighbourhoods for housing.

4.4 Residential**4.4.2 Goals**

1. Optimize the use of existing lands in the City with a long term consideration to expand boundaries and protect adjoining lands from further development to meet the future needs of the City.
2. To encourage multi residential development in the Downtown area of the City, and in areas identified through the Local Area Planning process.
3. Support the development of housing options for seniors.
4. Ensure the provision and integration of special needs and affordable housing.
5. Encourage housing opportunities and convenient community services for individuals having special housing requirements.
6. Ensure new housing projects introduce innovative and creative design and streetscapes.
7. Preserve the integrity and character of existing residential areas with any redevelopment proposal.
8. Ensure all new development includes the provision of amenities including buffer areas along major roads, neighbourhood parks, sidewalks and trails, and public facilities.

4.4.3 Policies

5. The City supports the designation of multi residential housing in a variety of locations to avoid large concentrations of the same type of housing in one area and to help provide more diversity within neighbourhoods.

4.5 Agricultural**4.5.3 Policies**

4. The City will work towards reducing conflicts between agricultural uses by ensuring buffering requirements for non-agricultural uses adjacent to agricultural lands.

Mission Road Local Area Plan

9.1.3 Park Lands

Linear parks

- Will be approximately 10 metres (33 feet) wide
- The design and location of sidewalks will be coordinated with the location of existing trees as located on a survey plan or landscape plan.

Park land acquisition

- Will be accomplished in the following manner: subdivision, cash in lieu of parkland or through negotiation with the property owner.

REGIONAL GROWTH STRATEGY REFERENCE:

The development proposal is consistent with the RGS goal (3.2.1) “to ensure a diversity of housing options to meet evolving demographic needs” as well as the objectives 1A, 1C and 1D listed below:

Objective 1-A: Locate housing close to existing services;

1A-1 Based on RGS growth management strategy locate housing close to existing services and direct 90 percent of new, residential development to Core Settlement Areas.

1A-2 The focus of higher density and intensive developments shall be within the existing Municipal Areas. Within the Municipal Areas densification and intensification of development is required including infill and redevelopment.

1A-3 Identify specific Town Centres in Municipal Areas through the OCP review process. These Town Centres are to be developed as walkable and complete communities, providing for a range of housing types focusing on medium and high density housing, employment and commercial uses. There will be a minimum of one Town Centre in the City of Courtenay, one Town Centre in the Town of Comox and one Town Centre in the Village of Cumberland.

1A-6 Increase housing opportunities in existing residential areas in Core Settlement Areas by encouraging multi-family conversions, secondary suites, and small lot infill.

Objective 1-B: Increase affordable housing options.

1B-2 Encourage residential multi-unit or multi-lot developments to contribute to affordable housing options including, but not limited to a range of unit sizes and types, lot sizes, multifamily or attached-unit buildings, rental units, and secondary suites. These contributions could take the form of land, cash, buildings or other such items as supported by the local governments.

1B-3 Coordinate opportunities for developers to provide market and non-market affordable housing, such as rezoning contributions, inclusionary zoning, or reduced application fees.

Objective 1-C: Develop and maintain a diverse, flexible housing stock.

1C-1 Provide a diversity of housing types in the Municipal Areas using the following housing type targets for new development by 2030: These targets are for all Municipal Areas in aggregate.

- 40% Low Density Single unit residential, town homes, semi-detached, secondary suites, 4-24 units per hectare
- 30% Medium Density Low-rise multi-unit up to four storeys, 24-74 units per hectare
- 30% High Density Over four storey multi-units minimum, 74 units per hectare

1C-4 Encourage infill units and secondary suites in residential zones in the Core Settlement Areas.

1C-5 Encourage multi-family housing, and small-lot housing in the Core Settlement Areas wherever it can be supported by regular transit and infrastructure services.

Objective 1-D: Minimize the public costs of housing

1D- 1 Direct the majority of new housing to areas that are or will be serviced through publicly owned water and sewer systems.

Objective 2-C: Promote environmental best practices in Agricultural and Resource Areas.

2C-5 All local governments will ensure appropriate buffers and transition zones between working landscapes and residential areas to minimize negative impacts from residential development on farmland.

Objective 2-D: Ensure access to parks, recreation areas.

2D-2 Require new developments to link to, improve or expand the existing greenway network.

Objective 5-A: Promote water conservation and efficiency throughout the Comox Valley.

5A-1 The majority of growth should be focused in Core Settlement Areas where appropriate publicly owned water servicing systems already exists.

Objective 5-D: Encourage sewage management approaches and technologies that respond to public health needs and maximize existing infrastructure.

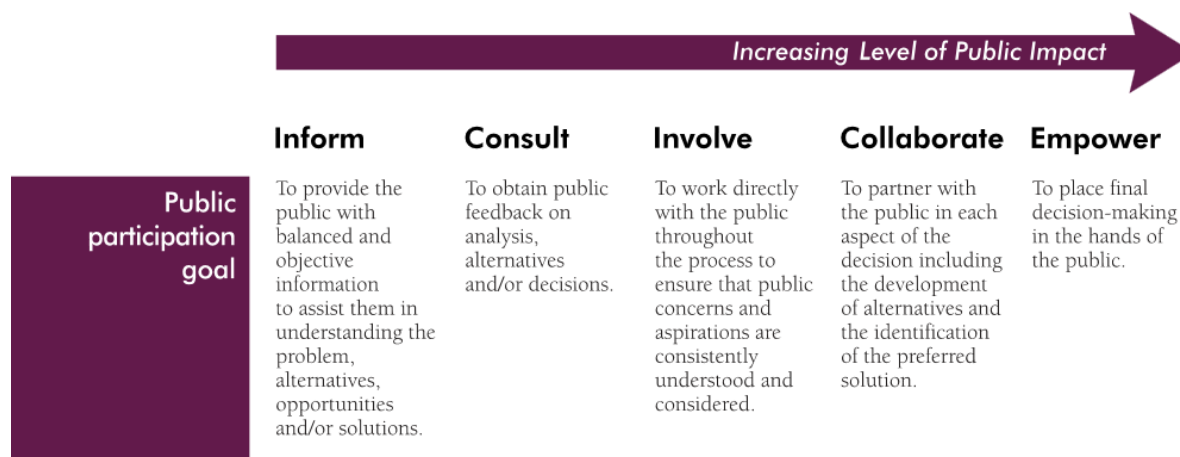
5D-1 The majority of growth should be focused in Core Settlement Areas where appropriate sewer servicing already exists.

Objective 6-A: Protect land for existing and future agriculture and associated activities.

6A-3 All local governments will ensure appropriate buffers and transition zones between working landscapes and residential areas to minimize negative impacts from residential development on farm and resource land. The need for and extent of buffers and transition zones will be site specific.

CITIZEN/PUBLIC ENGAGEMENT:

Staff will “**Consult**” the public based on the IAP2 Spectrum of Public Participation:



Should Official Community Plan Bylaw No. 2996 and Zoning Amendment Bylaw No. 2997 and receive First and Second Readings, a statutory public hearing will be held to obtain public feedback in accordance with the *Local Government Act*.

Prior to submission of the OCP and Zoning Amendment application to the City in January 2020, the applicant held a public open house in October 2019 where feedback was solicited from residents located 100m east of Veterans Memorial Parkway. After receiving feedback and comments on the initial proposal the applicant made substantial changes to the development's site plan. These changes included redesigning the site to reduce the development's visual impact on the single family homes to the east. The original development plan had the two apartment buildings running parallel to the access off Mission Road (as seen in **Figure No.4**). The apartment buildings were repositioned to the northeast corner of the site and west of the access off Mission Road. The proposed townhomes were also relocated adjacent to the eastern property line and will be built to a similar height and scale as the residential dwellings to the east. Also, the applicant increased building setbacks for the apartment building in Area 3 from 17m 25m to minimize privacy impacts and overlook on adjacent residents.



Figure 6: Concept Presented at the Public Open House October 2019

The applicant mailed out a public information meeting package on April 23, 2020 to adjacent property owners and occupiers within 100m of the property, this included 288 households. The notice contained details about the Zoning and OCP Amendment, proposed zoning and density, unit composition, amenity contributions including the playground and parks and trail connections to the leading to and from the site. Twenty-four comments were received for this proposal from the public mail out. The applicant prepared a response to the public comments on the development resulting to further modifications to the development proposal. The applicant further modified the development by:

- Reducing the number of rental market units from 84 to 72 by reducing the number of studio units and increasing the number of two and three bedroom units;
- Modifying the grading on the site to lower it to reduce view and privacy impacts on the adjacent single family residential properties to the east; and
- Providing a Traffic Impact Assessment results to address concerns regarding increases in traffic and parking and has supplied the required parking as set out in *Zoning Bylaw No. 2500*.

The mail out letter, public comments received and the applicant's letter of response are provided in *Attachment No. 4*.

OPTIONS:

OPTION 1: (Recommended)

1. That Council give First and Second Reading of “OCP Amendment Bylaw No. 2996” to redesignate the subject property from “Industrial” to “Multi-Residential”;
2. That Council give First and Second Reading of “Zoning Amendment Bylaw No. 2997” to rezone the subject property from R1-B and I-2 to R-4;
3. That Council direct staff to schedule and advertise a statutory Public Hearing with respect to the above referenced bylaws following the resumption of regular Council meetings or upon approval of an alternative process; and,
4. That Final Reading of the bylaws be withheld pending the registration of a Section 219 covenant on the subject property.

OPTION 2: That Council defers consideration of the Bylaws No. 2996 and 2997 pending the outcome of community consultation associated with the City’s OCP rewrite process.

OPTION 3: That Council postpone consideration of Bylaws No. 2996 and 2997 with a request for more information.

OPTION 4: That Council not proceed with Bylaws No. 2996 and 2997.

Prepared by:



Dana Beatson
Planner II

Reviewed by:



Matthew Fitzgerald, RPP, MCIP
Manager of Development Planning

Concurrence by



Ian Buck RPP, MCIP
Director of Development Services

Concurrence by:



Trevor Kushner, BA, DLGM, CLGA, PCAMP
Interim Chief Administrative Officer

Attachments:

1. *Schedule No. 1 – Applicant’s Development Summary*
2. *Schedule No. 2 – Architectural Submissions*
3. *Schedule No. 3 – Traffic Impact Assessment and Applicant’s Response Letter*
4. *Schedule No. 4 – Public Information Meeting Summary and Public Comments*
5. *Schedule No. 5 - Sustainability Evaluation Checklist*

Schedule No. 1: Applicant's Development Summary



MacDonald + Hagarty
Architects Ltd.

Maris MacDonald, Architect AIBC
Martin Hagarty, Architect AIBC

1822 Comox Rd. Unit E
Comox BC V9M 3M7

January 21, 2020
City of Courtenay
830 Cliffe Avenue
Courtenay, BC
V9N 2J7

Development Summary ***2700 Mission road***

The subject land is a 5.8-acre parcel property bordered by Veterans Way to the southwest and Mission Road to the southeast property lines. It is located in close proximity to Queneesh Elementary School, North Island College and the new North Island Hospital.

The Developer is looking to rezone the current use of the lands from light industrial and single family residential to a 100% residential use providing various forms of housing ranging from affordable rental housing for families, market rental housing and townhouses for ownership all subdivided into three lots with vehicle access off Mission Road and veterans memorial way.

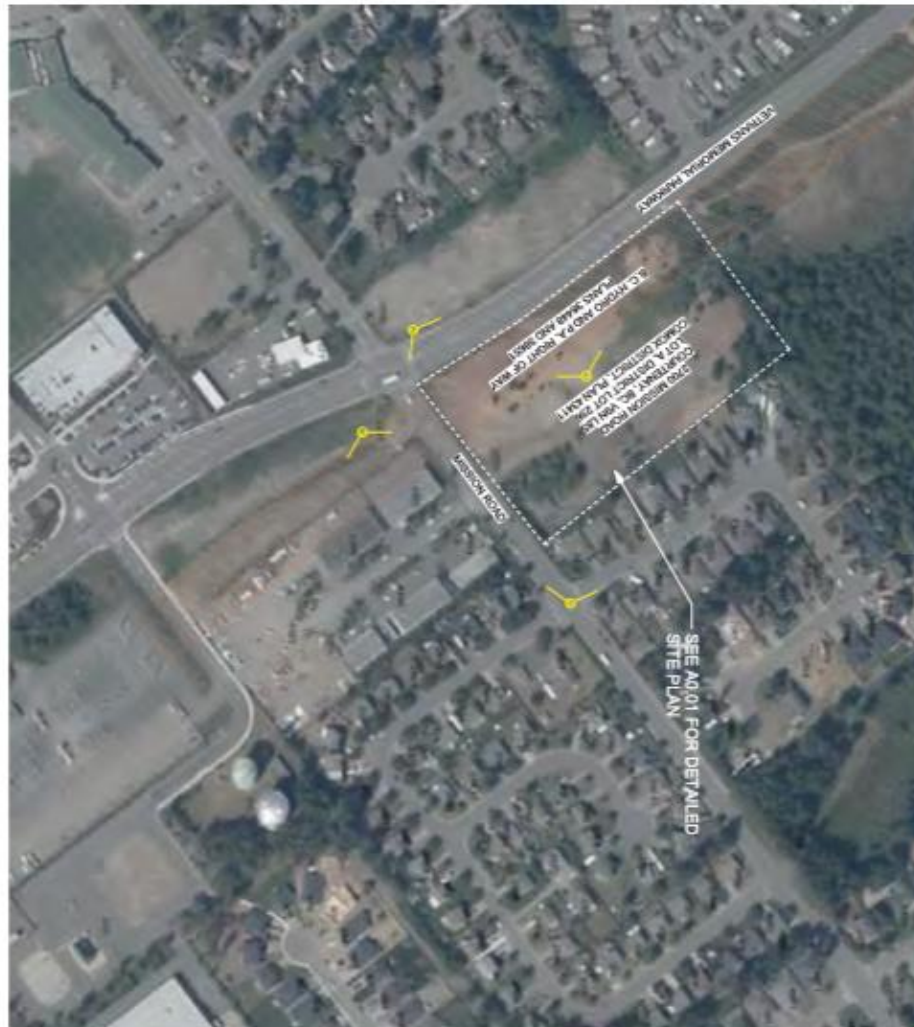
An extensive landscaping and grading plan will help buffer neighbouring homes to the Northeast property line and will provide an extension of the municipal trail system along Veterans Way. A children's play area will be provided on site for residents of the development and to help create community.

Lot 1 is a three-storey building with 39 affordable rental units ranging in sizes from 1-bedroom to 3-bedroom apartments primarily focused on families. This building conforms with the cities affordable housing policy.

Lot 2 is a three-storey building with 84 market rental units comprised of studios and 1-bedroom apartments.

Lot 3 will consist of 28, two level townhouses for market ownership or market rental spread out through five separate structures.

Schedule No. 2: Architectural Submissions



SITE PHOTOS



1. SITE, LOOKING TOWARDS VETERANS MEMORIAL PARKWAY



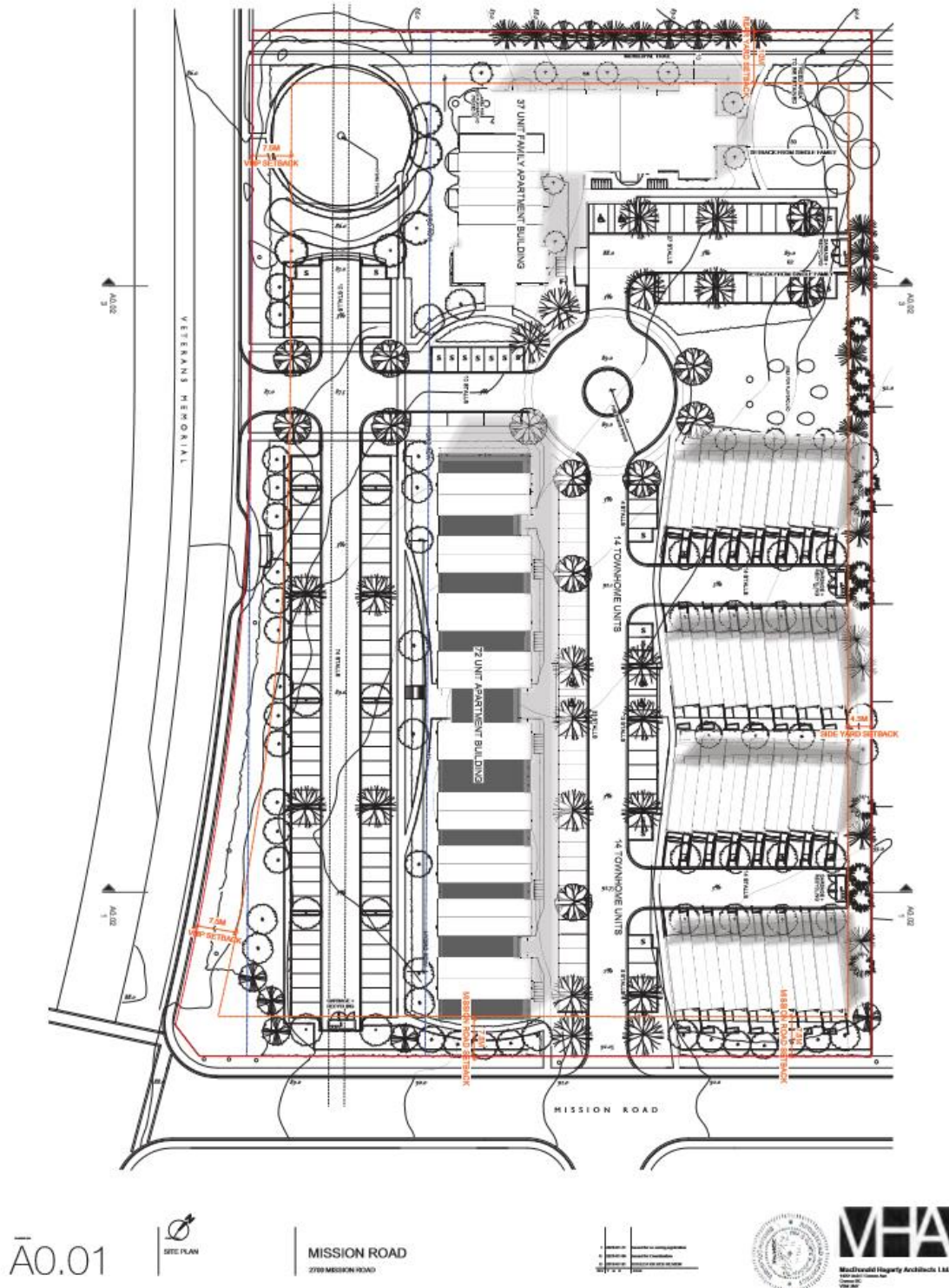
2. LOOKING BACK AT 2700 MISSION, VETERANS MEMORIAL IN FOREGROUND

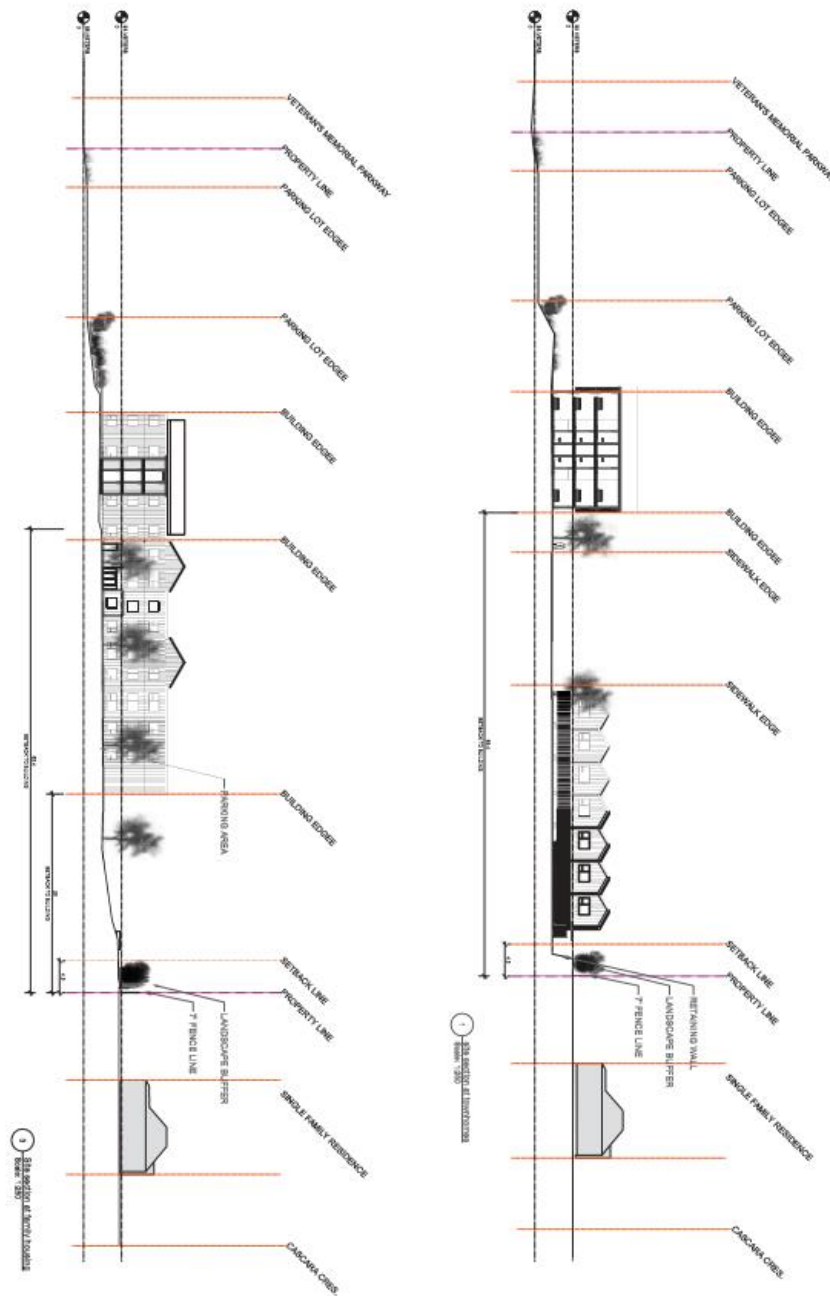


3. CONTEXT, INDUSTRIAL BUILDING AT ADJACENT PROPERTY



4. CONTEXT, ADJACENT SINGLE FAMILY PROPERTY TO THE EAST





AO.02

Site Section

MISSION ROAD
2700 MISSION ROAD

1. PREPARED BY: [Name]
2. CHECKED BY: [Name]
3. DATE: [Date]





A0.03

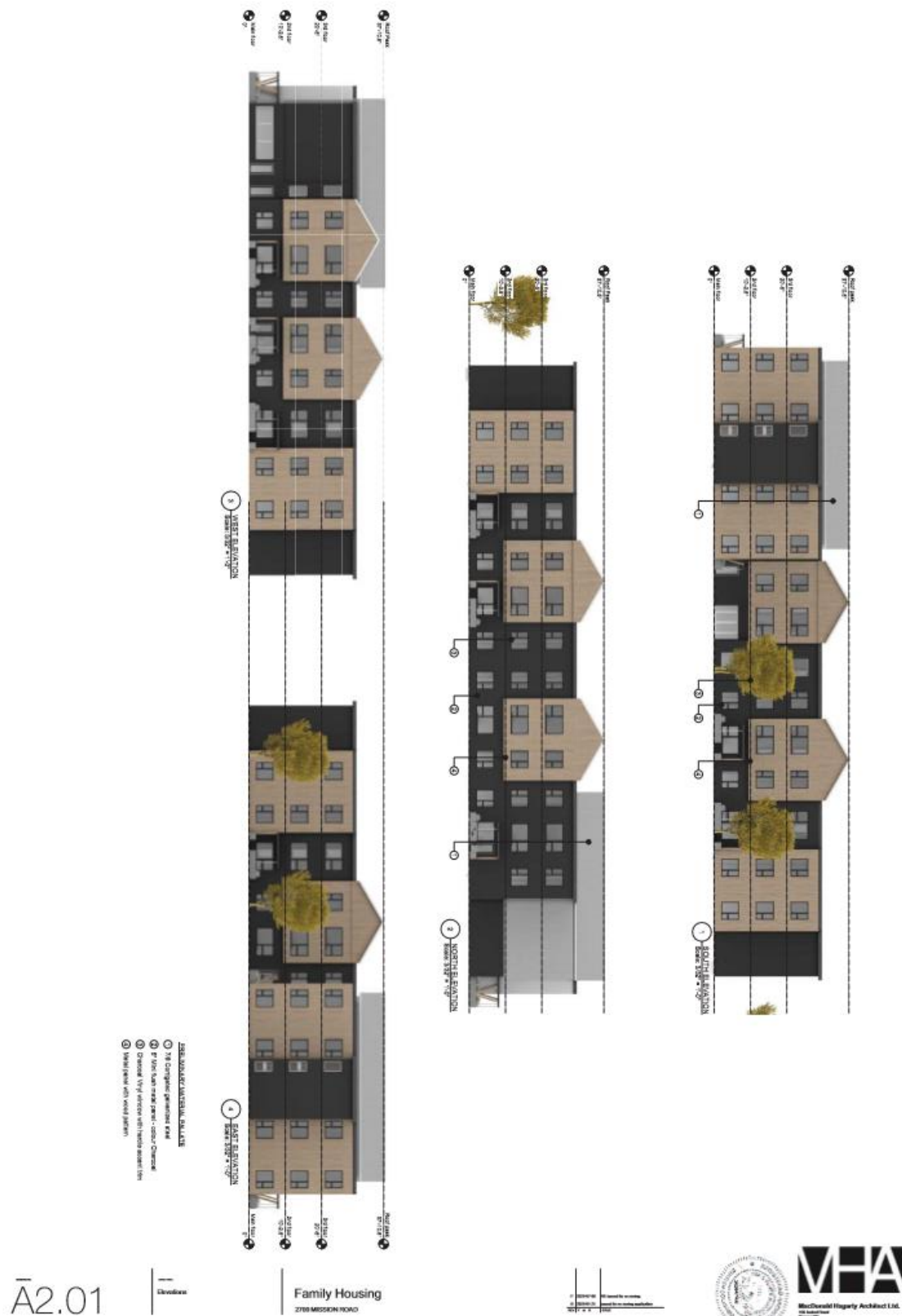
PERSPECTIVE RENDER

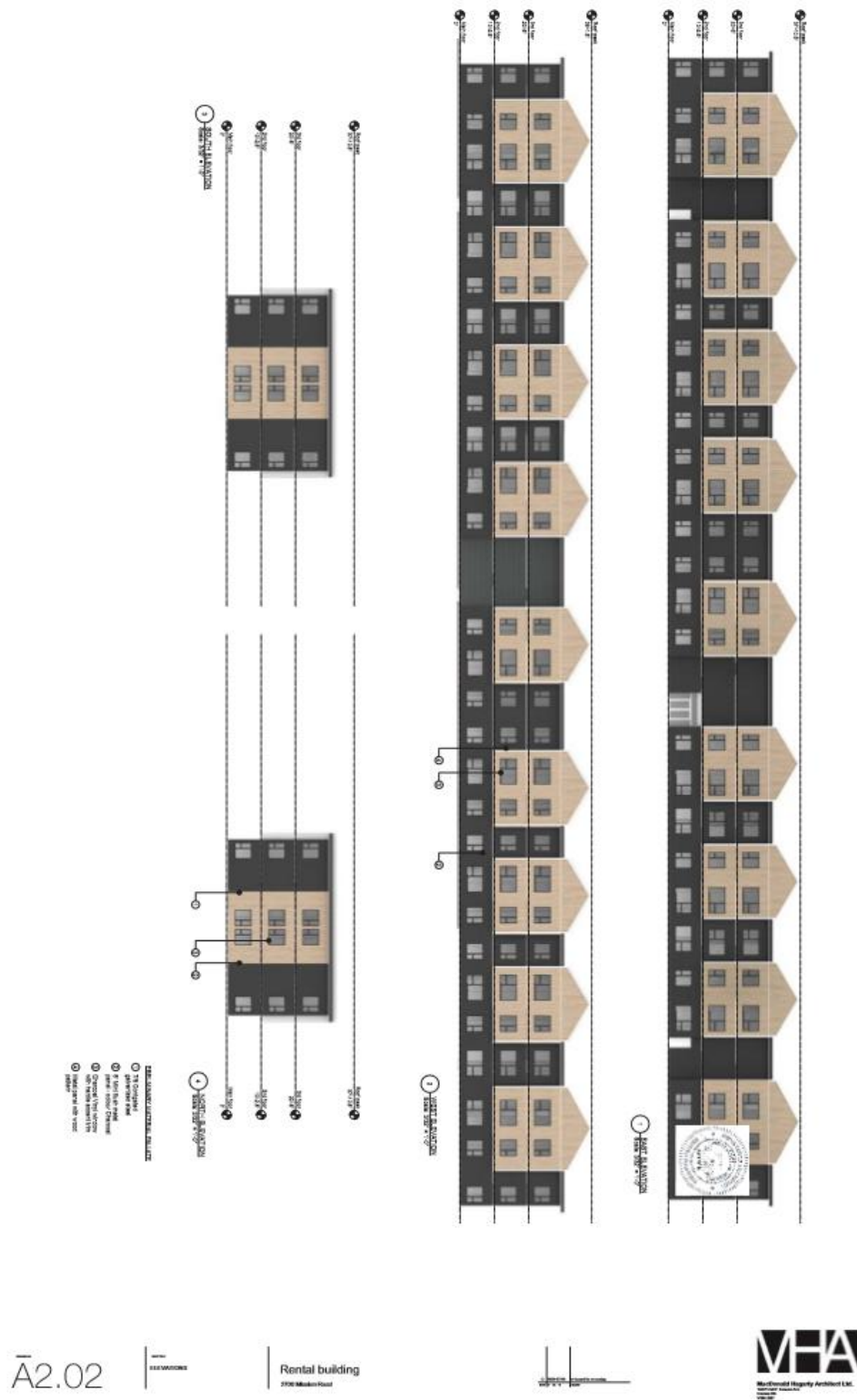
MISSION ROAD
2700 MISSION ROAD

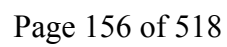
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North Arrow

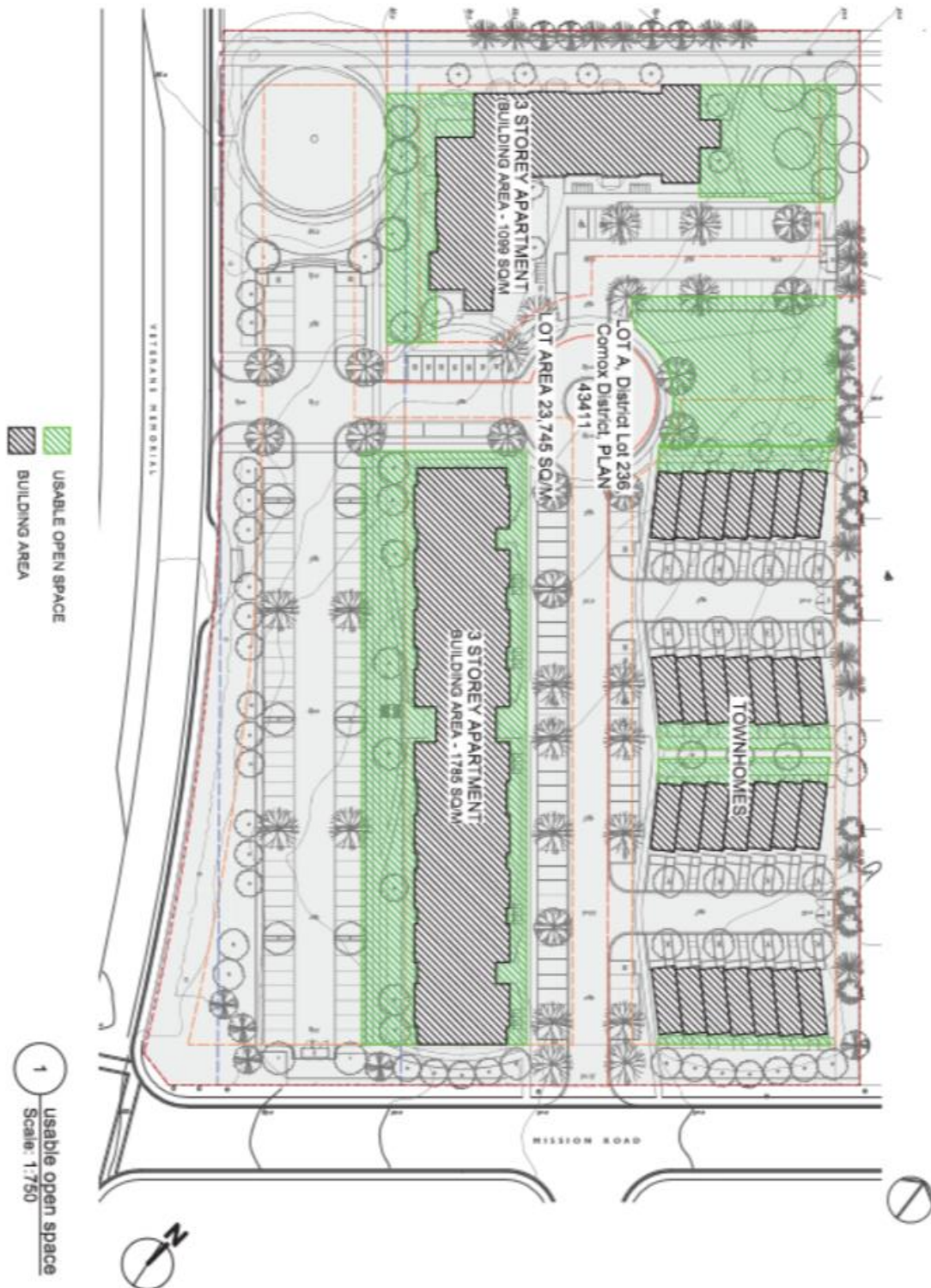


MHA
MacDonald Hoggarty Architects Ltd.
100 Adelaide Street West
Toronto, ON
M5H 1A1











A1.02

TYPICAL FLOOR PLANS

Rental building
2700 Mission Road

Scale: 1/8" = 1'-0"







Schedule No. 3 – Traffic Impact Assessment and Applicant's TIA Response Letter



2700 Mission Road
Transportation Impact
Assessment
Draft

Prepared for
Rick Browning

Date
July 7, 2020

Project No.
04-20-0143

July 7, 2020
04-20-0143

Rick Browning
Owner / Developer

Dear Mr. Browning:

Re: 2700 Mission Road, Courtenay
Transportation Impact Assessment – Draft Report

Bunt & Associates Engineering Ltd. (Bunt) has completed a Transportation Impact Assessment (TIA) study for the proposed residential development located at 2700 Mission Road in Courtenay, BC. Our Draft Report is provided herewith and addresses the potential transportation impacts related to the proposed development in accordance with the approved study Terms of Reference agreed on with the City of Courtenay.

We trust that our input with this TIA report will be of assistance. Please do not hesitate to contact us should you have any questions regarding this report.

Yours truly,
Bunt & Associates



Hana Stoer, EIT
Transportation Analyst



Tyler Thomson, MURB MCIP RPP PTP
Associate | Senior Transportation Planner

cc: Tim Orr, OrrMoniz Projects Corp.

CORPORATE AUTHORIZATION

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Approved By:	FINAL ONLY	Date: 2020-07-07 Project No. 04-20-0143 Status: Draft

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EXECUTIVE SUMMARY

The proponent is proposing to develop the lot at 2700 Mission Road in Courtenay, BC with 2 3-storey apartment buildings and 28 market condominium townhouses. The site fronts Veterans Memorial Parkway and Mission Road, with a number of transit stops and amenities within walking distance. Bike routes are present along Veterans Memorial Parkway/Lerwick Road and the west leg of Mission Road. The intersection of Veterans Memorial Parkway and Mission Road currently operates within thresholds.

The proposed development is expected to generate approximately 50 new vehicle trips (inbound and outbound combined) during the weekday AM peak hour, and approximately 65 new vehicle trips during the weekday PM peak hour. The site trips were distributed based on existing traffic volumes, road classifications, and the surrounding land uses.

All movements are estimated to operate within thresholds in the Total (Background + Site traffic) scenarios.

The development will provide sidewalks and boulevards along the site frontages, as well as the bike lane along the Veterans Memorial Parkway site frontage to comply with the Bylaw requirements for the corresponding OCP road classifications.

The Veterans Memorial Parkway is proposed as a right-in/right-out access as a full-movement access will be provided off of Mission Road. An auxiliary lane is not required for this access due to the right-turning vehicles equating approximately 5% of the through traffic. Additionally, the proposed corner clearance of 120 metres is considered appropriate due to the vehicle volumes and movement restrictions at the access.

The Mission Road access is proposed as a full movement access, positioned directly across from Madrona Place. It has a proposed corner clearance of approximately 80 metres, which exceeds the TAC minimum suggested 55 metre corner clearance.

The proposed site plan provides approximately 15 metres clear throat length at the Veterans Memorial Parkway access and approximately 10 metres clear throat length at the Mission Road access. The 10 metres clear through length at Mission Road may be sufficient, however, best practice would be to remove the first two stalls on either side of the throat to reduce conflict with vehicles at the Mission Road access and provide the full 15 metres clear throat length as recommended by TAC.

In the Opening Day + 10 Years (2033) Total scenario, the 95th percentile queue for vehicles turning westbound right out of the Veterans Memorial Parkway access is 10 metres. With the low number of vehicles turning at this access and given that the proposed site design can accommodate the 95th percentile westbound right queue, the 15 metres clear throat length is considered to be sufficient.

Driveway crossings at the site accesses are designed to emphasize pedestrian and bicycle priority through materials and paint markings with the sidewalks traversing the driveways and the bike lane painted green with elephant's feet markings through the driveway crossing. These design elements will highlight the potential presence of pedestrians and cyclists for driver awareness to help improve safety at these locations.

The development is supported by 207 vehicle parking spaces, which satisfies the minimum bylaw requirement. AutoTURN analyses were conducted for passenger vehicle circulation, key parking spaces, loading manoeuvres, and fire truck manoeuvres.

1. INTRODUCTION

1.1 Study Purpose & Objectives

The proponent is proposing to develop the lot at 2700 Mission Road in Courtenay, BC with 2 3-storey rental apartment buildings and 28 market condominium townhouses. As part of the Rezoning Application the City of Courtenay requires a Transportation Impact Assessment (TIA) Study. Bunt & Associates (Bunt) was engaged by the proponent to conduct the study in support of the development.

The main purpose of a TIA study is to demonstrate that potential transportation impacts of the proposed development will be manageable and that the transportation aspects of the proposal are consistent with the objectives and policies of the City of Courtenay. The TIA also identifies and evaluates transportation related improvements or mitigation measures which may be needed to support the proposed development.

1.2 Study Scope & Area

The scope of work for the TIA was agreed with the City of Courtenay in a Terms of Reference, provided in **Appendix A**. The site location and study area are illustrated in **Exhibit 1.1**.

1.3 Organization of Report

The report is structured as follows:

- **Section 1** outlines the introduction, study scope & area, report organization, and proposed development;
- **Section 2** documents the existing conditions;
- **Section 3** describes the future traffic conditions;
- **Section 4** assesses site access considerations;
- **Section 5** reviews the site plan design; and,
- **Section 6** presents conclusions and recommendations.

1.4 Proposed Development

The proposed land uses and densities are summarized in **Table 1.1** and the site plan is illustrated in **Figure 1**. The proposed development includes 28 townhouses and two 3-storey rental apartment buildings. The proposed development will have two access points, one off of Veterans Memorial Parkway and one off of Mission Road. Parking is provided at grade with 207 spaces.

Table 1.1: Proposed Land Uses

LAND USE	UNITS
Market Townhouses	28
Rental Apartment	109
TOTAL	137

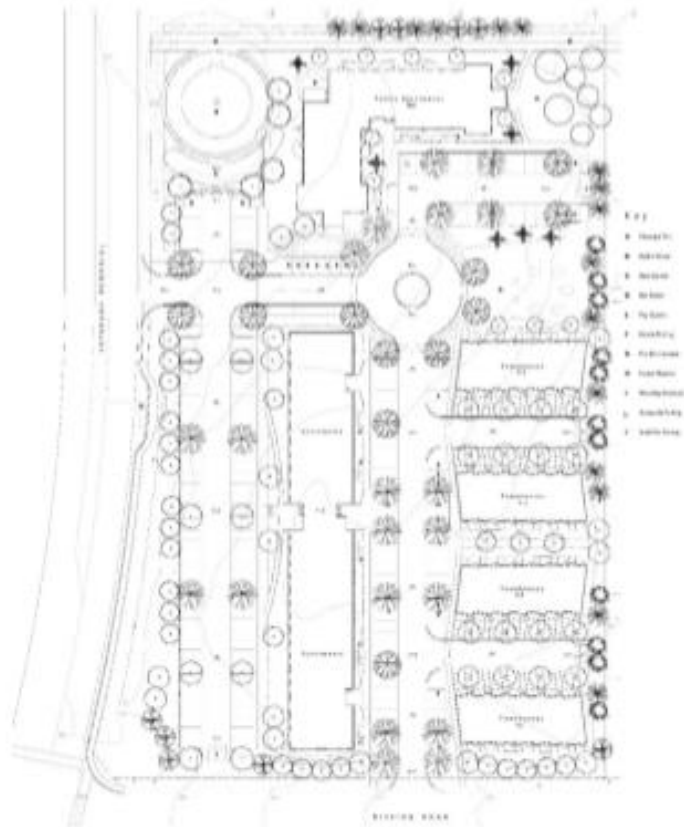


Figure 1.1: Site Plan



2. EXISTING CONDITIONS

2.1 Land Use

The lot is currently occupied by one single-family home. The surrounding area is mixed-use, with residential homes, Queneesh Elementary School, North Island College, North Island Hospital, Comox Valley Aquatic Centre, and multiple commercial amenities nearby.

2.2 Existing Transportation Network

2.2.1 Road Network

The site is located at the corner of Veterans Memorial Parkway and Mission Road. Veterans Memorial Parkway connects the site to Highway 19A (North Island Highway) and to Comox after transitioning to Lerwick Road. **Table 2.1** summarizes the street characteristics, and laning and traffic control are illustrated in **Exhibit 2.1**.

Table 2.1: Existing Street Characteristics

STREET	CLASSIFICATION	NUMBER OF TRAVEL LANES	POSTED SPEED	PARKING FACILITIES
Veterans Memorial Parkway	Major Arterial	4	60 km/h	None
Mission Road	Commercial / Industrial Collector	2	50 km/h	No restrictions

2.2.2 Transit Network

Transit stops within 800m walking distance of the site are summarized in **Table 2.2** (and illustrated in **Exhibit 2.2 – Site Accessibility**).

Table 2.2: Transit Stops within 800m Walking Distance of Site

STOP LOCATION	STOP #	ROUTES SERVICED	WALKING DISTANCE
Lerwick Road farside Waters Place (NB)	110248	6	260m
Lerwick Road farside Waters Place (SB)	110303	12	400m
Mission Road at Walbran Drive	111390	6	450m
North Island College Exchange Bay A	134010	1,6,11,12,99	650m
North Island College Exchange Bay B	111476	1,6,11,13	650m
Mission Road at Shetland Place	111391	6	700m



2.2.3 Cycling & Pedestrian Networks

The intersection of Mission Road and Veterans Memorial Parkway has marked crosswalks on all legs and sidewalks are present along both sides of Veterans Memorial Parkway, Lerwick Road, and the west leg of Mission Road. The east leg of Mission Road has sidewalk along the south edge.

North of Poje Way (north of the site), an unpaved multiuse path runs alongside Veterans Memorial Parkway. The path is accessed via the paved shoulder of the southbound side of the road. South of Mission Road, most of Lerwick Road is a signed bicycle route.

Exhibit 2.2 illustrates the site accessibility, with nearby bicycle routes and amenities within walking distance as well as transit stops and routes within close proximity.



2.3 Current Relevant Policies & Plans

2.3.1 Municipal Plans

Connecting Courtenay Transportation Master Plan – September 2019

Includes medium and long-term plans for all modes of transportation over the next 20 years and beyond. Mode split in Courtenay consists of 85% car, 8% walk, 3% transit, and 4% bike. Sustainable modes make up 15% of all trips, and the TMP aims to increase this to 30% with increased investment over time in sustainable travel modes.

Connecting Courtenay Cycling Network Plan – September 2019

Identifies existing cycling infrastructure, key infrastructure gaps, and provides recommendations for short-, medium-, and long-term cycling network & facilities. This plan does not identify and future cycling infrastructure plans along the site's Mission Road frontage, however facilities along Veterans Memorial Parkway/Lerwick Road and Mission Road south of Veterans Memorial Parkway will be improved or added to provide better connectivity through Courtenay.

2.3.2 Regional Plans

Comox Valley Transit Future Plan – 2014

Targets a transit mode share of 3% of all trips by 2038 using the four distinct layers of transit service (Frequent Transit Network, Local Transit Network, Targeted Services, and Custom Transit) that provide service within the core transit area, between urban areas and settlement nodes, and across Vancouver Island. Includes an implementation strategy with short, medium, and long-term priorities consisting of various service and infrastructure improvements.

2.4 Existing Traffic Data

2.4.1 Peak Hour Traffic Volumes

Peak hour traffic volumes were obtained from Watt Consulting Group (Watt) for a previous publicly available study nearby. Watt conducted PM Peak Hour traffic counts in 2017 and used these volumes to estimate AM Peak Hour volumes.

The 2017 volumes were then factored up linearly by 2% per year, and then traffic from the North Island Hospital was added to develop the volumes used for the existing 2020 condition. The North Island Hospital opened in late 2017, after the traffic data had been collected.

The existing 2020 peak hour vehicle traffic volumes are illustrated in Exhibit 2.3 and the estimated existing average daily vehicle traffic volumes in Exhibit 2.4. The existing average daily vehicle traffic volumes were estimated by factoring the PM Peak Hour volumes by 10. This is an industry standard for a conservative estimate which assumes that the daily volume profile is fairly average.

Note: Due to the ongoing COVID-19 pandemic, using previously collected traffic data prevented the traffic volumes used for the analysis from being impacted by the reduced vehicle traffic and disrupted vehicle patterns due to people self-isolating. Due to these impacts of COVID-19 and the fast-changing nature of the pandemic response, collecting data and applying a factor is difficult to do accurately and within a timely manner.



2700 Mission Road
July 2020



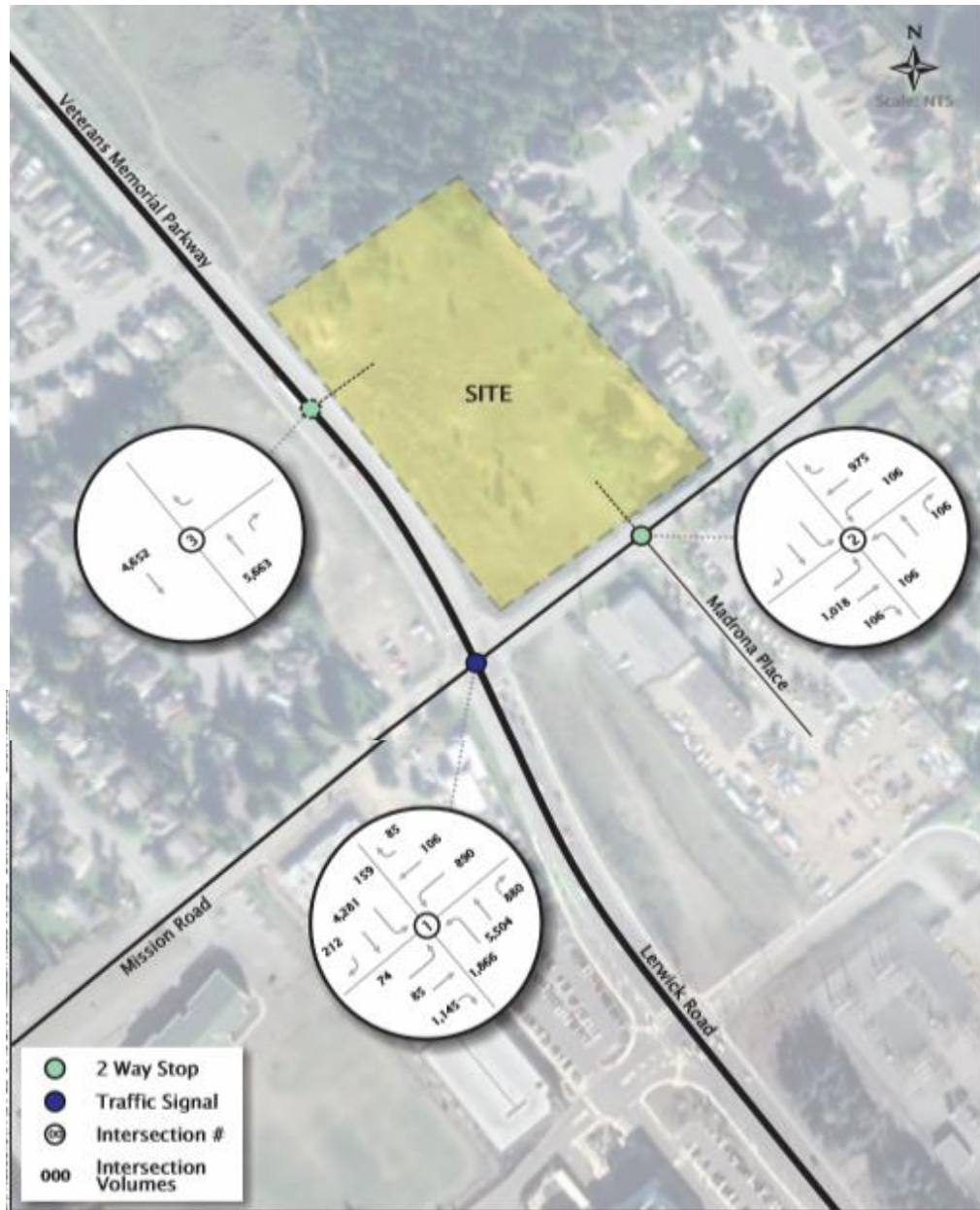


Exhibit 2.4
Existing 2020 Average Daily Vehicle Traffic Volumes

04-20-0143

2700 Mission Road
 July 2020



2.5 Existing Operations

2.5.1 Performance Thresholds

The existing operations of study area intersections and access points were assessed using the methods outlined in the 2010 Highway Capacity Manual (HCM), using the Synchro 9.2 analysis software (Build 915). The traffic operations were assessed using the performance measures of Level of Service (LOS) and volume-to-capacity (V/C) ratio.

The LOS rating is based on average vehicle delay and ranges from "A" to "F" based on the quality of operation at the intersection. LOS "A" represents optimal, minimal delay conditions while a LOS "F" represents an over-capacity condition with considerable congestion and/or delay. Delay is calculated in seconds and is based on the average intersection delay per vehicle.

Table 2.3 below summarizes the LOS thresholds for the six Levels of Service, for both signalized and unsignalized intersections.

Table 2.3: Intersection Level of Service Thresholds

LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Source: Highway Capacity Manual

The volume to capacity (V/C) ratio of an intersection represents ratio between the demand volume and the available capacity. A V/C ratio less than 0.85 indicates that there is sufficient capacity to accommodate demands and generally represents reasonable traffic conditions in suburban settings. A V/C value between 0.85 and 0.95 indicates an intersection is approaching practical capacity; a V/C ratio over 0.95 indicates that traffic demands are close to exceeding the available capacity, resulting in saturated conditions. A V/C ratio over 1.0 indicates a very congested intersection where drivers may have to wait through several signal cycles. In downtown and Town Centre contexts, during peak demand periods, V/C ratios over 0.90 and even 1.0 are common.

As directed by the City of Courtenay, the performance thresholds for acceptable operations are listed below. Operations exceeding these thresholds trigger consideration of roadway or traffic control improvements.

- Overall intersection V/C ratio = 0.85 or less;
- Individual movement Level of Service = LOS D or better at major approaches & truck routes, LOS E or better at minor approaches;
- Individual movement V/C ratio = 0.90 or less; and
- 95th percentile queue lengths do not exceed the available storage length

Unsignalized Intersections and Roundabouts:

- Individual movement Level of Service = LOS D or better, unless the volume is very low compared to other movements;
- Individual movement V/C ratio = 0.90 or less; and
- 95th percentile queue lengths do not exceed the available storage length

Note, in interpreting of the analysis results, that the HCM methodology reports performance differently for various types of intersection traffic control. In this report, the performance reporting convention is as follows:

- For signalized intersections: HCM 2010 output for overall LOS as well as individual movement LOS and V/C is reported. 95th Percentile Queues are reported as estimated by SimTraffic, the micro-simulation module of the Synchro software; and,
- For unsignalized two-way stop-controlled intersections: HCM 2010 LOS and V/C output is reported just for individual lanes as the HCM methodology does not report overall performance. 95th Percentile Queues are reported as estimated by SimTraffic, the micro-simulation module of the Synchro software.

The performance reporting conventions noted above have been consistently applied throughout this document and the detailed outputs are provided in **Appendix B**.

2.5.2 Existing Conditions Analysis Assumptions

The signal timing plan for Veterans Memorial Parkway and Mission Road was provided by the City and inputted into Synchro for the analysis.

All Synchro parameters have been left as default, except for the link speed which has been changed to reflect the speed limits in the area.

2.5.3 Existing Operational Analysis Results

Table 2.4 summarizes the existing 2020 AM and PM peak hour operations for the intersection of Veterans Memorial Parkway and Mission Road. All movements and the overall intersection operate within the proposed thresholds.

Signalized Intersections:

- Overall intersection Level of Service = LOS D or better;

Table 2.4: Existing 2020 Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Veterans Memorial Parkway & Mission Road Signalized	OVERALL	A			A		
	EBL	B	0.02	5	B	0.02	5
	EBT/R	B	0.31	20	B	0.39	20
	WBL	B	0.28	20	B	0.28	20
	WBT/R	B	0.06	10	B	0.06	10
	NBL	A	0.29	20	A	0.34	25
	NBT/R	A	0.30	30	A	0.36	25
	SBL	A	0.04	10	B	0.04	5
	SBT/R	B	0.43	30	B	0.40	30

Note: 1: 95th percentile queues rounded to the nearest 5 metres.

3. FUTURE TRAFFIC CONDITIONS

3.1 Traffic Forecasts

3.1.1 Background Traffic Forecasts

Background traffic is traffic that would be present on the road network if the site did not redevelop.

Background traffic for Opening Day (2023), Opening Day + 5 Years (2028), and Opening Day + 10 Years (2033) was developed by applying a 2% per year growth rate to the 2017 volumes, then adding site traffic from the North Island Hospital, 2600 Mission Road, and 2525 Mission Road sites.

Traffic from the existing single-family home has not been stripped off as it would generate a low amount of traffic in comparison to the proposed development, and is a conservative approach.

The background traffic forecasts are displayed in Exhibits 3.1 to 3.3.

3.1.2 Site Traffic

Trip Generation

The vehicle trip generation calculation for the proposed development utilizes the trip rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. To be consistent with the previous TIAs conducted for the North Island Hospital, 2600 Mission Road, and 2525 Mission Road, the fitted curve equations have been used where available. Based on the site location and characteristics of the area, the "general urban / suburban" location was used. These equations and their equivalent rates are summarized in Table 3.1.

Table 3.1: ITE Trip Rates & Fitted Curve Equations

PERIOD	LAND USE	ITE RATE/FITTED CURVE EQUATION	EQUIVALENT TRIP RATE
Weekday AM	Townhouses (LUC 220)	$T = e^{(0.95 \ln X - 0.51)}$	0.50 trips/unit
	Apartments (LUC 221)	$T = e^{(0.98 \ln X - 0.98)}$	0.34 trips/unit
Weekday PM	Townhouses (LUC 220)	$T = e^{(0.89 \ln X - 0.02)}$	0.68 trips/unit
	Apartments (LUC 221)	$T = e^{(0.96 \ln X - 0.39)}$	0.44 trips/unit

Note: T = trips
X = number of dwelling units

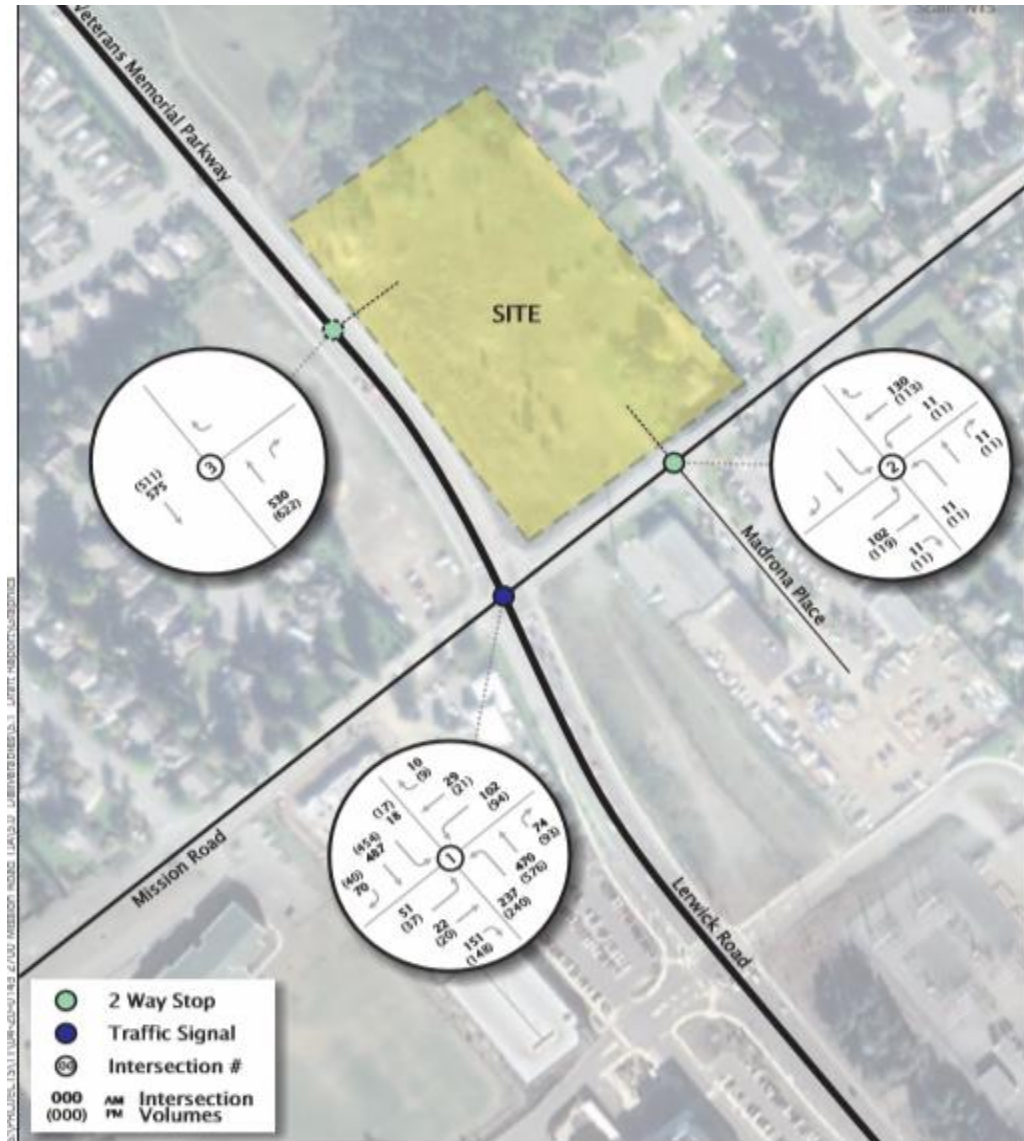
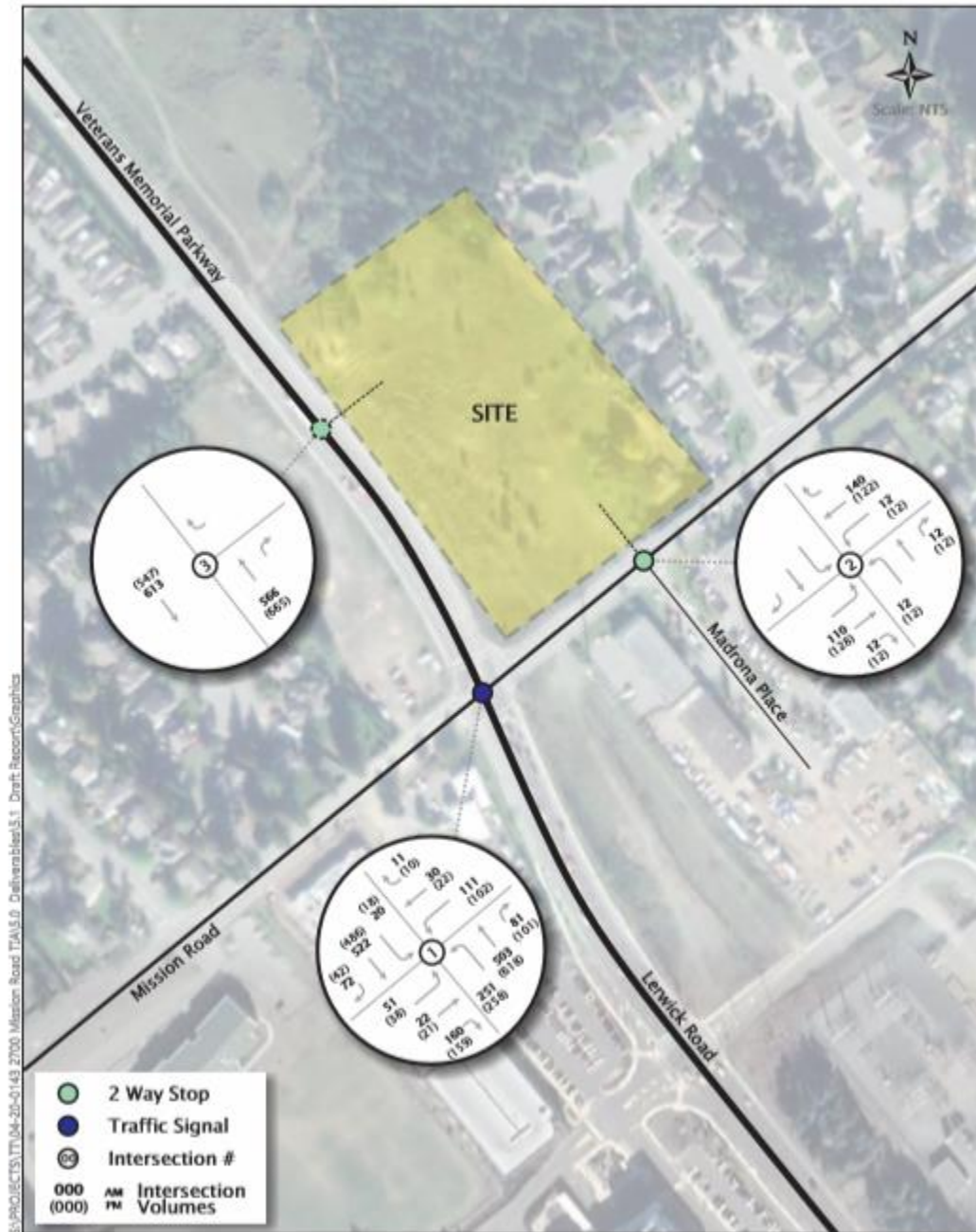


Exhibit 3.1
Opening Day (2023) Background Traffic Forecasts

04-20-0143

2700 Mission Road
 July 2020





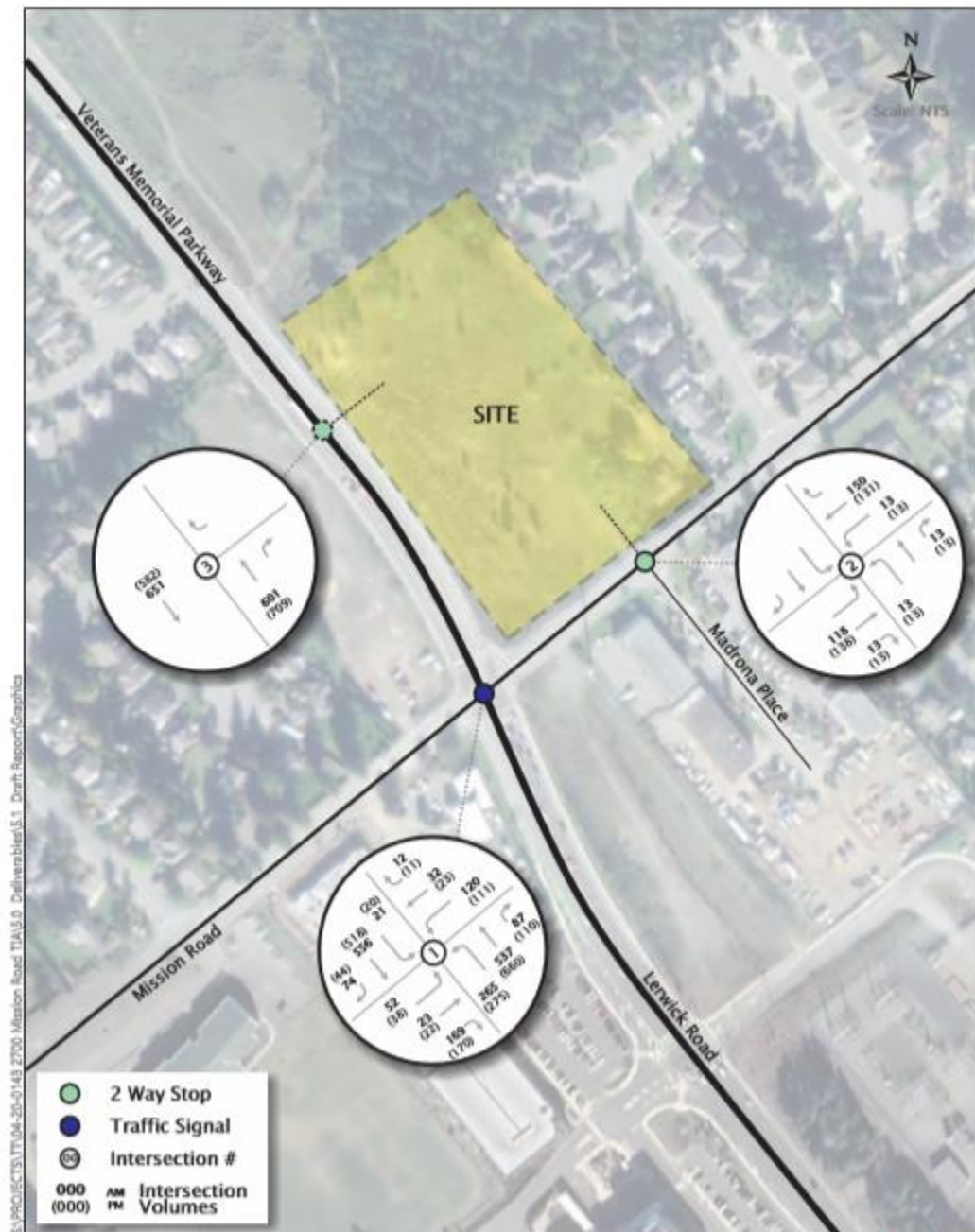


Exhibit 3.3
Opening Day + 10 Years (2033) Background Traffic Forecasts

04-20-0143

2700 Mission Road
July 2020



Table 3.2 summarizes the anticipated future site generated vehicle trips for the proposed development based on the above rates.

Table 3.2: Estimated Peak Hour Site Vehicle Trips

LAND USE	AM PEAK HOUR			PM PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Townhouses (LUC 220)	3	11	14	12	7	19
Apartments (LUC 221)	10	27	37	29	19	48
	13	38	51	41	26	67

Trip Distribution & Assignment

Trip distributions were estimated based on existing traffic volumes, road classifications, and surrounding land uses. Table 3.3 and Exhibit 3.4 illustrate the site traffic distribution through the study area.

Table 3.3: Estimated Trip Distribution

ORIGIN/DESTINATION	AM PEAK HOUR		PM PEAK HOUR	
	IN (%)	OUT (%)	IN (%)	OUT (%)
Veterans Memorial Parkway – North	30%	30%	30%	35%
Mission Road – West	10%	15%	10%	15%
Mission Road – East	10%	10%	10%	10%
Lerwick Road – South	50%	45%	50%	40%
TOTAL	100%	100%	100%	100%

3.1.3 Total Traffic

Total traffic consists of the proposed development's net new site-generated traffic volumes added to the background vehicle volumes. Exhibits 3.5 to 3.7 present the forecasted future total volumes for Opening Day (2023), Opening Day + 5 Years (2028), and Opening Day + 10 Years (2033).

3.2 Future Traffic Operations

3.2.1 Future Conditions Analysis Assumptions

Pedestrian volumes have been estimated using ITE person trip rates and the City of Courtenay's future mode split targets and conflicting pedestrian and pedestrian call values have been inputted accordingly.

The signal timing plan for Veterans Memorial Parkway and Mission Road was provided by the City and inputted into Synchro for the analysis. The signal timing plan was not adjusted for future scenarios.

All Synchro parameters have been left as default, except for the link speed which has been changed to reflect the speed limits in the area.

3.2.2 Future Background Traffic Operations

Tables 3.4 to 3.6 summarize the future background AM and PM traffic operations for Opening Day (2023), Opening Day + 5 Years (2028), and Opening Day + 10 Years (2033). All movements operate within thresholds, except for the northbound left turn queue exceeds the available storage bay length in the Opening Day (2023) Background scenario.

Table 3.4: Opening Day (2023) Background Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)'	LOS	V/C	95TH Q (M)'
Veterans Memorial Parkway & Mission Road Signalized	OVERALL	B			B		
	EBL	B	0.12	15	B	0.09	10
	EBT/R	B	0.43	25	B	0.45	25
	WBL	C	0.32	20	C	0.31	20
	WBT/R	B	0.09	15	B	0.07	15
	NBL	A	0.50	35	A	0.47	35
	NBT/R	A	0.32	30	A	0.39	35
	SBL	B	0.05	10	B	0.05	5
	SBT/R	B	0.53	40	B	0.46	40
Mission Road & SE Site Access / Madrona Place Minor Street Stop Control	OVERALL						
	EBL/T/R	A	-	-	A	-	0
	WBL/T/R	A	0.01	0	A	0.01	5
	NBL/T	B	0.02	10	B	0.02	10
	NBR	A	0.01	10	A	0.01	10

	SBL/T/R	A	-	-	A	-	-
	OVERALL						
	WBR	A	-	-	A	-	-
	NET/R	A	-	-	A	-	-
	SBT	A	-	-	A	-	-

Note: 1: 95th percentile queues rounded to the nearest 5 metres.

Table 3.5: Opening Day + 5 Years (2028) Background Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Veterans Memorial Parkway & NW Site Access RIRO Minor Street Stop Control	OVERALL	B			B		
	EBL	B	0.11	20	B	0.09	15
	EBT/R	B	0.44	25	B	0.46	25
	WBL	C	0.36	25	C	0.34	25
	WBT/R	B	0.09	15	B	0.07	15
	NBL	B	0.55	35	A	0.52	35
	NET/R	A	0.34	30	A	0.42	35
	SBL	B	0.06	10	B	0.06	15
	SBT/R	B	0.56	45	B	0.49	40
Mission Road & SE Site Access / Madrona Place Minor Street Stop Control	OVERALL						
	EBL/T/R	A	-	0	A	-	-
	WBL/T/R	A	0.01	0	A	0.01	5
	NBL/T	B	0.02	10	B	0.02	10
	NBR	A	0.01	10	A	0.02	15
	SBL/T/R	A	-	-	A	-	-
Veterans Memorial Parkway & NW Site Access RIRO Minor Street Stop Control	OVERALL						
	WBR	A	-	-	A	-	-
	NET/R	A	-	-	A	-	-
	SBT	A	-	-	A	-	-

Note: 1: 95th percentile queues rounded to the nearest 5 metres.

Table 3.6: Opening Day + 10 Years (2033) Background Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Veterans Memorial Parkway & Mission Road Signalized	OVERALL	B			B		
	EBL	B	0.12	20	B	0.09	15
	EBT/R	B	0.45	30	B	0.47	30
	WBL	C	0.39	30	C	0.38	25
	WBT/R	B	0.09	15	B	0.08	15
	NBL	B	0.59	45	B	0.57	35
	NET/R	A	0.37	50	A	0.45	30
	SBL	B	0.06	10	B	0.07	10
	SBT/R	B	0.60	50	B	0.52	45
Mission Road & SE Site Access / Madrona Place Minor Street Stop Control	OVERALL						
	EBL/T/R	A	-	0	A	-	-
	WBL/T/R	A	0.01	0	A	0.01	5
	NBL/T	B	0.02	10	B	0.02	10
	NBR	A	0.02	10	A	0.02	10
	SBL/T/R	A	-	-	A	-	-
Veterans Memorial Parkway & NW Site Access RIRO Minor Street Stop Control	OVERALL						
	WBR	A	-	-	A	-	-
	NET/R	A	-	-	A	-	-
	SBT	A	-	-	A	-	-

Note: 1: 95th percentile queues rounded to the nearest 5 metres.

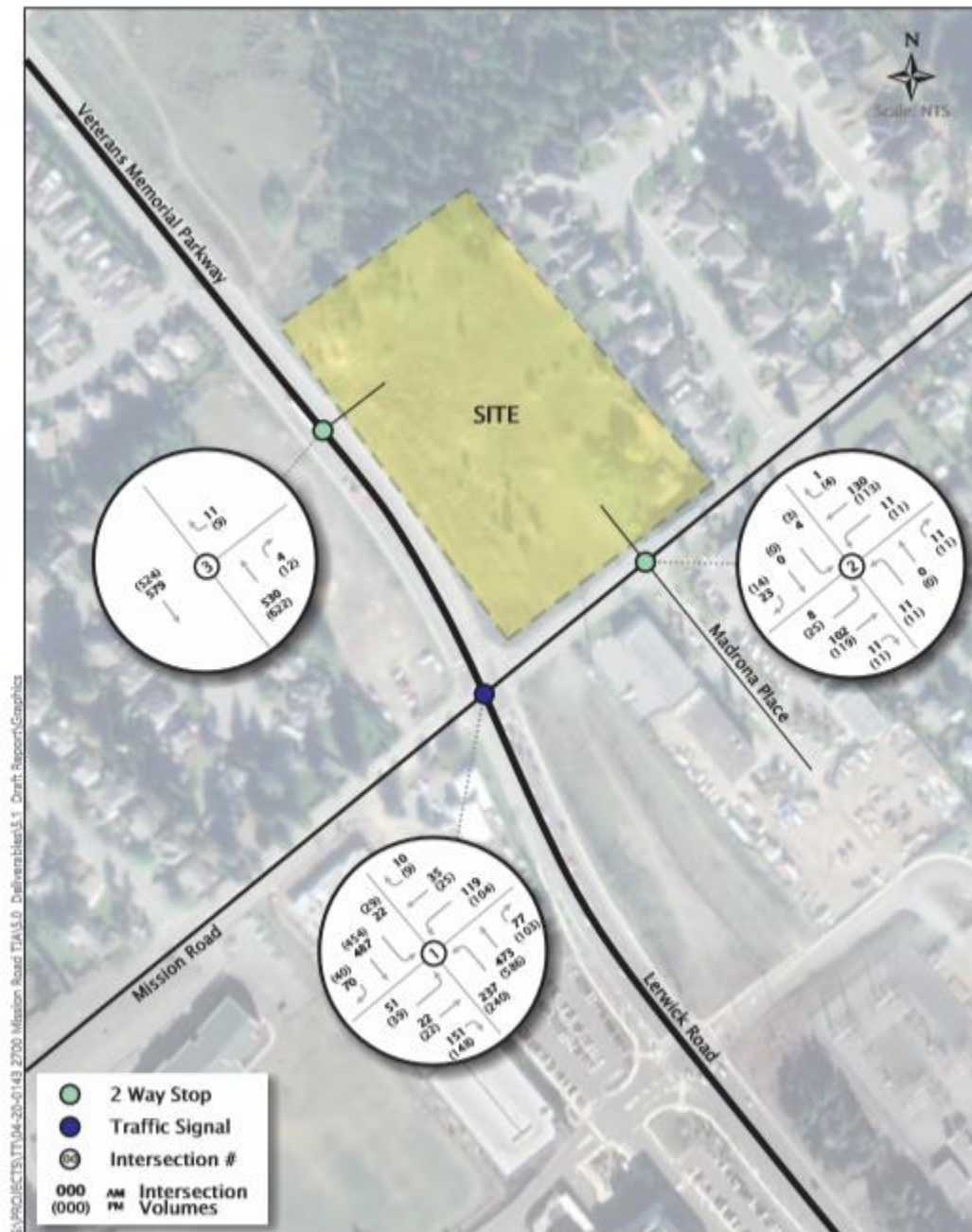


Exhibit 3.5
Opening Day (2023) Total Traffic Forecasts

04-20-0143 2700 Mission Road
July 2020



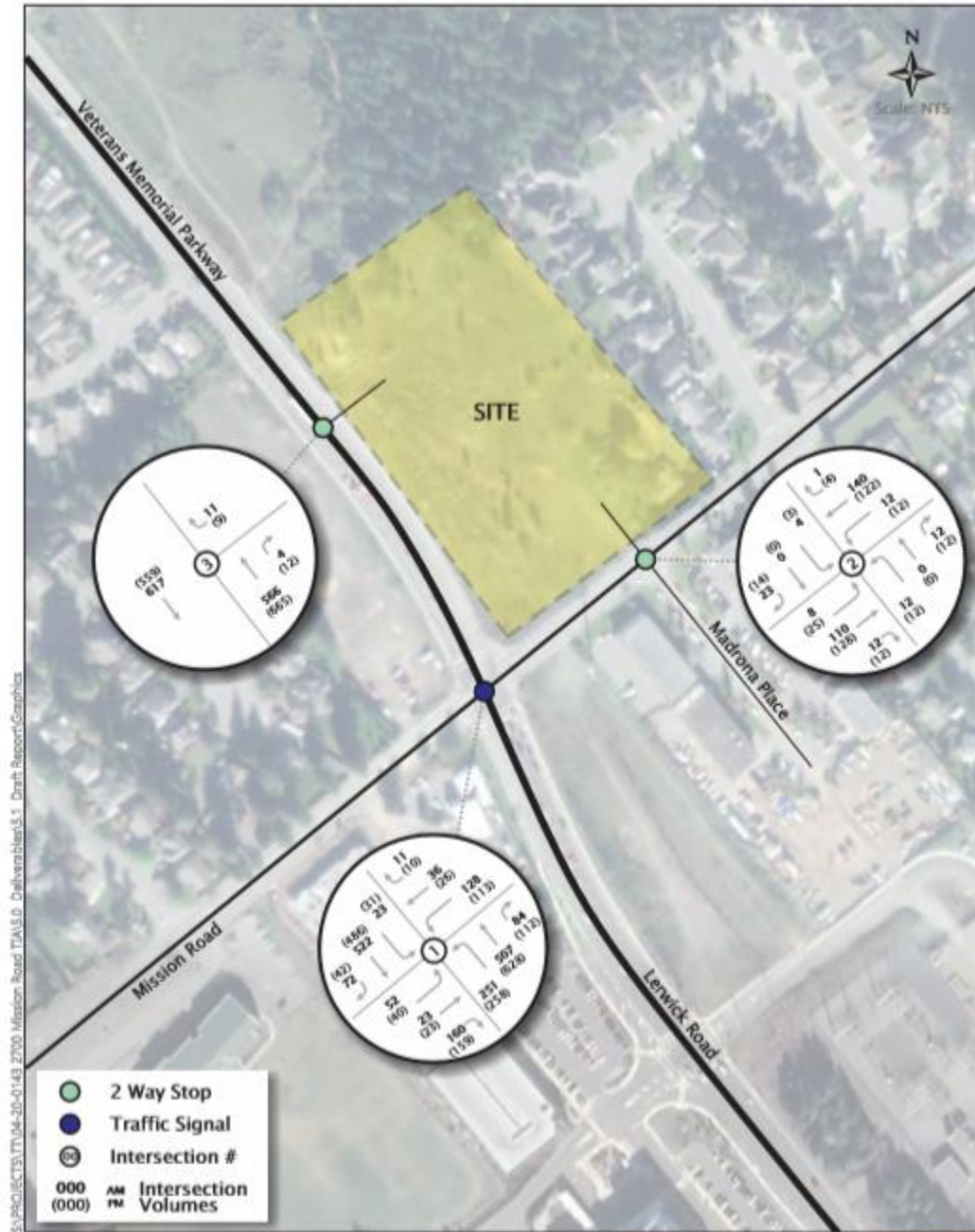


Exhibit 3.6
Opening Day + 5 Years (2028) Total Traffic Forecasts

04-20-0143
2700 Mission Road
July 2020



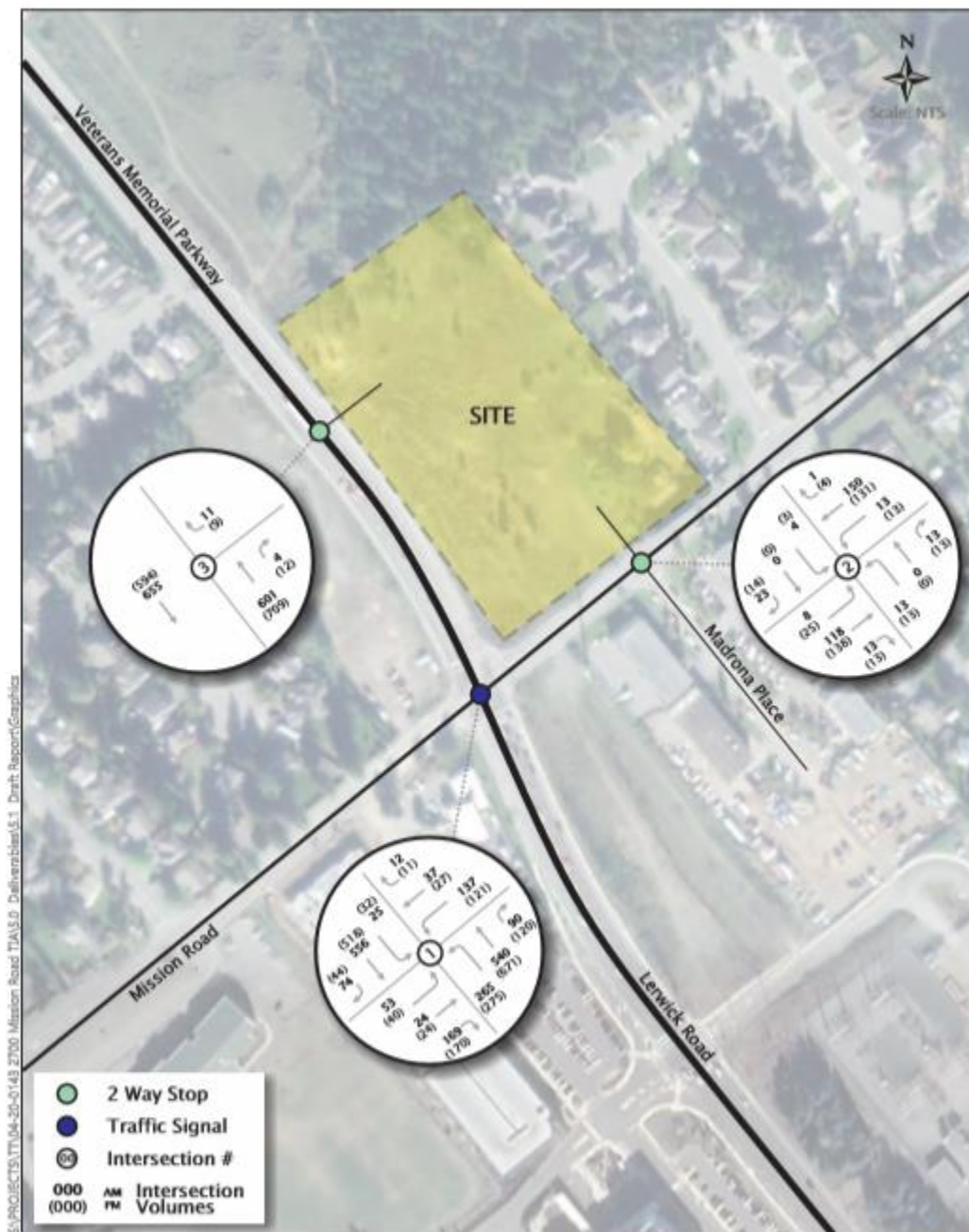


Exhibit 3.7
Opening Day + 10 Years (2033) Total Traffic Forecasts

04-20-0143

2700 Mission Road
July 2020



3.2.3 Future Total Traffic Operations

Tables 3.7 to 3.9 summarize the future total AM and PM traffic operations for Opening Day (2023), Opening Day + 5 Years (2028), and Opening Day + 10 Years (2033). All movements operate within thresholds.

Table 3.7: Opening Day (2023) Total Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Veterans Memorial Parkway & Mission Road <i>Signalized</i>	OVERALL	B			B		
	EBL	B	0.11	15	B	0.09	15
	EBT/R	B	0.42	25	B	0.43	25
	WBL	C	0.36	30	C	0.33	25
	WBT/R	B	0.10	15	B	0.08	10
	NBL	B	0.51	30	A	0.48	35
	NBT/R	A	0.33	30	A	0.41	35
	SBL	B	0.06	10	B	0.09	10
Mission Road & SE Site Access / Madrona Place <i>Minor Street Stop Control</i>	SBT/R	B	0.54	40	B	0.46	40
	OVERALL						
	EBL/T/R	A	0.01	5	A	0.02	10
	WBL/T/R	A	0.01	5	A	0.01	5
	NBL/T	B	0.02	5	B	0.02	10
	NBR	A	0.01	10	A	0.01	10
Veterans Memorial Parkway & NW Site Access <i>RIRO Minor Street Stop Control</i>	SBL/T/R	A	0.04	10	A	0.02	10
	OVERALL						
	WBR	B	0.02	10	B	0.02	10
	NBT/R	A	-	-	A	-	-
	SBT	A	-	-	A	-	-

Note: 1: 95th percentile queues rounded to the nearest 5 metres.

Table 3.8: Opening Day + 5 Years (2028) Total Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Veterans Memorial Parkway & Mission Road <i>Signalized</i>	OVERALL	B			B		
	EBL	B	0.12	15	B	0.09	15
	EBT/R	B	0.43	25	B	0.44	30
	WBL	C	0.40	30	C	0.36	25
	WBT/R	B	0.10	15	B	0.08	15
	NBL	B	0.55	40	B	0.53	30
	NBT/R	A	0.35	35	A	0.44	30
	SBL	B	0.07	10	B	0.10	15
Mission Road & SE Site Access / Madrona Place <i>Minor Street Stop Control</i>	SBT/R	B	0.57	40	B	0.50	40
	OVERALL						
	EBL/T/R	A	0.01	0	A	0.02	5
	WBL/T/R	A	0.01	5	A	0.01	5
	NBL/T	B	0.02	10	B	0.02	10
	NBR	A	0.01	10	A	0.02	10
Veterans Memorial Parkway & NW Site Access <i>RIRO Minor Street Stop Control</i>	SBL/T/R	A	0.04	10	A	0.02	10
	OVERALL						
	WBR	B	0.02	10	B	0.02	10
	NBT/R	A	-	-	A	-	-
	SBT	A	-	-	A	-	-

Note: 1: 95th percentile queues rounded to the nearest 5 metres.

Table 3.9: Opening Day + 10 Years (2033) Total Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Veterans Memorial Parkway & Mission Road <i>Signalized</i>	OVERALL	B			B		
	EBL	B	0.12	25	B	0.09	15
	EBT/R	B	0.44	30	B	0.46	30
	WBL	C	0.43	30	C	0.40	25
	WBT/R	B	0.10	15	B	0.08	20
	NBL	B	0.60	35	B	0.58	40
	NBT/R	A	0.38	35	A	0.47	40
	SBL	B	0.08	15	B	0.11	20
Mission Road & SE Site Access / Madrona Place <i>Minor Street Stop Control</i>	SBT/R	B	0.61	45	B	0.53	40
	OVERALL						
	EBL/T/R	A	0.01	5	A	0.02	5
	WBL/T/R	A	0.01	5	A	0.01	5
	NBL/T	B	0.03	10	B	0.03	10
	NBR	A	0.02	10	A	0.02	10
Veterans Memorial Parkway & NW Site Access <i>RIO Minor Street Stop Control</i>	SBL/T/R	A	0.04	15	A	0.02	10
	OVERALL						
	WBR	B	0.02	10	B	0.02	10
	NBT/R	A	-	-	A	-	-
	SBT	A	-	-	A	-	-

Note: 1: 95th percentile queues rounded to the nearest 5 metres.

4. SITE ACCESS CONSIDERATIONS

4.1 OCP Road Classification Cross-Sections

From the City of Courtenay's Subdivision and Development Servicing Bylaw 2919, the OCP Road Network Map, and a review of the surrounding area, the study area roads and their corresponding classifications are summarized in Table 4.1.

Table 4.1: OCP Road Classification Cross-Sections

ROAD	CLASSIFICATION	THROUGH LANES	BIKE LANES	SIDEWALKS	BOULEVARD
Mission Road	Collector Urban - B	2	No	Yes	Yes
Veterans Memorial Parkway	Arterial B	4	Yes	Yes	Yes

As shown in Figure 1.1, the development will provide sidewalks and boulevards along the site frontages, as well as the bike lane along the Veterans Memorial Parkway site frontage to comply with the Bylaw requirements.

4.2 Veterans Memorial Parkway Access Design

The Veterans Memorial Parkway access is proposed as a right-in/right-out access.

4.2.1 Turning Restrictions

Given that a full movement access is available on Mission Road (a collector road) which provides access for all buildings on the site, it is recommended to restrict access from Veterans Memorial Parkway to right-in/right-out movements only.

4.2.2 Auxiliary Lane

The TAC Geometric Design Guide suggests that an auxiliary lane for the right-in/right-out access on Veterans Memorial Parkway should be considered when the volume of right-turning vehicles compared with the through traffic causes undue hazard¹. The right-turning vehicles at the proposed access equate to approximately 5% of the through traffic, and as such is not considered to cause undue hazard. Therefore, an auxiliary lane is not required.

4.2.3 Corner Clearance

Figure 8.8.2 of the TAC Geometric Design Guide indicates that for a 50km/h roadway, the suggested minimum corner clearance to be provided is 70 metres³. The corner clearance provided for the Veterans Memorial Parkway site access is approximately 120 metres. With the Veterans Memorial Parkway speed limit of 60km/h, the corner clearance required would be higher than the 70 metre minimum for a 50km/h roadway. Given that the proposed corner clearance for the site access is almost double the suggested minimum corner clearance for a 50km/h roadway, the access will be restricted to right-in, right-out only, and the turning volumes are approximately 5% of the through traffic, this corner clearance is considered to be appropriate for the site.

4.3 Mission Road Access Design

The Mission Road access is proposed as a full movement access, positioned directly across from Madrona Place.

4.3.1 Corner Clearance

Figure 8.8.2 of the TAC Geometric Design Guide indicates that for a 50km/h roadway, the suggested minimum corner clearance to be provided is 55 metres³. The corner clearance provided for the Mission Road site access is approximately 80 metres, which exceeds the suggested minimum.

4.4 Clear Throat Lengths

The TAC Geometric Design Guide Table 8.9.3 suggests that for a development of 100-200 residential units, the minimum clear throat length from an arterial is 25 metres and from a collector is 15 metres⁴. The proposed site plan provides approximately 15 metres clear throat length at the Veterans Memorial Parkway access and approximately 10 metres clear throat length at the Mission Road access.

Due to the residential nature of the development, the perpendicular stalls located in the throat of the Mission Road access likely have a low turnover rate. As such, the 10 metres clear through length may be sufficient. However, best practice would be to remove the first stall on either side of throat to reduce conflict with vehicles at the Mission Road access and provide the full 15 metres clear throat length as recommended by TAC.

In the Opening Day + 10 Years (2033) Total scenario, the 95th percentile queue for vehicles turning westbound right out of the Veterans Memorial Parkway access is 10 metres. With the low number of

vehicles turning at this access and given that the proposed site design can accommodate the 95th percentile westbound right queue, the 15 metres clear throat length is considered to be sufficient.

5. SITE PLAN DESIGN REVIEW

5.1 Pedestrian and Bicycle Crossing Considerations

New sidewalks are provided along both site frontages, and a new marked/buffered bicycle lane is planned on Veterans Memorial Parkway. Driveway crossings are designed to emphasize pedestrian and bicycle priority through materials and paint markings with the sidewalks traversing the driveways and the bike lane painted green with elephant's feet markings through the driveway crossing. These design elements will highlight the potential presence of pedestrians and cyclists for driver awareness to help improve safety at these locations.

5.2 Sightline Analysis

Desktop sightline analyses were conducted for the two site accesses. The Stopping Sight Distances (SSD) and Intersection Sight Distances (ISD) were considered for both accesses.

SSD is defined in Section 2.4.3 of the TAC guide as "the sum of the distance travelled during the perception and reaction time and the braking distance", where the braking distance is "the distance that it takes to stop a vehicle once the brakes have been applied". This can refer to either an object on the road or to another vehicle. It is imperative that SSD is met for safety reasons.

The minimum required stopping sight distance (SSD) is calculated as a function of the design speed, brake reaction time, deceleration rate, and grade.

ISD is defined in Section 9.8 of the TAC guide as "the sight distance available from a point where vehicles are required to stop on the intersecting road, while drivers are looking left and right along the major roadway, before entering the intersection". The ISD is adequate when it allows the vehicles on the minor roadway to safely make all the maneuvers that are permitted by the layout (e.g., left-turns, right-turns, and through movements), without significantly affecting vehicles travelling on the main roadway (i.e., main road drivers should not need to reduce speed to less than 70% of their initial speed). ISD criteria are longer than the minimum SSD to allow the intersection to operate smoothly.

The required ISD is calculated as a function of the design speed, time gap acceptance values, and grade, and as such the ISD varies depending on the movement the driver is intending to make.

Exhibits 5.1 to 5.3 illustrate the minimum required SSD and ISD for both site accesses.

The SSD and ISD requirements are met for the Mission Road access, with the ISD stretching into the intersections to the east and west of the access. The sightline triangles are free of obstructions and contain no landscaping above eye-level or bus stops in the area.

The SSD and ISD requirements are met for the Veterans Memorial Parkway access and do not extend into the Veterans Memorial Parkway and Mission Road intersection. The sightline triangles are free of landscaping above eye-level, however there is a bus stop located to the south of the access and lies within the sightline triangles. As the minimum route frequency of the nearby bus routes is 1 hour, the blockage due to buses is low and considered to be acceptable. If in the future the bus frequency were to increase, moving the bus stop to the north of the site access or installing a "hidden driveway" sign should be considered.

5.3 Parking Supply

5.3.1 Vehicle Parking

Table 5.1: Vehicle Parking Supply Requirement & Provision

LAND USE	DENSITY	BYLAW RATE	BYLAW SUPPLY REQUIREMENT	PROVIDED	DIFFERENCE
Multi residential dwellings	137	1.5 per dwelling unit	206	207	+1
TOTAL			206	207	+1

The proposed parking supply meets the minimum bylaw requirements for vehicle parking. The City has no requirements for bicycle parking supply.

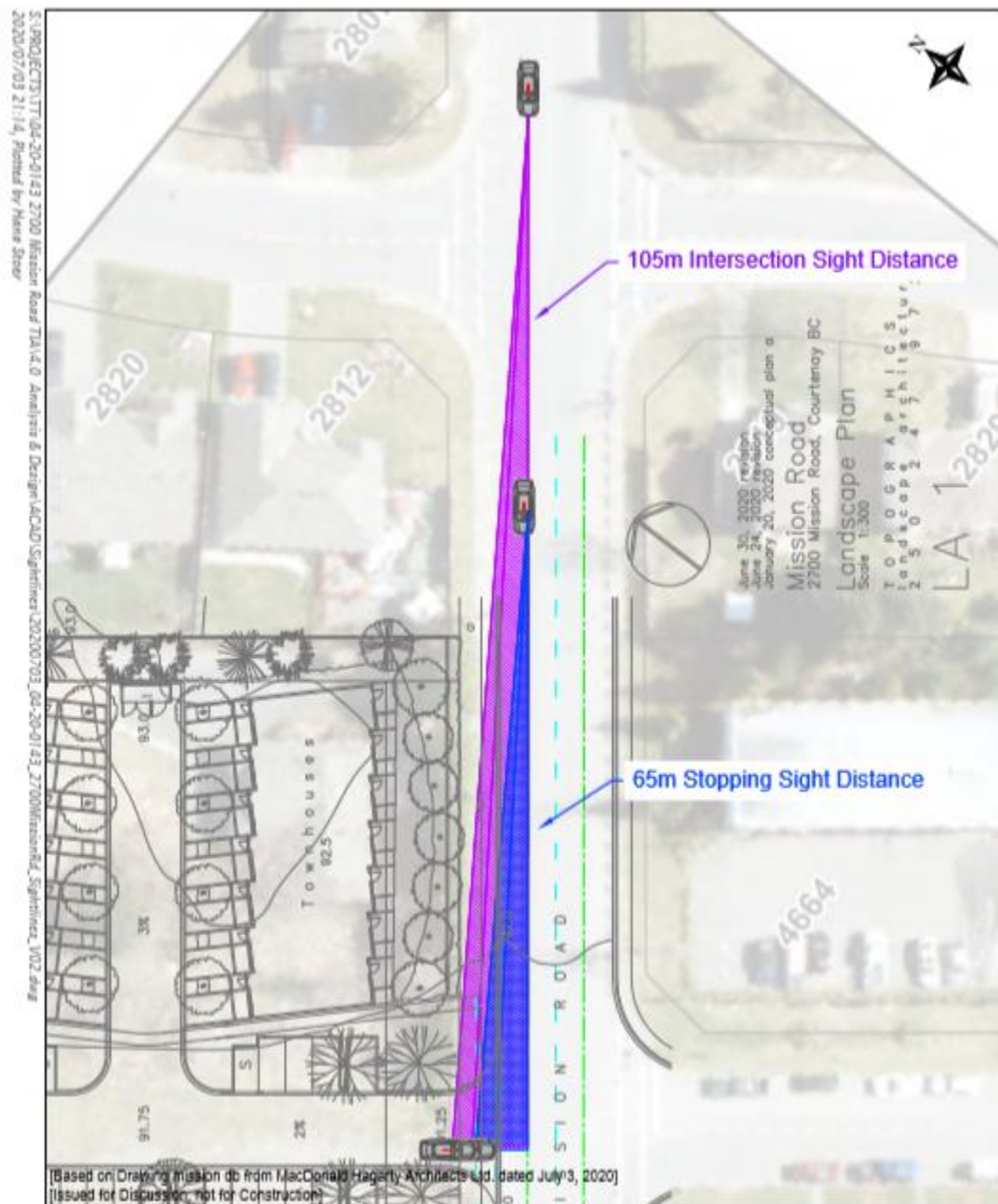


Exhibit 5.1
Mission Road Access East Side Sight Triangles

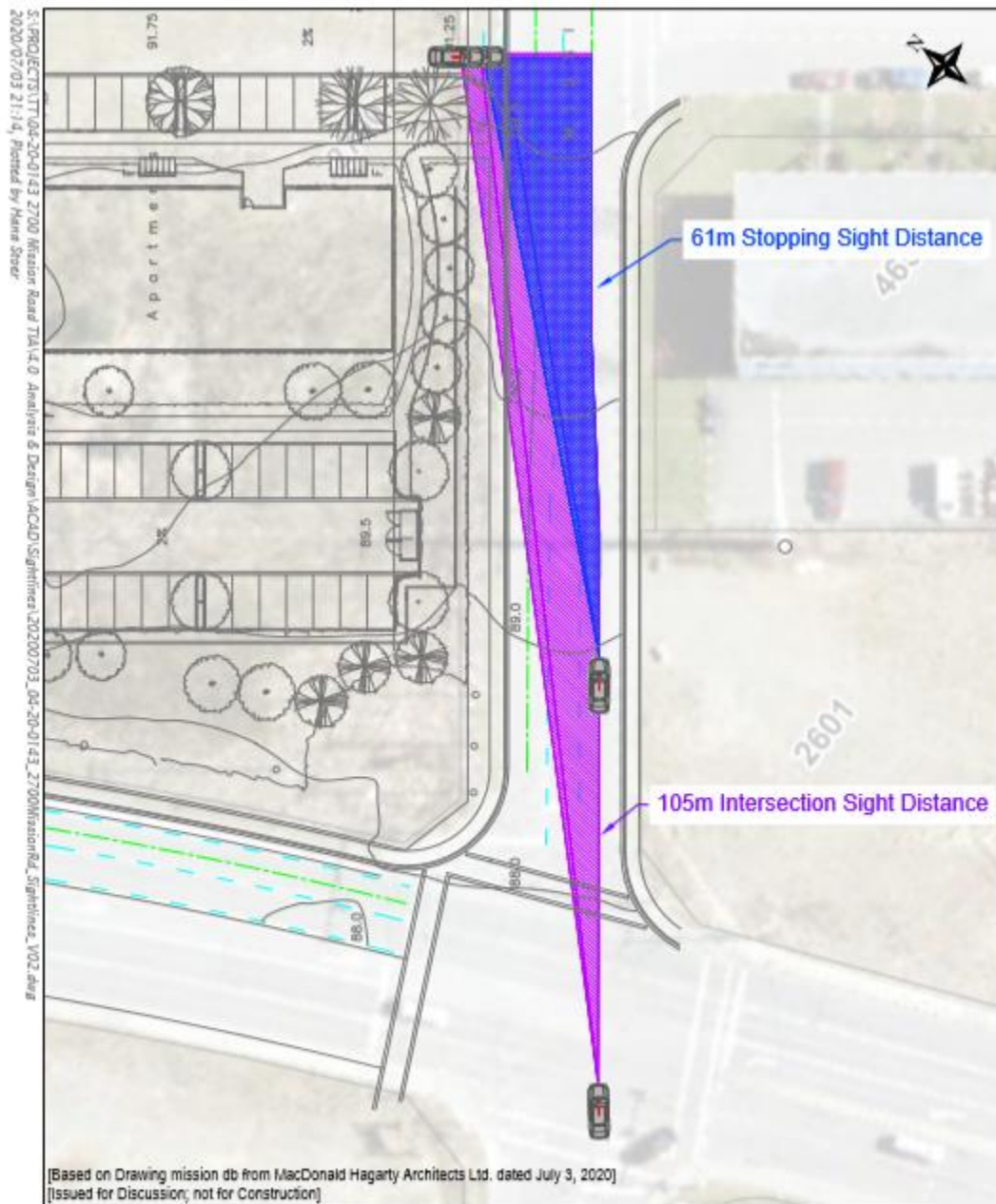


Exhibit 5.2 Mission Road Access West Side Sight Triangles



04-20-0143 July 2020 2700 Mission Rd TIA
 Scale 1:550 on Letter Prepared by HS

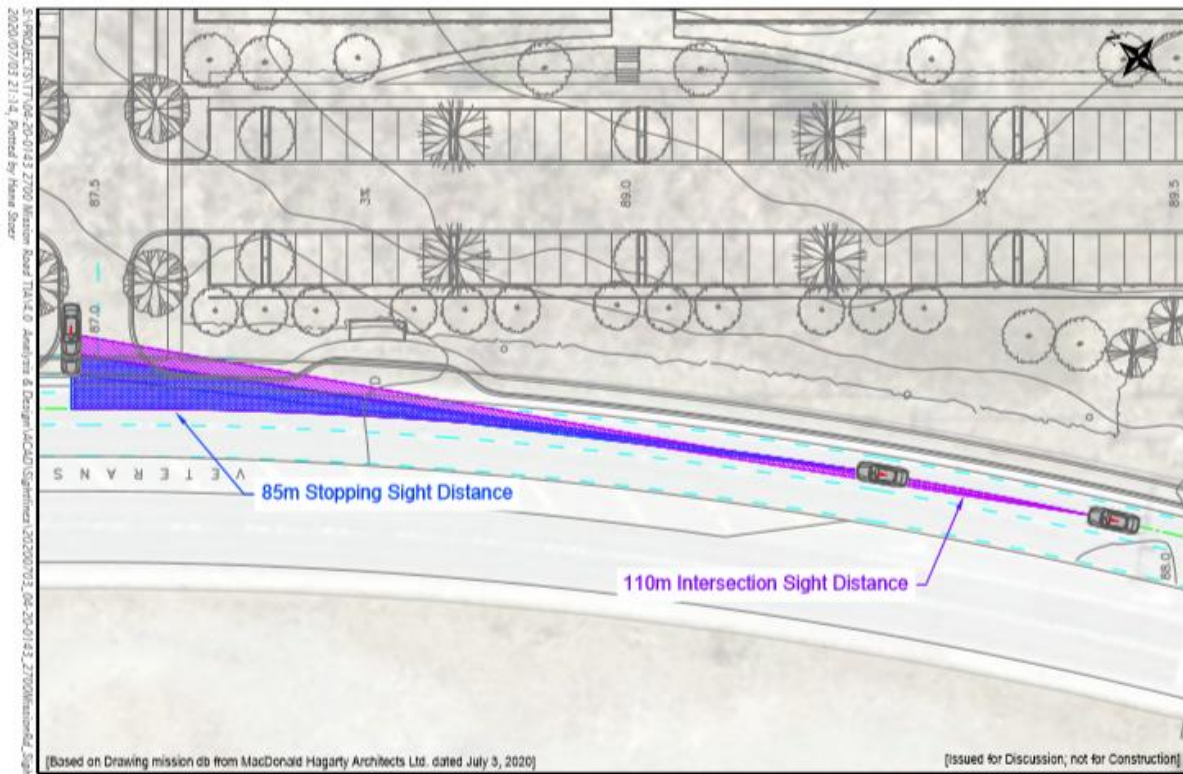


Exhibit 5.3
Veterans Memorial Parkway Access Sight Triangles

04-20-0143 July 2020 Scale 1:500 on Letter Prepared by HS

2700 Mission Rd TIA
Prepared by HS

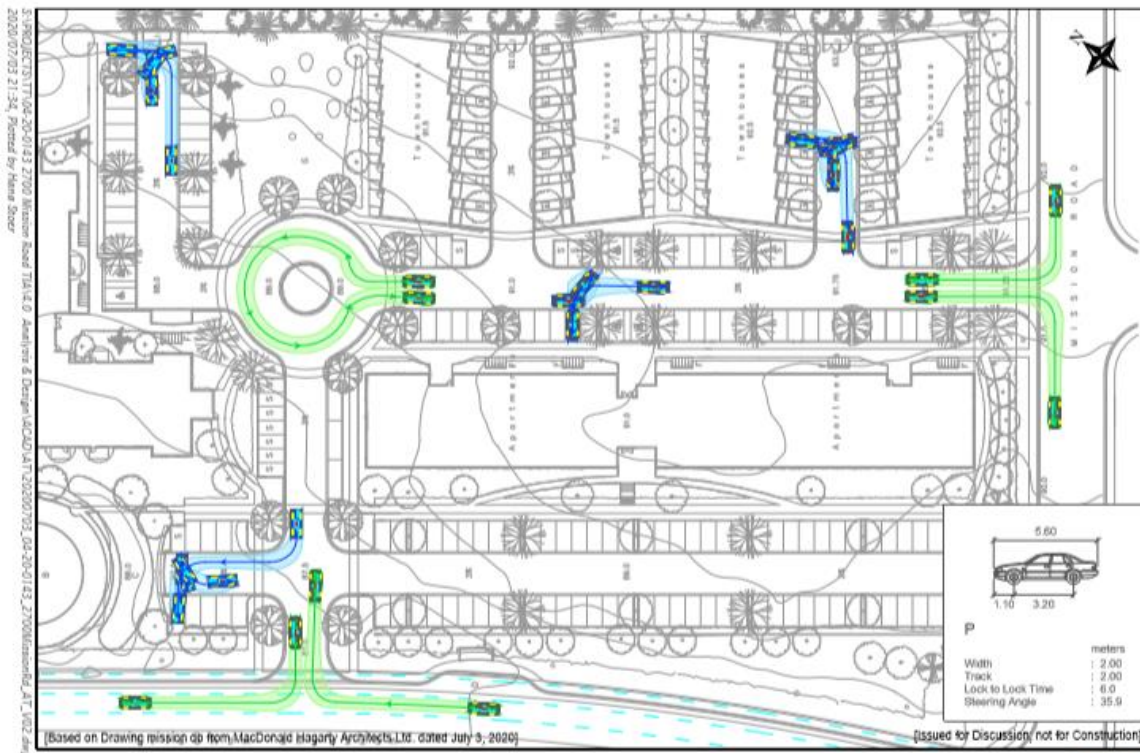


Exhibit 5.4
Passenger Vehicle Circulation & Manoeuvres

04-20-0143 July 2020

Scale 1:800 on Letter Prepared by HS

2700 Mission Rd TIA
Prepared by HS





6. CONCLUSIONS & RECOMMENDATIONS

Bunts conclusions and recommendations are presented in the sections below.

6.1 Conclusions

Key points from the existing conditions, future traffic conditions, site access considerations, and site plan design review are outlined below.

Existing Conditions

1. The site is currently occupied by a single-family home;
2. The surrounding area is mixed-use, with residential homes, Queneesh Elementary School, North Island College, North Island Hospital, Comox Valley Aquatic Centre, and multiple commercial amenities nearby;
3. The site is located at the corner of Veterans Memorial Parkway (arterial) and Mission Road (collector);
4. There are a number of transit stops and amenities within walking distance, and bike routes along Veterans Memorial Parkway/Lerwick Road and the west leg of Mission Road; and,
5. The intersection of Veterans Memorial Parkway and Mission Road currently operates within thresholds.

Future Traffic Conditions

1. The proposed development generates approximately 50 new vehicle trips (inbound and outbound combined) during the weekday AM peak hour period, and approximately 65 new vehicle trips during the weekday PM peak hour period;
2. Trip distributions were estimated based on existing traffic volumes, road classifications, and surrounding land uses;
3. All movements operate within thresholds in the Background scenarios, except for the northbound left turn queue exceeds the available storage bay length in the Opening Day (2033) Background scenario; and,
4. All movements operate within thresholds in the Total scenarios.

Site Access Considerations

1. The development will provide sidewalks and boulevards along the site frontages, as well as the bike lane along the Veterans Memorial Parkway site frontage to comply with the Bylaw requirements for the corresponding OCP road classifications;
2. The Veterans Memorial Parkway access is proposed as a right-in/right-out access:
 - a. Given that a full movement access is provided off of Mission Road, it is recommended that the Veterans Memorial Parkway access is restricted to right-in/right-out movements only;
 - b. Due to the right-turning vehicles at the Veterans Memorial Parkway access equating approximately 5% of the through traffic, and auxiliary lane is not required; and,

- c. The corner clearance of approximately 120 metres is considered appropriate as the access will be restricted to right-in, right-out only, and the turning volumes are approximately 5% of the through traffic.
3. The Mission Road access is proposed as a full movement access, positioned directly across from Madrona Place:
 - a. The corner clearance of approximately 80 metres exceeds the minimum suggested 55 metre corner clearance.
4. The clear throat lengths provided for the Veterans Memorial Parkway access and the Mission Road access are approximately 15 metres each and are considered to be sufficient given the traffic volumes and movement restrictions on the accesses.

Site Plan Design Review

1. Pedestrian and bicycle crossing considerations have been made for the site, including new sidewalks along both frontages and driveway crossings designed to emphasize pedestrian and bicycle priority;
2. Desktop sightline analyses were conducted for both site accesses to illustrate the required Stopping Sight Distances and Intersection Sight Distances;
3. The development is supported by 207 vehicle parking spaces which satisfies the minimum bylaw requirement;
4. AutoTURN analyses were conducted for passenger vehicle circulation, key parking spaces, loading manoeuvres, and fire truck manoeuvres; and,
5. The City does not require any designated loading spaces for residential uses.

6.2 Recommendations

Bunt's recommendations are as follows:

1. The Veterans Memorial Parkway access should be restricted to right-in/right-out movements only;
2. An auxiliary lane is not required for the Veterans Memorial Parkway access;
3. The first stall on either side of the throat of the Mission Road access should be removed to prevent conflicts and allow for the full 15 metres clear throat length; and,
4. In the event that bus frequencies increase at the bus bay south of the Veterans Memorial Parkway access, moving the bus bay to the north of the access or installing a "hidden driveway" sign should be considered.

***All Attachments for the Traffic Impact Assessment have been made available on the City's Development Tracker at the following website: <https://www.courtenay.ca/EN/main/departments/development-services/planning-division/current-development-applications.html>**



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August 18, 2020
City of Courtenay
830 Cliffe Avenue
Courtenay, BC
V9N 2J7

**Development Summary - Applicants Response to TIA Comments from
Development Engineering
2700 Mission road**

Comment 1:

The Bunt TIA, Recommendation Section 6.2, item 1 states that the VMP access should be restricted to right-in / right-out movements only. The development should be required to provide clarification on exactly how this will be achieved. Below is a figure from the TAC manual showing a raised traffic island that may be applicable to restrict traffic movements to those recommended in the report.

Applicant Response:

MHA confirms that a raised traffic island is being incorporated into the site design and will be in the updated Bunt TIA report.

Comment 2:

The bus bay appears to have been located within the Sight Triangle of the proposed private driveway intersection of the VMP. The development should provide a rationale for this location choice and clarify if there is any allowance available to move it further south outside of the Sight Triangle.

Applicant Response:

MHA confirms The bus stop will be relocated approximately 6 meters away from the VMP and mission road intersection. This will be incorporated into the site plan and will be included in the updated Bunt TIA report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Maris MacDonald'.

Maris MacDonald
Architect AIBC
604.845.9733

Schedule No. 4 – Public Information Meeting Summary and Public Comments



PUBLIC INFORMATION MAILOUT

NOTE: In lieu of a public open house due to Covid-19, the City of Courtenay will take public feedback to the following application by written responses through email, mail or fax. Information on the project and how to respond is enclosed.

2700 Mission Road

The subject land is a 5.8-acre parcel property bordered by Veterans Way to the southwest and Mission Road to the southeast property lines. It is located in close proximity to Queneesh Elementary School, North Island College and the new North Island Hospital.

The Developer is looking to rezone the current use of the lands from light industrial and single family residential to a 100% residential use providing various forms of housing ranging from affordable rental housing for families, market rental housing and townhouses for ownership all subdivided into three lots with vehicle access off both Mission Road and Veterans Way.

An extensive landscaping and grading plan will help buffer neighbouring homes to the Northeast property line and will provide an extension of the municipal trail system along Veterans Way. A children's play area will be provided on site for residents of the development and to help create community.

Lot 1 is a three-storey building with 38 affordable rental units ranging in sizes from 1-bedroom to 3-bedroom apartments primarily focused on families.

Lot 2 will consist of 28, two level townhouses for market ownership or market rental spread out through five separate structures.

Lot 3 is a three-storey building with 84 market rental units comprised of studios and 1-bedroom apartments.

Link to Re-Zoning Application:

<https://prospero.courtenay.ca/TempestLive/ourcity/Prospero/Details.aspx?folderNumber=OCP00008>

Location of Site



Please return your Comments by: MAY 8th 2020

Comments can be submitted to the City of Courtenay by one of the following methods:

- Drop your comment sheet off in the drop box located at the front entrance of the City of Courtenay or mail: City of Courtenay, Planning Services Department, 830 Cliffe Avenue, Courtenay, BC V9N 2J7
- Email your comments to planning@courtenay.ca
- Fax your comments to 250-334-4241

Applicant contact info:

O|M Projects

Contact: Tim Orr

E: tim@orrmoniz.com

O: 604.360.6141 / Ext. 3

To PlanningAlias

Hi,

We received the request for public feedback in the mail today, and thanks for the opportunity.

We live in Valley Vista Estates, about a block from the proposed development. We used to live on Anna Place, also very close to the proposed development.

We support the plans for this development, as long as there is enough parking onsite, and no need to park on the street. If street parking will need to be utilized, that aspect should be re-visited.

Generally the Comox Valley needs more affordable housing, more density, and more rental spaces we hope you aren't swayed by an large NIMBY reaction; there's far too much of that in the Comox Valley and in many places for that matter. Comox council did the right thing with the development plans on Aspen, despite some backlash, and we hope Courtenay council will do the same.

Sincerely,

A solid black rectangular box used to redact the signature of the sender.

Attention: Planning Department

Given the desire for the rezoning from light industrial & single family to 100% Family ... **We object to the change!**

Reasons:

heavy traffic increase within a congested area

heavy increase regarding child access to an already 100% capacity school

Veterans is a major route and will be even more so in the near future

Hospital access and emergency usage increasing already


We do not support this change request!

Regards,


[REDACTED]
Courtenay East, BC
V9N 4B8
Canada
[REDACTED]

*

To PlanningAlias

 You replied to this message on 5/1/2020 1:15 PM.

We feel that there are way to many units proposed for this property! Taking into consideration the busy traffic already flowing through the Lerwick/Veterans Way corridor due to the placement of the hospital, Home Depot, Costco the Thrifty's shopping center, college and aquatic center, we think that adding to the traffic flow caused by many new residences would be a big mistake! We live in the Valley Vista Park and already find it difficult at times to exit this property because of traffic on Veterans Way. We would like to see it remain light industrial and single family residential.



*

To PlanningAlias

 Follow up. Start by Friday, May 1, 2020. Due by Friday, May 1, 2020.
You replied to this message on 5/1/2020 2:38 PM.

To whom it may concern


I understand there is always a need to build new housing for families, but I don't believe it should come as a risk. In your plan you mention there will be access off of Mission Road as well as Veterans Way. To me that is a big risk. There is already a set of traffic lights on Mission Road and that should be the only safe access point. There is no way they should be entering onto Veterans Way and the last thing anyone wants is another set of traffic lights a short distance from Mission Road.

Please for safety sake of all, only allow the one access point.

Sincerel*y,



To PlanningAlias


 You replied to this message on 5/4/2020 8:45 AM.

Hi I am concerned about the parking stress this development will have on the businesses on Madrona place
. 150 additional homes without sufficient parking will result in increased overflow of residential
tenants and visitors filling up the already tight parking on Madrona pl.

Cheers



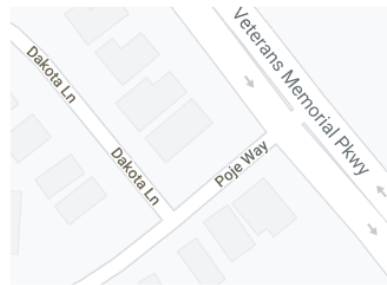
To PlanningAlias

 You replied to this message on 5/4/2020 8:44 AM.

My wife and I live in a modular home in Valley Vista Estates, just west and across Veterans Memorial Pkwy of this proposed development. There are approximately 175+ homes in this development. Our access to the hospital and nearby shopping is via the main exit at Poje Way.

Since the opening of the new North Island Hospital, we have noticed an increase in traffic, both east and westbound on Veteran's Memorial Pkwy. Our only real concern is the added increase in traffic, which is already making our main exit to the Parkway more difficult.


If the city would consider some kind of traffic control at Poje Way and Veterans Memorial Pkwy, we would have no objection to the proposed rezoning.



Sincerely,




To PlanningAlias

 You replied to this message on 5/4/2020 11:37 AM.

My husband and I are 100% against this project. To have such a small parcel of land with 150 units is not appealing to the community. As it stands now the traffic alone on Veterans Way is busy, now to have 150 more vehicles coming in and out (minimum) will be impossible. At times at the light at Home Depot you have to wait sometimes 2 lights to even get across. Hospital traffic, is busy and the College. Then you wait again for a few more lights to cross Ryan Rd. It's already a congested area and high accident. This area is mostly single dwellings. It would be very disappointing to have this type of complexing in this area. Children's play area? Veterans Way is not exactly a safe area for children even though I know it would be in the complex, kids will be on a very busy street. I suppose another type of light set up will be put in place as well, more congestion. Totally opposed to this project. Thank you. Wayne & Carol Carpenter

Sent from my iPhone

To PlanningAlias

 You replied to this message on 5/4/2020 8:43 AM.

RE: 2700 MISSION ROAD REZONE.

As owners of property on Madrona Place since 2001 we are opposed to the zoning change to 100% residential.

Traffic congestion & parking is already an issue. Access of Mission Road would cause even more congestion. Adding another intersection on Veterans Way seems excessive.

There is also no mention of allocated parking for these three story structures or visitor parking!

They are being promoted as affordable rental units which brings its own sets of issues.

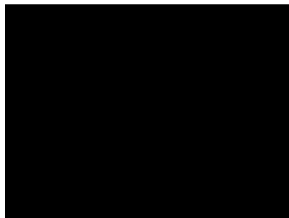
Families mean children, is Queneesh able to take on more families we was under the impression the school was already at capacity.

We would like to see this piece of property remain light industrial and single family.


It would be nice to see this property developed as an extension of the hospital for outpatient facilities.

If this project goes ahead what guarantees do you have for the local business on Madrona PI? That they will not be effected by construction as it was when the hospital was built!?

Sincerely



To PlanningAlias

 You replied to this message on 5/4/2020 8:45 AM.

I am strongly opposed to the application for the following reasons:

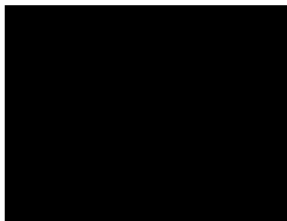
Traffic density in this area is already dangerous ie there is no such thing as 50-60 km along Lerwick/VPW adding more vehicles and exit entrances is an accident waiting to happen, the number of heavy construction/commercial vehicles speeding along this thru fare is already excessive and this will add more over a 2-3 year construction period.

Within 400 yards you have a hospital, college, home depot, a school (with hundreds of drop off pick-ups per day) and a new professional building with housing units plus plenty of other housing, there is no room for 150 additional units with a possibility/probability of 2 cars per unit in this area.


The intersection of Ryan Road and Lerwick/VPW is already a dangerous situation which will only be compounded with additional traffic.


Enough is enough lets keep our neighbourhoods safe and liveable.

Thank you for your consideration in this matter.



To PlanningAlias

 You replied to this message on 5/4/2020 1:10 PM.

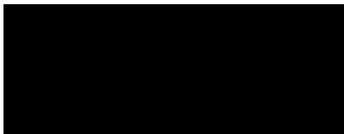
I think mixing of affordable housing with high end single family homes is a ticking time bomb. I live across the street in Valley Vista Estates which is a senior's facility. I own my home and am of the opinion that the value of my home would go down. If you can convince me that my property value will go up and not down as well as the crime rate in our neighborhood not going up due to this project then I would support the rezoning to 100% residential. 

To PlanningAlias


I would oppose this application, for the following reasons..

- Too many rental units in this area, with the units at 2525, and 2600 Mission.
- With all these rentals, no pride in ownership....
- Home owners, in the area will loss the value of the homes, and will want to move, leaving more rentals, is that what the city is planning in the future?
- Is the plan to have all the rentals in this area of the city?
- The traffic is heavy now, as Veterans Memorial Parkway, is already used like a speed Way.
- All this new traffic will make access to the hospital very difficult, and potentially be hazardous to the students attending Queneesh School.

Regards



to PlanningAlias

 You replied to this message on 5/5/2020 11:47 AM.

Hello City of Courtenay Planning Department,

This email is in regards to the proposal to rezone 2700 Mission Rd from light industrial to residential.

My husband and I have lived at 2829 Elderberry Cres for 10 years now and have watched our area (and related traffic) grow substantially in that time. So much so, that there are already current issues that need to be addressed related to the back up of traffic turning left onto Ryan Road from Lerwick due to the construction of the new hospital and its related traffic.

As I am sure it is being echoed by our neighbours, the development currently proposed by OrrMoniz & Pacific Western Management is far too dense for an already busy area.

The developers stated at the meeting that The City of Courtenay wanted this development because of a lack of available rental units in the Comox Valley. They also said that although the city wants this development to happen, it is unwilling to add in an entrance off of Lerwick Rd making Mission Road the only access point for the entire development. From my perspective that alone will cause issues.

I encourage anyone involved in the planning stage to come and spend time in this area when it is in 'full swing' to see how busy it is. On Madrona there are three business that offer classes: Knockout Tae Kwon Do, Studio G Dance and Stronghearts School of Fitness. Each of these business bring an influx of temporary traffic that is almost constant. At the end of Madrona is JR Edgett Excavating which adds a fleet of large trucks travelling in and out. All of these businesses are on just *one* side of that street. The other side containing mixed industrial type business each bringing in their own traffic.

Furthermore, taking into consideration the 2 developments already happening on the other side of Lerwick, I couldn't even begin to imagine the nightmare traffic scenario we'd be dealing with in a few years if this development went forward as proposed.

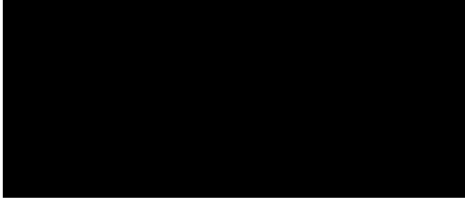
If this area is to be rezoned residential then the residential development needs to work with the neighbourhood that it's going to co-exist with. Something that is going to enhance the neighbourhood. The currently proposal does not.

Clearly this neighbourhood is the entrance to what is going to be a much larger neighbourhood that will stretch down Mission, connecting to Crown Isle and beyond. The first plot of land developed at the entrance of that neighbourhood should be done so in a way that is welcoming. The current proposed development is not.

Lastly I want to point out that as one of the developers is the current owner of The Westerly Hotel I think it is only fair that that property be used as an example of how this new development would be maintained. The recent public information meeting held at The Westerly on October 24th was the first time I had been there in years. I will not go into detail with my personal thoughts on that building but I will say that if these proposed affordable apartment buildings are going to maintained in the same way that that hotel is being

maintained then I do not want that development in my neighbourhood. I am confident that it will be let go into disarray and our homes, our investments, will be affected.

Thank you very much for taking the time to read this. I can only imagine that being involved in processes like this would be challenging with a lot of viewpoints and factors to take into consideration. I will be in touch to inquire as to how the rest of this process will unfold. The developers said many times at the info session that this is just in the initial stages so I am hoping our input will be considered going forward.



MAY 5, 2020

RE-ZONING

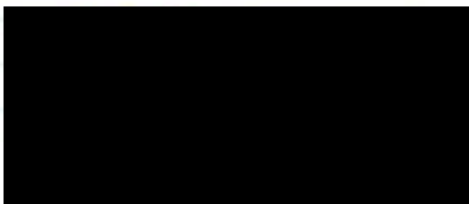
2700 MISSION Rd.

MY NAME ROBERT BEAN.
I LIVE AT 2844 CASCARA CRES.
WHEN I BOUGHT THIS HOUSE
I CHECKED THE ZONING
OF THE PROPERTY BETWEEN
MY PLACE + VETERANS WAY.

NOW A DEVELOPER WANTS
TO BUILD 3 STORY APARTMENT
BUILDING ~~20'~~ 20' FROM MY
BACK YARD.

AT THE VERY LEAST
TELL THEM ONLY 2 LEVEL
TOWN HOUSES THAT BORDER
CASCARA CRES. PROPERTY.
SINGLE FAMILY RESIDENCE WOULD
BE BETER.

COMPROMISE ON BOTH SIDES.
HOW WOULD YOU LIKE AN APARTMENT BUILDING
IN YOUR BACK YARD??



April 30, 2020.

Sir:

My comments are the same as the objections I made to The application for development of Mission and Veterans Way. This is much too high a density for this area and traffic will be a bottleneck for Ryan Rd intersection as well as access to hospital. Council is not considering taxpayers in this area or the fact that Veterans Way to the highway has become a speedway. Surely you can do better! Mary Milliken #92, 4714 Muir Rd.

Dear City of Courtenay,

I have attached a letter outlining my concerns regarding the re-zoning and development of housing on 2700 Mission Road.

Thank-you for taking the time to read and address these concerns.

City of Courtenay
Planning Services Department
830 Cliffe Avenue
Courtenay, BC
V9N 2J7

RE: ORRMONIZ Development on 2700 Mission Road

Dear City of Courtenay,

Firstly, thank-you for your leadership during the COVID 19 crisis. I am writing in regards to the development on 2700 Mission Road. I have heavy concerns.

1. I am concerned about how this development will affect what is left of the pristine forest nearby. No amount of money can create technology that can clean our air or improve our mental health and quality of life the way that forests can.

How will the developer and the city (at present and in the future) work to **protect and save** the surrounding forest **in its entirety** and not further encroach upon or damage what is left of this beautiful area?

2. Cities (urban planning) need to be centered around a greener future. How are the city and the developer working to not simply develop land for housing, but making the housing eco- and socially-friendly?

For example, is this property (and other properties going up today and in the future) going to have any or all the following:

- a) Large community garden space with accessible raised beds and irrigation
- b) Fruit Trees (apple, pear, plum, etc. that grow in abundance in the Comox Valley)
- c) Other flowering plants/vegetation that attract pollinators
- d) Solar panels on roofs so that residents can collect their own power and tie into the grid.
- e) Any other additional measures that benefit energy efficiency, the environment, the renters/buyers, and the surrounding area

We have learned from the Covid crisis that local solutions are of utmost importance.

By having these measures in place, we can prevent further encroachment on green space and promote more sustainable living. It is important to work to prevent the causes of disease and meet social determinants of health.

3. On a different note, my concerns extend to a possible new parking lot to be paved in the forest behind North Island College. A multi-level parking lot could be built on the already existing parking lot instead of sprawling outwards and cutting down forest. In addition, promoting transit use for students would be far more beneficial.

Thank-you for taking the time to read these concerns. I look forward to hearing about how the city will operate with what we now know of sustainability and urban planning in mind.

Sincerely,

A solid black rectangular box used to redact the signature of the author.

To PlanningAlias

To Whom It May Concern,

This letter is being drafted to bring to your attention our concerns with regards to the proposed development that is slated to be built along Veteran's Memorial Parkway (VMP) and Mission Drive.

First and foremost, with the recent addition of the hospital on Lerwick Rd., there has been a significant rise in traffic as well as vehicle collisions at what was already labelled as Courtenay's most accident-prone intersection; Ryan and Lerwick according to ICBC. With the addition of this complex and the sum of 300 people expected to reside there, these intersections will become inherently more dangerous. There are many children that reside east of VMP and have to cross the Mission - VMP intersection; the number of vehicles that a complex of this size will pose a significant safety concern.

We purchased our home on Cascara for several reasons; proximity to both elementary school and high schools, extra-curricular activities at various businesses on Madrona Pl., the fact that the population was the normal density, and Cascara Crescent was set to become a semi-affluent neighborhood. Not to mention the gorgeous view of the Comox Glacier and surrounding mountains. The height and style of this complex will eliminate our view!

We have all seen what can happen in and to low-income housing complexes as clearly demonstrated at Washington Apartments on Ryan; we do not want that happening in our neighbourhood. Property values in and around Washington Apartments are significantly lower than similar homes in other areas of Courtenay/Comox. It is statistically proven that lower-income housing developments bring a rise in neighbor vandalism, petty theft, illicit drug use, and other undesirable lifestyles. This situation will cause our investment, our property value to decline. This type of complex would be better suited on the west side of Courtenay, near Walmart, or better yet, take over the old Canadian Tire location and build there!

Bottom line

WE DO NOT WANT THIS COMPLEX IN OUR NEIGHBOURHOOD!!

Attached is our comment sheet regarding the proposed multi use development at 2700 Mission Road.

Regards,



Summary

1. The existing Official Community Plan led many of the existing residents to believe that their community was being developed as an owner unit single family dwelling.
2. The proposed Official Community Plan identifies several areas that suggest the development of 123 rental units at 2700 Mission Road may not be in alliance with its goals.
 - a. The imbalance created by the introduction of an additional 123 rental units and only 28 ownership units.
 - b. The location of the proposed project encourages travel by car rather than travel by walking or by bicycle.
 - c. Public Transit is not conducive to decreasing the number of car trips.
3. There is no significant goal- benefit to the city or to the community by adding a third multi-unit home project into this community.

Before I start, I ask that you review the 2005 Official Community Plan. It served as the guiding factor in for of the current residents building or purchasing homes in the area north of Veterans Memorial Parkway/ Lerwick Road.

The Development Plan and Guidelines were created to: guide the orderly development of the area; promote the preservation of the natural environment and the rural character, in particular the existing stands of trees; explore appropriate housing types and densities; and synthesize the wishes of the property owners.

The Mission Area Development Plan precedes development pressures and proposes a framework for future development. Beyond road layout and parks allocations, it incorporates qualities inherent in a good single family neighbourhood.

The Mission Area Development Plan proposes a single family neighbourhood incorporating the following qualities:

- streets that interconnect and cul de sacs with walkway connections to promote the concept of neighbourhood and to provide future residents opportunities to walk around the block
- a rational and simple street layout to promote a sense of the interconnectedness of the neighbourhood and for clear visual mapping
- neighbourhood parks for the visual relief of green space buffer zones as tree protection areas to create transitions between busy streets and backyard fences a linear park along the north side of lots fronting onto Mission Road and along Lerwick Road as a tree protection area and for pedestrian connections a rigorous enforcement of the tree protection bylaw to promote the sense of an established neighbourhood
- and privacy single family lot sizes of approximately 9000 sq. ft. (no allowances for duplex lots) lot width dimensions to vary within a prescribed range to promote diversity of house plans and discourage excessive repetition rear property lines that line up to discourage backyards bordering on more than three neighbours, to discourage visual clutter and promote privacy for future residents lots that are staggered across the street from each other to promote views between houses and to promote a sense of privacy.

Courtenay's Official Community Plan is being reviewed!

As I review the proposed Official Community Plan, I am amazed that the City of Courtenay would entertain an addition project at 2700 Mission Road.

The report states that the Background Research Report begins to build a baseline for Courtenay, focusing on key factors that are important to understand in creating an OCP.

It states that the climate crisis is here. Exploring different future urban scenarios to tackle this crisis – and to meet a host of other community goals – begins with creating a baseline of existing conditions today.

Let's take a look at the recommendations of this February 2, 2020 proposal:

HOUSING

As estimated by CMHC, there is currently a total of approximately 11,705 dwelling units within the city, 8,135 (69.5%) of which are owned and 3,570 (31.5%) are rented.

Including the proposed units at 2600 and 2700 Mission Road there will be of the 444 dwelling units in the residential area north of the intersection of Veterans Memorial Parkway/Lerwick Road and Mission Road.

Currently, to the north east of 2600 and 2700 Mission Road there are 130± existing single family units (assumed owned), plus an additional 34 (for sale to owners) under construction at the north end of Mission Road, plus 28 townhouses at 2700 Mission Road = 192 owned dwelling units (43.2% versus the city's 69.5%). When the 34 allowed secondary suites in the homes now under construction at the north end of Mission Road are added to the 95 rental units at 2600 Mission Road and the proposed 123 rental units at 2700 Mission Road there will be 252 rental units ((56.8% versus the city average of 31.5%))

This means that the majority of the residential units in the community will move from ownership units to rental units. (1.31 rental units for every 1 owner unit)

The proposed revised OCP states that how growth is managed during the next half century will have a tremendous impact on whether Courtenay is able to achieve its GHG emission reduction targets.

Some forms of development makes it convenient, safe, and desirable to move around on foot, by bike, or by transit, while other while other forms of development effectively limit transportation choices to travel by car.

Neighbourhoods, Emission Control and Transportation

One of the suggested ways to reduce emissions is to increase the density of dwelling units. However, this is based on the assumption that living in the Mission area would result in walking or use a bicycle rather than driving their cars to shop or to go to work. According to the proposed OCP plan, for individuals to walk or bike they would need to be within a convenient 5 – 10 minutes to shop or work. And, according to your proposed plan, this area is within an 11 – 20 minute walk to shop and possible work. The expectation is also that communities would have clearly gridded streets for direct access to conveniences. This community is built with cul de sacs and dead-end roads. The proposed OCP shows its walkability index as 'least walkable' – the very bottom of the grid. Furthermore, one of the shopping areas shown as accessible in the proposed OCP is Costco which does not sells groceries in small enough quantities that encourage people shopping to carrying groceries home.

Even if the proposed extension of Mission Road was completed it would not conveniently connect with shopping or work and would only further encourage driving. And, the proposed OCP tells us that transportation equals 59% of emissions.

Road Congestion

The corner of Ryan Road and Lerwick Road is already considered a high-collision area. Adding a possible 245 cars (plus the 68 cars from current project at the north end of Mission) and the traffic arriving at and departing the medical centre at 2525 Mission Road, will not only increase the congestion but realistically may hamper ambulance and hospital traffic.

Public Transit

According to the proposed OCP, the bus average wait time is 61 – 90 minutes. The current bus route does go past the senior high school and it goes to the core are of Courtenay but the wait times may encourage car travel.

It may be thought that totally densifying a district simply because the land is available and there is a developer willing to invest in a project will provide a positive outcome, however, the proposed OCP clearly concludes All of the listed information indicates a large development at 2700 Mission Road will have a negative impact on the neighbourhood and the surrounding area.

The OCP also states: . . . that there is extensive discussion of the uncertainty in models and modelling results. The assumptions underlying a model can be from other locations or large data sets and do not reflect local conditions or behaviours, and even if they did accurately reflect local conditions, it is exceptionally difficult to predict how those conditions and behaviours will respond to broader societal changes and what those broader societal changes will be.

In addition:

In 2017, W.J. Construction successfully had the Multi-Use land at 2600 Mission Road rezoned from Commercial to Multi Residential. Their plan is for two 47 unit building plus a caretakers unit. Although there is a proposed playground area, the green space is limited with much more space allotted to car parking.

The most recent Public Information Mail Out from Orrmoniz regarding 2700 Mission Road talks about 5.8-acre parcel of land. Proposed is development of Lot 1 with 38 affordable units, Lot 2 with 28 two level townhouse and Lot 3 with a three-story building containing 84 market rental units.

There is no map showing where these lots are located on the 5.8 acres plot, where the parking is to be located nor the size or the location of the playground. The compass directions are not accurate.

The City of Courtenay Lot 1 to contain 39 rental units, Lot 2 to contain 84 unit apartment building, Lot 3 to contain 28 unit townhouses contained within 5 separate structures.

These exclusions make it more difficult to assess the developers' plans.

When I attended the first Public Information Meeting hosted by Pacific Western Management OrrMoniz Projects, I asked many questions about the impact this development may have on the small, single family residential community adjacent to this project. All but one of my questions from that meeting have gone unanswered. Please refer to that submission to augment this statement.

 2700 Mission Rd

Response to Public Information Mailout

To The City of Courtenay

**In reviewing the request for comments on the
Subject land at 2700 Mission Rd are as follows:**

**Rezoning the current use of the land from
light industrial and single family residential..**

**The question is why... the current zoning
includes family residential residence..**

However: if the City gives the approval...

**Please Think of the impact on the following:
To subdivide into 3 lots is inconveivable... It is
only 5.8 acres...**

**Plus the proposed building plans could housed
300 – 500 people**

**and these families have vehicles, children that
will be faced with the impact of traffic...&
safety for their well being...**

**The paragraph of landscaping , buffer
neighbouring homes & children play area
sound inviting but a big challenge for the
existing space..**

On a positive note...

**Lot 1 & Lot 2 description of plans sound
manageable for the housing of families**

**However Lot 3 proposal is a very overcrowded
residential plan...**

and further study is required

Therefore..

**Suggest give consideration of the proposals of
Lot 1 & Lot 2..**


Do a traffic analysis, imperative!

Reduce speed limit on Veterans Way.


**Give priority of the Landscraping as outlined &
Children play area**

To PlanningAlias


Cc PlanningAlias

 This message was sent with Low importance.

Sent from my iPhone.

Sent from my iPhone.  homeowners on 2784 elderberry cr support development but much lower density of said property , however no apartments.

To PlanningAlias

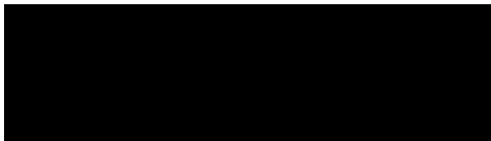
 You replied to this message on 5/8/2020 8:54 AM.

This is in response to the above development. My husband and I are strongly opposed to this development for the same reasons we were opposed to the recently approved development at 2600 Mission Rd. I would hope that this development will not be approved. It is very much ill-conceived to have two residential complexes, one a 185 unit plus another one a 150 unit in this area of an already very busy and congested intersection. There is the new hospital, Terasen gas offices, a large professional office complex, Quennish school, N.I.college, and the Aquatic centre, in addition the Home Depot plaza. Especially for the young students at the school the traffic these developments will contribute to the already traffic nightmare will pose a dangerous situation.


There are five stop lights between Mission and Crown Isle Plaza already and I am sure this development will necessitate yet another one. The traffic in the area is already horrendous. And, there will certainly not be sufficient parking to accommodate 335 households. Where will the residents Park their vehicles? Parking was one of the key issues in the neighbourhood when the Hospital was built. And as a result parking at the hospital was made free thankfully so that the spill over would not end up on our streets in front of our houses. That is an inevitable result if this development happens.

Neither of these developments should go ahead. There are many other reasons for our opposition but these are enough to think about initially.

I hope you seriously consider the ramifications of these projects and I hope my writing this was not an exercise in total futility.



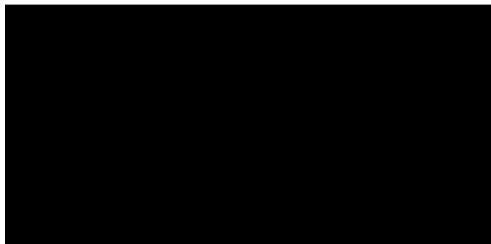
To PlanningAlias

 Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Traffic is our main concern.


The exit onto Veteran's Memorial should be RIGHT turn only.

Presumably as traffic increases the traffic light sequences (particularly at Lerwick & Ryan) will be reviewed.



To PlanningAlias

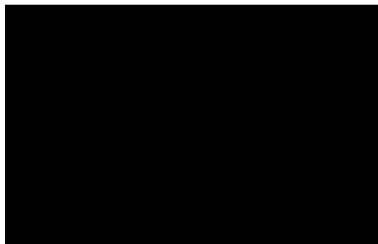
Cc tim@orrmoniz.com; STEVE ACCIAROLI

 You replied to this message on 5/8/2020 8:55 AM.



Hello, please add our, Lori Ste. Croix and Stephen Acciaroli's, names to your 'NO' vote tally for the development of 2700 Mission Road as currently proposed. While we are supportive of development for the area in general, we are particularly concerned about the proposal of building bachelor suites and 1 bedroom apartment units. We feel this puts far too much density into our area of appropriately sized lots and homes for our neighbourhood and is not the 'feel' that matches the rest of the homes already in existence all around the proposed site. We are more amenable to single unit homes with lot size equivalent to the neighbourhood homes nearby or even townhouses with sufficient green space buffers and a visual barrier between them and the higher-end homes on Cascara Crescent.

We reside at 2869 Elderberry Crescent. There are multiple homes sites being prepared for building on Mission Road already which are following the sizing flow of the area. This is appropriate. Cramming in high density rental spaces is not.

We request a new proposal for building from the developer before the current zoning change can be approved by the city.



To PlanningAlias

 Message  2700 mission feedback V2.docx

May 10, 2020

Claudia Ederle
2941 Huckleberry place
Courtenay, BC

Development Services Department
City of Courtenay
planning@courtenay.ca

Re: Rezoning of 2700 Mission Road, Courtenay

I am writing to provide my comments regarding the application to rezone use of land from light industrial to 100% residential and the application for subdivision with the planned housing proposal.

I strongly disagree with the current proposal. The current proposal with an apartment building with 84 one bedroom and studio units does not fit into a single family neighbourhood. The proposal is not within the current Official Community Plan and does not meet requirements in the current plan. The current plan designates our neighbourhood as a single family neighbourhood. There are already 360 units of rental accommodation planned within the 3 block area of this proposal, with a potential increase in population of 700 people in this area (without the current proposal This will have a big negative impact on the quality of life in our neighbourhood.

Zoning for light industrial land is very limited in Courtenay, and this is the only parcel zoned light industrial in the East Courtenay area. The light industrial area across the street contains small business that creates jobs in our neighbourhood and community. The facilities such as a workout studio and dance studio in this area reduces car trips for those in this part of the city.

As citizens, almost all of us have been renters at one point in our lives. While some rental housing may be beneficial to the community, the total cumulative impact on a neighbourhood must be considered when multiple projects are planned in a neighbourhood of single family houses. Impacts include traffic, schools, crime, and quality of life for all residents.

Our neighbourhood currently has 360 units of rental housing planned within a 3 block area of 2700 Mission st. If an average of 2 people occupy a unit this increases the population in a 3 block area by 720 people currently. The following table lists the apartments planned that I am aware of:

Rental units planned within 3 blocks of 2700 Mission St		
Location	Number of Units	Population increase based on average off 2 people per unit
2600 Mission st	96	192
Across from Costco – Crown Isle	56	112
Mission St – Cubes building	60	120
NIC Student housing	148	296
Currently approved subtotal	360	720
Proposal - 2700 mission st	161	322
Total	521	1042

If an average of 2 people occupy a unit, the current proposal increases the population in our neighbourhood by over 1,000 people in a 3 block area.

The [current OCP background research report](#) states Courtenay has an estimated current population of 25,595, projected to grow by 24% to reach a total of 31,696 by 2041. This is an increase of 6,101 people in 21 years, but we are adding 1,000 people to our neighbourhood within a 3 block area now!

Our neighbourhood is a family neighbourhood. Two apartment buildings on that property is too much! I would support townhouses and patio homes and even two story buildings geared to families. This means 2 or 3 bedroom units that families can live in.

A whole building of 84 units of one bedroom and bachelor pads does not fit into a family neighbourhood. That many units geared to single people creates social issues that we do not want here in this neighbourhood. Is this building going to be a party place? That many single people in one place may lead to an increase in drug usage and crime in our neighbourhood. Or will this be a place for the homeless without supports? Does the developer build, make the money and walk away from the potentially significant social impacts? Our neighbourhood will be forever changed if this development is allowed. If the desire is for having a place for NIC students, then maybe the development would be collaborative with NIC who is also building student accommodation. These units are so tiny without even a balcony, that it could impact the quality of life for residents (more mental health challenges especially if self isolating) that our neighbourhood will be impacted by.

Community Plan

I am aware that the City of Courtenay is currently updating its community plan. However, at the present time the **current Community plan (OCP) does not support this amount of multi-residential housing in one area**. The Community plan states¹:

The City supports the designation of multi residential housing in a variety of locations to avoid large concentrations of the same type of housing in one area and to help provide more diversity

*within neighbourhoods. In this regard, a) **multi residential development shall be limited in scale and size outside the downtown area** b) the multi residential description is subject to the following criteria: • contains three or more dwelling units on a property • sufficient amenity space for the recreational need of the development • access to schools, parks, walkways, transit and complementary commercial/ service uses • adequate buffer areas from major roads and adjacent land uses • input from School District regarding enrolment capacity • includes existing mobile home parks c) priorities for multi-residential development will be: • high - downtown area including along riverfront • medium - intensification or redevelopment of existing sites • **low - peripheral expansion subject to Local Area Plan***

The OCP states Mission area is covered in the Mission Area Development plan. The plan states that it is a **Single Family Neighbourhood** (Section 9 pg 131 of OCP). *The Mission Area Development Plan precedes development pressures and proposes a framework for future development. Beyond road layout and parks allocations, it incorporates qualities inherent in a **good single family neighbourhood**. The Mission Area Development Plan proposes a single family neighbourhood*

Section 8.5 of the current community plan contains requirements for Multi residential developments that **this development does not meet:**

- *The design of buildings shall reflect the heritage of the City of Courtenay and the **use of materials such as stone, brick, ornamental work and wood with varied details and columns is required.***
- *The design and introduction of a new building type to a residential neighbourhood **shall provide harmony and lend continuity to the neighbourhood and should not create excessive disruption of the visual character of the neighbourhood.***
- *The design of a new project or an addition to an existing project shall be based on a comprehensive design concept and shall give adequate attention to the general architectural style, detailing, scale, materials, character of fenestration, character and materials of roofs, treatment of entrances, gradation of heights, relationship of indoor and outdoor spaces, design and placement of play areas, access parking arrangement and circulation, and landscape character and design.*
- ***No more than four townhouse units shall be linked in a row** unless warranted by special design treatment.*
- *Where townhouse units have attached garages or carports, the units shall be wide enough to allow the creation of attractive entrances to the individual units between garages*

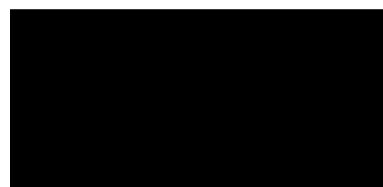
Please deny this application.

PlanningAlias

You replied to this message on 5/11/2020 11:48 AM.

Message mission st proposal.docx

I understand the public hearing deadline was May 8. I submitted this letter in October and it still represents my views.



Development Services Department
City of Courtenay
planning@courtenay.ca

Re: Rezoning of 2700 Mission Road, Courtenay

I am writing to provide my comments regarding the application to rezone use of land from light industrial to 100% residential and application for subdivision and planned housing.

I strongly disagree with the current proposal.

The application for the proposed housing mix and type of housing should absolutely be rejected!! This proposal does not fit into the current community design and does not meet the needs of families and individuals in the Courtenay area.

The proposal to build a 3 story building consisting of 84 studio and one bed rental apartments should be outright denied as it in no way meets the needs of the community and would change this neighbourhood forever! We are a family neighbourhood! Putting a building that houses 84 single people in a family neighbourhood is crazy! It would destabilize this family neighbourhood! It also in no way will address the shortage of rental housing for families!!

The following data is from the 2018 Vital Signs report for the Comox Valley:

Table 93: Vacancy rates for purpose-built market rental units, Courtenay Census Agglomeration, by number of bedrooms, October 2013-October 2017

Time	Studio	1 bedroom	2 bedroom	3+ bedroom	Total
October 2013	4.4%	1.4%	2.5%	1.2%	2.2%
October 2014	0.7%	1.9%	2.0%	0.9%	1.8%
October 2015	N/A	0.7%	0.3%	0.0%	0.5%
October 2016	9.1%	0.5%	0.5%	0.0%	1.0%
October 2017	3.3%	5.0%	1.9%	0.0%	2.4%

It clearly shows that there is an absolute shortage of rental units for families – rental units with 3 plus bedrooms. There is a much higher vacancy rate for studio and one bedroom apartments. To propose to build a whole apartment building of more studio and one bedroom units in no way addresses the need for family accommodation.

Building studio and one bedroom units also does not help affordability as it is usually unsuitable for a person who would like a roommate to split the cost (such as NIC students).

Having another 3 story building rentals targeted to families with one bedroom suites also does not meet the needs of the majority of families who need two or more bedrooms. There are a lot of rental being built in Courtenay at the moment including one next to Queneesh school and therefore the demand for rental apartments will be less.

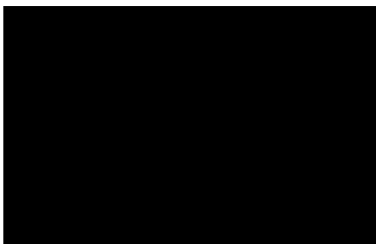
In my opinion, well designed residential area with a mix of townhomes and patio homes on this property would fit into this community and alleviate the housing shortage. There is a shortage of townhomes, patio homes and this type of housing geared to families and seniors. This should include townhomes and patio homes for purchase to allow families and seniors the stability of having permanent housing. Having units for purchase also provides stability to the neighbourhood.

Before allowing any subdivision, the city should consider a comprehensive plan without building apartments on this property.

The application to change zoning from light industrial to 100% residential should be reviewed by the city with regard to the impacts. The current light industrial use across the street, creates local employment and there do not appear to be many areas where businesses can operate in the city outside of the downtown core. Having businesses in this area reduces the need for travel for many of us. For example, my child was able to walk to dance classes (across the street from proposed site) in our neighbourhood.

The current proposal as it is should be rejected completely!

Please keep me informed on any council meeting considering this proposal.



Name
Address

Email
Phone

Pacific Western Management/ OrrMoniz Projects has applied to the City of Courtenay for an OCP/Zoning Amendment. To rezone the current use of lands from light industrial to 100% residential use providing various forms of housing ranging from affordable rental housing for families to market rental and townhomes for ownership subdivide into three lots. This project is under review by staff in the Planning Department of the City.

Given the information you have received regarding this project do you have any comments or questions?

① COMPLETE PACKAGE ALREADY ON FILE REGARDING 1st
PROPOSAL FOR 2700 MISSION - COMPLETE - CASCADE CREST

② DOESN'T COMPLIMENT EXISTING HOMES - KLAAGUA CREST
- ALL BUILT OR PURCHASED "BECAUSE" OF - SABAH PLACE
EXISTING ZONING BEHIND US! - MADRON PLACE
- ALL ARE - DO

③ WILL ALREADY HAVE 150 UNITS ACROSS
ROAD BY 2600 MISSION - LOOK AT THIS IMPACT ON AREA FIRST

④ NO ONE IS AGAINST DEVELOPMENT - JUST WHAT IS RIGHT
AND WAS EXPECTED TO BE! - "NIMBY-ISM" DOES NOT
APPLY HERE.



July 15, 2020

RE: 2700 Mission Road RZ application – Summary of Open House Mailout Responses

This letter serves as a summary of the comments received toward the original proposed re-zoning application for the above noted address. In the following section below, it will show what has been changed to the application to address the concerns with the original submission.

Proposal:

- To change zoning PA-2 (Public use and Assembly Two Zone), R-1B (Residential One B Zone), and I-1 (Industrial Two Zone) and is designated 'industrial' to a CD (Comprehensive Development Zone).
- 5.8-acre site subdivided in to three separate lots with access from Mission Road and Veterans Memorial Parkway.
- **Lot 1:** Three storey, 39 units, affordable rental units for families.
 - Revised to 37 units.
- **Lot 2:** Two storey, 28 market town houses.
 - The townhouse lot and revised 37-unit affordable rental lot swapped locations.
 - This change helps mitigate loss of views from neighbouring residential lots, going from a three-storey structure down to two storey structure.
 - In addition, the grades have been lowered significantly to be more neighbourly with adjoining residential single-family properties.
- **Lot 3:** Three storey building, 84 market rental units (See table for revised changes).

Original Proposal		Revised Proposal	
Studio	48	Studio	18
1 Bed	36	1 Bed	18
2 Bed	0	2 Bed	24
3 Bed	0	3 Bed	12
TOTAL	84		72

- Parking for all units on-site
 - On-site parking meets city bylaws (1.5 stalls/unit)
 - 137 units total = 206 parking stalls provided

The following is a summary of the responses received from the public open house mailout to 288 neighbourhood addresses. This provided a two-week window for neighbouring residents to formally respond to the application.

Public Open House Mailer

Mailed out Date: April 23, 2020

Time Frame to respond: Two Weeks

End Date for Responses: May 7, 2020

The city received 22 official responses with the overall outcome as follows:

Opposed: 21

For: 1

There were two core concerns.

1. Traffic Concerns along with parking & access:

A formal traffic engineering report was completed by Bunt & Associates Engineering Ltd. The conclusions of the report have found that there is no traffic concern with the increase in density and the proposed parking onsite meets current city bylaw requirements. There are a number of minor recommendations that will be coordinated with city engineering through the application process.

The full traffic report can be viewed by contacting the city planning department.

2. Density:

Revised application attempts to address neighbourhood concerns. Application can be viewed by contacting city planning department.

The above represents the two primary concerns we received when talking with the neighbouring residents at our pre-application open house on October 2019 and the responses we have received from the mailout April 23rd - May 7th, 2020.

Neighbourhood Enhancements

The proposal will be adding the extension of the trail from the North West property lines to Veterans Memorial Parkway (VMP) and retaining the mature forested area in that precinct, as well as, the continuation of the multipurpose trail parallel to VMP.

I hope the above served as a thorough summary. All formal written comments have been included, as well as, the mailout to residents. If any further information is required, please contact me at your earliest convenience.

Sincerely,



Tim Orr
O|M Projects

Schedule No. 5 - Sustainability Evaluation Checklist



CITY OF COURTENAY
Development Services
830 Cliffe Avenue
Courtenay, BC, V9N 2J7
Tel: 250-703-4839 Fax: 250-334-4241
Email: planning@courtenay.ca

SUSTAINABILITY EVALUATION

COMPLIANCE CHECKLIST

The following checklist provides a quick reference list of required sustainability criteria that, where applicable, shall be satisfied for all development applications including Official Community Plan (OCP) and Zoning Bylaw amendments, Development Permits, Development Variance Permits, Tree Cutting and Soil Removal Permits, Agricultural Land Reserve and Subdivision applications. These criteria are established to ensure that the goals and objectives of the OCP are satisfied. **Please briefly state in the "Description" column how the application achieves the stated criterion.** Where an element of the development proposal does not comply with a sustainability criterion, a justification stating the divergence and the reason shall be made. A separate sheet may be used to provide comment. **Incomplete forms will result in application delays.**

The Sustainability Evaluation Checklist Policy states: *Proposed developments will be considered where a development:*

- provides substantial benefits to the City;*
- will not negatively impact on the City's infrastructure, neighborhood or environment;*
- new development that supports destination uses such as the downtown, Riverway Corridor or a Comprehensive Planned Community;*
- Meets applicable criteria set out in the OCP.*

The complete Sustainability Evaluation Checklist policy is contained within the City of Courtenay Official Community Plan No. 2387, 2005.

Project Address: 2700 Mission Road	Date: January 21, 2020
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Applicant:	Signature:
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APPLICATION REQUIREMENTS To be filled out by applicant

Land Use. The application:	Description of how the criteria are met
a) Provides a mix of housing types and sizes;	The proposed development provides a variety of housing types including studio, 1 bedroom, 2 Bedroom, 3 bedroom apartments and townhomes.
b) Balances the scale and massing of buildings in relation to adjoining properties;	After an initial public meeting the developer moved all larger massed buildings away from the adjoining properties. All buildings over 2 storeys have been located 20M or more from the single family homes to the east
c) Complements neighboring uses and site topography;	The surrounding area is has gone through dramatic change over the past few years. Two properties near by are experiencing similar density changes. The site is a gently sloping with a dense set of trees to the north east.
d) Provides or supports mixed used developments or neighborhoods;	The density of the site will help neighbouring business both existing and ones that will be opening soon veterans memorial way in the new CUBE building
e) Promotes walking to daily activities and recreational opportunities;	The site is within walking distance of: Day care, schools, Coffee shops, Groceries, healthcare, and recreational facilities.
f) Supports a range of incomes;	The unit matrix allows a wide range of incomes live at the development.
g) Is a positive impact on views and scenery;	The developer has chosen not to increase the FSR of the site and has gone to great lengths to not negatively impact any existing view corridors.
h) Preserves and provides greenspace, trails and landscaping;	The site will host a community trail, a large amount of open space, and a playground and play area.

Building Design. <i>The application:</i>	Description of how the criteria are met
a) Exhibits high standard of design, landscaping and environmental sensitivity;	Buildings will strive to reach step 3 of the BC step code. Landscaping will focus on drought tolerant and native species.
b) Maintains a high standard of quality and appearance;	Buildings have been designed in a Scandinavian modern style
c) Includes articulation of building faces and roof lines with features such as balconies, entrances, bay windows, dormers and vertical and horizontal setbacks with enhanced colors;	Buildings faces are broken to break the massing down.
d) Avoids creating a strip development appearance;	yes
e) Satisfies Leadership in Energy and Environmental Design (LEED) certification (or accepted green building best practices);	No, But will be aiming to meet step 3 of the BC energy step code
f) Uses environmentally sensitive materials which are energy sensitive or have accepted low pollution standards;	Building materials will focus on resilience.
g) Builds and improves pedestrian amenities;	Many pathways have been designed to intersect the site.
h) Provides underground parking;	All parking will be surface
i) Applies CPTED (Crime Prevention Through Environmental Design) principles;	Yes
Transportation. <i>The application:</i>	Description of how the criteria are met
a) Integrates into public transit and closeness to major destinations;	the site is located along major transportation routes.
b) Provides multi-functional street(s);	the site is located along major transportation routes.
c) Prioritizes pedestrian and cycling opportunities on the public street system and through the site location that can provide an alternative to public road;	Again Many pathways have been designed to intersect the site and allow for both pedestrian and cycling routes through the site. One such pathway connects with an existing path along the north east of the property.
d) Provides or contributes towards trail system, sidewalks, transit facilities, recreation area or environmentally sensitive area;	Municipal pathway will travel across the site.
Infrastructure. <i>The application:</i>	Description of how the criteria are met
a) Includes stormwater techniques that are designed to reduce run-off, improve groundwater exchange and increase on-site retention;	Storm water retention and infiltration is planned for the site. see site servicing plan attached.
b) Utilizes renewable energy sources (i.e. solar, geothermal) within servable area to City standards;	no

Character & Identity. <i>The application:</i>	Description of how the criteria are met
a) Provides a positive image along waterfront areas and fronting road;	veterans memorial and mission will have vast landscape buffers
b) Is designed with quality and variety of features within the project (i.e. street furniture, street lights, signs, curb treatments);	Further details will be provided at DP
c) Provides public and private amenity space;	Playground and pathways will be provided.
d) Preserves heritage fixtures;	No
e) Orients to views, open space and street;	Yes, the buildings are oriented so that open space is highlighted.
Environmental Protection & Enhancement. <i>The application:</i>	Description of how the criteria are met
a) Protects riparian areas and other designated environmentally sensitive areas;	A large area of trees at the north east portion of the site will be retained.
b) Provides for native species, habitat restoration/improvement;	Planting strategy will help promote this
c) Includes tree lined streetscapes.	Yes, Deciduous trees will line all streets on the site.



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council

File No.: 0470-20/3900-00
REF00009

From: Chief Administrative Officer

Date: September 21, 2020

Subject: Comox Valley Regional District Referral CP 1C 20/RZ 1C 20 3L Developments Inc.

PURPOSE:

To respond to a referral from the Comox Valley Regional District (CVRD) for an OCP Bylaw amendment and a Zoning Bylaw amendment to facilitate the development of 780 housing units, 1,400 square meters of neighbourhood commercial and 97 hectares of open space/park.

CAO RECOMMENDATIONS:

THAT Council direct staff to respond to the attached referral recommending that the bylaws be rejected as they are inconsistent with the Regional Growth Strategy.

Trevor Kushner, BA, DLGM, CLGA, PCAMP
Interim Chief Administrative Officer

BACKGROUND:

The CVRD has referred an application to the City to consider amendments to the "Rural Comox Valley Official Community Plan Bylaw No. 337, 2014" and "Rural Comox Valley Official Community Plan Bylaw 2042, 1998" and to the "Rural Comox Valley Zoning Bylaw No. 520, 2019" to facilitate the creation of a new settlement node that would consist of 780 housing units, 1,400 square meters of neighbourhood commercial space and 97 hectares of open space/park on approximately 201 hectares of land owned by 3L Developments Inc.

Background information on the proposal, including the current OCP and zoning designations of the land and the applicant's development details are included in the attached referral package.

DISCUSSION:

Section 445 of the Local Government Act requires that the Regional District must conform with the Regional Growth Strategy (RGS). Specifically, section 445(1) requires that all bylaws adopted must be consistent with the regional growth strategy.

As noted in the referral package new settlement nodes can only be created through an amendment to the RGS. The proposed OCP and zoning amendments that have been referred to the City contemplate the development of a new settlement node which would be inconsistent with the RGS.

It is the opinion of staff that a new settlement node would be inconsistent with the general growth management principle of the RGS which is to focus growth in the municipal areas and the existing settlement nodes of Union Bay, Saratoga and Mt. Washington prior to creating new nodes or expanding municipal boundaries into the settlement expansion areas. There exists significant land in the municipal

areas and existing settlement nodes to accommodate the historic residential housing demand for some years to come. Accordingly, the proposal to develop at urban densities outside these identified growth areas should be considered premature at this point.

It is the recommendation of staff that the City not support the proposed amendments and recommends that the CVRD Board should reject the bylaws.

FINANCIAL IMPLICATIONS:

Outside of staff time, there are no direct financial implications with this referral.

As a participant of the RGS function the City supports the service through an annual requisition. In 2020 the requisition was \$163,482.

ADMINISTRATIVE IMPLICATIONS:

As participants in the RGS service City staff spend time throughout the year responding to simple referral requests related to minor development applications in the settlement expansion areas adjacent to municipal boundaries (typically variances to building setbacks and height). Staff also participate in regional projects through the RGS service such as the housing needs assessment and the upcoming poverty reduction strategy.

Key to the RGS service staff also attend RGS Technical Advisory and Steering Committee meetings as required.

Specific to this referral staff have spent approximately 10 hours reviewing the material, meeting with regional district staff and preparing this report.

ASSET MANAGEMENT IMPLICATIONS:

The proposal does not create any asset management implications for city services as the proposed development contemplates the use of private utilities.

STRATEGIC PRIORITIES REFERENCE:

Not specifically referenced.

OFFICIAL COMMUNITY PLAN REFERENCE:

The growth management policies of the current Official Community Plan (OCP) support the principles of Part 4 of the RGS and inclusion of Settlement Expansion Areas in the City through logical expansion of municipal boundaries. As noted above staff are of the opinion that such expansion would be premature at this time.

REGIONAL GROWTH STRATEGY REFERENCE:

As outlined in the attached referral and the discussion above the subject lands are designated Rural Settlement Area (areas outside core settlement areas) and Settlement Expansion Area (areas on the fringe of Municipal Areas that will become part of a Municipal Area through local boundary extension that maintains the policies of the RGS). These designations do not support the proposed OCP and zoning amendments to create a new Settlement Node.

CITIZEN/PUBLIC ENGAGEMENT:

There is no specific public engagement required by the City related to this referral request.

OPTIONS:

OPTION 1: THAT Council direct staff to respond to the referral recommending that the bylaws be rejected as they are inconsistent with the Regional Growth Strategy

OPTION 2: THAT Council request further information related to the application prior to providing comment.

OPTION 3: THAT Council direct staff to respond to the referral indicating support of the proposed bylaws.

Prepared by:



Ian Buck RPP, MCIP
Director of Development Services

Concurrence by:



Trevor Kushner, BA, DLGM, CLGA, PCAMP
Interim Chief Administrative Officer

Attachment No. 1 Referral Package

770 Harmston Avenue, Courtenay BC V9N 0G8
Tel: 250-334-6000 Fax: 250-334-4358
Toll free: 1-800-331-6007
www.comoxvalleyrd.ca



Bylaw Referral Form

File: 3350-20 /CP 1C 20

3360-20 /RZ 1C 20

3L Developments Inc., 0768816 BC Ltd.

Date Sent: July 3, 2020

Please comment on the attached bylaw for potential effect on your agency's interests. Section 475 of the *Local Government Act* (RSBC 2015 c. 1) (LGA) outlines that a local government must provide one or more opportunities for consultation with persons, organizations and authorities affected by the development of an Official Community Plan (OCP), or the repeal or amendment of an OCP. In keeping with Section 475, the Comox Valley Regional District (CVRD) wishes to ensure that all future consultations with applicable adjacent regional districts and municipalities, First Nations, school and improvement district boards, provincial and federal government agencies is considered early and ongoing as required by the LGA. You will note on the response form a number of choices that describe your agency's interests. All details that support your position are appreciated as are official legislative, governance and policy considerations that may affect the CVRD's consideration of this bylaw.

We would appreciate your response within thirty (30) days of July 3, 2020. If no response is received within that time, it will be assumed that your agency's interests are unaffected. If required, please contact the CVRD to assist you in determining the type of information that would be helpful or to better understand how the proposed bylaw amendments may impact land use and development. Should you have any specific questions regarding the proposed bylaw amendment, please contact Alana Mullaly at 250-334-6051 or by email to planning@comoxvalleyrd.ca.

Applicant:	3L Developments Inc., 0768816 BC Ltd.
Agent:	Rob Buchan
Civic address:	None assigned
Proposed Bylaw Amendments:	<p>To re-designate the subject properties to 'Settlement Node' and 'Rural Settlement Area' to enable their subdivision and development with residential use of various densities, commercial uses, park land, and private water and wastewater utilities.</p> <p>To rezone the subject properties to one or more zones that would allow for 780 housing units (335 single detached units each with provision for a secondary suite, 54 townhouse units and 56 multi-family units), 1,400 square meters of neighbourhood commercial floor area, and 97ha of open space (e.g. park land).</p>
Legal Description:	That Part of the NW ¼ of Section 10, Township 9, Comox District, Plan 552G, Lying West of Puntledge River, except that part in Plan

	<p>VIP70188 and EPP24391, PID 000-866-792; The south west ¼ of Section 15, Township 9, Comox District, Plan 552G, except that part shown coloured red on Plan 79 RW and except that part in plan VIP70188, PID 000-866-814;</p> <p>Lot A, Sections 10 and 15, Township 9, Comox District, Plan EPP23059, PID 028-915-194;</p> <p>That Part of the north ½ section 14, Township 9, Comox District, Plan 552G lying to the South of the North bank of the Puntledge River, PID 003-922-308;</p> <p>That Part of the south east ¼ of section 14, Township 9, Comox District, Plan 552G lying to the west of the east bank of the Puntledge River except those parts in Plans 8304 and 9343, PID 003-922-391;</p> <p>The south west ¼ section of Section 14, Township 9, Comox District, Plan 552G, except that part in Plan 9343 and except that part shown coloured red on Plan 829 R.W., PID 003-924-033;</p>
OCP Bylaws:	<p>Rural Comox Valley Official Community Plan Bylaw No. 337, 2014 Rural Comox Valley Official Community Plan Bylaw No. 2042, 1998</p>
Current OCP Designation:	<p>Rural Settlement Area and Settlement Expansion Area (Bylaw No. 337); Rural Area (Bylaw No. 2042)</p>
Proposed OCP Designation:	<p>Settlement Node (Bylaw No. 337) and Rural Settlement Area (Bylaw No. 337)</p>
Zoning Bylaw:	<p>Bylaw No. 520, being the “Rural Comox Valley Zoning Bylaw No. 520, 2019”</p>
Current Zone:	<p>Rural Twenty (RU-20)</p>
Proposed Zone:	<p>To be determined</p>

Other Information:

An application has been received to develop the above noted properties with 780 housing units (335 single detached units each with provision for a secondary suite, 54 townhouse units and 56 multi-family units), 1,400 square meters of neighbourhood commercial floor area, and 97ha of open space (e.g. park land). The proposal triggers the need for an amendment to the Regional Growth Strategy (RGS).

In 2018, the Board initiated an RGS amendment process to review 3L Developments Inc.’s proposal to re-designate the subject lands from “Rural Settlement Area” and “Settlement Expansion Area” to “Settlement Node” in order to develop the lands with 1,100 residential dwelling units and provide lands for public use (i.e. park). The Board adopted a consultation plan to consider the proposal as a standard amendment to the RGS.

A public information meeting was held and over 200 citizens attended. The RGS Steering Committee (i.e. Chief Administrative Officers for the CVRD and each member municipality) recommended, following analysis of the proposal by the RGS Technical Advisory Committee (i.e. CVRD and municipal planning staff), that the Board deny the proposed amendment on the basis of existing and approved housing supply within the Core Settlement Areas (i.e. a new Settlement Node was not needed to accommodate projected growth). The Board denied the application in October 2018.

In December 2018, the Board amended the implementation section of the RGS to state that an amendment to the RGS may be proposed by a member municipality, the CVRD Electoral Areas Services Committee, or the CVRD Board, including on behalf of an external agency or private land owner. Essentially, any proposed amendment requires a local government to bring it forward for the Board's consideration. No longer can a landowner make an application to amend the RGS directly to the CVRD Board. The idea is that the local government that is most likely affected by the proposed amendment (e.g. the lands are within the local government's planning area jurisdiction) should have an opportunity to consider how any given proposal to amend the RGS impacts the local OCP and zoning.

3L Developments Inc. has therefore submitted an application to the CVRD to amend the Rural OCP and Zoning Bylaw in order to develop a new Settlement Node comprising 780 residential units (335 single detached dwellings, 335 secondary suites, 54 townhouse units, 56 multi-family units), 1,400 square meters of commercial floor area, 97 hectares of open space (proposed to be park and trails), a "community room and gathering place", and a 10 hectare parcel for K'ómoks First Nation. The applicant has submitted the following studies in support of the application:

- Archaeological Overview Assessment, I.R. Wilson Consultants Ltd., August 2009
- Transportation Assessment, Bunt and Associates Engineering Ltd., October 2009
- Ecology and Wildlife Summary, FishFor Contracting Ltd., December 2009
- Floodplain Assessment, McElhanney Consulting Ltd., July 2018
- Geohazard Assessment, Base Geotechnical Inc., July 2018

The applicant proposes water and sewer *systems "to be provided and operated by on-site private utilities"*. The application package also notes that *"storm water (is) to be managed with an integrated storm water management plan"*. Minimum parcel sizes are not identified (Appendix A). The applicant states *"in responding to comments regarding the previous application, this OCP and rezoning proposal has set out to reduce the development foot print and maximize rural and green space...As a result it has less impact and protects more land"*.

Official Community Plan Designations

The majority of the subject properties are designated "Rural" under Bylaw No. 2042 (Rural Comox Valley Official Community Plan Bylaw, 1998). Note that these are the only lands in the electoral areas that still have a designation under the former OCP. The balance of the subject properties are subject to the current Rural OCP (Bylaw No. 337, being the "Rural Comox Valley Official Community Plan Bylaw No. 337, 2014") and are designated either "Rural Settlement Area" or "Settlement Expansion Area" (Appendix B).

Official Community Plan Bylaw No. 2042

3L Development Inc.'s proposal would require repeal of the "Rural" designation and replacement with a new designation under Bylaw No. 337. The "Rural" designation was intended to encourage land use patterns that minimize urban sprawl, ensure "appropriate and adequate" rural servicing, minimize potential negative impacts on the environment and the productive potential of adjacent resource lands, and support the provision of affordable housing appropriate to its rural setting. Permitted land uses include: residential (i.e. single detached, secondary suites, mobile homes), forestry, agriculture, manufacturing and processing. The minimum parcel size for subdivision (in the absence of public water and/or sewer systems) defaults to the minimum specified in the applicable zone (i.e. Rural Twenty – 20 hectares).

Official Community Plan Bylaw No. 337

The portions of the properties designated under Bylaw No. 337 are "Rural Settlement Area" and "Settlement Expansion Area". The Rural Settlement Area designation allows residential development with parcel sizes ranging between 4 hectares and 20 hectares. The Plan envisions that each new residential lot shall have its own potable water source (well) and its own septic system (with both onsite primary and secondary disposal lands identified). The intent of the Rural Settlement Area is to provide for rural living without causing fragmentation of rural lands or negative impact on working landscapes (e.g. agriculture, silviculture). One of the reasons for the minimum 4 hectare parcel size is to ensure that over the long-term lands proposed for subdivision will be self-sustaining and not require an unplanned extension of public water and sewer services.

The "Settlement Expansion Area" designation was created to identify lands with either the potential for increased density (once incorporated into a municipal area and connected to public water and sewer service) or historically developed lands that will require public servicing given historic densities and related on-site servicing challenges. Until such time as settlement expansion area lands may be incorporated in a municipality and provided with public water and sewer service, the lands have minimal development potential. For example, the OCP states that the minimum parcel size for subdivision is 4ha.

Zoning Bylaw No. 520

All of the lands are subject to Zoning Bylaw No. 520, being the "Rural Comox Valley Zoning Bylaw No. 520", adopted in 2019. The majority of the subject properties are zoned Rural Twenty (RU-20); one portion is zoned Upland Resource (UR-40), including a portion of the land identified by the applicant as K'ómoks First Nation "development lands". The RU-20 zone permits a range of principal uses, including single detached dwellings, agriculture, forestry, sawmills, wood processing, mineral extraction, crushing and screening. The UR-40 zone includes principal uses such as agriculture, silviculture, wood processing, firearm ranges, and mineral extraction, crushing and screening (Appendix C). Surrounding and nearby lands, particularly north of the Puntledge, are similarly zoned for rural density (e.g. on-site services) and land use (including Agricultural Land Reserve lands).

3L Development Inc.'s Proposed OCP Designations and Zoning Amendment

The applicant is proposing to re-designate the lands to "Settlement Node" and "Rural Settlement Area" under Bylaw No. 337 (i.e. eliminate the Settlement Expansion Area designation entirely) (Appendix A).

Settlement nodes are one of four types of “core settlement areas”: this is an electoral area designation that applies to the communities of Union Bay, Saratoga, and Mt. Washington. When the RGS was being developed, these communities were identified as existing settlements that could benefit from full public servicing and, if publically serviced, could have potential to accommodate additional rural density and uses. The scale and density of the Union Bay and Saratoga Settlement Nodes in particular was deemed viable to support, in future, provision of public utilities and services such as rural transit and access to elementary schools (and/or sufficient economy of scale to support bussing to schools). They are not contiguous with municipal areas nor are they intended to replicate all of the features and services that are found in a municipal area. New settlement nodes can only be created through an amendment to the RGS.

The applicant characterizes the proposed settlement node as follows:

“The Riverwood Settlement Node is an approximate 445 residential unit village. It incorporates a mix of housing forms including single family dwellings with Secondary Suites, Townhouses, Low Rise Apartments. Within this mix, it is contemplated that there will be rental housing, social and assisted housing opportunities. Riverwood will be a compact village scale neighbourhood that will include opportunity for living, recreating, working, playing and growing food. Riverwood is sited to protect the surrounding ecosystems and access to greenway, bikeway and trail systems.”

The applicant’s reference to “445 residential units” does not include the potential for 335 secondary suites.

Although the applicant has submitted a concurrent rezoning application, no zoning has been proposed (e.g. permitted uses, minimum parcel size for subdivision). Within the application package it is stated that *“the community facility along with trails, parks and allotment gardens will be provided as community amenities”*. Staff note that the Board has adopted a voluntary community amenity policy that would need to be considered if and when the Board considers the proposed zoning amendment. The appropriate time to consider any voluntary offer of community amenities is through the public re-zoning process. The applicant has also stated that a separate development parcel will be given to K’ómoks First Nation but no new OCP designation or zoning is proposed to enable its subdivision from the balance of the lands or development with uses other than what currently exists.

Water, Wastewater and Rainwater Management

As noted elsewhere, 3L Developments Inc. is proposing greenfield development (i.e. a new community) with private water and wastewater utilities owned and operated by a private entity. The properties are not within a local service area. Although the applicant has not yet provided any servicing details, staff note that many private water and wastewater services in BC are challenged in maintaining operations and infrastructure in accordance with provincial utility standards over the long-term. The CVRD has seen several recent examples of private utility operators approaching the CVRD to take over their private systems including Sandwick, King Coho, and Watutco. The Union Bay and Graham Lake Improvement Districts have also requested that the CVRD undertake conversion studies. None of the long term planning for the regional water and sewer systems has included development in this area, which would significantly increase the cost and operational impacts of extending community water and sewer to this location if requested by future residents.

The Board received a report from staff in September 2019 outlining some of the factors to be considered in both supporting development that relies on privately owned and operated community

utility systems and factors to be considered when approached by private utility operators with a request to take over service to a community. At present, there are two non-CVRD utility operators serving a population with more than 300 connections in the electoral areas (i.e. Union Bay Improvement District's water service – currently part of a provincially sponsored governance review, and Mt. Washington's water and sewer services). The majority of the private utility systems serve populations with fewer than 15 non-residential connections.

As noted in staff's September 2019 report, there are very few opportunities for the CVRD to influence private utility decisions, despite the CVRD potentially being required to take over those utilities in future. To be clear, the opportunity to consider whether development that relies on private utility servicing should be enabled is at the OCP amendment/rezoning stage. There is no opportunity at the subdivision stage or building permit stage.

In respect to rainwater management, the documents provided by the applicant are silent on how the proposed development will manage rainwater (although the application package states that "*storm water to be managed with an integrated storm water management plan*"). A Rainwater Management Plan will need to be developed that demonstrates how the proposed development will meet the rainwater management policies and objectives of the OCP. Additionally the applicant will have to demonstrate how the proposed development will meet the requirements of the Ministry of Transportation and Infrastructure's *TAC BC Supplement*, Chapter 1000. The proposed scale of development suggests that some level of community rainwater management infrastructure may be necessary to maintain the natural water balance of the development site. This would likely require either a private utility or the establishment of a local service area to construct, operate and maintain the community infrastructure. Again, staff highlights the concern with the long-term ability of a private utility to sustain this type and scale of infrastructure on behalf of a residential community.

Cultural values

The lands are within the territory of the K'ómoks First Nation. The applicant has provided an archaeological overview assessment, completed by I.R. Wilson Consultants in 2009. Note that it is not attached to this report as it identifies the location of archaeological sites. The author states that the overview assessment is intended to identify and assess heritage resource potential. It is not to be used as a detailed assessment or mitigation plan.

Multi-modal Transportation

The applicant states that "traffic sustainability measures including walking, cycling, car pooling and car sharing" will be incorporated in the development in accordance with Bunt and Associates' 2009 Transportation Assessment. Note that this report was prepared while the RGS was in preparation and prior to the current OCP but does reference the Comox Valley Sustainability Strategy. The report has not been updated to reflect the proposed number of residential units or commercial floor area, rather is based on a phased construction plan of 60 single detached dwellings in 2012 and 540 single detached dwelling units in 2022. The Bunt assessment proposes ideas to:

1. Encourage walking (i.e. "*Centrally located services (convenience shopping, daycare, etc.) to reduce the need to travel outside the neighbourhood; walkable access to a variety of transportation and community services; traffic calmed streets with (sic) achieve 20-30km/h operating speeds; an extensive, inviting and safe network of sidewalks and trails within the neighbourhood and connecting to destinations outside of the neighbourhood with good lighting, signage and way finding maps; pedestrian-permeable and/or small development blocks. Approximately half of the development land is dedicated as park land to ensure continued public access to the Puntledge River and Browns River Trail systems and other natural amenities of the area.*")

2. Encourage cycling (e.g. on-street bike lanes, multi-use pathways within the right-of-way or off-street paved multi-use pathways, connections to future cycling network, way-finding, bike racks, charging station for electric bikes and scooters).
3. Provide transit to key destination: No BC Transit service therefore the *“developer could provide a community shuttle van and operating funds for a private transit service”*.
4. Encourage car-pooling: *“the developer could include a community amenity space in the central transportation hub that includes a ‘Ride Share Board’ and/or internet access that would allow residents to match to other residents”*.
5. Encourage car sharing: *“the neighbourhood could potentially support two car-share vehicles...it may be that the development is too small or not sufficiently dense to be a good candidate (for a car share operator to invest)”*.
6. Discourage excessive parking supply.
7. Eliminate trips: *“high speed internet should form a key requirement for the development and it should be something delivered to each unit at time of purchase”* – the assessment includes this idea in the context of shopping online and working from home as means to eliminate trips.

While the assessment proposes some ideas for reducing the reliance on private vehicles it does not address how a greenfield residential development in a rural area achieves viable multi-modal connectivity or overcomes the challenges of economies of scale required to achieve modal shift. Staff note that many of the ideas suggested within the report are outside of the control of the developer and the CVRD and would instead rely on external agencies to alter rural standards of service provision (or require a CVRD service area establishment).

Parks, the Environment and Climate Change

The applicant is proposing a voluntary community amenity of dedicated land for public use, including Stotan Falls and the bed of the Puntledge River. The Board has adopted a voluntary community amenity policy that would need to be considered at the rezoning stage (i.e. following an amendment to the RGS to create a new settlement node). The applicant states that *“once Riverwood is rezoned, there will be public access to Stotan Falls and River trails”*.

Lands along the Puntledge River and Browns River (Puntledge Triangle) including Stotan Falls have been identified as a priority acquisition piece in the Rural Comox Valley Parks and Greenways Strategic Plan 2011 – 2030. The large contiguous park size being proposed would address a gap in the current parks and greenways system for larger nature parks that could provide recreation opportunities as well as provide sufficient size to protect wildlife habitat and ecological integrity. As such, the proposed parkland dedication meets the following specific park objective as per the Rural Comox Valley Parks and Greenways Strategic Plan 2011 – 2030:

Objective 2.2 – *“Secure access to community amenities and special features, such as Stotan Falls, swimming holes, beaches, fossil beds, cultural and historic sites.”*

If this proposal proceeds, staff will work with the applicant to refine the terms of the proposed park dedication, including assessment of the geohazard and floodplain considerations within the riverine and terraced systems and will report back to the Board accordingly.

The applicant has provided an “Ecology and Wildlife summary” prepared in 2009 by FishFor Contracting Ltd. If the rezoning application proceeds, an updated report will be requested per the CVRD’s Development Approval Information Bylaw.

In addition to the parks and open space policies, the OCP includes climate change policies. Adopted in 2014, the policies are primarily focussed on the reduction of greenhouse gas emissions and include targets for those reductions. Recognizing fossil-fuel burning transportation and home heating as the largest sources of emissions, the OCP directs the majority of rural development to existing settlement nodes where transit and active transportation infrastructure can be more readily provided. Conversely, the applicant is proposing a new Settlement Node in order to develop the subject lands. One of the fundamental principles of growth management in respect to mitigating climate change is to direct new development to existing developed areas. Compact development is infill development within existing core settlement areas with existing or planned infrastructure. It is difficult to suggest that greenfield development in the rural area on the fringe of a municipality is anything but urban sprawl that detracts from the ability to make the most efficient use of already developed lands and infrastructure.

The applicant states that through the use of covenants (i.e. private contracts between the CVRD and individual landowners) the dwellings will be required to be constructed to “Built Green” standards. “Built Green” is a third-party, non-profit organization that promotes and certifies energy efficiency in new construction. BC has introduced the “Energy Step Code”: these are performance requirements for new construction. The goal is to move BC towards net zero energy readiness by 2032. In the meantime, local governments have the authority to require that new construction meets one or more steps of the Energy Step Code as an alternative to the BC Building Code’s prescriptive energy efficiency requirements. Staff do not foresee the need to introduce covenants (which take more local government resources to monitor and enforce than public law such as requirements of the Building Bylaw). Rather, compliance with the Energy Step Code will assure that new buildings are performing as advertised.

Housing and Affordability

The applicant states that the creation of a new settlement node will augment housing supply and therefore contribute to increased housing affordability in the Valley.

“We suggest that not all of the capacity for new housing identified in the RGS may be easily or readily developed. One solution to this is to increase the sources of new housing through an additional settlement node so that additional housing is actually produced. ...As long as the core areas are actually approving sufficient development, the new settlement node would augment the housing produced in the core hopefully with the result working towards a better balance of supply and demand.”

The applicant does not provide any detail on how the proposed housing units will be made affordable. To be clear, “affordable” means that household shelter costs equate to less than 30 per cent of total before-tax household income. Increasingly, however, affordability calculators include consideration of a household’s transportation costs. The findings of our Housing Needs Assessment include a strong connection between housing and transportation needs. For example, if a household must have a private vehicle to travel to work/school/services the household’s costs increase. Housing location is a key factor in a household’s ability to use travel modes other than private vehicles. As the subject properties are not within a BC Transit service area, households will not have the option to swap a vehicle for a transit pass in order to improve household affordability. It is also important to consider the impact of proposed private utilities on household costs and the degree to which this type of servicing impacts the overall affordability of housing. Finally, the property is outside of the Courtenay Fire Protection District: households may experience increased home insurance premiums.

The soon to be completed Regional Housing Needs Assessment identifies the gaps that have been created in our reliance on market housing to achieve true affordability. There is a need for more non-market housing, particularly dedicated rental housing (i.e. purpose built rental). The services that can readily improve household affordability are generally not found in rural areas.

Growth Management

The applicant states that the *“Riverwood Settlement Node is key to the ability of the Comox Valley Regional District to achieve several of its important regional growth management...goals”* and that the proposal is *“consistent with many of the CVRD’s growth management policies”*. The applicant continues that the proposal *“does not create additional planned settlement areas; rather it simply shifts planned growth from one part of the property to another part”*. The applicant suggests that the removal of lands from the future, municipal land base (i.e. settlement expansion area lands) is akin to the creation of a new settlement node in the rural areas.

To be clear, the RGS and both OCPs designate the entirety of the subject properties for rural uses and density (until such time as the Settlement Expansion Area portion may be incorporated into a municipal area). The applicant’s proposal does, in fact, alter the growth management scheme for the subject properties as well as the Region as a whole (including proposal of a different future municipal boundary). As noted previously in this report, settlement expansion areas were identified as either having existing residential density that may require public water and sewer servicing in the future to avoid an environmental or health crisis, or because of their potential (once incorporated in a municipality and serviced) to absorb additional density. In the meantime, development in the settlement expansion area lands is limited and change that would increase density, impact or intensity of use is not envisioned (i.e. OCP identifies a minimum 4ha area parcel size for subdivision).

Also noted previously, settlement nodes are not intended to replicate the density and related services found within a municipal area. Creation of a new Settlement Node within the rural area before the existing settlement nodes or municipalities have reached build-out is not consistent with the growth management objectives of the RGS.

3L Development Inc.’s proposal to “shift planned growth” is regionally significant in that investment decisions by private landowners, local government and higher level governments (e.g. land use and infrastructure development) will be affected. Shifting the location for growth potential will also shift or detract from the infrastructure opportunities and needs within existing Core Settlement Areas. These are the same arguments that were presented to the Board in 2018 in the context of 3L Development Inc.’s RGS amendment application. Since the Board last considered a proposed new settlement node, region-specific population, housing and employment data has been collected (through the Regional Housing Needs Assessment project in 2019 and 2020) and re-confirms that, on balance the Region is building enough housing for its growth needs. The Region is challenged by a lack of truly affordable housing that the market has not, to date, been able to provide.

Bylaw Referral Files CP 1C 20 & RZ 1C 20

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Sincerely,

A. Mullaly

Alana Mullaly, RPP, MCIP
Senior Manager of Sustainability and RGS
Planning and Development Services Branch

Attachments: Appendix A – “3L Development Inc.’s Application”
Appendix B – “OCP designation map”
Appendix C – “RU-20 and UR-40 zoning”

At its regularly scheduled meeting of June 23, 2020, the Comox Valley Regional District Board endorsed forwarding the proposed bylaw(s) to the following agencies as listed below. As part of this motion, it was decided to circulate this referral to your office for comments in order to enable you to take the proposed development into consideration as part of the future expansion of your operations.

AGENCY AND FIRST NATIONS REFERRAL LIST

Pursuant to Section 475(2) and (4) of the *Local Government Act* (RSBC, 2015, c. 1), this list specifically considers whether consultation is required with the listed agencies. Those denoted with an ☒ will receive a referral of the proposal prior to a public hearing.

First Nations

<input checked="" type="checkbox"/>	K'ómoks First Nation	<input checked="" type="checkbox"/>	Homalco Indian Band
<input checked="" type="checkbox"/>	We Wai Kai First Nation	<input checked="" type="checkbox"/>	Wei Wai Kum First Nation of the Kwiakah Treaty Society
<input checked="" type="checkbox"/>	Laich-Kwil-Tach Treaty Society		

Provincial Ministries and Agencies

	Agricultural Land Commission		Ministry of Municipal Affairs and Housing
<input checked="" type="checkbox"/>	BC Assessment		Ministry of Energy & Mines
	BC Parks	<input checked="" type="checkbox"/>	Ministry of Forests, Lands and Natural Resource Operations and Rural Development
<input checked="" type="checkbox"/>	Ministry of Environment and Climate Change	<input checked="" type="checkbox"/>	Ministry of Transportation and Infrastructure
<input checked="" type="checkbox"/>	BC Transit		Ministry of Jobs, Tourism & Skills Training (responsible for Labour)
	Ministry of Agriculture	<input checked="" type="checkbox"/>	Ministry of Indigenous Relations and Reconciliation
<input checked="" type="checkbox"/>	BC Hydro		

Local Government

<input checked="" type="checkbox"/>	Comox (Town of)		Alberni-Clayoquot Regional District
<input checked="" type="checkbox"/>	Courtenay (City of)		Strathcona Regional District
<input checked="" type="checkbox"/>	Cumberland (Village of)		Regional District of Mount Waddington
	Islands Trust		Regional District of Nanaimo

Bylaw Referral Files CP 1C 20 & RZ 1C 20Page 12**Other**

<input checked="" type="checkbox"/>	Advisory Planning Commission Area C	<input checked="" type="checkbox"/>	Vancouver Island Health Authority (Environmental Health)
<input checked="" type="checkbox"/>	Advisory Planning Commission Area B	<input checked="" type="checkbox"/>	Advisory Planning Commission Area A
<input checked="" type="checkbox"/>	School District No.71 (Comox Valley)	<input checked="" type="checkbox"/>	Coalition to End Homelessness

Development Proposal Referral Form
File: 3350-20/CP 1C 20
3360-20/RZ 1C 20
3L Developments Inc., 0768816 BC Ltd.
(Planner: A. Mullaly)

<input type="checkbox"/> Approval recommended for reasons outlined below	<input type="checkbox"/> Interests unaffected or general comments related to this development proposal outlined below
<input type="checkbox"/> Approval recommended subject to conditions outlined below	<input type="checkbox"/> Approval NOT recommended due to reasons outlined below

[illegible]

Signed By: _____ Title: _____

Agency: _____ Date: _____

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Appendix A Page 1 of 228

Planning Application

Property information (Refer to your tax assessment notice or certificate of title.)

Legal description	See Attached.
Civic address	
PID	BC Assessment roll No.

Application type (if more than one application is needed, check the additional applicable boxes.)

Bylaw amendment		
<input checked="" type="checkbox"/> Official community plan	<input checked="" type="checkbox"/> Zoning bylaw (i.e., rezoning)	
Development permit		
<input type="checkbox"/> Aquatic and Riparian Habitat	<input type="checkbox"/> Eagle Nest	<input type="checkbox"/> Blue Heron Nest
<input type="checkbox"/> Shoreline Protection Devices	<input type="checkbox"/> Steep Slopes (Hazardous Conditions)	<input type="checkbox"/> Farm Land Protection
<input type="checkbox"/> Mt. Washington mixed use development	<input type="checkbox"/> Union Bay Tourism Highway Commercial	<input type="checkbox"/> Kensington Comprehensive Development
<input type="checkbox"/> Commercial and Industrial (Form & Character)		
Variance		
<input type="checkbox"/> Development variance permit	<input type="checkbox"/> Board of variance	
Others		
<input type="checkbox"/> Temporary use permit	<input type="checkbox"/> Site specific amendment to floodplain	<input type="checkbox"/> Strata conversion
<input type="checkbox"/> Home occupation, bed and breakfast...	<input type="checkbox"/> Temporary occup. of additional dwelling	<input type="checkbox"/> Property information request

Owner information

Name(s)	3L Developments, 0768816 BC Ltd. Company			
Mailing address	Personal Information Removed			
City	Province	Postal code	Personal Information Removed	
Phone(s)	Email	Personal Information Removed		

Applicant information (If the applicant is not the owner(s), complete this and the agent authorization sections. All communication will be forwarded to the applicant only.)

Name(s)	Rob Buchan Company iPlan			
Mailing address	Personal Information Removed			
City	Province	Postal code	Personal Information Removed	
Phone(s)	Email	Personal Information Removed		

Agent authorization (Complete only if the applicant is not the owner(s).)

I/we, (owner's name)	Personal Information Removed		
declare that I am/we are the property owner(s) noted on this form, and hereby authorize			
(agent's name)	Rob Buchan to act as agent in the matter of this/these application(s).		
Owner's name 1	Signature		
Owner's name 2	Signature		


All owners shown on the certificate of title must sign. Attach a separate page with additional signatures.

Appendix A Page 2 of 228

Development proposal (Describe the present and intended uses, and reasons for proposal. Attach additional pages if needed.)**Provincial site profile**

Section 40(1) of the *Environmental Management Act* requires a site profile to be completed with an application when the applicant knows, or reasonably should know, that a site has been used or is being used for commercial or industrial purposes. If any activities found in Schedule 2 of the *Contaminated Sites Regulation* apply to the subject property, the applicant is required to complete a site profile. Schedule 2 and the site profile application form are available in the "land remediation" section of the BC Government web site (www.gov.bc.ca), as well as at the Comox Valley Regional District (CVRD). If any of the listed activities in Schedule 2 applies, contact the CVRD. If any of the listed activities in Schedule 2 does not apply, complete the following declaration:

I hereby declare that, based upon my current knowledge of the subject property, no Schedule 2 activities have been carried out.


Signature 	Personal Information Removed	Date
		03 08 20

Notice of collection of personal information

Personal information on this application form is collected for the administration, enforcement and processing of this application. The personal information is collected under the authority of the *Freedom of Information and Protection of Privacy Act* (FIPPA), *Local Government Act* and CVRD bylaws. All documentation, drawings, plans and information submitted in support of this application can be made available for public inspection pursuant to the FIPPA. For questions about the collection of personal information, please contact the corporate legislative officer at 600 Comox Road, Courtenay, BC or at 250-334-6007.

Declaration

I, the undersigned, have attached the required documentation, as noted on the submission checklist, along with the required application fee and hereby agree to submit further information deemed necessary for processing this application. I hereby certify that the documentation and information provided with respect to this application is full and complete¹ and is, to the best of my knowledge, a true statement of the facts related to this application. Lastly, I hereby acknowledge that an incomplete application will not be processed and will be returned to me, and that any fees paid are non-refundable except as noted in the Planning Procedures and Fees Bylaw.

Signature 	Personal Information Removed	Date
		03 09 2020

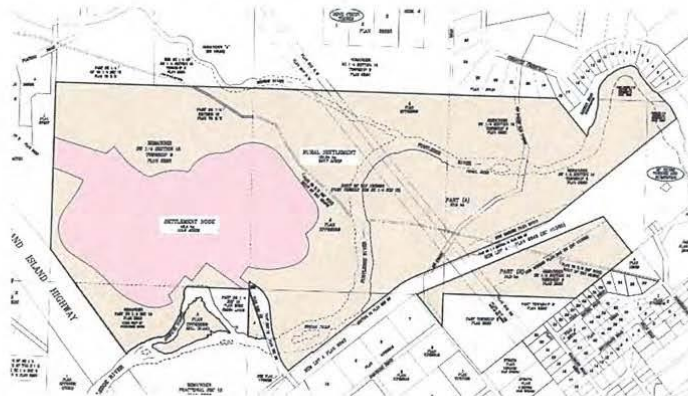
¹ A complete application includes: application form properly filled out and all fees paid; plans and supporting information compiled by applicant into a complete, required set; compliance with existing development agreements on certificates of title and conditions of previous planning approvals; identification of existing easements and rights-of-way. Incomplete applications will not be processed and will be returned.

Office use

PSR	Date received	Received by
	Fee \$	Security deposit \$
Planning staff	Date assigned	Assigned to



Request for Regional Growth Strategy Amendment.



And

Application for Official Community Plan, and Rezoning Amendments



March 2020

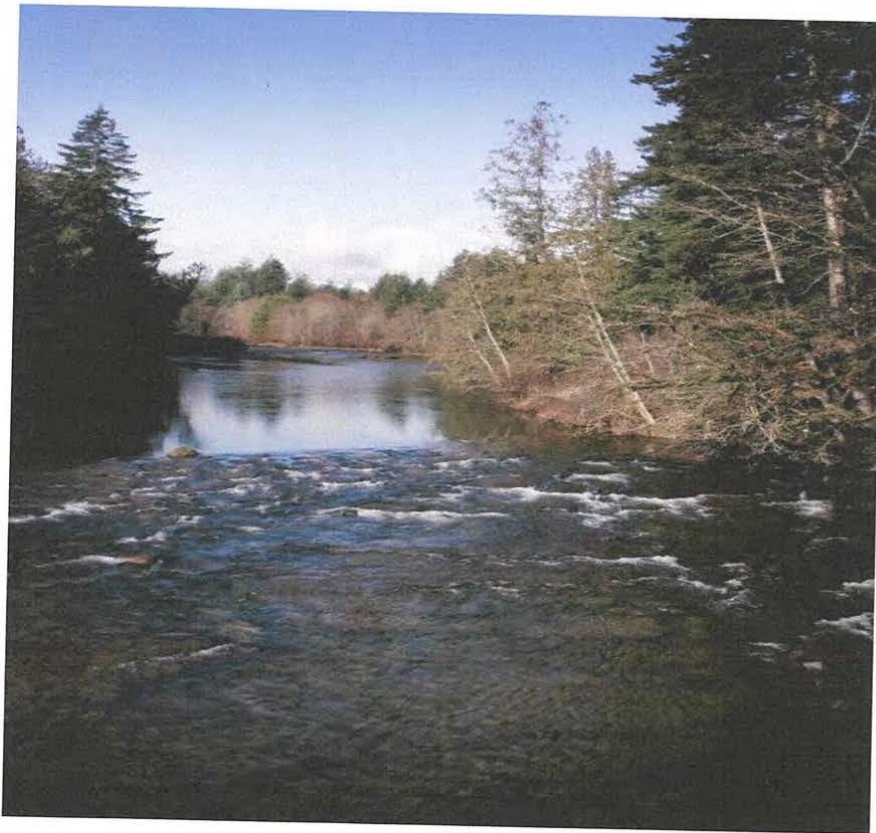
iPlan Planning and Development Services



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Introduction

Riverwood is an approximately **201 hectare (500 acres)** master planned community in the Comox Valley. The proposed density is reduced from the previous proposed dwelling units to 335 single family lots with Secondary Suites, 54 Townhouses and 56 medium density multifamily housing, with a modest neighbourhood commercial village green centre to meet local demand for retail and to serve as a neighbourhood gathering place.



At build out, Riverwood will consist of 335 single family lots secondary suites, a mix of low (54 units) and medium density (56 units) multifamily housing (with provisions for assisted living and special needs units) and contain 1,400 square



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metres (15,000 square feet) of neighbourhood commercial space in a central village green (see attached land use plan).

Riverwood is committed to dedicating approximately half of the total site area which will place about 97 hectares into public ownership and create a network of public trails. This significant park and trail dedication will include the Puntledge and Brown's River beds and adjacent green belts. Acquisition of these lands are a priority objective in the Comox Valley Regional District's Parks and Greenway Strategy which calls for the acquisition of the Puntledge triangle trail system and Stotan Falls. These dedications would place these important lands with ecological and recreational values into the control and stewardship of the Comox Valley Regional District and enable achieving a number of regional policy goals.



K'omoks First Nation

The Riverwood team is committed to undertaking meaningful consultations with the K'omoks First Nation and will engage as the First Nation wishes. To this end, the proponents have been proactively approaching the First Nation and will continue in this spirit.



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Development Approach

In responding to comments regarding the previous application, this OCP and Rezoning proposal has set out to reduce the development foot print and maximize rural and green space. Accordingly, only 25% of the site is proposed for development. Of the remaining land, 49% is proposed as park land, 21% is proposed as rural settlement land, and a 10 hectare parcel (5%) is identified as a lot proposed for the K'omox First Nation. The proponent is committed to work with and support the Nation in their aspiration for the future use of that parcel. While we have presented a specific proposal, we look forward to discussions that can lead to detail changes recommended through the process.

The proposed development has been designed to protect environmental, recreational and archaeological values and to minimize impacts. Accordingly, a number of professional reports have been prepared for an earlier, larger development proposal. This new, smaller scale proposal reduces the previous development footprint. As a result, it has less impact and protects more land. The relevant assessments include: archaeology, traffic, environmental and ecological, and Geohazard. The development will follow the recommendations in these assessments. In particular, the following will be actioned as the development proceeds:

- 1) An archaeological review where the development footprint includes areas of moderate to high archaeological potential.
- 2) Environmental field reviews to determine if there are any western hemlock - western red cedar / deer fern or douglas-fir/ sword fern plant communities on the property and if there are any Broadwhorl Tightcoil slugs on the property.
- 3) Detailed riparian assessment of the headwaters of stream 13 to ensure no net loss of riparian habitat.
- 4) Connection to the greenways located to the north and south.
- 5) Sight line improvements (vegetation removal) and pavement marking improvements in accordance with the Traffic Assessment.
- 6) Incorporation of traffic sustainability measures including walking, cycling, car pooling, and car sharing per the Bunt Traffic Assessment.



- 7) Compliance with the flood plain set back and flood construction levels recommended in the McElhanney Flood Plain Analysis.

Inclusionary, Affordable and Sustainable Housing

The proposed 335 single family dwellings with suites, 110 low and medium density housing units will make a meaningful contribution to the supply of housing in the Comox Valley. Recent reports in the media and from the CVRD highlight the lack of supply as being a contributor to the increasing housing prices and the resulting affordability challenges in the Comox Valley.

Riverwood proposes to have secondary suites included in the zoning bylaw which will enable a significant contribution to the affordable rental housing stock. The advantage of secondary suite housing is that it does not require any government funding and results in affordable housing throughout the development rather than being segregated into pockets of affordable housing. They also function to assist homeowners in paying their personal mortgages and/or supplement household incomes.

Riverwood also proposes to deliver sustainably built housing that meets or exceeds Builtgreen standards. A Section 219 would be registered on title prior to adoption of the rezoning bylaw to ensure that all homes built in Riverwood are certified Builtgreen.

Servicing

The Riverwood Settlement Node will be serviced as follows:

- 1) Vehicle and bicycle traffic will connect to adjacent public roads.
- 2) Bicycles and pedestrians will be provided with internal routes and connections to external routes.
- 3) Hydro Electric service is available and will be used for servicing the development.
- 4) Sanitary Sewer and water service to be provided and operated by on-site private utilities.
- 5) Stormwater to be managed with an integrated storm water management plan.



The Proposed RGS Amendment

It is proposed to remove the Settlement Expansion area in the south east area of the site and replace that designation with Rural Settlement. It is also proposed to remove an area of Rural Settlement in the north west part of the plan and replace it with Settlement Node. These changes essentially relocate planned settlement lands (see attached plan). We propose the following RGS text amendment to accompany the map amendment:

"MG Policy ID-5 – Riverwood Settlement Node

The Riverwood settlement node is an approximate 445 residential unit village. It incorporates a mix of housing forms including single family dwellings with Secondary Suites, Townhouses and Low Rise Apartments. Within this mix, it is contemplated that there will be rental housing, social and assisted housing opportunities. Riverwood will be a compact village scale neighbourhood that will include opportunity for living, recreating, working, playing and growing food. Riverwood is sited to protect the surrounding ecosystems and access to greenway, bikeway, and trail way systems.

Riverwood Settlement Development Policies include:

- 1) Respond to climate change by requiring all development to meet Builtgreen standards, be solar ready, and provide transit facilities, bicycle facilities, Electric Vehicle charge stations, and trail facilities within the development and linking to the surrounding networks.
- 2) Ensure a mix of housing forms is provided.
- 3) Ensure affordable housing is provided.
- 4) Provide opportunity for Assisted and Special Needs housing.
- 5) Develop in accordance with an Integrated Storm Water Management Plan.
- 6) Provide opportunities for growing food in allotment gardens.
- 7) Develop with measures to mitigate the risk of Interface Fire Hazard.
- 8) Provide a neighbourhood centre for social gatherings.
- 9) Provide neighbourhood shopping services."

The rationale for this new Settlement Node is attached as Appendix A.

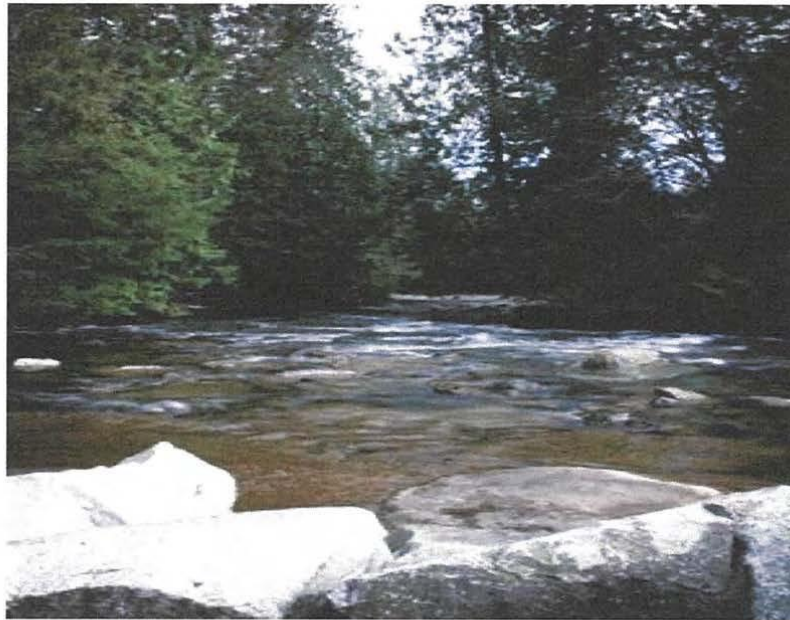
Development Summary:

1. The Riverwood Plan encompasses approximately 201 hectares.
2. Ecological Values will be protected with significant park land dedication

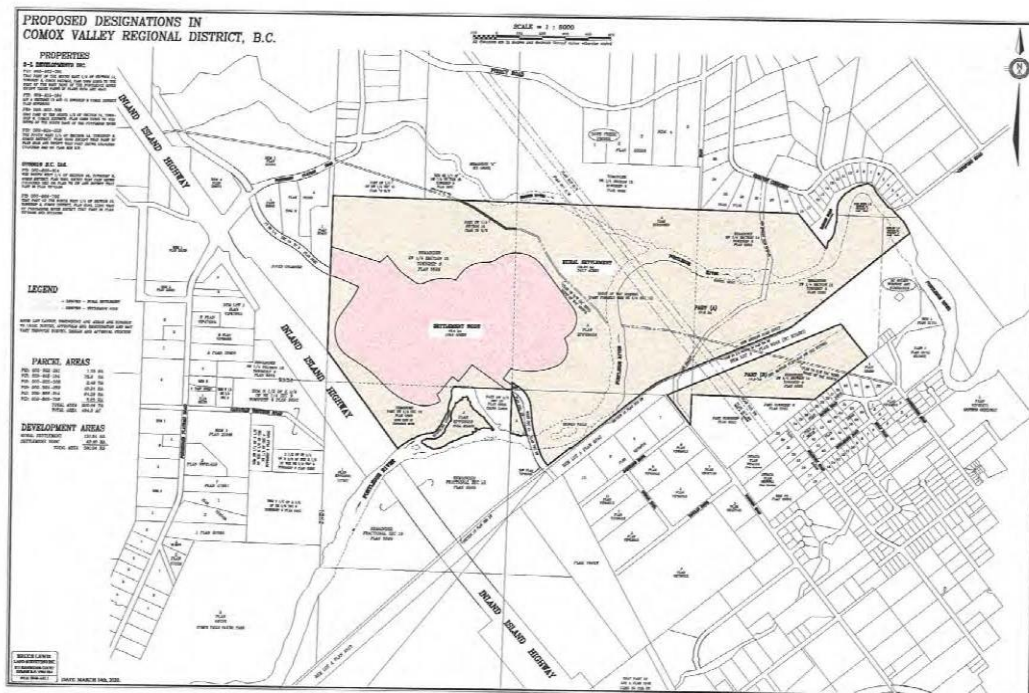


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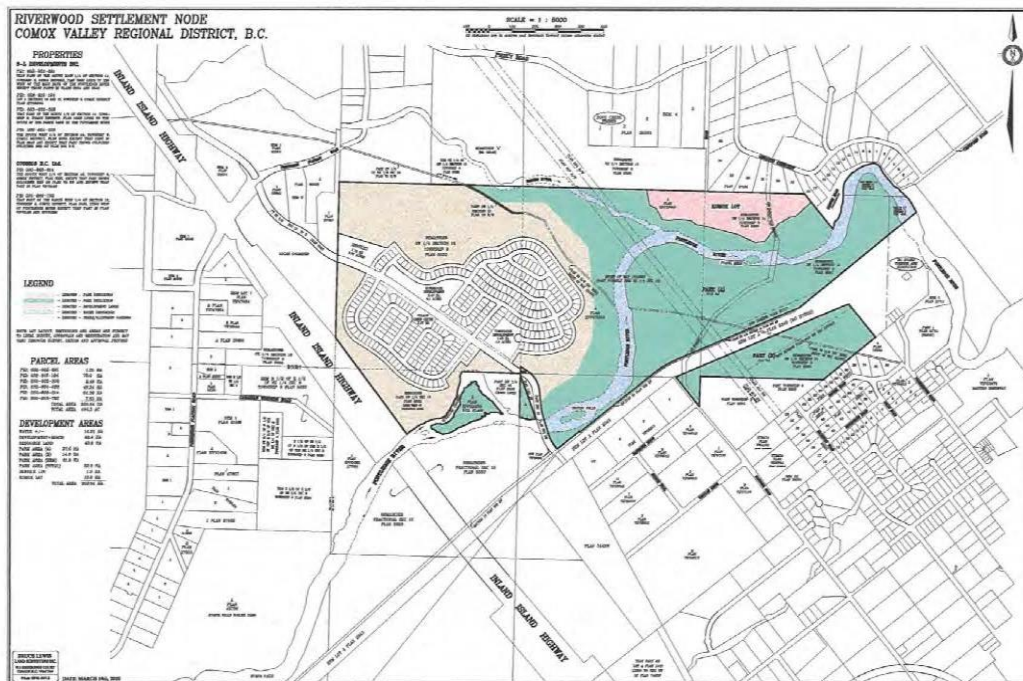
- comprising 49% of the lands.
3. Development will be clustered on a small footprint comprising 25% of the lands.
 4. Housing Density will be limited to 335 single family lots with suites and two areas of low and medium density housing comprising 110 residential units.
 5. Affordable housing will be provided through inclusionary zoning which will allow a secondary suite in each house.
 6. Assisted and special needs housing will be accommodated in the low and medium density housing areas.
 7. All housing will be constructed and certified Builtgreen.
 8. Local retail services will allow residents to walk to shop at the neighbourhood village green.
 9. The Village Centre will include a community room and gathering place.
 10. A perimeter trail and green way will include allotment gardens and serve as an interface fire hazard defense measure.
 11. Dedicated Parkland and trails will achieve the CVRD's park and greenway goals for this property.
 12. Private sewage and water treatment plants built and operated to provincial standards.
 13. The regional road network will be enhanced with the dedication of road through the property. The development can be accommodated by the existing traffic network.
 14. The Development will incorporate sustainable transportation features recommended by the Bunt Traffic Assessment.
 15. The proponent will support the K'omoks First Nation in its aspirations for the land proposed for its ownership.



For more information please contact iPlan Planning and Development Services
250-884-0972



RIVERWOOD
 COMOX VALLEY





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APPENDIX A

Rationale for the New Settlement Node

There are several reasons for amending the RGS and OCP to designate a new settlement node. In general these are:

- 1) a need for additional new housing stock to reduce an existing supply demand imbalance that is responsible for worsening the housing affordability issue in Comox Valley;
- 2) The existing Settlement Expansion area identified on the subject property has several issues that support relocating the planned growth area on the property.
- 3) The proposed Riverwood Settlement node is key to achieving many regional goals identified in the RGS, OCP, Transportation Road Network Plan and the Parks and Greenway Strategy. Without the development of this new node, these goals may prove difficult or unlikely to be achieved.
- 4) The proposed node is consistent with many other growth management principles in the RGS and OCP.

These reasons are discussed below.

RGS Policy

The RGS cites a number of trends that help shape the RGS goals and policies. Several of these trends support the new Settlement Node we propose for the Riverwood Lands.

- 1) The third trend (RGS Page 9) notes the increasing trend towards unaffordable housing. It is a fact that when supply does not keep pace with demand, prices increase. A February 24, 2020 report from the Vancouver Island Real Estate Board concludes that greater demand and lack of housing supply continues to make housing prices unaffordable (Troy Landreville). This is making the housing affordability issue more critical and supports the need for more housing development. The CVRD's Housing Needs Project consultants, Neil Lovitt and Sarah Ravlic, have confirmed the unaffordability of single family dwellings in the Comox Valley in their recent report.

A new settlement node will contribute to housing supply. While the RGS notes sufficient capacity for new housing within Valley, it would seem that the delivery of new housing is not keeping pace. We suggest that not all of the capacity for new housing identified in the RGS may be easily or readily developed. One solution to this is to increase the sources of new housing through an additional settlement node so that additional housing is actually



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produced. This would not interfere with the goal to have most housing directed to the core areas. As long as the core areas are actually approving sufficient development, the new settlement node would augment the housing produced in the core hopefully with the result working towards a better balance of supply and demand.

- 2) The proposed Riverwood settlement node will open up a closed logging road for public access. Development of these lands will improve the Regional Transportation network by offering more direct routes for some traffic. (Trend 6, p 10). The Region's transportation plan identifies a north south road through Riverwood and a bicycle lane through the land. Development of Riverwood would facilitate these plan goals.
- 3) The Riverwood settlement node would be the closest settlement node to the core areas of Courtenay, Comox, and Cumberland compared to the other designated settlement nodes.
- 4) This node will allow the CVRD to realize one of its important parks and greenway strategy goals which is to have a greenway and trail system through the property (Trend 4, p 9)
- 5) The Riverwood Settlement node offers an opportunity for a low impact development being very level and with an existing impacted ecosystem due to recent logging. (RGS Trend 4, p 9)
- 6) The Riverwood Settlement node offers the opportunity for food production within three minute walk on surrounding rural resource land (RGS Trend 8, p 10)
- 7) Access to on site and regional trail system and allotment gardens works towards the public health goals in the RGS. (RGS Goal 10, p 11)
- 8) The site offers an opportunity to support the RGS's goal of supporting First Nations economic development opportunities through a gift of land and opportunity for employment opportunities (RGS Goal 11, p 11)

Other reasons supporting The Riverwood Settlement node:

The overarching RGS vision statement reads:

The Comox Valley will continue to evolve as a region of distinct, well-connected and well-designed urban and rural communities. As stewards of the environment, local governments, the K'ómoks First Nation, public agencies, residents, businesses and



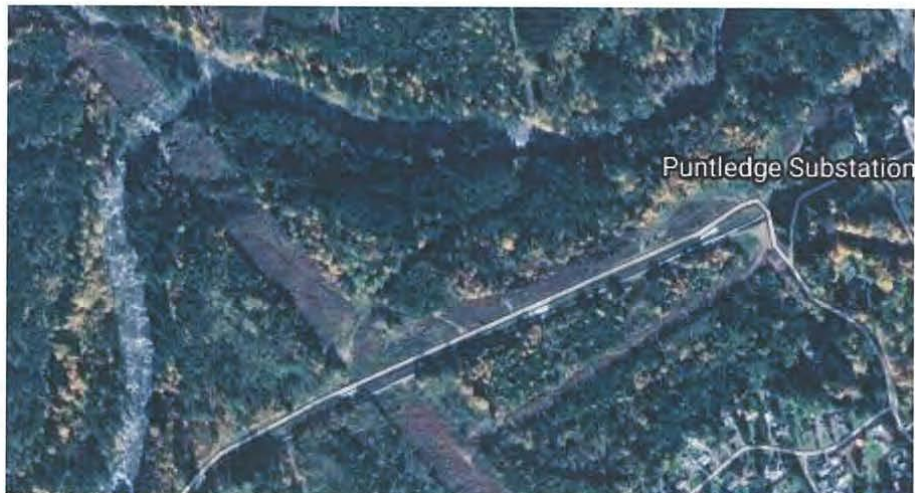
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community and non-governmental organizations will work collaboratively to conserve and enhance land, water and energy resources and ensure a vibrant local economy and productive working landscapes.

The Riverwood settlement node would fit this vision as one of the distinct communities and one that conserves and enhances land and environmental resources.

Once Riverwood is rezoned, there will be public access to Stotan Falls and River trails. Realization of the CVRD's parks and Greenway strategy goals for the trail network through the property and RGS Objective 2-D (Ensure access to parks, recreation areas) would be realized with the development of the property as a settlement node. Without that rezoning, this goal may not be achieved.

The suitability of the lands currently designated for urban expansion south east portion of the site is questionable. First, it currently hosts areas of significant mature forest and forest ecosystems. This would be impacted with development (this is in conflict with RGS Objective 2-A). The Riverwood Node would allow that ecosystem to remain in its current state. Second, access would be impractical with the Penstock dissecting the land. Third, there is a major hydroelectric transmission line dissecting the property (See photo). Residential use under or near these lines should be avoided because of electromagnetic radiation concerns. The presence of the Penstock and the main hydro transmission lines would also present a negative visual element in a new neighbourhood.





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One of the RGS's goals is to avoid sprawl. The urban expansion lands currently designated on the lands are proximate to the City of Courtenay and adjacent suburban development. We are proposing that the intended growth designated for those lands be shifted to another part of the Riverwood lands as a settlement node. The relocation of the planned development does not increase development in the Comox Valley. It simply relocates it across the Puntledge River onto a more suitable site that protects ecological values and realizes recreational values. This node would be separated from the adjacent urban and suburban development by a large park and green belt that is called for generally by the RGS and the Parks and Greenway strategy.

The RGS sets policies regarding farming and food production as follows:

Objective 6-A: Protect land for existing and future agriculture and associated activities and allow for the growth and expansion of such activities.

- Rural Areas: Additional farming occurs in non-ALR rural areas. There is the potential for innovative agricultural enterprises and location of agricultural- supported activities in these areas, such as food processing plants, storage and distribution centres (e.g., farmers markets).

The Riverwood Settlement Node is situated adjacent lands that will be assessed for agriculture and opportunities for growing and food system activities.

The RGS encourages the use of electric vehicles as follows:

- 8B-7 In order to promote the use of electric vehicles, local governments should develop incentives and infrastructure for low-emissions vehicles such as recharging infrastructure and priority parking.

The Riverwood Settlement node will include public EV charging stations.

The RGS calls for attention to interface fire hazard protection as follows:

- 8F-7 Address fire protection needs for developments in the interface areas where there is a high risk of forest fires.

The location of Riverwood provides a number of advantages for interface fire hazard protection. For example, the Inland Island Highway provides a significant fire break as does the Browns and Puntledge rivers. This makes the settlement node a well protected area. In addition, a perimeter trail around the node will provided an



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additional fire-break and ability for firefighters to defend structures from interface fire. Further, an area around the node will be prepared for agriculture and on-site vegetation from clearing will be used as soil amendments to improve that soil when practical.

The RGS's first Growth Management Policy is to "Protect key natural and ecological features throughout the Comox Valley". Riverwood provides a unique opportunity to protect key green ecological corridors.

The Regional District's Transportation Road Network Plan shows the Duncan Bay main as part of the road network and bicycle network. Development of this settlement node will facilitate securing and improving these transportation elements thus improving the connectivity of the regional system and enable shorter trips/fewer GHG emissions.

The Comox Valley Official Community Plan contains a number of policies that the Riverwood Settlement node would assist in achieving.

CVOCP Natural environment – objectives:

1. To identify and protect unique natural features and characteristics of the Comox Valley.
2. To protect, restore and enhance coastal shorelines, streams, wetlands and the marine environment.

Riverwood would protect and preserve a critical segment of the Valley's green corridor and trail system along with the Puntledge and Browns river ecosystems.

CVOCP Parks and Greenway -- Objectives:

The CVOCP has specific park and greenway policies that Riverwood would assist in achieving as follows:

"To recognize the parks and greenway system as a vital part of the existing CVRD network of parks, open space, trails and recreational facilities.

To improve and maintain public access to water bodies – lakes, streams and the foreshore."

Development of the Riverwood Settlement node will provide access to the Puntledge River and Stotan falls.



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CVOCIP Transportation Objectives:

The CVOCIP calls to "increase opportunities for rural residents to walk, bicycle and use public transit". The trails within Riverwood and along the Puntledge and Browns Rivers will increase walking opportunities. Improvement and access to the Comox Main will secure a portion of the planned bicycle route through the property. Public transit facilities will be provided within Riverwood.

Development of Riverwood would help achieve the CVOCIP policy regarding growth. It sets the following settlement node objectives:

Settlement Nodes – objectives:

1. To implement the CVRD regional growth strategy by directing most growth in the electoral areas of the CVRD to the settlement nodes
2. To encourage residential intensification as a means of increasing the amount of available housing including rooming, boarding and lodging houses, accessory dwelling units, infill, re-development and conversions within existing neighbourhoods, provided the additional housing is compatible with the scale, design context and community features of the neighbourhood.
3. To ensure that the design of the built environment strengthens and enhances the character of existing distinctive locations and neighbourhoods, and that proposals for intensification and infill within existing neighbourhoods are designed to be compatible with the existing neighbourhood character.
4. To integrate assisted and special needs housing in the settlement nodes and provide for a supply of assisted and special needs housing.
5. To promote complete communities and neighbourhoods within the settlement nodes where people can live, work, play and shop. "

In response to these objectives, Riverwood would help keep development in a settlement node, allow the integration of assisted and special needs housing in the settlement, and provide a complete neighbourhood by providing homes, recreation, shopping, working and food production land uses.

Settlement Nodes – policies:

33. The following policies apply to the lands designated as "settlement node"



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1. Approved local area plans establish the goals and objectives for residential, commercial, park, industrial and institutional land uses including a range of residential types and densities in each node.
2. Facilitate the provision of water and sewer services, where possible, in order to meet the needs of existing residents within the settlement nodes, and to protect public health and the natural environment in situations where on-site and privately owned systems are deemed to be insufficient.
3. Promote community facilities within settlement nodes with programs and initiatives to promote or enhance cultural activities, social interaction and educational opportunities.
4. Apply the community amenity policy included in part 4 of this OCP for development of the settlement nodes. Community amenities that support the goals and objectives of the settlement node and approved local area plans, will be considered as priority. "

We will draft a local area plan that establishes the above noted goals. There are no on site residents aside from a single caretaker. A community facility and gathering area will be provided. The community facility along with trails, parks and allotment gardens will be provided as community amenities.

In conclusion, the Riverwood Settlement node is key to the ability of the Comox Valley Regional District to achieve several of its important regional growth management, parks and greenway, and transportation goals. The plan is consistent with many of the CVRD's growth management policies. It would be an important measure to start addressing the housing affordability crisis that has developed in the Comox Valley. It does not create additional planned settlement areas; rather, it simply shifts planned growth from one part of the property to another part. Finally, with the Riverwood Settlement node, a very important and cherished part of the Comox Valley will be protected from potential resource extraction activities and be accessible to public use and enjoyment.

LEGAL DESCRIPTION AND OWNERSHIP

1. That Part of the NW $\frac{1}{4}$ of Section 10, Tp. 9, Comox District, Plan 552G, Lying west of Puntledge River except that part in Plan VIP70188 and EPP24391 – PID 000-866-792
Owned by 0768816 BC. Ltd.
2. The SW $\frac{1}{4}$ of Section 15, Tp. 9, Comox District, Plan 552G, except that part shown coloured red on Plan 79 RW and except that Part in Plan VIP70188 – PID 000-866-814
Owned by 0768816 BC Ltd.
3. Lot A, Sections 10 and 15, Tp. 9, Comox District, Plan EPP23059 – PID 028-915-194. Owned by 3L Developments Inc.
4. That Part of the Nort $\frac{1}{2}$ of Section 14, Tp. 9, Comox District, Plan 552G lying to the south of the north bank of the Puntledge River – PID 000922-308. Owned by 3L Developments Inc.
ccs HNW
5. That Part of the SE $\frac{1}{4}$, Tp. 9, Comox District, Plan 552G lying to the west of the east bank of the Puntledge River except those parts in Plans 8304 and 9343 – PID 003-922-391. Owned by 3L Developments Inc.
6. The SW $\frac{1}{4}$ of Section 14, Tp. 9, Comox District, Plan 552G, except that part in Plan 9343 and except that part shown coloured red on Plan 829 RW – PID 003-924-033. Owned by 3L Developments Inc.

Ecology and Wildlife Summary

RiverWood Development



Prepared For

3L Developments Inc.

Prepared By

Cindy Hannah, R.P.Bio.
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Submission Date

18 December 2009

Cindy Hannah, R.P.Bio.
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Wayne B. Wall, R.P.Bio.
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Executive Summary

FishFor Contracting Ltd. was retained by 3L Developments Inc. to provide assistance in the ecology and wildlife component of their RiverWood development. This included locating, mapping and describing all waterways on the property for the development of the subdivision layout, as well as having input from a wildlife biologist to develop a conservation plan to meet the objectives of their Sustainability Matrix.

The project has been divided into sections based on sustainability issues of the RiverWood Sustainability Matrix. The sections include:

- Ecology – Conservation
- Ecology – Restoration
- Ecology – Natural Wetlands and Surface Water

The section on conservation will describe the conservation of local flora and fauna and how the development will protect imperiled species and ecological communities and ecologically sensitive areas.

The section on Restoration will describe how the development will provide habitat and promote biodiversity.

The section on Natural Wetlands and Surface Water will describe the twenty two waterways that were located and identified in the assessment and what protection is needed to meet the requirements under the Riparian Areas Regulation (RAR). One of the identified waterways will have some impact from the development and the onsite with Fisheries and Oceans Canada has been described. The resulting map and photographs of the waterways have been included.

This report has been completed as part of the rezoning process. Some of the issues surrounding the ecology and wildlife portion of the development will require further assessments at an appropriate time of year.



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FishFor Contracting Ltd
3L Developments Inc. RiverWood Ecology and Wildlife Summary

Location

The RiverWood development is located on approximately 395 acres (160 hectares) within the Comox Regional District adjacent to the Puntledge and Browns Rivers. Duncan Bay Main bisects the property.

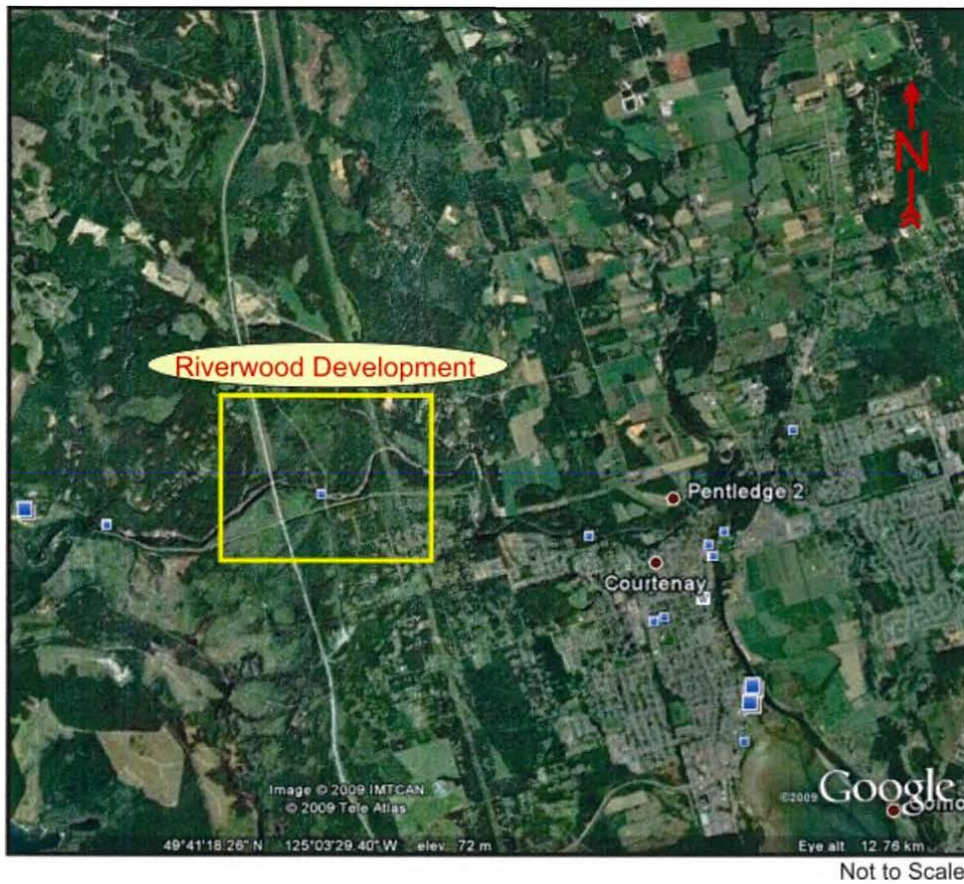


Figure 1. Area map showing location of proposed RiverWood development



Methodology

Ecology – Conservation

No specific field inventories were conducted in the development area.

A query was conducted for animals and plants using BC Species and Ecosystems Explorer. The query was refined to Red and Blue listed species that occur within the Comox Valley Regional District. Species were evaluated on their global ranking. Species that were critically imperiled (G1) or imperiled (G2) were reviewed to determine the potential for occurrence within the development area. The possibility of occurrence was based on habitat requirements found in the literature and distribution. These were compared to general habitats found in the development area and a general possibility of occurrence was stated. If the habitat types did not occur in the development area (based on biogeoclimatic information or specific habitat types) the probability was Nil. If the range of the species occurred in the development area but specific habitat features were absent the possibility of occurrence was considered Unlikely. If the basic habitat information indicated that the species could occur, the possibility of occurrence was Potential. If habitat information on species was not available, no probability was assigned.

A plant community list was developed using BC Species and Ecosystems Explorer. The query was refined to Red and Blue listed species that occur within the Comox Valley Regional District. Species were evaluated on their global ranking. Plant communities that were critically imperiled (G1) or imperiled (G2) were reviewed to determine the potential for occurrence within the development area. The level of stratification was based on the biogeoclimatic sub-zone/variant in which the plant community occurs. If the plant community did not occur in the CWH xm1 it was determined that the possibility of occurrence was nil. If the plant community occurred in the CWH xm1 the site series were reviewed to determine the possibility of occurrence in the development area. The probabilities in this case were subjectively stated as Unlikely (low probability) and Potential (moderate to high probability).

Ecology – Restoration

The development area was assessed against the need for restoration outlined in the RiverWood Sustainability Matrix. The aim for the sustainability issue is to *Provide habitat and promote biodiversity*. The Proposed Measure in the Matrix was to *restore 10% of the development footprint to native habitat*.

Prior to commencing a field visit of the proposed development area, a review of existing inventory information was conducted. This review included locating specific features in the Comox Valley Regional District Habitat Atlas as well as reviewing the distribution of forest cover and relative age of the forest using Google Earth. A field review was conducted at an overview level to look at the relative values in the development footprint in relation to area designated as reserve.



Ecology – Natural Wetlands and Surface Water

Prior to commencing field work all safety precautions were taken based on our in-house Occupational Health and Safety Program. The assessments were carried out to the standards outlined in the Resource Inventory Standards Committee (RISC) guidelines and methodologies for quality assurance and control. The RISC is a provincial initiative to ensure that all data collection, storage, analysis interpretation and reporting relating to natural and cultural resources are undertaken using standardized compatible systems. Both government and industry recognize and utilize RISC standards in the implementation of projects relating to ecosystem assessments and mapping. In addition, the following reference material was utilized to determine and apply appropriate field sampling techniques:

Riparian Areas Regulation: Implementation Guidebook, January 2006, Ministry of Water Land and Air Protection (Ministry of Environment).

Riparian Areas Regulation: Assessment Methodology, January 2006, Ministry of Water Land and Air Protection (Ministry of Environment), Department of Fisheries and Oceans Canada.

Reconnaissance (1:20000) Fish and Fish Habitat Inventory Manual, March 1999, Resource Inventory Committee (RIC)

Fish Stream Identification Guidebook, August 1998, Forest Practices Code of BC

Using working level 1:10,000 scale maps from the Ministry of Environment Habitat Wizard showing TRIM streams, the field crews located and assessed all waterways on the property. The waterways were located using a Trimble GeoXT Mapping Grade GPS Receiver operating to RIC standards for an accuracy of 5m. Streams were mapped as line features and GPS points of significance were taken at various locations along each watercourse to note features such as barriers to fish passage, beaver dams etc.

Stream widths, gradients, substrates and morphology were noted. Habitat quality observations were made.

Although the RAR methodology and data analysis was not completed at this time, the required information was collected to determine the appropriate setback if the detailed assessment is done.

Field equipment that was used in this study included:

- Standard personal equipment for forestry related stream work (compasses, clinometers, hip chains, radios, field safety gear, etc...)
- Laser Rangefinders
- Trimble GeoXT Mapping Grade GPS Receiver and external antenna with data dictionaries
- Olympus 8.5 mega pixel digital cameras

Collected GPS data was corrected to the local base station provider to increase accuracy and precision. GPS data was manually corrected by an experienced GIS analyst using the field notes as reference. Communication between field crews and GIS analysts ensures the map data accurately represents observed field conditions.



Results and Observations

Ecology – Conservation

The aim of this sustainability issue is to address the conservation of local flora and fauna and protect imperiled species and ecological communities. Although this might seem like a difficult task in a development such as RiverWood, the fact that 50% of the development will stay in its present state makes the conservation of local flora and fauna more attainable. The 50% of the development that will be retained consists of most of the older forest on the property and areas associated with water bodies that were identified during the riparian area assessment.

With regards to imperiled species and ecological communities, an initial query of potential species and ecological communities was conducted using BC Species and Ecosystem Explorer. BC Species and Ecosystem Explorer is supported by NatureServe, an internationally accredited system for ranking species at risk.

Local Flora and Fauna

A course filter approach was used to evaluate the developments impact on local flora and fauna. When looking at the risk to these species the property is evaluated on forest age and generally ecological significance. Forests associate with riparian habitats and older forests generally sustain the highest levels of biological diversity. For example the Clayoquot Scientific Panel indicates that 72% of forest dwelling species use riparian habitats for all or a portion of their life cycle¹. Reserves have been designed around all water bodies on the property and are described further in the natural wetland and surface water section of this report.

Older forests generally have a greater structural diversity with important attributes such as snags and course woody debris. A significant portion of the oldest forests on the property will be retained. At this time, these forests have limited structural diversity. These older forests are found along the two major water bodies on the property and should contribute significantly to biodiversity.

Reference was made to the Comox Valley Regional District Habitats Atlas to determine impacts of the development on documented sensitive habitats.² Habitats identified by the Habitat Atlas were associated with riparian areas and wetlands. The proposed reserve design associated with the development will augment the areas identified in the Habitat Atlas.

Imperiled Species – Animals and Plants

Imperiled Species is not a common phrase used in British Columbia or Canada when looking at species at risk. The term as defined by NatureServe, means Extirpated, Endangered or Threatened. A query was conducted using BC Species and Ecosystem Explorer of Red or Blue Listed species found in the Comox Valley Regional District. The list was further refined to include both Critically Imperiled (G1) and Imperiled (G2) species. These species are listed in Table 1.

¹ 1995, Clayoquot Sound Scientific Panel. Report 5, Sustainable Ecosystem Management in Clayoquot Sound: Planning and Practices, pg 27

² Comox Valley Regional District Habitat Atlas. <http://www.imap.rdcg.bc.ca>. Accessed, December 17, 2009.



Table 1 Comox Regional District – List of Imperilled Species - Plants and Animals

Scientific Name	English Name	COSEWIC Status	Global Ranking	Possibility of occurrence
<i>Marmota vancouverensis</i>	Vancouver Island Marmot	Endangered	G1	Nil Ranges of species does not overlap development area
<i>Trematodon boasii</i>		Not Ranked	G1	Nil Found in Mountain Hemlock Zone ³
<i>Copablepharon fuscum</i>	Sand-verbena Moth	Endangered	G1G2	Nil Closely associated with yellow sand verbena (vascular plant). This plant is not found in development area
<i>Deroceras hesperium</i>	Evening Field Slug	Data Deficient	G2	Unknown Very little is known about this species. NatureServe Explorer indicates that it could be extirpated in BC ⁴
<i>Limnathes macounii</i>	Macouns's meadow-foam	Threaten	G2	Nil This species is generally associated with Garry oak ecosystems ⁵
<i>Andreaea schafeldiana</i>		Not Ranked	G2G3	Nil Occurs in montane to subalpine ecosystems ⁶
<i>Myotis keenii</i>	Keen's Myotis	Data Deficient	G2G3	Highly Unlikely There are no karst features noted on the property. Limestone caves are used as hibernacula for this species. ⁷
<i>Pristiloma johnsoni</i>	Broadwhorl Tightcoil	Not Ranked	G2G3	Potential These species could occur within the property area.

Source: BC Species and Ecosystem Explorer – Comox Valley Regional District Search, December 16, 2009

Each imperilled species found in the query were evaluated for possibility of occurrence in the area of the property. In cases like the Vancouver Island Marmot, the process of elimination was simple as the property does not overlap the range of the species. In other cases an evaluation of habitat features such as karst (limestone caves) was used to assign the possibility of occurrence.

A summary of the species, general distribution and habitat description of the species has been included. In the case of the evening field slug, very little information could be found. This is also reflected in the COSEWIC status in Table 1. Although much of the information on the species comes from multiple references only the source reference has been cited.

³ Ryan M.W. Bryophytes of British Columbia: rare species and priorities for inventory. Res. Br., B.C. Min .For., and Wildl.Br., B.C. Min. Environ., Lands and Parks. Victoria, B.C. Work. Pap. 12/1996. Pg.13.

⁴ NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 16, 2009).

⁵ COSEWIC, 2004. Assessment and Update Status Report on the Macoun's Meadowfoam *Limnathes macounii* in Canada. Executive Summary pg iv.

⁶ Christy, J.A. & D.H. Wagner. 1996. Guide for the identification of rare, threatened or sensitive bryophytes in the range of the northern spotted owl, western Washington, western Oregon, and northwestern California. USDI Bureau of Land Management. 200 pp.

⁷ B.C. Ministry of Environment. 2004. Identified Wildlife Management Strategy. Accounts and Measures for Managing Identified Wildlife: Keen's Long-eared Myotis, *Myotis keenii*. B. C. Ministry of Environment, Victoria, BC.



Vancouver Island Marmot

This marmot is endemic to Vancouver Island and has declined by more than 50% in the past ten years. Less than 30 mature animals remain in the wild, where they are confined to four mountains. Most colonies occur on south-west slopes between 1000 and 1400 m in elevation. Marmots require grasses and forbs for forage, suitable soils for digging burrows, and a microclimate that permits summer foraging, thermoregulation and successful hibernation. Habitat scarcity is the primary reason for marmot rarity, but recent declines are due to high losses of both adults and juveniles to predators and to unsuccessful hibernation. Other threats include the impacts of climate change on vegetation and reduced dispersal success through logged habitats. Intensive recovery efforts, including captive breeding are ongoing.⁸

Trematodon boasii

Basic Description: Mosses erect, tiny, 2-4 mm tall. Leaves 2-4 mm long, green or yellow-green, glossy, imbricate and flexuose but not much contorted when dry, consisting of a short, sheathing blade tapering to a long awl-shaped and flexuose apex. Setae yellow, 1-4 mm long, flexuose. Capsules usually numerous, reddish-brown, 0.5-1 mm long, 0.5 mm wide, with a yellowish neck of about the same length tapering to the seta. Peristome well developed. Lid of capsule has a distinct beak (Christy & Wagner 1996).

Habitat Comments: Forming loose mats on moist bare soil, often with organic content, along edges of trails, streams and ponds in the subalpine zone (Christy 1996).⁹

Sand-verbena Moth

Habitat Comments: Beaches, dunes, and sand spits with dense vigorous patches of sand verbena (*Abronia latifolia*), but not sandy meadows or nearly bare sand with sparse or non-flowering sand verbena plants only.

Food Comments: The larvae are monophagous on yellow sand verbena *Abronia latifolia*. Adults take nectar from its flowers.

Phenology Comments: Adults occur from mid or late May though June, about 45-55 days per year. Eggs hatch in about two weeks. Larvae overwinter in one or more late instars and pupate in late April or May.¹⁰

Evening Field Slug

Potentially extirpated in Washington State and British Columbia.¹¹ Limited information available on distribution or habitat requirements in British Columbia.

⁸ Species at Risk & Local Government: A Primer for British Columbia. <http://www.speciesatrisk.bc.ca> Accessed December 16, 2009.

⁹ NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1.

NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 17, 2009).

¹⁰ NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1.

NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 17, 2009).

¹¹ NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1.

NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 17, 2009)



Macoun's meadow-foam

Distribution: Macoun's meadow-foam is known only from southern Vancouver Island and several other islands close to Vancouver Island. It has not been found on the mainland of British Columbia nor in Washington State.

Habitat: Plants occur in seasonally wet depressions or along intermittent seeps in low elevation and usually close to the ocean. The majority of the sites are in open areas of Garry oak ecosystems.¹²

Keen's Myotis

Terrestrial Habitat(s): Bare rock/talus/scree, Cliff, Forest - Conifer, Woodland – Conifer

Special Habitat Factors: Standing snag/hollow tree

Habitat Comments: The distributional range suggests an association with coastal forest habitat (van Zyll de Jong 1985; Nagorsen and Brigham, unpubl. manuscript). Apparently this bat is associated with mature forests (Balcombe, 1988 COSEWIC report), but it is not restricted to old growth (COSEWIC 2003). Across the range it has been found roosting in southwest-facing rock crevices, among geothermally heated rocks, in tree cavities, in bark crevices, and in buildings (D. Burles, pers. comm.; Firman et al. 1993; Nagorsen and Brigham 1993; Parker and Cook 1996; Mather et al. 2000). Tree cavities and loose bark are important natural roost sites and may be limiting in some parts of the range (British Columbia Ministry of Water, Land and Air Protection 2004). In British Columbia, one maternity colony (on Hot Springs Island in the Queen Charlotte Islands) is situated within geothermally heated rocks associated with hot spring activity (British Columbia Ministry of Water, Land and Air Protection 2004). The only other known maternity colony in British Columbia was suspected to be in a tree located in a low elevation, southwest-facing cliff at Knoll Hill near Tahsis, Vancouver Island (COSEWIC 2003). Known maternity roosts and summer feeding areas in British Columbia are at elevations below 240 meters; known hibernation sites occur above 400 meters in caves over 100 meters long (British Columbia Ministry of Water, Land and Air Protection 2004). These bats have been observed foraging over hot spring pools and clearings above scrubby salal (*Gaultheria shallon*).¹³

Andreaea schofieldiana

Basic Description: Erect mosses, rarely over 1 cm tall, dark reddish-brown to blackish. Leaves lanceolate, 2-2.5 mm long, imbricate when dry, sometimes falcate at tip of shoot, broad enough at back to show a portion of the blade on each side of the well-defined costa. Leaf margins entire, or finely crenate toward tips because of projecting cells. Capsules opening by four vertical valves, the urn shrinking vertically when dry, to resemble a Japanese urn (Christy & Wagner 1996).

Habitat Comments: Forming mats on dry and exposed to moist, shaded igneous rocks, montane to subalpine. Associated species include *Saxifraga*, *Sedum*, *Selaginella*, *Gymnomitrium*, *Cladonia* and crustose lichens (Christy 1996).¹⁴

¹² COSEWIC, 2004. Assessment and Update Status Report on the Macoun's Meadowfoam *Limnanthes macounii* in Canada. Executive Summary pg iv.

¹³ NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 17, 2009).

¹⁴ NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 17, 2009).



Broadwhorl Tightcoil

This tiny (to 2.8 mm), flattened, translucent to waxy-white snail is found from the mid-coast of British Columbia (including Vancouver Island) south to Oregon. It is considered rare within this range and is typically found in the leaf litter of deciduous, mixed or coniferous forests below 1300 m elevation. The major threats are habitat loss and fragmentation to forest harvest, urbanization, and agricultural development.¹⁵

The only potentially Critically Imperiled or Imperiled species that could occur on the property is the Broadwhorl Tightcoil.

Imperiled Species – Ecological Communities (Plant Communities)

A query was conducted using BC Species and Ecosystem Explorer of Red or Blue Listed plant communities found in the Comox Valley Regional District. The list was further refined to include both Critically Imperiled (G1) and Imperiled (G2) plant communities. The Comox Valley Regional District covers a broad range of ecosystems. The possibility of occurrence of many of the plant communities is nil as the biogeoclimatic units in which they occur are not found within the area of the development. In other cases, the biogeoclimatic units may occur in the area of the property but the possibility of occurrence could be easily determined that based on known location. For example, Henderson's checker-mallow Tidal Marsh is associated with tidal marshes. The development is located well above sea level.

Table 2 Comox Regional District – List of Imperiled Species - Plant Communities

Scientific Name	English Name	Biogeoclimatic Units	Global Ranking	Possibility of occurrence
<i>Festuca idahoensis</i> ssp. <i>roemerii</i> - <i>Koeleria macrantha</i>	Roemer's fescue - junegrass	CDFmm/00 CWHxm1/00	G1	Nil Plant Community does not occur in development area
<i>Sidalcea hendersonii</i> Tidal Marsh	Henderson's checker-mallow Tidal Marsh	CWHxm1/00	G1	Nil Plant Community does not occur in development area
<i>Carex macrocephala</i> Herbaceous Vegetation	large-headed sedge Herbaceous Vegetation	CDFmm/00 CWHvh1/00 CWHwh1	G1G2	Nil Biogeoclimatic sub-zone/variant does not occur in development area
<i>Picea sitchensis</i> / <i>Maianthemum dilatatum</i> Very Wet Hypermaritime 1	Sitka spruce / false lily-of-the-valley Very Wet Hypermaritime 1	CWHvh1/08	G1G2	Nil Biogeoclimatic sub-zone/variant does not occur in development area
<i>Picea sitchensis</i> / <i>Rubus spectabilis</i> Dry	Sitka spruce / salmonberry Dry	CWHdm/08 CWHds1/08	G1G2	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Populus tremuloides</i> / <i>Malus fusca</i> / <i>Carex abnupta</i>	trembling aspen / Pacific crab apple / slough sedge	CDFmm/00 CWHxm1	G1G3	Nil Plant Community does not occur in development area

¹⁵ Species at Risk & Local Government: A Primer for British Columbia. <http://www.speciesatrisk.bc.ca> Accessed December 16, 2009.

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FishFor Contracting Ltd
3L Developments Inc. RiverWood Ecology and Wildlife Summary

Scientific Name	English Name	Biogeoclimatic Units	Global Ranking	Possibility of occurrence
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Oplopanax horridus</i> Very Wet Hypermaritime 1	western redcedar - Sitka spruce / devil's club Very Wet Hypermaritime 1	CWHvh1/07	G1G3	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Abies amabilis</i> - <i>Thuja plicata</i> / <i>Tiarella trifoliata</i> Moist Maritime 1	amabilis fir - western redcedar / three-leaved foamflower Moist Maritime 1	CWHmm1/05	G2	Nil Biogeoclimatic sub-zone/variant does not occur in development area
<i>Arbutus menziesii</i> / <i>Arctostaphylos columbiana</i>	arbutus / hairy manzanita	CDFmm/00 CWHxm1/00	G2	Nil Plant Community does not occur in development area
<i>Carex lasiocarpa</i> - <i>Rhynchospora alba</i>	slender sedge - white beak-rush	CDFmm/Wf53 CWHmm1/Wf53 CWHxm1/Wf53 CWHxm2/Wf53	G2	Nil Plant Community does not occur in development area
<i>Carex sitchensis</i> / <i>Sphagnum</i> spp.	Sitka sedge / peat-mosses	CWHvh2/Wf51 CWHvm1/Wf51 CWHvm2/Wf51 CWHwh1/Wf51 CWHwm/Wf51 CWHws2/Wf51 ICHvc/Wf51 ICHwc/Wf51 MHmm1/Wf51	G2	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Deschampsia cespitosa</i> - <i>Sidalcea hendersonii</i>	tufted hairgrass - Henderson's checker-mallow	CWHxm1/00	G2	Nil Plant Community does not occur in development area
<i>Salix sitchensis</i> - <i>Salix lucida</i> ssp. <i>lasiandra</i> / <i>Lysichiton americanus</i>	Sitka willow - Pacific willow / skunk cabbage	CDFmm/Ws51 CWH/Ws51 ICH/Ws51	G2	Nil Plant Community does not occur in development area
<i>Pseudotsuga menziesii</i> - <i>Pinus contorta</i> / <i>Holodiscus discolor</i> / <i>Cladina</i> spp.	Douglas-fir - lodgepole pine / oceanspray / reindeer lichens	CWHdm/02	G2G3	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Thuja plicata</i> / <i>Polystichum munitum</i> Dry Maritime	western redcedar / sword fern Dry Maritime	CWHdm/05	G2G3	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Thuja plicata</i> - <i>Pseudotsuga menziesii</i> / <i>Acer circinatum</i>	western redcedar - Douglas-fir / vine maple	CWHds1/05 CWHds2/05	G2G3	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Tsuga heterophylla</i> - <i>Abies amabilis</i> / <i>Hylocomium splendens</i>	western hemlock - amabilis fir / step moss	CWHms1/01 CWHms2/01	G2G4	Nil Biogeoclimatic sub-zone variant does not occur in development area



Scientific Name	English Name	Biogeoclimatic Units	Global Ranking	Possibility of occurrence
<i>Tsuga heterophylla</i> - <i>Pseudotsuga menziesii</i> / <i>Rhytidadelphus triquetrus</i> Dry Submaritime 1	western hemlock - Douglas-fir / electrified cat's-tail moss Dry Submaritime 1	CWHds1/01	G2G3	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Tsuga heterophylla</i> - <i>Thuja plicata</i> / <i>Blechnum</i> <i>spicant</i>	western hemlock - western redcedar / deer fern	CWHdm/06 CWHxm1/06 CWHxm2/06	G2G3	Potential Plant community could exist within development area
<i>Pseudotsuga menziesii</i> - <i>Pinus contorta</i> / <i>Holodiscus discolor</i> / <i>Cladina</i> spp.	Douglas-fir - lodgepole pine / oceanspray / reindeer lichens	CWHdm/02	G2G4	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Pseudotsuga menziesii</i> / <i>Polystichum munitum</i>	Douglas-fir / sword fern	CWHdm/04 CWHxm1/04 CWHxm2/04	G2G4	Highly Unlikely Limited possibility that plant community could exist in development area
<i>Thuja plicata</i> / <i>Oplopanax horridus</i>	western redcedar / devil's club	CWHds1/07 CWHds2/07	G2G4	Nil Biogeoclimatic sub-zone variant does not occur in development area
<i>Tsuga heterophylla</i> - <i>Abies amabilis</i> / <i>Blechnum spicant</i> Moist Maritime	western hemlock - amabilis fir / deer fern Moist Maritime	CWHmm1/06 CWHmm2/06	G2G4	Nil Biogeoclimatic sub-zone variant does not occur in development area

Source: BC Species and Ecosystem Explorer – Comox Valley Regional District Search, December 16, 2009

As indicated in Table 2, there are two plant communities that could be present within the development area. It is recommended that a qualified professional conduct and overview assessment to determine the occurrence, amount and distribution of these plant communities.

Ecology – Restoration

The aim of this sustainability issue is to provide habitat and biodiversity. The proposed measure is to restore 10% of the development footprint to pre-development habitat. The present design addresses this measure through retention of approximately 50% of the development in reserve. The reserve design utilizes riparian areas, wetlands and older forests. These areas presently exhibit the area of higher biodiversity on the property. Over time, the reserve network should increase in structural diversity and provide habitat for a wide range of species.



Ecology – Natural Wetlands and Surface Water

The aim of this sustainability issue is to identify and protect surface water bodies (watersheds, wetlands and riparian areas). Protection of waterways and their associated riparian areas is a requirement under the Riparian Areas Regulation (RAR). Rather than design the development, apply for rezoning and finally complete a RAR assessment at the time that a development permit was required, 3L Developments Inc. had a vision of using the water bodies as positive features on the property. Prior to the design of the RiverWood development, FishFor Contracting Ltd was retained to locate, map and note uses of the waterways on the property. The maps would be used by the architect to design the layout of RiverWood around these features, ensuring that the riparian areas are protected and determine appropriate areas of additional setbacks to be dedicated as park/open spaces.

On March 30, April 1, 3-8, 14 and June 30, 2009 waterways were located and traversed to be mapped accurately for the development of the property. The property was walked along slopes that would drain to the known water bodies (Puntledge, Browns and Forbidden Plateau Creek) to locate watercourses. Waterways were identified and preliminary assessments on habitat quality were noted. Required setbacks under the Riparian Areas Regulation (RAR) have been listed although the detailed assessments and the completion of a RAR Assessment Report to meet the criteria needed under the RAR have not been completed to date.

Conclusions are based upon an inspection of the waterways mentioned in this report and on the conditions observed March 30, April 1, 3-8, 14 and June 30, 2009. Conclusions and recommendations in this report have been made in a manner consistent with the level of care and skill normally applied by environmental professionals practicing under similar conditions to those encountered at the time of the assessment. Geological and/or morphological changes can occur in waterways. Any change in conditions from those observed on the above date has the potential to invalidate the conclusions in this report. This report has been prepared for use and distribution by 3L Developments Inc.

Although a detailed assessment under the RAR has not been completed at this stage of the development, the waterways on the property were located and mapped. Fish use and habitat quality were noted. Amphibian use was also noted. Stream widths and gradient were measured to determine the appropriate setback that would be required under the RAR.

The results are shown in Table 3. The resulting map showing the location of the identified waterways is included in Appendix 1. Representative photos were taken of each waterway and are included in Appendix 2.


Table 3 RiverWood Property Natural Wetlands and Surface Water Identification

Waterway ID	Width	Setback Required under RAR detailed assessment	Comments	Photo #
Puntledge River	+15m	30m	The Puntledge River has steep sideslopes that will need assessing by a qualified professional to determine if the setback is sufficient in providing slope stability.	
Browns River	+10m	30m	The Browns River has steep sideslopes that will need assessing by a qualified professional to determine if the setback is sufficient in providing slope stability.	
1	n/a	n/a	This small drainage dissipates and does not connect to fish bearing water.	1
2	±1m	10m	This small stream flows directly into Waterway 3 (Forbidden Plateau Creek) a known fish bearing stream. The stream offers rearing and limited spawning habitat for resident fish.	2
3 Forbidden Plateau Creek	±4m	10-15m	This is a known fish bearing stream. It offers excellent spawning and rearing habitat for resident fish. The beaver ponds offer habitat for amphibians, Red Legged frog egg masses were noted.	3
4	n/a	15m, 30m due south	This wet site has evidence of old beaver activity. Fish access would be extremely limited due to poor habitat attributes (shallow, no pools).	4, 5
5	n/a	n/a	There is a small seepage that does not provide fish access or habitat.	
6	±1m	10m	This shallow (<5cm deep) drainage is 15m long. It provides marginal fish access and habitat (shallow, no pools). There is no spawning habitat.	6
7	±2m	10m	This shallow waterway offers limited fish access during high flows for ~20m. There is no spawning habitat.	7
9 stream	±1m	10m	The stream drops 4m into the Browns River. Above barrier sampling did not locate resident fish.	8
9 wetland	n/a	15m, 30m due south	This wetland has evidence of recent beaver activity. It offers quality amphibian habitat and numerous egg masses were noted. There is no fish access into the wetland.	9
10	<1m	n/a	Dissipates and does not connect to fish bearing water.	
11	±1m	n/a	This waterway dissipates upslope of the Puntledge River and does not connect to fish bearing water.	10, 11



Waterway ID	Width	Setback Required under RAR detailed assessment	Comments	Photo #
12	±1m	n/a	This short waterway dissipates upslope of the Puntledge River and does not connect.	12
13	±1.5m	10m on stream 15m, 30m due south on wetland	This stream connects directly to the Puntledge River. There is fish access for 42m to an increase in gradient to +40% including a +3m high vertical drop. The seasonal stream was dry in the lower reaches and intermittent upslope. There is no suitable resident fish habitat upslope (no spawning substrates). The wetland does provide limited amphibian habitat. The wetland is dominated by hummocks with low lying areas vegetated in sedges, grasses and fern.	13, 14
14	±1m	10m	This seasonal stream had minimal water at the time of the assessment. It connects directly to the Puntledge River and offers limited fish access to the base of the topographic bench. There is no suitable habitat (shallow, seasonally dry) for resident fish habitation upslope.	15
16	±1m	n/a	This small waterway does not connect directly to fish bearing water and therefore does not trigger the RAR. It has a muck bottom with sedges along the perimeter. The upper reaches have been modified into a drainage area for the surrounding property.	16
17	n/a	n/a	This waterway is a small isolated wet area. It does not connect to fish bearing water.	17
18	n/a	n/a	This waterway is a small isolated wet area. It does not connect directly to fish bearing water.	18, 19
19	n/a	n/a	This waterway is a small isolated wet area. It does not connect to fish bearing water.	
20	±1.5m	10m	This stream connects directly to the Puntledge River and offers both spawning and rearing habitat for fish. Coho fry were observed. The upper reaches are unconfined but there is sufficient depth of water for fish use.	20, 21
21	n/a	n/a	This waterway is a small isolated wet area. It does not connect to fish bearing water.	22, 23
22	±1m	n/a	This small waterway sources from Highway 19 ditchline. It does not connect to fish bearing water.	24



Wetland 13

This wetland (at the headwaters of Stream 13) that was identified during the initial assessment was determined to pose a problem with the proposed development layout. As the RAR process does not allow for encroachment into waterways or their riparian areas, consultation with Fisheries and Oceans Canada was initiated.

On June 22, 2009 an onsite meeting was held between Kabel Atwall of 3L Developments Inc, Cindy Hannah of FishFor Contracting Ltd and Doug Swift of Fisheries and Oceans Canada to discuss the marginal wetland. The proposed development requires filling in portions of the marginal wetland to accommodate the layout. As a result of the onsite a subsequent assessment was recommended to locate and map the area of the wetland that exhibits the best wetland characteristics to ensure that this portion of the wetland is protected during the development. The marginal areas of the wetland are dominated by hummocks vegetated in terrestrial plants, including both coniferous and deciduous species. Low lying areas are dominated by sedges, grasses and ferns. The ground is wet, but a surface water connection throughout the wetland is difficult to determine.

The wetland was re-assessed on June 30 (and a visual assessment was done in December 2009 to ensure that the area located in June is correct) to locate and map areas of the wetland that exhibit defined wetland characteristics (vegetation type and direct connectivity to the outlet stream). The development will not encroach on this area of the wetland. As the development is in the preliminary stages, specific details of both the amount of wetland that will be lost and how the loss will be compensated has not been determined. An agreement in theory has been accepted by Mr. Swift and his comments will be utilized to develop the plan that will be used when completing the "Request for Review under the Habitat Provisions of the Fisheries Act Form" when the development reaches that phase. This plan will ensure that there is "no net loss" of fish habitat. Although the wetland itself is non-fish bearing, it does provide a water source to fish bearing water and thus under the *Fisheries Act* could be considered fish habitat.



Discussion

3L Developments Inc. RiverWood Development within the Comox Valley Regional District is being designed to be a Sustainable Development. In their Sustainability Guidelines and Matrix, the objectives are divided into three main areas of sustainability; environmental, social and economic. FishFor Contracting Ltd was retained to provide assistance with the Ecology and Wildlife section of the Environmental Sustainability area.

Within the RiverWood Sustainability Matrix several Issues are described within the Ecology and Wildlife Section. Three of these issues are described in this report. They include:

- Ecology – Conservation
- Ecology – Restoration
- Ecology – Natural Wetlands and Surface Water

Ecology – Conservation

The aim of this sustainability issue is to:

"Conserve local flora and fauna and protect imperiled species and ecological communities"

The fact that 50% of the development will stay in its present state makes the conservation of local flora and fauna more attainable. The 50% of the development that will be retained consists of most of the older forest on the property and areas associated with water bodies that were identified during the riparian area assessment. Riparian areas are critical to both aquatic species as well as other forest dwelling creatures. By having these areas set aside as park will meet the aim of conserving local flora and fauna.

The only potentially Critically Imperiled or Imperiled species that could occur on the property is the Broadwhorl Tightcoil, a very small slug that lives in the leaf litter of forests below 1300m elevation. It is recommended to discuss the potential for the slug to occur on the property with a biologist familiar with this invertebrate prior to any field assessments being conducted.

There are two plant communities that could be present within the development area. There is some potential to have the western hemlock - western redcedar / deer fern plant community occurring on the property. There is a less likelihood of having the douglas-fir / sword fern plant community occurring on the property. It is recommended that a qualified professional conduct an overview assessment to determine the occurrence, amount and distribution of these plant communities. Assessment for occurrence of plants is generally conducted in late spring/early summer for accurate identification.



Ecology – Restoration

The aim of this sustainability issue is to:

“Provide habitat and promote biodiversity”

The proposed measure is to restore 10% of the development footprint to pre-development habitat. The present design addresses this measure through retention of approximately 50% of the development in reserve. The reserve design utilizes riparian areas, wetlands and older forests. These areas presently exhibit the area of higher biodiversity on the property. Over time, the reserve network should increase in structural diversity and provide habitat for a wide range of species.

Ecology – Natural Wetlands and Surface Water

The aim of this sustainability issue is to:

“Identify and protect surface water bodies (watersheds, wetlands and riparian areas)”

This was achieved by locating and mapping all watercourses on the property prior to designing the layout of the development. This ensured that the development could be designed in such a way to both protect the aquatic features on the property and highlight these habitats as park areas that the residents in the community can enjoy. The development is within a development permit area of the Comox Valley Regional District, thus requiring the property to have a Riparian Areas Regulation Assessment done on the property during the subdivision. As the project is at the re-zoning stage, a complete RAR assessment has not been completed, but sufficient data was collected to determine the required setbacks that a detailed assessment would determine, to ensure that the design of the development accounted for the required riparian areas to maintain the form and function of each of the waterways on the property.

One waterway was determined to pose a problem for the design, and consultation with Fisheries and Oceans Canada commenced immediately to ensure that the vision of the project could be completed without negatively impacting the waterway. Recommendations from Fisheries and Oceans Canada will be utilized when designing the final layout of that phase of the project.

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*FishFor Contracting Ltd
3L Developments Inc. RiverWood Ecology and Wildlife Summary*

Appendices

Map of located waterways and associated setbacks
Photo documentation of the located waterways



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FishFor Contracting Ltd
3L Developments Inc. Riverwood Ecology and Wildlife Summary

Photo Documentation

Photo 1, Waterway 1:

This drainage dissipates and does not connect to fish bearing water. It does not require a setback under the RAR.



Photo 2, Waterway 2:

This small stream offers potential rearing and spawning habitat for fish.



Photo 3, Waterway 3:

Forbidden Plateau Creek is known to be fish bearing. It offers both spawning and rearing habitat for fish.





Photo 4, Waterway 4:
This wet area offers very limited fish
access and limited rearing habitat.



Photo 5, Waterway 4:
There is evidence of old beaver
activity.



Photo 6, Waterway 6:
This seepage is 15m long. It offers
marginal fish access and limited
rearing habitat.





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*FishFor Contracting Ltd
3L Developments Inc. Riverwood Ecology and Wildlife Summary*

Photo 7, Waterway 7:
This waterway offers limited fish access and limited rearing habitat for ~20m during high water levels.



Photo 8, Waterway 9:
The stream drops 4m into the Browns River. No resident fish were sampled upstream.



Photo 9, Waterway 9:
There is ongoing beaver activity upstream. The wetland offers excellent habitat for amphibians.





Photo 10, Waterway 11:
The waterway dissipates upslope of
the Puntledge River and does not
connect to fish bearing water.



Photo 11, Waterway 11:
Typical morphology upslope of the
trail, predominantly muck/fines
substrate with skunk cabbage growing
throughout.



Photo 12, Waterway 12:
The waterway dissipates upslope of
the Puntledge River. There is no
connection to fish bearing water.





Photo 13, Waterway 13:
This +3m high vertical drop with the
+40% gradient slope is a barrier to
upstream fish access. There is no
resident fish habitat upstream.



Photo 14, Waterway 13:
The wetland does not provide suitable
habitat for resident fish habitation, but
does offer habitat for amphibians. The
water is generally shallow.



Photo 15, Waterway 14:
Upslope of the barrier to fish, the
waterway does not offer suitable
habitat for resident fish habitation.





Photo 16, Waterway 16:
This waterway does not connect directly to fish bearing water. It is shallow with a muck substrate and sedges growing along the perimeter.



Photo 17, Waterway 17:
This is a small isolated wet area. It does not connect to fish bearing water.



Photo 18, Waterway 18:
There is no connection to fish bearing water.





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FishFor Contracting Ltd
3L Developments Inc. Riverwood Ecology and Wildlife Summary

Photo 19, Waterway 18:
There is a small isolated wet area
upslope of the trail.



Photo 20, Waterway 20:
This stream offers both spawning and
rearing habitat for fish. Coho fry were
observed.



Photo 21, Waterway 20:
The upper reaches are unconfined, but
there is sufficient depth of water for
fish access.



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FishFor Contracting Ltd
3L Developments Inc. Riverwood Ecology and Wildlife Summary

Photo 22, Waterway 21:
This waterway does not connect to
fish bearing water.



Photo 23, Waterway 21:
The waterway is an isolated wet
area.



Photo 24, Waterway 22:
This waterway that sources from the
Highway 19 ditchline does not
connect to fish bearing water.



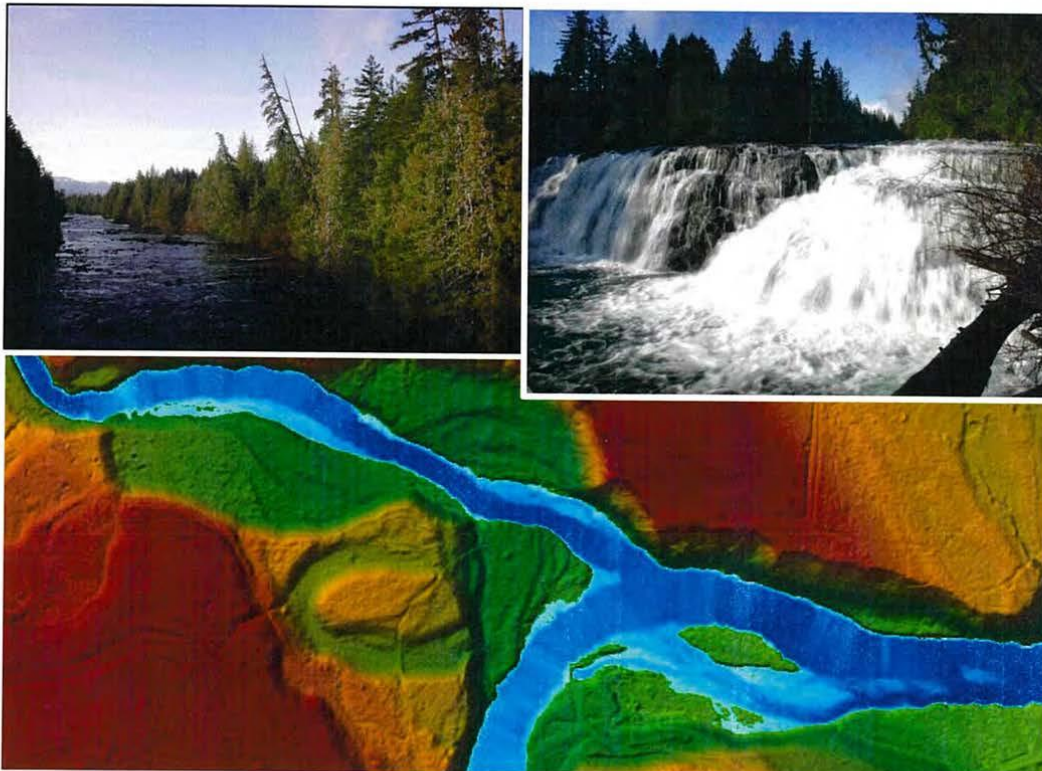


REVISION 0 - FINAL

RIVERWOOD DEVELOPMENT FLOODPLAIN ASSESSMENT

Puntledge & Browns Rivers
3-L Developments Inc.

July 12, 2018 | Our File: 2211-47519-00



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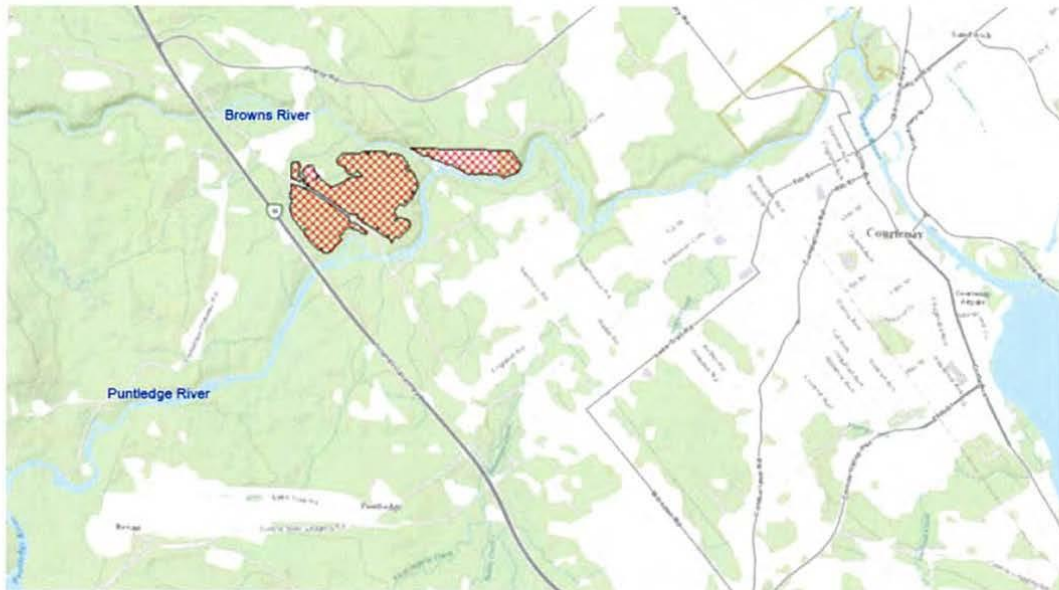
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3-L Developments Inc. is proposing to construct a residential development at the confluence of the Puntledge River & Brown's River, near Courtenay, BC. This report details the hydrologic and hydraulic analyses completed to assess these watercourses, with the purpose of determining appropriate Flood Construction Levels (FCLs) and construction setbacks for the development.

Figure 1, shows the project location.

Figure 1: Site Location, East of Courtenay, BC (Shown by Red Cross-Hatch)





The project is located within the Comox Valley Regional District (CVRD) and must follow the CVRD's *Floodplain Management Bylaw 2005*.

This bylaw establishes the requirements for Flood Construction Levels (FCLs) as well as floodplain setbacks. Specifically, for the Browns & Puntledge Rivers, the bylaw states:

- **Flood Construction Level:** *Bylaw 2005, Section 302 Item 2)d): "Where Floodplain Mapping is NOT available, the following elevations are specified as flood construction levels: 3.0 meters above the natural boundary of Browns & Puntledge rivers.*
- **Floodplain Setback:** *Bylaw 2005, Section 303, Item 1)b): 30.0 meters from the natural boundary of the Browns & Puntledge rivers.*

A detailed survey of the "natural boundary" is not available. In lieu of conventional field survey of the natural boundary, detailed LiDAR data was recently collected. This provides a detailed topographic surface of the site and the adjacent rivers to a level of accuracy of +/- 5 cm. We used the LiDAR information as the basis for a detailed river analysis to recommend the FCLs and floodplain setbacks. These recommendations, subject to approval by the CVRD, are considered generic FCL and floodplain setback recommendations noted in *Bylaw 2005*.

In addition to the CVRD's Bylaw, the following guidelines were referenced as part of this analysis:

- *Professional Practice Guidelines - Legislated Flood Assessments in a Changing Climate in BC* (APEGBC, June 2012)
- *Flood Mapping in BC – APEGBC Professional Practice Guidelines* (V1.0, January 2017)
- *Technical Circular T-06/15: Climate Change and Extreme Weather Event Preparedness and Resilience in Engineering Infrastructure Design* (MoTI, August 2016)

Appendix A includes an *Assurance Statement*, recognizing that the guidelines have been followed in our analysis.



3.1. 200-YEAR FLOW RATES

As per *Bylaw 2005*, the "Designated Flood" for determination of FCLs and floodplain setbacks is the 200-year return period flood event.

We referred to the City of Courtenay's *Integrated Flood Management Study* (McElhanney & KWL, December 2013) to estimate the 200-year return period flows for the Browns & Puntledge Rivers. **Appendix B** provides the relevant excerpts from the IFMS Report and associated appendices. The Designated Flood flow for each watercourse is:

- Puntledge River 200-Year Flow Rate = 439 m³/s
- Browns River 200-Year Flow Rate = 428 m³/s

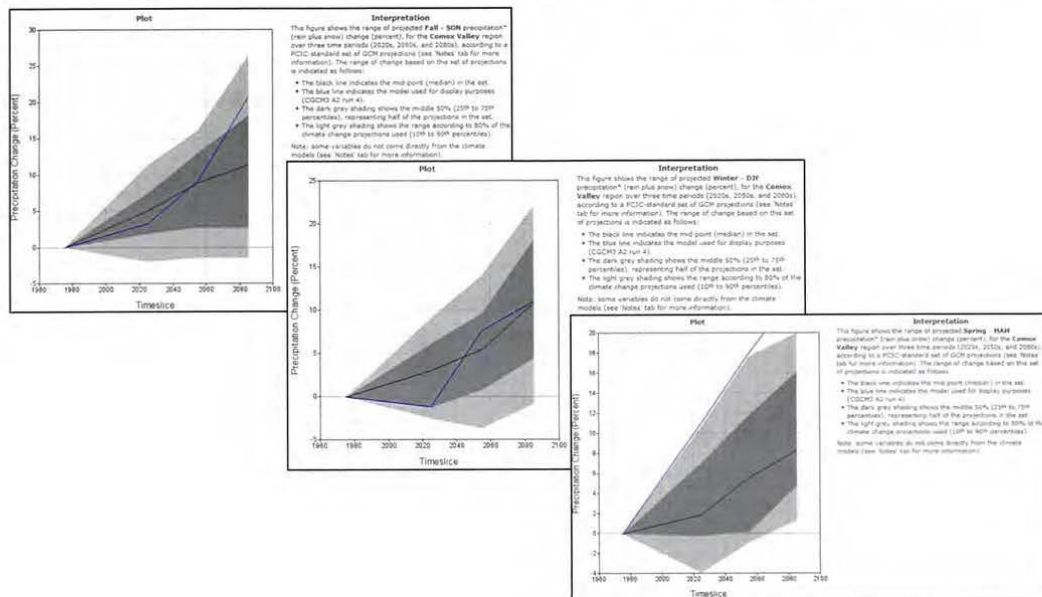
3.2. CLIMATE CHANGE

The peak flows of the Puntledge River & Browns River are generally caused by severe rain or rain-on-snow storm events, occurring between November to March. Climate change is anticipated to alter precipitation patterns within these watersheds, and result in stronger and more intense winter storms and therefore increased peak flows.

To estimate the impact of climate change on the 200-year peak flows, the *Plan2Adapt* tool provided by the Pacific Climate Impacts Consortium (PCIC) was used. This tool provides estimates of changes to rainfall patterns for various regional districts in British Columbia. **Figure 2** shows the estimated precipitation increases for the CVRD during the fall, winter & spring periods, projecting the year 2090. The *average* (50th percentile) estimated increase in precipitation is 10%. However, the 75th percentile estimated increase in precipitation is approximately 18%. Due to the large uncertainty inherent in long-range forecasting, we increased the 200-year peak flow by 18% for this study. This is directly related to the increase in precipitation. The revised designated flood flows for each watercourse are:

- Puntledge River 200-Year Flow Rate (incl. Climate Change adjustment) = 518 m³/s
- Browns River 200-Year Flow Rate (incl. Climate Change adjustment) = 505 m³/s

Figure 2: Estimated Impacts of Climate Change on Rainfall for the CVRD (from PCIC's Plan2Adapt Tool)



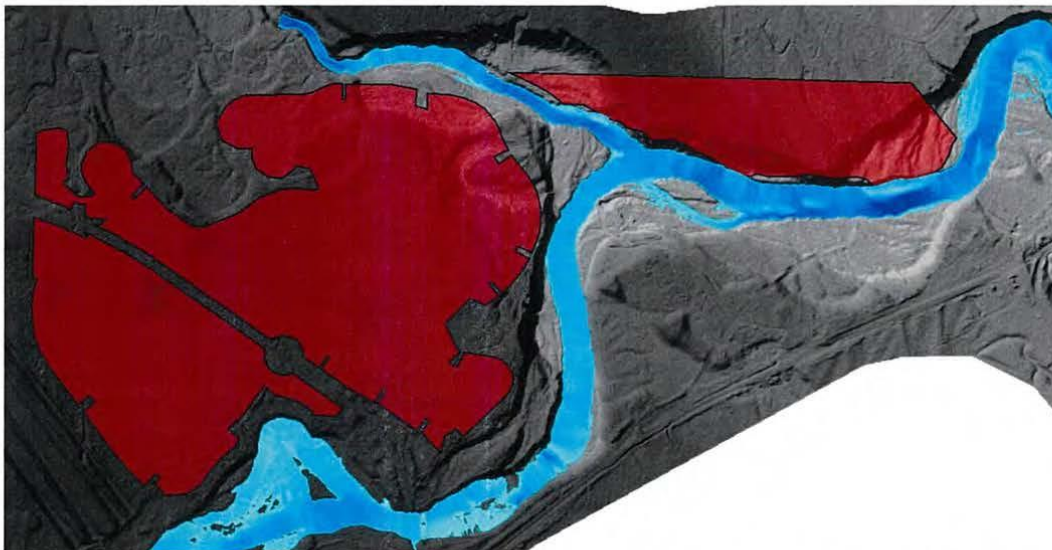


The hydraulic analysis of the Browns River & Puntledge River was completed using the HEC-RAS (v5.0.5) hydraulic modelling software. This software is the River Analysis System (RAS), developed and maintained by the US Army Corps of Engineers Hydraulic Engineering Center (HEC). The two-dimensional mesh modelling functionality was used in conjunction with the LiDAR data (Spring 2018). The model estimates the water surface elevation, and water velocity and direction at all locations within the model's boundaries.

4.1. INPUT PARAMETERS & MODEL CREATION

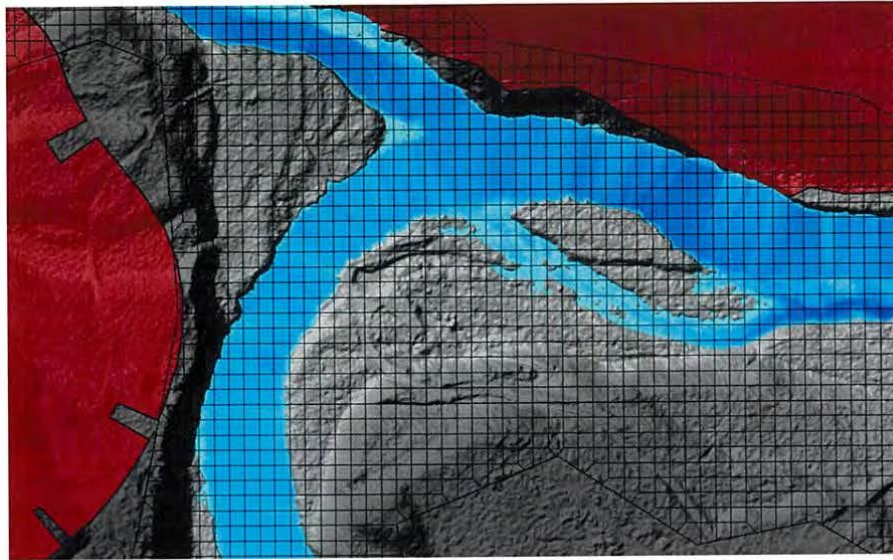
LiDAR data was collected by McElhanney in Spring 2018 via an airplane mounted sensor. It provides coverage of the study area to approximately +/- 5 cm accuracy. **Figure 3** shows the Digital Terrain Model (DTM) created from the LiDAR data.

Figure 3: Prop. Development Areas (Red) Overlaid on Digital Terrain Model (DTM, grey) & Puntledge / Browns Rivers Main Flow Channels (Blue)



We employed a computational mesh size of 12m x 12m (see **Figure 4**). It was overlaid on top of the Digital Terrain Model. Channel roughness coefficients (Manning's 'n' values) were assigned based on site information and aerial imagery. A value of 0.04 was assigned to the main river channel, and a value of 0.10 was used for the overbank / vegetated areas outside of the main channel.

Figure 4: Detail showing 12m Computation Mesh inside HEC-RAS Model



4.2. RESULTS

Both the Brown's River and Puntledge River flow within well-defined, incised channels. The Puntledge River, from the Highway 19 crossing to its confluence with the Brown's River, flows within a minimum 60-meter wide channel bordered by steep banks that rise 10 meters from the river channel (see **Figure 5**). The designated flood flow is contained within the lower portion of the channel, with an average water depth of approximately 2 meters.

Figure 5: Puntledge River Cross-Section near Stotan Falls (approx. 100m Downstream of Duncan Bay Rd Bridge)

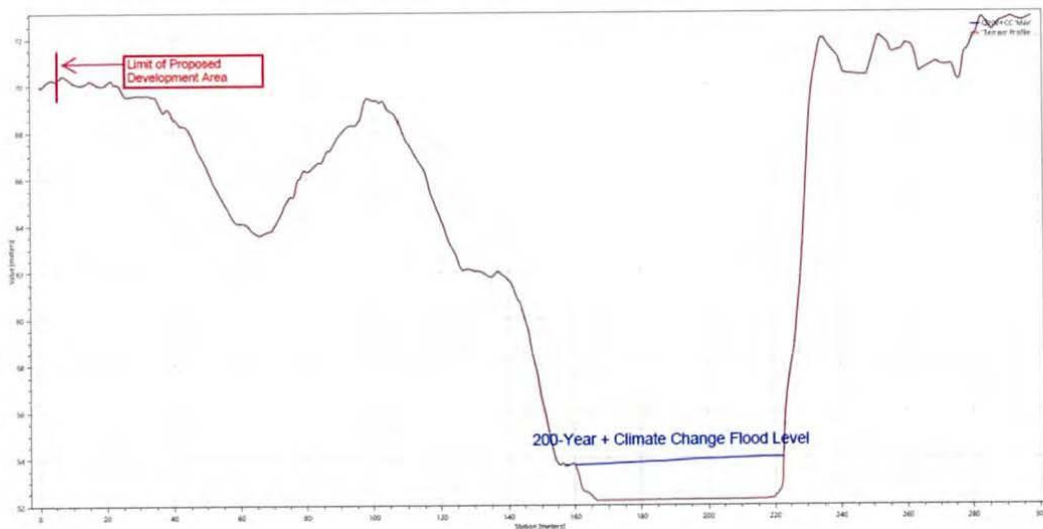


Figure 6 (plan view), and **Figures 7 & 8** (3D isometric views), highlight the proposed development area west of the confluence. This area is situated above the predicted water surface elevation under designated flood conditions.

Figure 6: Proposed Development Areas (red) & 200-Year Flood Extents (Blue indicates Flood Depth: Light Blue = shallow, Dark Blue = up to 4m deep)

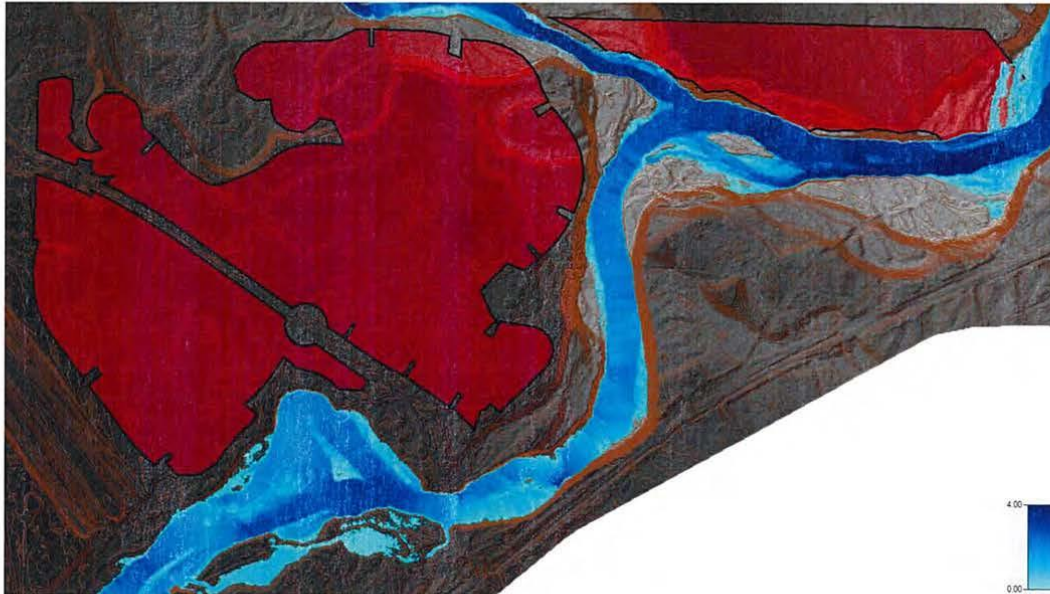


Figure 7: 3-D Isometric View, Looking from South to North (approx.) Showing the Proposed Development Areas on Either Side of Duncan Bay Road & 200-Year Flood Extents

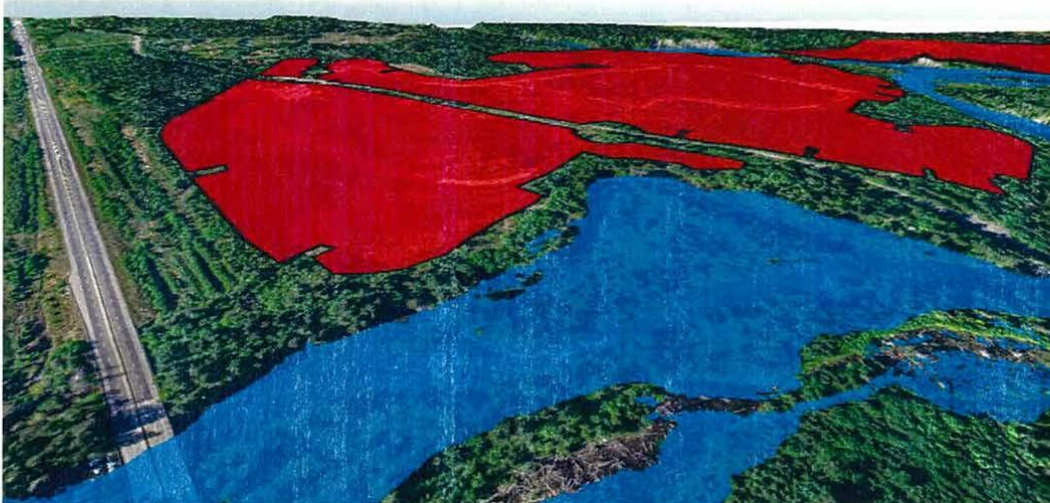


Figure 8: 3-D Isometric View, Looking from North to South (approx.) Showing the Proposed Development Areas on Either Side of Duncan Bay Road & 200-Year Flood Extents



Most of the development area east of the confluence is also located above the top of bank and outside of the potential flood hazard area. The westernmost portion of the development extends along the north side of Browns River. It is situated below the top of bank. We recommend development in this area be built above the FCL elevation and respect the recommended floodplain setback (recommendations provided in Section 5 of this report).

Figure 9: Development Area East of Confluence of Browns & Puntledge Rivers, including 200-Year Floodplain Elevation Contours



Similarly, a the easternmost development area is below the top of bank and should be respect the FCL and floodplain setback recommendations.



The proposed development is situated above the higher river banks of the Puntledge River and Browns River. Most of the proposed development area is above the recommended FCL and respects the floodplain setbacks.

Due to the complex terrain around this proposed development site, it is our recommendation that the conclusions and recommendations described herein be adopted for use in the design and construction of any proposed development within this area, in lieu of the generic recommendations provided in the CVRD's Floodplain Bylaw.

In general, this proposed development likely meets or exceeds the setback and Flood Construction Level (FCL) requirements of the CVRD's Bylaw. However, in lieu of a lengthy and difficult field survey to determine the "natural boundary" of these rivers, it is recommended that the floodplain setbacks and FCLs be instead based on the extents and elevations of the calculated flood levels, as described below:

- Development within any of the "proposed development areas" described within this study shall:
 - Have a "floodplain setback" of at least 15m from the limits of the estimated 200-year return period flood;
 - Have a "Flood Construction Level" of at least 0.6m above the estimated floodplain elevations for the 200-year return period flood.

The attached **Figure 10** shows the recommended floodplain setback areas and FCLs. This information will also be provided electronically along with this report, in the form of: a floodplain setback shapefile (*.shp file); and a flood construction level contours shapefile (*.shp file).

We trust this analysis and report will suit your needs. If you have any questions or concerns, please contact the undersigned.

McELHANNEY CONSULTING SERVICES LTD.

Prepared by:



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Reviewed by:



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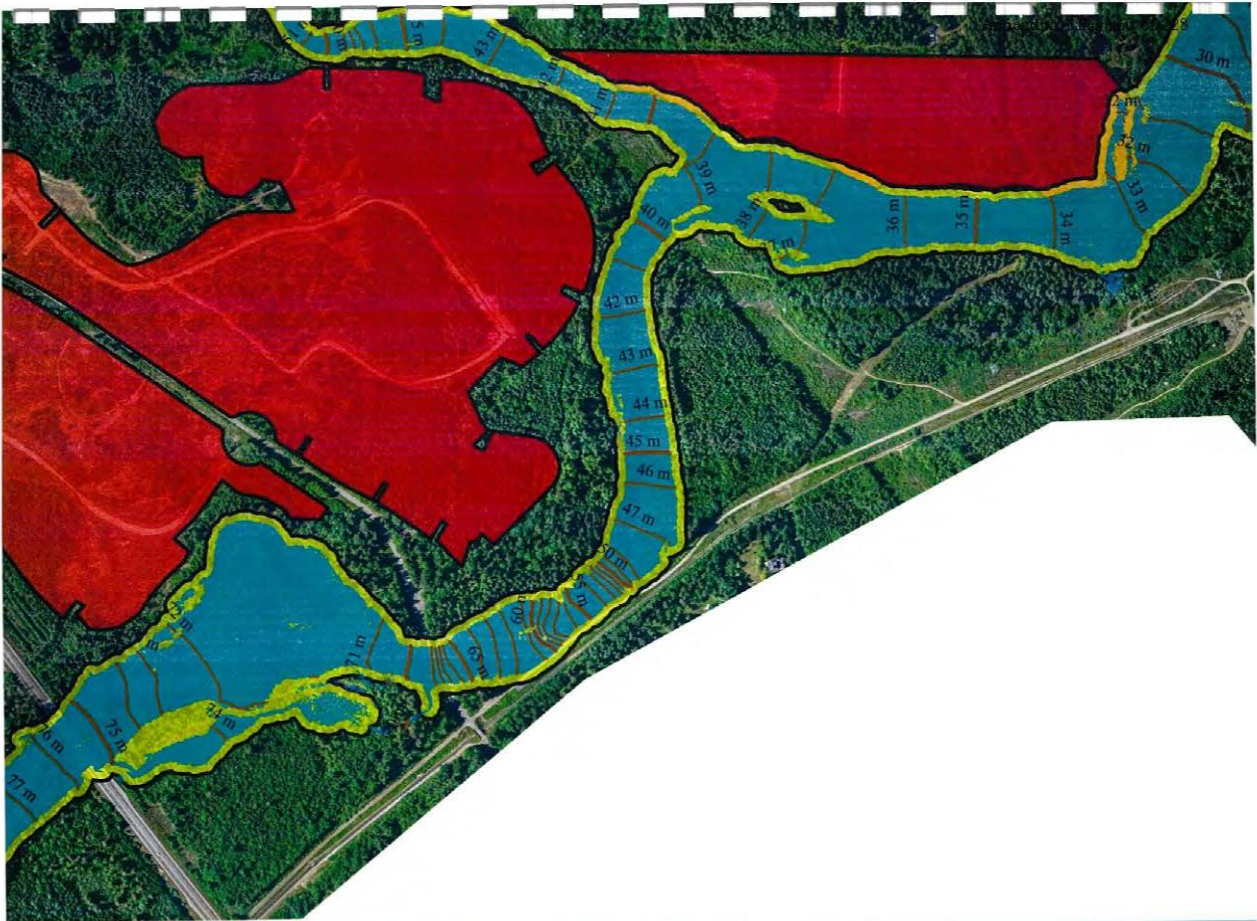


FIGURE # 10 – PROPOSED DEVELOPMENT AREAS (RED), 200-YEAR FLOOD CONSTRUCTION AREAS (BLUE)

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APPENDIX A: ASSURANCE STATEMENT

■ APPENDIX A: FLOOD MAPPING ASSURANCE STATEMENT

To: The Client

Date: July 16, 2018

3-L Developments Inc. (Attn.: Kabel Atwall)

Name (print)

Address (print)

Flood Mapping Project:

Riverwood Comox Valley - Proposed Development near Puntledge & Browns Rivers

The undersigned hereby gives assurance that he/she is an APEGBC registered professional and the Qualified Professional for the project identified above.

I have signed, sealed and dated the attached report in accordance with the APEGBC Professional Practice Guidelines – Flood Mapping in BC. The report supports and accurately reflects the assurances made in this Assurance Statement.

I have completed the following activities:

(Check the applicable items)

Activity	
<input checked="" type="checkbox"/>	Reviewed the relevant provincial legislation and local government regulations, policies, and floodplain bylaws
<input checked="" type="checkbox"/>	Reviewed available and relevant background information, documentation and data
<input checked="" type="checkbox"/>	Visited the site and reviewed the conditions in the field that may be relevant
<input checked="" type="checkbox"/>	Considered the need for, and scale of, investigations that address future land use changes and climate change
<input checked="" type="checkbox"/>	Developed and executed the flood mapping in accordance with the criteria established by the client
<input checked="" type="checkbox"/>	Addressed any significant comments arising from internal or peer reviews
<input checked="" type="checkbox"/>	Prepared a flood mapping report along with the accompanying digital information

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I hereby give assurance that the attached flood mapping report and supporting digital documentation have been produced in accordance with the APEGBC Professional Practice Guidelines – Flood Mapping in BC.

Eric Heel, P.Eng.
Name (print)
Signature 
McElhanney Consulting Services Ltd.
Address (print)
1196 Dogwood Street
Campbell River, BC V9W 3A2

250-287-7799
Telephone
eheel@mcelhanney.com
(email)

July 16, 2018
Date



If the APEGBC Qualified Professional is a member of a firm, complete the following:

I am a member of the firm McElhanney Consulting Services Ltd.
and I sign this letter on behalf of the firm. (Print name of firm)

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**APPENDIX B: EXCERPTS FROM COURTENAY INTEGRATED FLOOD
MANAGEMENT STUDY (IFMS)**

City of Courtenay
Integrated Flood Management Study

5 HYDROLOGIC AND HYDRAULIC MODELING

5.1 HYDROLOGIC ASSESSMENT

The provincial Floodplain Mapping Guidelines are based on an estimated 200-year return period peak water levels to determine floodplain mapping levels (or flood construction levels). The 200-year return period event is also used in developing flood protection options and assessing upstream and downstream impacts.

Flood hydrology of the Courtenay River basin is dependent on a complex number of variables. These combine to influence the magnitude of stream flow experienced during a flood event. Development of design floods for the mandated 200-year return period requires an assessment of flows within the tributary streams, an assessment of the timing of tributary peak flows relative to each other, and the magnitude and timing of tide levels in Comox Bay.

A detailed hydrologic assessment was completed by KWL, relating available hydrometric data to the timing of peak flows and tide levels, arriving at predicted design discharges and hydrographs. This information was then used as input to the development of flood profiles in the river and floodplain. The results of their hydrologic assessment are provided in Appendix C and are summarized below.

5.1.1 Available Hydrologic Data

Six Water Survey of Canada (WSC) hydrometric stations are located within the Courtenay River watershed, providing stream flow and water level data. These stations include:

- Puntledge River at Courtenay (08HB006)
- Puntledge River below Diversion (08HB084)
- Tsolum River near Courtenay (08HB011)
- Browns River near Courtenay (08HB025)
- Cruickshank River near the mouth (08HB074)
- Courtenay River at 5th Street Bridge (08HB083)
- Comox Bay near Comox (08HB087)

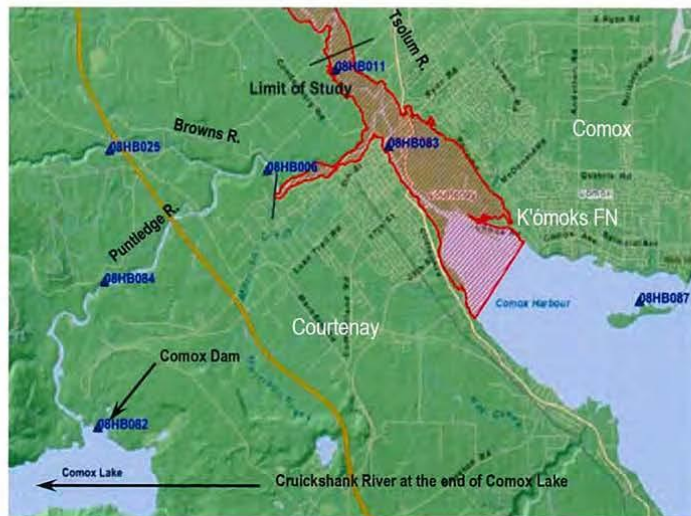


Figure 5.1: Hydrometric Stations

City of Courtenay
Integrated Flood Management Study

In addition to the Water Survey of Canada records, BC Hydro also maintains a daily record of inflow to Comox Lake which is back calculated based on the recorded Comox Lake levels and controlled outflows into the Puntledge River at the Comox Lake Dam. The locations of the hydrometric gauges are shown on Figure 5.1.

The magnitude of the peak design flows for the Courtenay, Puntledge and Tsolum Rivers have been estimated through a regional flood frequency analysis. This analysis uses peak flood records from hydrometric stations from watersheds across the region, having similar physical characteristics and similar statistical peak flood characteristics as those for the study watersheds.

Screening of regional hydrometric stations was carried out to identify watersheds with similar characteristics as the Puntledge and Tsolum Rivers. Regional stations selected to estimate peak flood flows for the Puntledge River, Comox Lake Inflow and Browns River were based on watersheds with higher elevation mountainous watersheds. For the Tsolum River, watersheds with lower average elevation and lower elevation mountain watersheds were selected.

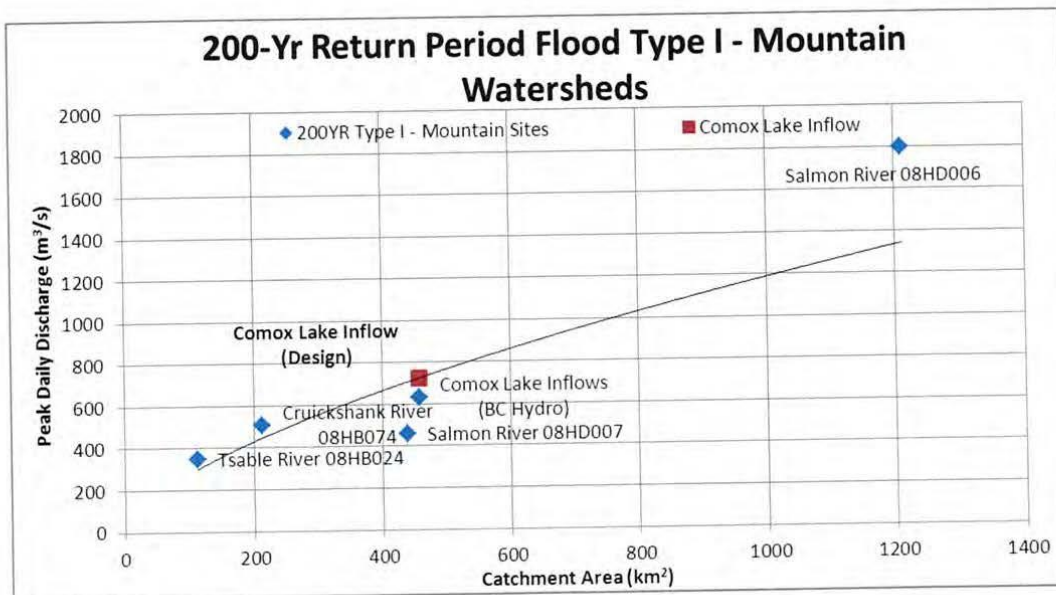
Regional flood frequency involves calculating the 200-year return period peak daily discharges for each of the selected regional stations. These peak flood estimates are then plotted against watershed area to develop a regional flood frequency curve for each of the watershed types, high mountainous watersheds and lower mountain and lowland watersheds. A copy of the regional flood frequency curves for the high mountain and lower mountain watersheds are included in Figures 5.2 and 5.3, respectively.

The results of the regional analysis indicate that the estimate of the daily 200-year inflow to Comox Lake would be marginally higher, about 10% greater, than what would be estimated using the BC Hydro inflow records alone. This is shown as the difference between the blue diamond labeled Comox Inflows (BC Hydro) and the red square labeled Comox Inflow (Design) in Figure 5.2. For the Tsolum River, the regional 200-year return period peak daily flow is about 30% higher than the 200-year return period estimate based on the annual daily peak record from the Tsolum River near Courtenay (WSC 08HB011) gauge. The suitability of both the regional estimate and the single station estimates were carefully considered for adoption as the design value for the assessment. Ultimately, discussions held with the Inspector of Dykes during development of the study, led to using the more conservative regional estimate due to the uncertainty in estimating peak flood flows based on a single station.

Instantaneous peak flow estimates for each of the rivers has been estimated using the results of the regional analysis, by applying an average instantaneous to daily peaking factor based on the overlapping period of record for the daily and instantaneous flows.

City of Courtenay
Integrated Flood Management Study

Figure 5.2 – Regional Flood Frequency Curves for Mountain Watersheds



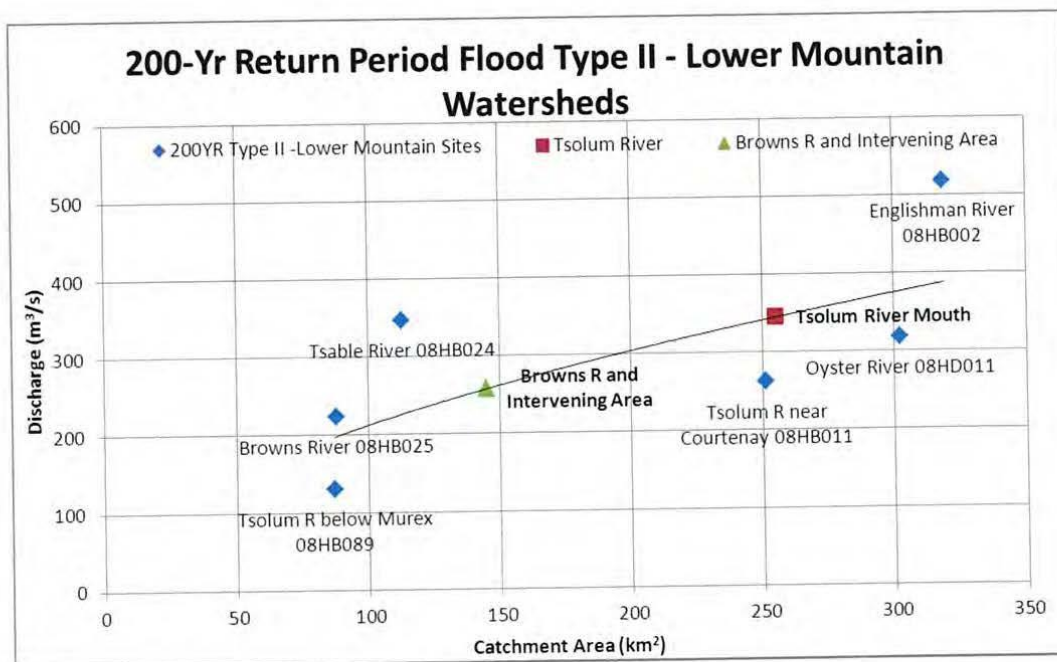
Since discharge in the Puntledge River is strongly influenced by operation of the Comox Lake dam, a frequency analysis of the recorded flows at the Puntledge River gauge does not provide a good indication of the river discharge conditions under the design flood event. For the IFMS study, frequency analysis was performed for Comox Lake inflows (back calculated by BC Hydro), together with the Browns River flows, to determine respective peak design flows. The design return period Puntledge flows were then calculated by adding the following three components:

1. The estimated Comox Lake inflow being routed via the lake and the control dam
2. The estimated Browns River flow
3. The design flow from the additional intervening area of 47 km² between Comox Lake and Courtenay River (excluding the Browns River, based on the Browns River design flow).

A reservoir operation model was developed, based on BC Hydro's Operating Orders, to simulate discharges from Comox Lake. This model incorporated the current Operating Orders which outline how the dam is to be operated under flood conditions. Under the orders, flow releases from the dam are to be reduced during high tide periods, to limit the potential for flooding; however, this is limited by the storage capacity of Comox Lake.

City of Courtenay
Integrated Flood Management Study

Figure 5.3 – Regional Flood Frequency Curve for Lower Watersheds



The model assumes that the Comox Lake water level is at the spillway crest level at the start of the 200-year return period flood event, at El. 135.33 m. Typically, BC Hydro operates the dam to control water levels below this level. However, per discussions with the Provincial Authorities, for the 200-year return period event, it has been assumed that water levels in the lake have been raised to the limit of control, as a result of high inflow to the lake prior to the start of the 200-year return period flood event. Therefore, flow is released from Comox Lake uncontrolled from the start of the 200-year return period event until such time as the reservoir level falls below the spillway crest and the operating orders can resume.

Once the magnitude of peak flows for each of the tributaries to the Courtenay River was estimated, the distribution of flow over time (hydrograph shape) and relative timing of flows had to be established for the design event. Both hydrograph shape and relative timing were based on review of recent flood events. The design event hydrograph shapes were selected to have a single peak, cover typical flood event durations and produce larger than average total volume. The historical events were then scaled up to the magnitude of the design events, by multiplying the ratio of the design event peak flow and the recorded peak flow to hourly data points from the historical recorded flood event. The historical flood events used to develop hydrograph shapes for the Tsolum River and Browns River are based on

City of Courtenay
Integrated Flood Management Study

recorded events from November 4 to 16, 2004, and from November 12 to 19, 2011, respectively. The design Comox Lake Inflow hydrograph is based on hourly records from the Cruickshank River gauge, located at the headwaters of Comox Lake, for an event recorded in November 10th to 20th, 2004.

Relative timing of the peak floods was based on a review of historical flood events. These indicate that for those storm events which produce large flood peaks on all tributary streams, the Browns River tends to peak prior to that of Comox Lake inflow, while Tsolum River tends to peak after the peak of the Comox Lake Inflow. The timing of the peak flows between Comox Lake Inflow and the Browns River and Tsolum River were found to occur 1 hour before and 4 hours after, respectively. This combination produces a peak flow at the mouth of the Puntledge River that is coincident with the peak flow on the Tsolum River. A summary of the design peak flood discharges at various locations in the study area is shown in Table 5.1. Plots of the 200-year return period flood event hydrographs are shown on Figure 5.4.

A sensitivity analysis was carried out to assess the influence of relative timing of the Comox Lake inflow peak and the Tsolum River peak flow. Due to the routing effect of Comox Lake and the flattening of the Puntledge River peak, it was found that adjusting the relative timing of the peaks had very little influence on the magnitude of peak flows in the Courtenay River.

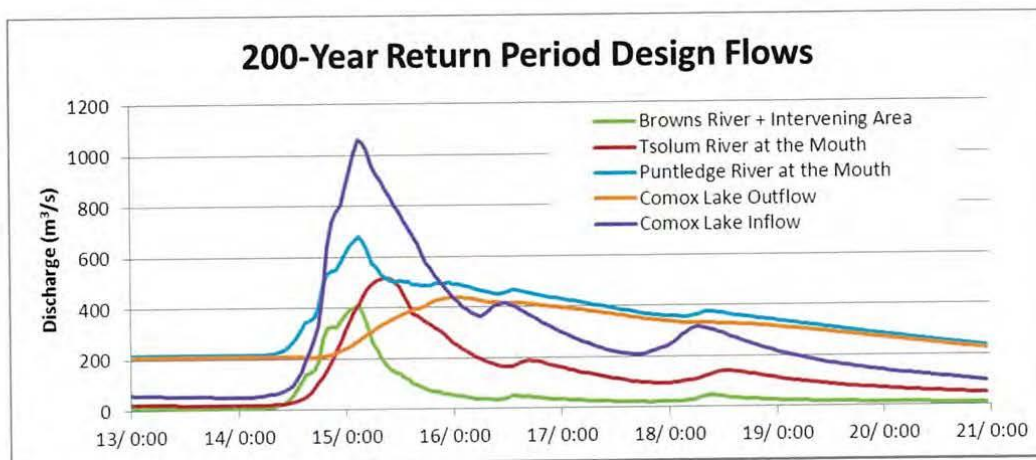
Table 5.1: 200-year Return Period Design Storm Event Values

River	Peak Instantaneous Discharge (m ³ /s)
Comox Lake Inflow	1059
Comox Lake Discharge ¹	439
Puntledge River at the Mouth	679
Tsolum River at Mouth	516
Courtenay River ³	1105

Note: 1 – Table shows magnitude of instantaneous flood peaks but not the relative timing of the peaks. The peak discharges in the contributing watersheds do not occur at the same time which is reflected in the peak flow estimates for Puntledge River at the mouth and Courtenay River.
2 – Comox Lake Discharge is based on controlled outflows using the Operating Rules until lake levels rise above free overflow spillway at which point flows are assumed to be uncontrolled.
3 – Contribution to peak flow from intervening area between Comox Lake Dam and Puntledge River mouth not including Browns River.
4 – Peak Courtenay River Discharge is estimated by adding Puntledge River and Tsolum River hydrographs which provides an estimate of total peak flow in the river channel and across the floodplain.

City of Courtenay
Integrated Flood Management Study

Figure 5.4: 200-Year Design Flood Event



5.2 HYDRAULIC MODEL DEVELOPMENT

MIKE FLOOD is a hydrodynamic computer modeling software developed by Danish Hydraulic Institute (DHI) for flood modeling. It is an integrated tool for river channel, floodplain, and coastal flood studies. The MIKE FLOOD model for the Courtenay River watershed is a combination of the MIKE 11 one-dimensional hydrodynamic model used to model flows and water levels in the main river channels and the MIKE 21 two-dimensional model in the floodplain area and coastal areas. The MIKE 21 Flexible Mesh module was used to allow for variations in the grid sizes in the floodplain and therefore to increase topographic detail in critical overflow areas while allowing for reduced topographic detail in areas of ponding or areas outside the flood extents, thereby limiting model size and run times. The model covers the following extents:

- Courtenay River from tide water at Comox Bay to the confluence of the Old Tsolum River Channel and Puntledge River;
- Puntledge River from the confluence with the Courtenay River to the Puntledge River at Courtenay Gauge (WSC 08HB006) downstream of the BC Hydro Puntledge Powerhouse;
- Tsolum River from the confluence with the Puntledge River to a point approximately 300 m upstream of the Dove Creek Road bridge; and
- Old Tsolum River Channel adjacent to Headquarters Road, the Old Island Highway and Lewis Park.

The limits of the model are shown on Figure 2.1, and are consistent with the limits of the Study Area.



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Technical Memorandum

DATE: October 8, 2013

YOUR FILE:

TO: Derek Richmond, City of Courtenay

CC: Mark DeGagne, McElhanney Consultants Ltd.

FROM: Craig Sutherland, P.Eng.

RE: **CITY OF COURTENAY**
Courtenay River Integrated Flood Management Study
Hydrodynamic Model Boundary Conditions
Our File 0755.016

Background

The following technical memorandum outlines the development of model boundary conditions for the Courtenay River Integrated Flood Management Study (IFMS) being prepared for the City of Courtenay.

This technical memorandum outlines:

1. The study area and description of regional hydrology
2. Development of 200-year design floods for Puntledge River and Tsolum River
3. Development of design ocean flood levels
4. Boundary conditions under the future climate change conditions

Water levels in the Puntledge River, Tsolum River and Courtenay River as well as the floodplain area will be modelled using a MIKE FLOOD combined one-dimensional/two dimensional hydro-dynamic model. The primary purpose of this memo is to outline the development of design flows and ocean water levels that will be used as boundary conditions for the MIKE FLOOD hydrodynamic model.

Study Area & Hydrology

Courtenay River is a 3.1 km waterway flowing through the city of Courtenay into tide water at Comox Bay and is formed by its two main tributaries - the Tsolum River and the Puntledge River. Flooding in the City of Courtenay is governed by the magnitude of peak discharges of the rivers and high tide levels in Comox Bay. The relative timing of the peak flows in the rivers and high tide in Comox Bay is also an important factor to peak flood levels.

The Tsolum River and the Puntledge River drain watersheds which rise up the eastern face of the Vancouver Island range to maximum elevations of 1,590 m and 2,134 m, respectively. Both watersheds can accumulate significant snowpack at higher elevations during the winter months. However, peak discharges as a result of spring snowmelt are generally much less than those peak flows that are due to high rainfall events with a low pressure system causing a storm surge in Comox Bay. As a result, flooding in the Courtenay River system occurs most frequently between October and February when higher tides and higher precipitation are prevalent.



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The primary study area extends from Comox Bay to the Dove Creek Road Bridge on the Tsolum River and to the Water Survey of Canada (WSC) hydrometric gauge just downstream of the BC Hydro Power Station on the Puntledge River. The MIKE FLOOD model will model water levels throughout the floodplain which is outlined in red on Figure 1 below.

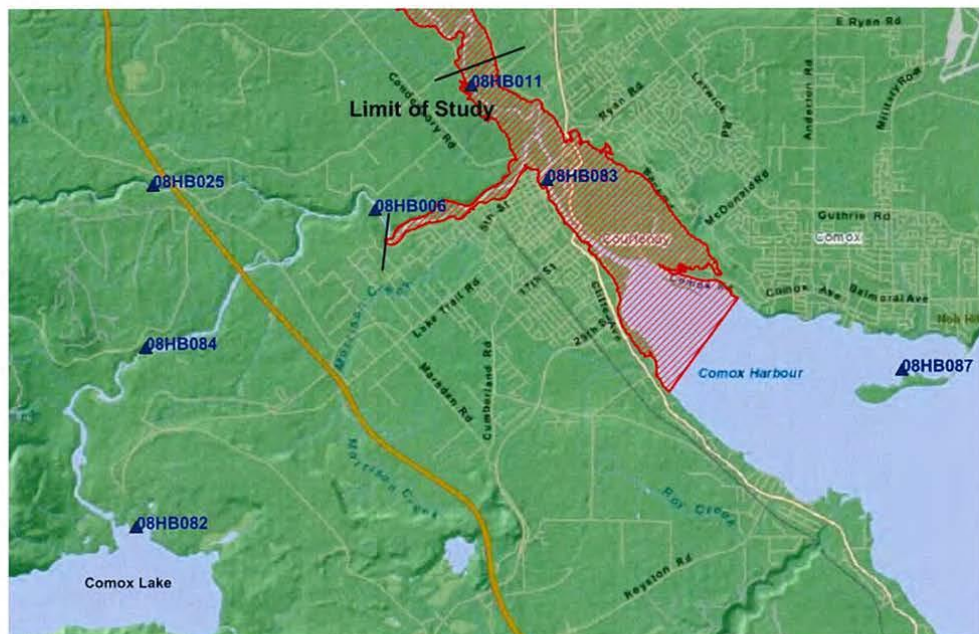


Figure 1: Study Area and Hydrometric Station Locations

The WSC has a network of hydrometric stations in the study watershed which provide essential historic and current data to forecast probable events. In addition to the stream flow and water level records from the WSC gauges, daily inflows to Comox Lake from BC Hydro were also used in the analysis. The inflow records are back calculated based on the measured Comox Lake Levels (WSC 08HB082) and controlled outflows into the Puntledge River. Table 1 lists of the WSC gauges used in the study in selection of calibration and verification events and the development of design flood discharges. The locations of the gauges are shown in Figure 1.

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Table 1: Major WSC hydrometric stations in the study area

Station Name	Station ID	Catchment Area (km ²)	Years of Record
Tsolum River near Courtenay	08HB011	255	51
Puntledge River near Courtenay	08HB006	590	52
Courtenay River at 5 th street bridge	08HB083	867	15
Browns River	08HB025	89	33
Cruikshank River	08HB074	215	29
Comox Harbour at Goose Spit	08HB087	-	3
BC Hydro Comox Lake Inflow	-	-	48

Recent Flood Events

High flows in the Puntledge and Tsolum Rivers combined with large tides in Comox Bay, resulted in flooding in the City of Courtenay on Dec. 21 to 29, 2009 and Nov. 12 to 19 2010 with maximum Courtenay River water levels recorded at the 5th Street Bridge of 3.154 and 3.002 m, respectively. These two flood events were used to calibrate and verify the MIKE FLOOD model developed for the Courtenay River watershed. Recorded discharge and water level hydrographs for the two events are shown in Figures 2 and 3.

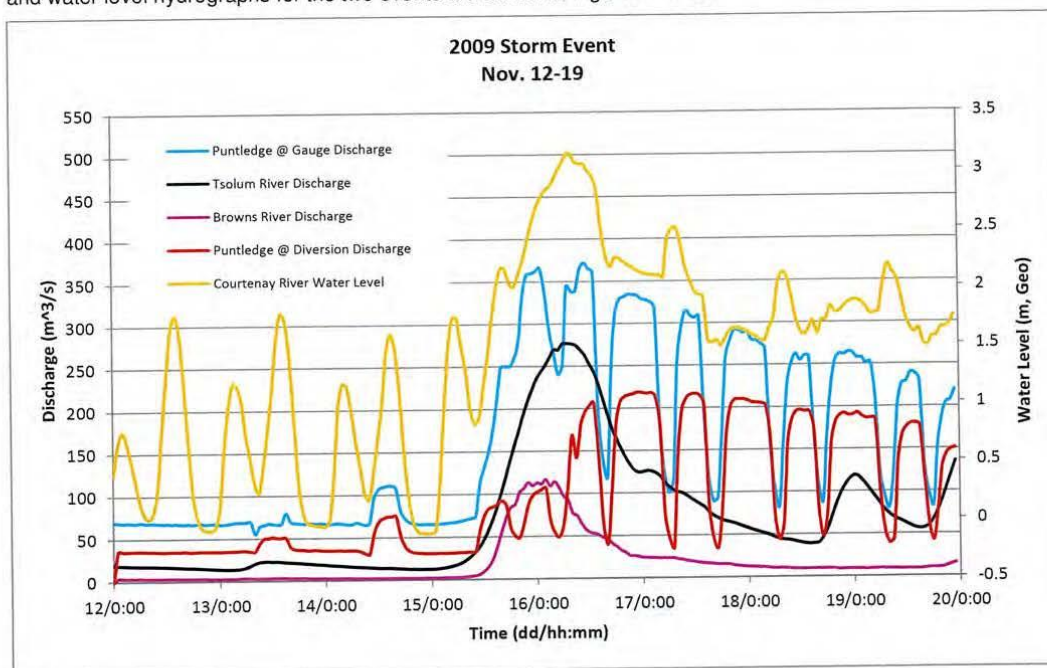


Figure 2: 2009 Storm Event Hydrographs

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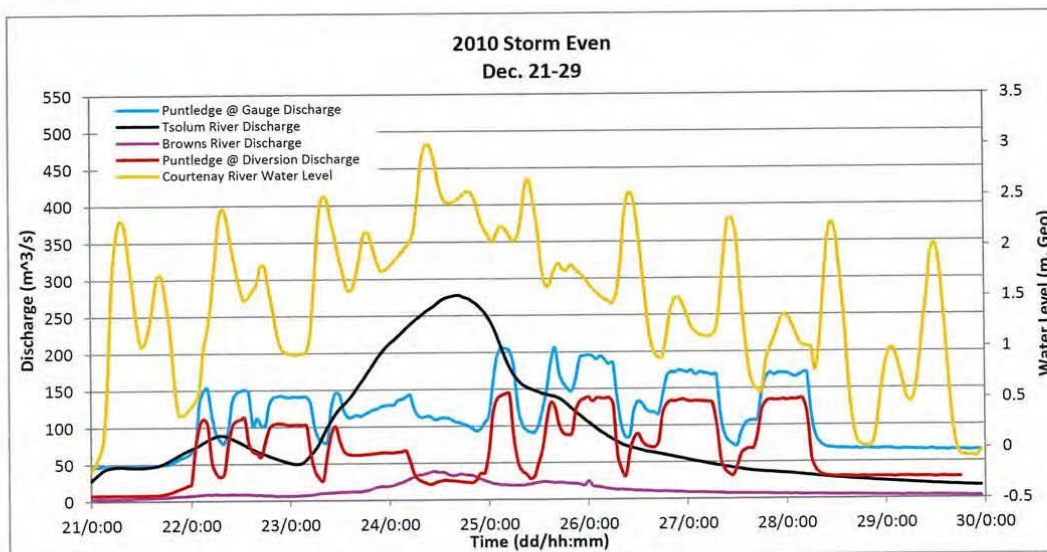


Figure 3: 2010 Storm Event Hydrographs

Design Flood Events

The provincial Floodplain Mapping Guidelines requires the use of the estimated 1:200-year return period peak water levels to determine floodplain mapping levels (or the flood construction levels) for the type of watersheds as the Courtenay River. On this basis, modelling of the 1:200-year return period flood event was performed for the Courtenay River floodplain mapping study. The proposed flood management options were also tested mainly using the design 1:200-year return period flood event model. In addition to the 1:200-year return period event, the 1:50-year and 1:100-year return period modelling were also performed during the selection of the design parameters of the proposed flood management options. Therefore boundary condition data were also to be generated for the 1:50-year and 1:100-year flood conditions.

The Courtenay River watershed is a typical coastal watershed that the flood levels in the floodplain are influenced by both the ocean tides and the river discharges. Likely, the 1:200-year flood level near the coastal area of the floodplain would be governed by the ocean tide levels, while the design flood levels in the upstream section of the floodplain would be governed by the river discharges. Design flood levels in the middle section of the watershed would be a combined effect from both the coastal tide levels and river discharges. Typically methodology used for the floodplain mapping studies for this type of watersheds includes performing a series of analysis with combined probabilities of the ocean tide data and the river discharges.

For the Courtenay River study, we performed the MIKE FLOOD modelling using 1:200 return period river discharge data combined with typical higher high tide and the 1:200-year return period ocean tide with average annual flood. The higher water levels from these two scenarios has been used to establish the peak 200-year return period design water levels. Same methodology was also used for modelling of the 1:50-year and 1:100-year flood events.

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Regional Flood Frequency Analysis

The magnitude of the peak design flows for the Courtenay, Puntledge and Tsolum Rivers have been estimated through a regional flood frequency analysis. This analysis uses peak flood records from hydrometric stations from watersheds across the region which have similar physical characteristics and with peak flood data with similar statistical characteristics as those for the study watersheds.

A screening of regional hydrometric stations was carried out to identify watersheds with similar characteristics as the Puntledge and Tsolum Rivers. Regional stations selected to estimate peak flood flows for the Puntledge River, Comox Lake Inflow and Browns River were based on watersheds with higher elevation mountainous watersheds. For the Tsolum River, watersheds with lower average elevation and lower elevation mountain watersheds were selected. The stations selected for initial screening included the regional analysis are shown in Table 2, on following page.

Regional flood frequency involves calculating the 200-year and 50-year return period peak daily discharges for each of the selected regional stations. These peak flood estimates are then plotted against watershed area to develop a regional flood frequency curve for each of the watershed types, high mountainous watersheds and lower mountain and lowland watersheds. A copy of the regional flood frequency curves for the high mountain and lower mountain watersheds are included in Figures 4 and 5.

As most stations have longer periods of record for daily average floods. The average daily flood discharge has been estimated using the regional analysis. The instantaneous flood estimate for each of the rivers has then been estimated by applying an average instantaneous to daily peaking factor based on the overlapping period of record for the daily and instantaneous flows.

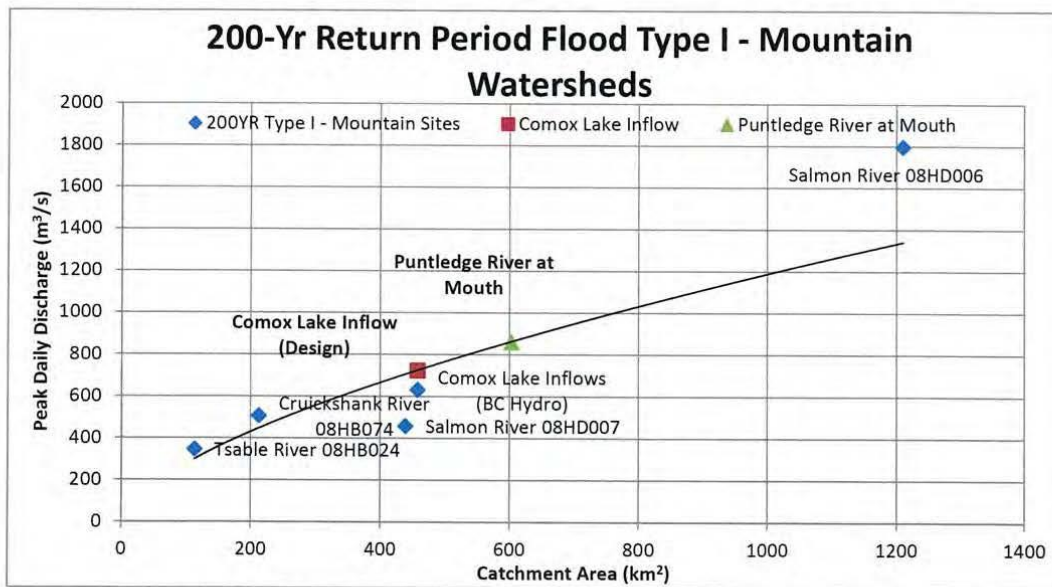


Figure 4 – Regional Flood Frequency Curves for Mountain Watersheds

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TABLE 2 – Regional Stations used in Flood Frequency Analysis

Regional Stations used in Regional Analysis					
Catchment Name	Catchment Area (km ²)	Median Elevation (m)	Mean Annual Flood (m ³ /s)	200YR Return Period Daily Flow (m ³ /s)	200YR Return Period Instantaneous Flow (m ³ /s)
Type I Watersheds – High Mountain					
Cruikshank River 08HB074	213	976	186	507	775
Tsable River 08HB024	113	780	138	347	547
Salmon River 08HD006	1210	627	712	1797	2336
Salmon River 08HD007	439	619	209	459	730
Comox Lake Inflows (BC Hydro)	458	752	284	633	
Type II Watersheds – Low Mountain					
Browns River 08HB025	88	800	70	224	428
Oyster River 08HD011	302	762	144	318	472
Tsable River 08HB024	113	780	138	347	547
Tsolum R near Courtenay 08HB011	251	230	128	262	358
Tsolum R below Murex 08HB089	87		59	131	199
Englishman River 08HB002	319	571	205	518	812



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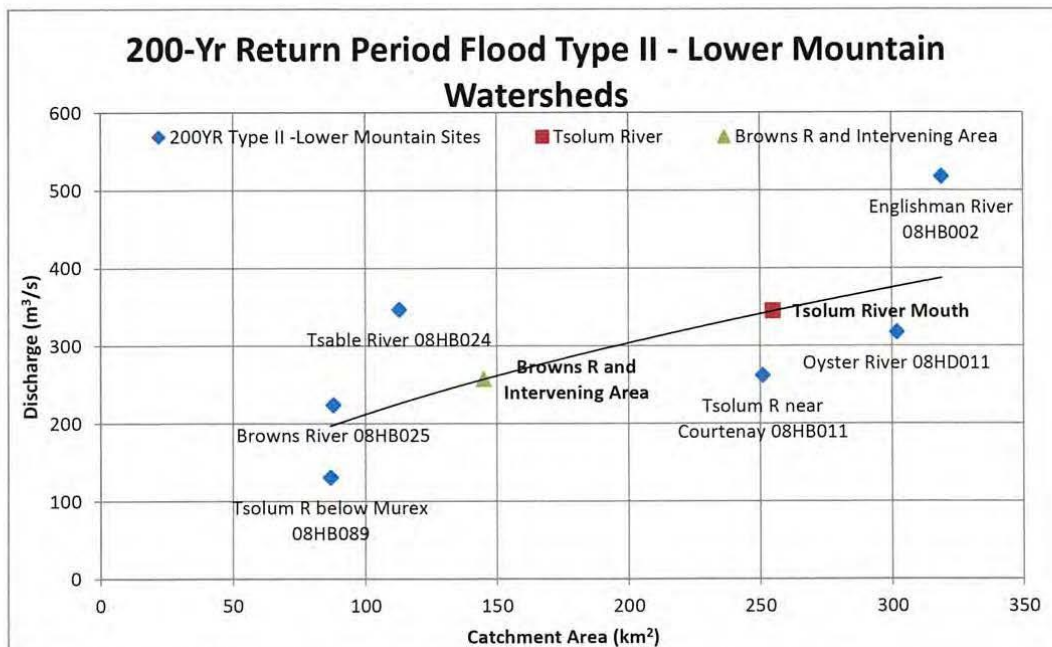


Figure 4 – Regional Flood Frequency Curve for Lower Watersheds Watersheds

Tsolum River

The Tsolum River has a catchment area of 266 km² and consists mainly of lowlands with minor proportion of the catchment draining the east facing slopes of the Vancouver Island Mountains. The discharge values recorded at the WSC gauge downstream of the Dove Creek Road Bridge (08HB011) were used in the regional analysis to estimate peak design discharges for various return period flood events. The results of the regional flood frequency assessment indicate that the 200-year return period flood has a magnitude of 345 m³/s and 516 m³/s for the daily and instantaneous peaks, respectively.

The recorded Tsolum River flows for both the 2009 and 2010 events were approximately the same (277 m³/s and 278 m³/s) and roughly equal to the 1:20-year return period peak design flow.

The flow distribution shape of the storm event of November 2004 was selected as the distribution shape of the design flood for the Tsolum River. The November 2004 storm event had a duration of approximately three days and a single peak. The 2004 event was scaled up to match the peak instantaneous discharge for the required design return period event.

Puntledge River

The Puntledge River has a catchment area of 598 km² with two significant tributaries, Browns River and Comox Lake. Browns River consists of lowlands with minor proportion of mountains without any lakes or structures that

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could influence the peak discharges. Comox Lake is primarily fed by a large catchment area from Cruickshank River (215 km²). Flows released from the Comox Lake are controlled by BC Hydro to provide water supply for their power generating penstock, fisheries, and water distribution systems.

The WSC has a few active flow measurement gauges in the Puntledge River watershed including the gauge in Puntledge River near Courtenay (08HB006, downstream of the Comox Lake dam), in the Browns River (08HB025) and in the Cruickshank River (08HB074). In addition, inflows to the Comox Lake have also been recorded by BC Hydro. Although the Puntledge River near Courtenay gauge measures flows in the Puntledge River including the discharges from both the Browns River and the Comox Lake, the recorded Puntledge River flows show flows being strongly influenced by the Comox Lake dam operation. A frequency analysis to the recorded flows from the Puntledge River gauge would not likely provide a representative peak flows under the desired return period flood conditions. For the current floodplain mapping study, we performed frequency analysis to the recorded Comox Lake inflows and the Browns River flows to determine their peak design flows. The design return period Puntledge flows were then calculated by adding the following three components:

- The estimated Comox Lake inflow being routed via the lake and the control dam
- The estimated Browns River flow
- The design flow from the additional intervening area of 48 km² between Comox Lake and Courtenay River excluding the Browns River based on the Browns River design flow.

As previously discussed, the BC Hydro dam plays an important role in controlling discharges from the Comox Lake into the Puntledge River. The *Generation Operating Order* report issued in 2010 by BC Hydro provides the current flow release protocols for the Comox Lake dam. The operating orders are determined by a series of triggers that are sent live from BC Hydro's hydrometric stations downstream of the dam to limit flood risks during a storm event. BC Hydro monitors the following parameters to mitigate flood hazards:

- Puntledge River near Courtenay discharge
- Tsolum River near Courtenay discharge
- Comox Lake water levels
- Courtenay River water levels
- Courtenay River discharge (assumed to be Puntledge + Tsolum discharge values)
- Comox Bay predicted tides

BC Hydro reduces discharge from Comox Lake in the event of high tides and/or high water levels in the Courtenay River. During the rising limb of the flood and when tides and river water levels are low the dam is operated to release as much water as safely possible to balance the flood risk between the downstream properties and properties around the lake. It should be noted that the concrete dam is designed to be overtopped during extremely high flood events (greater than the 200-year event).

BC Hydro has a long record (48 years) of daily inflow data to Comox Lake, which were back calculated based on change in lake levels and outflows using the mass balance equation. This data set was used to determine the 1:200-year return period peak daily inflow value. Although hourly inflow data are also available from BC Hydro, there appears to be significant noise in the record due to slight errors in water level measurements or discharge records which can result in significant variation in inflows. For our study, hourly inflow time-series data for the design events was developed based on recorded hydrograph shapes of the Cruickshank River. A daily flow to instantaneous flow peaking factor of 1.53 determined for the Cruickshank River was used to calculate the peak instantaneous discharge value for the design hydrographs.

A reservoir operation model was developed using Excel and BC Hydro's Operating Orders to simulate discharge from Comox Lake during the different return period design events. The model assumes that the orders are

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followed exactly as written. A review of historical data indicates that this may not always be the case because of difficulty in knowing in advance if the event will be an extreme flood or not.

The operation model was used to simulate the controlled discharges from Comox Lake. The model assumes that the water level at the start of the flood event is at the spillway crest level at the start of the 200-year flood event, at El. 135.33 m. Typically, BC Hydro operate the dam to control water levels below this level. However, for the 200-year event it has been assumed that water levels in the lake have raised to the limit of control as a result of phigh inflow to the lake prior to the start of the 200-year flood event.

Estimated design peaks of the Comox Lake inflow, the Comox Lake outflow, the Browns River flow and the flow for the intervening area are summarized in Table 4.

Table 2: Puntledge River Tributaries Storm Event Values

	200-Year Return Period Event (m ³ /s)
Comox Lake Inflow (Peak Instantaneous Flow)	1059
Comox Lake Discharge Uncontrolled (Peak Instantaneous Flow)	439
Puntledge River (Peak Instantaneous Flow)	679

Figures 6. and 6 shows the design flow hydrographs generated at various locations of the Courtenay River watershed for the 1:50-year and 1:200-year return period flood events, respectively. Hydrographs for the Tsolum and Puntledge Rivers were used as inflow boundary conditions for the hydraulic model.

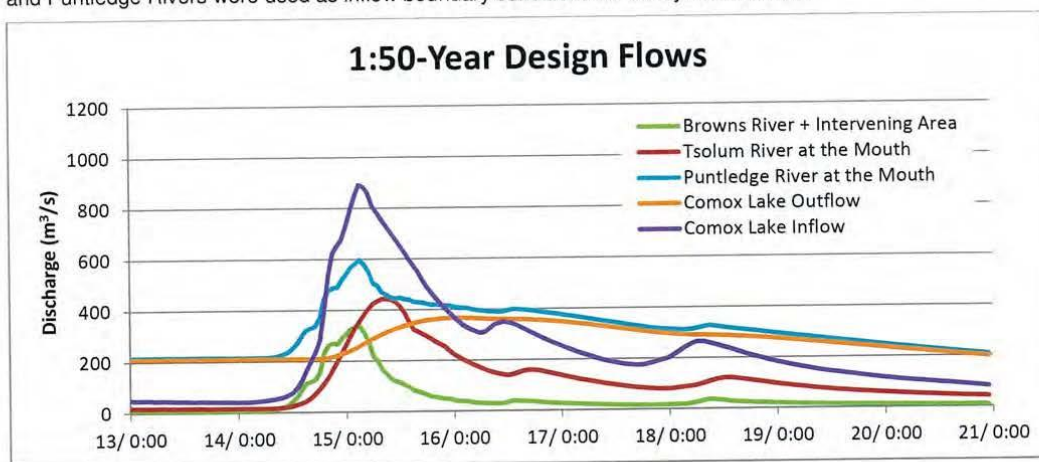


Figure 4: Puntledge River 1:50-Year Design Flows

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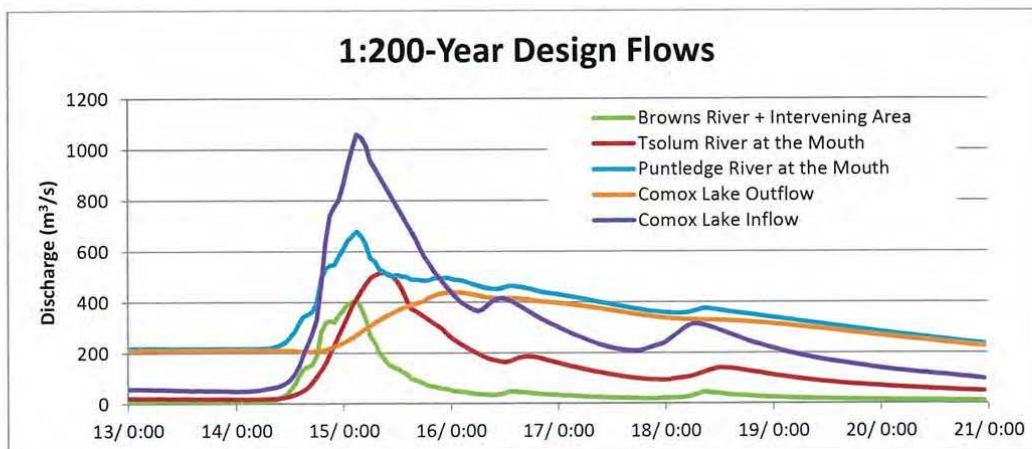


Figure 6: Puntledge River 1:200-Year Design Flows

Comparison with Previous Studies

There have been several studies conducted investigating design flood flows in Courtenay. Most notably are the Floodplain Mapping study conducted by Ker Priestman & Associates Ltd. (KPA) in 1990 and the Flood Hydrology Investigation Study of the Tsolum River conducted by Northwest Hydraulic Consultants (NHC) in 2011. A summary of the estimated design flows from the past studies in comparison of the results of the current study are shown in Table 5.

Table 3: Estimated River Flows in Previous Studies and the Current Study

	KPA, 1990 (m ³ /s)	NHC 2011 (m ³ /s)	KWL 2013 (m ³ /s)
Tsolum River - 1:200-Year Peak Instantaneous Flow (m³/s)	495	345	516
Comox Lake Inflow - 1:200-Year Peak Instantaneous Flow (m³/s)	1107	-	1040
Puntledge River - 1:200-Year Peak Instantaneous Flow (m³/s)	748	-	539
Courtenay River - 1:200-Year Peak Instantaneous Flow (m³/s)	926	-	1105

Note: Courtenay River Peak Flow based on combining the Tsolum River hydrograph and Puntledge River hydrograph with time-lag based on average of historical records.

For the Tsolum River, KPA and KWL have estimated design flows based on a regional analysis while NHC used only the Tsolum River data to compute the 200-year return period event. For the Puntledge River, KPA estimated peak flows in the Puntledge River at the mouth by first calculating the 200-year event based on the regional analysis for the entire watershed, assuming no regulation from Comox Lake. This peak discharge was then

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reduced by subtracting the difference between the Comox lake inflow and outflow based on flood routing through the lake. KPA used a storm event from 1981 to provide a shape for the inflow hydrograph, which included three and assumed that lake levels would be controlled until water levels were over-topping the dam and which time the gates would be opened resulting in very high peak outflow from the dam.

KWL have used a similar approach, except that we have assumed that lake levels start at the spillway crest elevation and are then released uncontrolled through the entire period of the storm event. This assumes that higher inflows to the lake occurred prior to the 200-year event, resulting in controlled lake levels rising to the spillway crest at which time BC Hydro opens the spillway gates to allow water to flow from the lake uncontrolled. In addition, the inflow to Comox Lake is based on 2004 inflow event which has a single peak which has been scaled up to match both the 200-year instantaneous peak as well as the 200-year 2-day total volume. These two assumptions are likely the reasons why KWL have estimated a lower outflow from the lake.

Interestingly, even though the Comox Lake outflow is lower, the combined hydrographs for the Puntledge River and Tsolum River result in an increased 200-year peak flow estimate for the Courtenay River in comparison with the KPA study.

Coastal Boundary Conditions

A coastal MIKE 21 HD model of Comox Harbour was established roughly between the tip of Goose Spit and the mouth of the Trent River in Royston to generate water level hydrographs at the Courtenay River mouth for using as the downstream boundary conditions for the MIKE FLOOD river model. The following data were used as the inputs to the coastal model:

- Astronomical tide time series;
- Storm surge;
- Wind speed and direction; and
- Courtenay River discharge.

Storm surge impacts were estimated and added to the astronomical tide to become the coastal model downstream boundary condition. The combined Tsolum River and Puntledge River discharges were used as the upstream discharge boundary condition of the coastal model. It was found that river discharges have minor impacts on the results of the coastal model; therefore our study did not perform iterations between the river and the coastal model to match up the water level and discharge data at the mouth. Wind shear and wind set up were simulated within the coastal model by adding estimated wind direction and speed under the design flood conditions. The storm wave and propagations in Comox Harbour induced by the 200-year design wind storm were modelled in MIKE 21 and used in conjunction with sea levels during the design storm events. The derivation of the boundary conditions for the coastal model is discussed in the following sections.

Astronomical Tides

Astronomical tides are the daily changes in water level due to the rotation and motion of the earth, moon and sun. The design astronomical tide time-series data were developed based on predicted astronomical tide data for Comox Harbour by the Canadian Hydrographic Service (CHS). The 200-Year design tide is based on the higher high water large tide (HHWLT), which is the average of the highest high water levels from 18.6 years of data calculated and published by CHS. The HHWLT for Comox Harbour is 2.19 m, Geodetic. The 50 & 100 design tides were based on a selected high astronomical tide event (in December 2005) in which large low (Lower Low Water Level) and high (Higher High Water Level) tides occur in one tidal cycle. The peak differences between the two design tide series is 0.33 m. The design astronomical tide time-series is shown in Figure 7.

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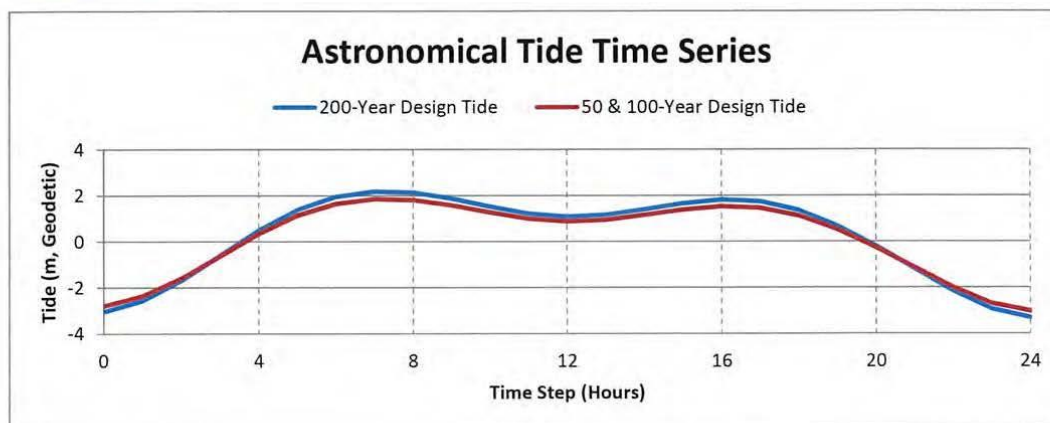


Figure 7: Design Astronomical Tide

Storm Surge

Storm surge is an episodic rise or fall in water level caused by gradients in atmospheric pressure and the associated flow of water during storm events. The design storm surge in Comox Harbour has been determined through analysis of predicted and measured tides. The difference between the predicted tide (i.e. astronomical tide) and the measured tide is primarily the storm surge.

Ideally, the design storm surge in Comox Harbour would be determined through extreme value analysis of data collected in Comox Harbour. Unfortunately, measured water level data in Comox Harbour is only available from 1967-1969 (collected by CHS) and 2010-Present (collected by Water Survey of Canada); these brief data series are not suitable for extreme value analysis.

The closest port with a long measured water level data set in Campbell River (1967- Present). A visual analysis of the correlation of storm surge was performed and it was determined that the storm surge data from Campbell River can be used as a proxy for Comox Harbour.

Extreme value analysis was performed on the Campbell River Data set (annual maximum, hourly data); it was found that the data is best fit by the Weibull Distribution. The estimated storm surge for various return periods including 90% confidence limits are summarized in Table 6.

Table 6: Estimated Peak Design Storm Surge Values at Comox Harbour

	20-Year Return Period Event	50-Year Return Period Event	100-Year Return Period Event	200-Year Return Period Event
Storm Surge (m)	1.00	1.09	1.15	1.19
Upper 90% Confidence Interval (m)	1.09	1.19	1.25-	1.31
Lower 90% Confidence Interval (m)	0.92	0.99	1.04-	1.08

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Wind Speeds and Directions

Design wind speeds have been determined based on extreme value analysis of hourly wind speeds collected by the Atmospheric Environment Service at Comox Airport (1953-Present). This data consists of 5-minute average wind speeds collected on the hour, and when used for extreme value analysis, is generally considered to be representative of the hourly average wind speed. The extreme value analysis was conducted for 16 compass directions, and it was found that the greatest wind speeds are from the south-east. The estimated wind speeds from the south-east for various return periods including 90% confidence limits are summarized in Table 7.

Table 7: Estimated Southeast Wind Speeds for Comox Airport

	20-Year Return Period Event	50-Year Return Period Event	100-Year Return Period Event	200-Year Return Period Event
South-East Wind (km/hr)	83.5	87.1	89.5	91.8
Upper 90% Confidence Interval (km/hr)	86.0	90.1	92.8-	95.3
Lower 90% Confidence Interval (km/hr)	80.9	84.1	86.3-	88.3

Climate Change Impacts

Sea level is predicted to rise moderately in the period of 2010 to 2025 and more rapidly in the period leading up to 2100 and 2200. As the sea level rises and more frequent storm events are experienced, there is an increased risk of flooding to coastal communities that poses a challenge for local government in terms of land development planning. Climate change impacts on the Courtenay River watershed were evaluated in this study. The impacts were evaluated for the following four scenarios:

- Year 2100 sea level rise only
- Year 2100 sea level rise and rainfall increase
- Year 2200 sea level rise only
- Year 2200 sea level rise and rainfall increase

Estimated rates of sea level rise have recently been assessed for BC based on the latest research. According to the Ministry of Forests, Lands and Natural Resources Operations' *Coastal Floodplain Mapping – Guidelines and Specifications* (June 2012), the expected sea level rise to Year 2100 time horizon is 1 m and to Year 2200 time horizon is 2 m over the Year 2000 level. In this study, it was assumed that the 1:200-year return period ocean levels would be increased by 1 m by Year 2100 and by 2 m by Year 2200 in comparison with the estimated existing condition 1:200-year return period tide levels.

Climate change on coastal storms and river runoffs is also considered in the study. Recent studies predicated 10% to 20% increases to rainfall and runoff values in the BC coastal regions. Our study assumed that by Year 2100, the 1:200-year return period design storm surge values and river flood flows would be increased by 15% and by another 15% on top of the Year 2100 values by Year 2200.

Closing

We trust that this memo provides an outline of the modelling boundary conditions and proposed modelling scenarios. Should you have any other questions, please contact the undersigned at (250) 595-4223.

KERR WOOD LEIDAL ASSOCIATES LTD.
consulting engineers



TECHNICAL MEMORANDUM
Courtenay Integrated Flood Management Study
Hydrodynamic Model Boundary Conditions
October 08, 2013

KERR WOOD LEIDAL ASSOCIATES LTD.

Prepared by:

Reviewed by:

Wendy X Yao, M.A.Sc., P.Eng.
Senior Water Resources Engineer

Craig Sutherland, M.A.Sc., P.Eng.
Project Manager

Reviewed by:

David Sellars, P.Eng.
Senior Water Resources Engineer

KERR WOOD LEIDAL ASSOCIATES LTD.
consulting engineers



TECHNICAL MEMORANDUM
 Courtenay Integrated Flood Management Study
 Hydrodynamic Model Boundary Conditions
 October 08, 2013

Statement of Limitations

This document has been prepared by Kerr Wood Leidal Associates Ltd. (KWL) for the exclusive use and benefit of the intended recipient. No other party is entitled to rely on any of the conclusions, data, opinions, or any other information contained in this document.

This document represents KWL's best professional judgement based on the information available at the time of its completion and as appropriate for the project scope of work. Services performed in developing the content of this document have been conducted in a manner consistent with that level and skill ordinarily exercised by members of the engineering profession currently practising under similar conditions. No warranty, express or implied, is made.

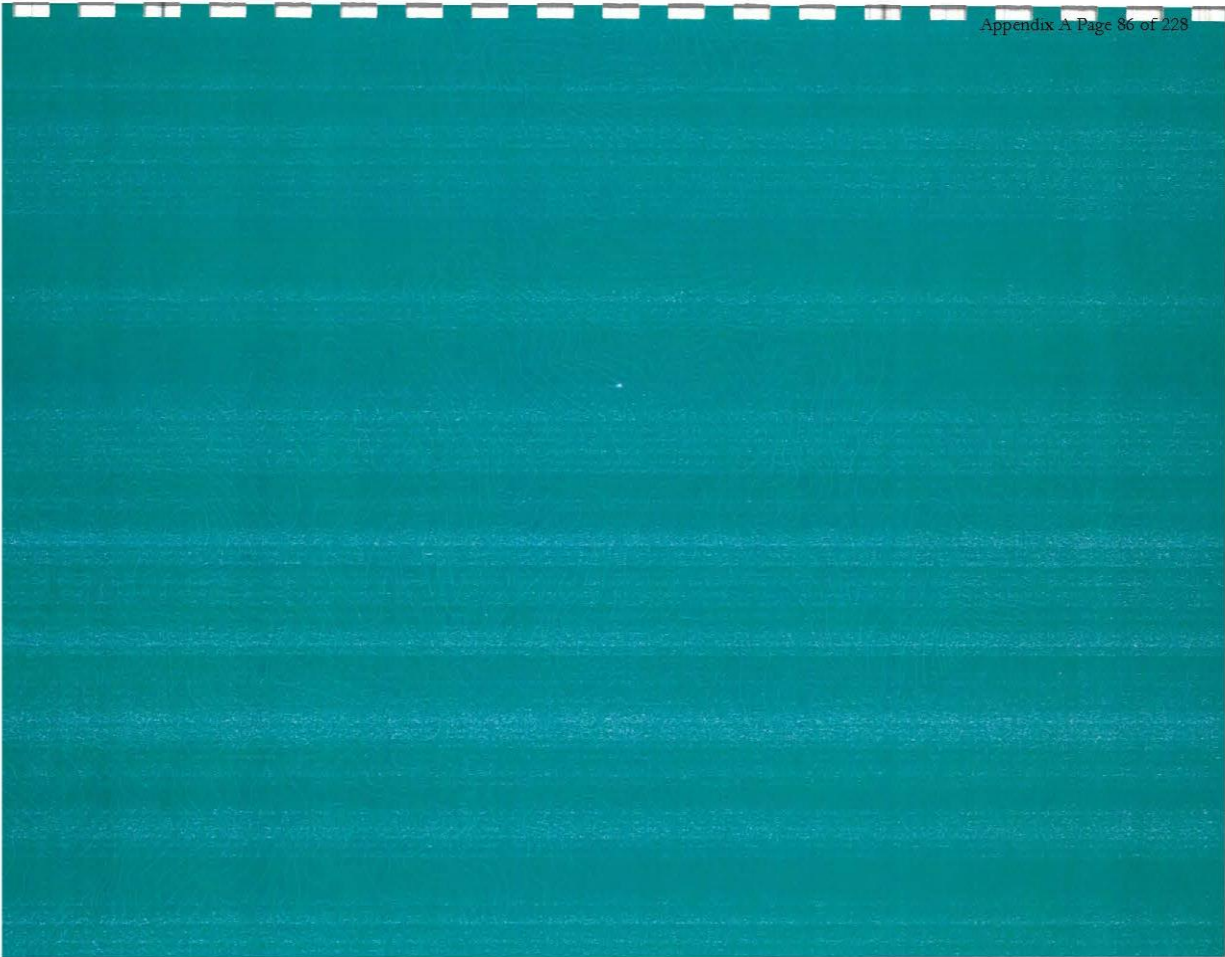
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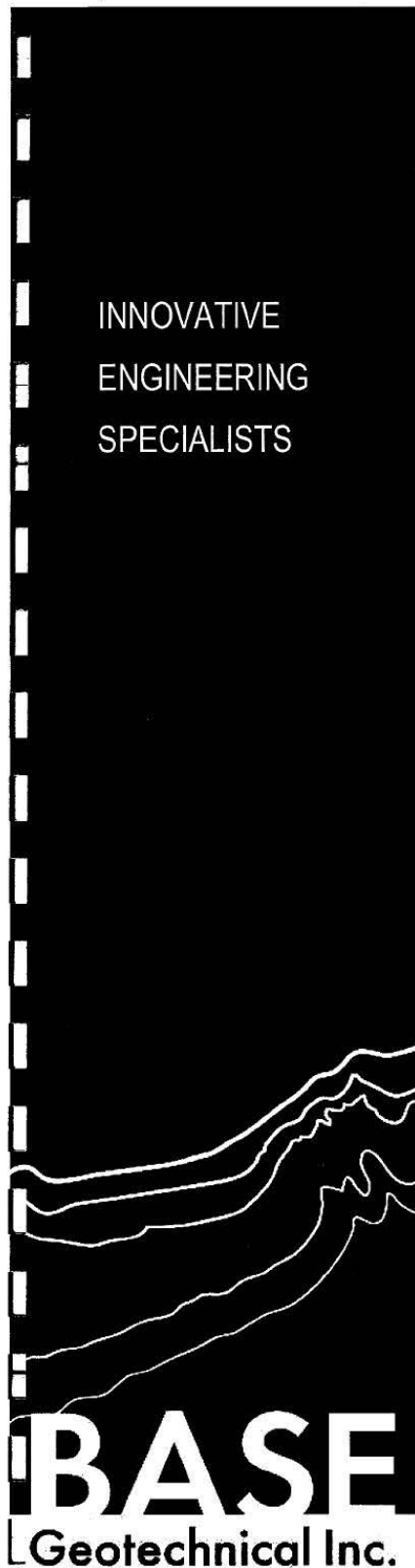
Revision History

Revision #	Date	Status	Revision	Author
0	Sept. 21, 2012		Draft for Review	CS
1	May 8, 2013		Final	CS
2	Oct 9, 2013		Revised Final with input from MFLNRO	CS

KERR WOOD LEIDAL ASSOCIATES LTD.
 consulting engineers



Appendix A Page 87 of 228



GeoHazard Assessment

Riverwood Subdivision
Courtenay, B.C.

Prepared for:

3L Developments Inc.

Prepared By:

Base Geotechnical Inc.
www.basegeotechnical.ca

Peter Bullock, P.Eng., M.Eng.
Principal

July 27, 2018
BGI File: 12920180509
MoTI File: 2017-07384

1 | Page

1. Introduction

This report summarizes the results of a geohazard assessment for the proposed Phase 1 Riverwood subdivision within the Comox Valley Regional District (CVRD) just west of Courtenay B.C.. The property as a whole is approximately 208 hectares in size (520 acres) and is situated at the confluence of the Puntledge and Browns Rivers, however this report is limited to the upper plateau region on the west side of the property (see Figure 1). The limited scope was implemented to match the phased approach for development and covered the areas that are considered to be of low geohazard risk. Additional study and reporting will be completed on an as needed basis to match the development needs. It was understood that 3L confirmed this with MoTI, and the Approving Officer agreed to this approach.

The hazard assessment was conducted by Base Geotechnical Inc. (BGI) in accordance with the "Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia" (revised May 2010) and "Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC (June 2012) prepared by the Association of Professional Engineers & Geoscientists of BC (APEGBC).

This report is subject to the attached Statement of General Conditions. These conditions should be clearly understood while reading or interpreting this report.

2. Scope of Work

The assessment was based on a review of the available background information and field reconnaissance across the west terrace and much of the remaining property. The following documents and records were reviewed as part of this investigation. The scope for this report was limited to the western upper plateau area (see Figure 1) of low geohazard risk to help expedite the phased development approach. Further study and reports are anticipated as the next phases are implemented.

- MoTI Proposed Subdivision Review Status Letter, eDAS File # 2017-07384, Dated March 21, 2018.
- FishFor Contracting Ltd., Ecology and Wildlife Summary RiverWood Development, December 18, 2009.
- McElhanney, Riverwood Development Floodplain Assessment – Draft, Puntledge and Browns Rivers 3L Developments Inc., July 12, 2018
- APEGBC, Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC, Revised May 2010
- APEGBC, Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC, June 2012
- APEGBC, Flood Mapping in BC – APEGBC Professional Practice Guidelines (V1.0, January 2017)
- MoTI, Geotechnical Design Specifications for Subdivisions, July 4, 2017
- MoTI – Technical Circular T04-17: Geotechnical Design Criteria, March 22, 2017
- MoTI, Technical Circular T-06/15: Climate Change and Extreme Weather Event Preparedness and Resilience in Engineering Infrastructure Design, August 2016.

The phased approach and discussions were completed in a meeting at the McElhanney office in Courtenay on May 18, 2018; Kabel Atwall of 3L, Kerry Barth and Bob Hudson of McElhanney, and Peter

Bullock of BGI were present. Further to this meeting a series of emails between all aforementioned party's and two field visits of the property were completed by Peter Bullock.

3. Level of Landslide Safety

The only province-wide adopted level of landslide safety is the statement "that the land may be used safely for the use intended" associated with the Land Title Act (Section 86) for subdivision approvals; however, there is no definition of what constitutes "safe." The BC Ministry of Transportation & Infrastructure (MOTI) generally accepts a probability of occurrence of a landslide hazard affecting the proposed structure of less than 10% in 50 years or 1:475 per annum. Where potential consequences include loss of life, a more commonly accepted standard is a probability of death to an individual (PDI) of 1:10,000 per annum.

The Fraser Valley Regional District (FVRD) devised a series of acceptable hazard tables based on the type of hazard (i.e. rock fall) and type of development ranging from "minor repair" to rezoning. The most common type of hazard affecting this development is "Small-scale Localized Landslip" along either the foreshore slope or the gully bank. The FVRD's level of acceptable hazard for a new building without restrictions is <1:10,000 per annum or 1:500 with siting requirements or measures to protect the structure. Note that the levels of acceptable hazard pertain directly to the building rather than the lot and should be referred to as "levels of acceptable partial risk".

Another means of assessing the slope hazard for a specific building site is to analyze the factor of safety of a slope failure capable of damaging the structure. The tolerable or acceptable factor of safety can vary but the most common standard is that applied by the District of North Vancouver (DNV). For new houses, the minimum factor of safety is 1.5 under static conditions and 1.0 under seismic conditions, or less than 15 cm displacement under the 1 in 2,475 year earthquake. This earthquake standard is consistent with the requirements of the BC Building Code to assess the slope stability under the design earthquake having a probability of exceedance of 2% in 50 years (annual probability of 1:2,475).

CVRD Planning Department confirmed they do not have qualitative risk criteria; therefore, both the FVRD's and DNV's levels of acceptable hazard and risk were adopted for this assessment.

4. Geology

The BC Geological Survey (BCGS) bedrock geology map for the Courtenay area shows the bedrock to be sedimentary in nature and part of the Nanaimo Group from the Upper Cretaceous period. This rock was found only in the river exposures on the property. The BCGS describes the rock to be of boulder, cobble, and pebble conglomerate, coarse to fine sandstone, siltstone, shale and coal. The bedrock within the property was not studied in detail, but the reconnaissance did confirm the sedimentary nature and coarser sediments as the dominant exposures.

The property was characterized by terraced sediments. Approximately 20 shallow test pits were hand excavated across the property and several past larger machine test pits were found across the property and investigated too. The soil was consistent as a silty fluvial soil of sand and gravel with varying percentage of cobble and boulders. These findings were consistent with the GeoScience BC Map 2013-NVI-1-1. The map described the area as "Quaternary Cover: alluvium, glaciofluvial gravels and sand, till".

5. Site Description

5.1 General

The property trends essentially east/west roughly triangular in shape. Both the southeastern and south western corners have been trimmed off and a small piece along the north boundary was also removed. Most of the property is between the Puntledge and the Browns River which run east to the ocean. The confluence of the rivers just east of the mid point of the property, with reduced development opportunity downstream.

There are three basic terrains on the property: flat river/marine terraces, natural soil slopes between the terraces and the active river/flood plain.

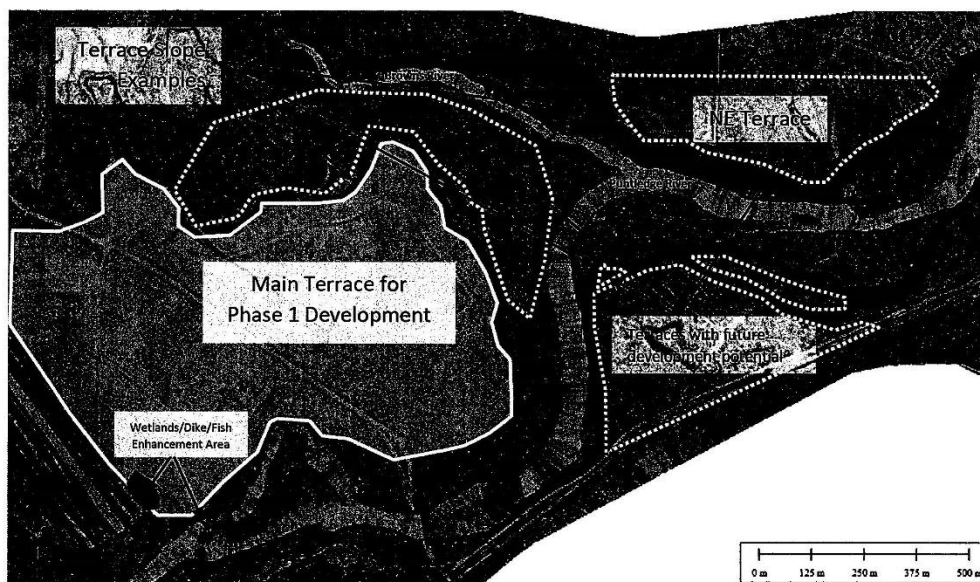


Figure 1 - Topo and Hill shade imagery of the property, with the main terrace terrain highlighted.

The terraces will be the primary development sites. They are easily accessed by existing roads or foreseeable new construction down the terrace slopes. The primary development area is the “main terrace” in the west. Relatively large terraces also exist on either side of the Puntledge River below the confluence. The upper terraces have been slightly disturbed with road building and past infilling from localized leveling. The disturbances were not found to be extensive, but these disturbances should be accounted for and investigated for construction.

The slopes between the terraces were naturally shaped from past river erosion at the toe and soil wasting. They were found to vary between 1.5H:1V and 2H:1V. Soil creep was noted on all slopes with localized slumping at some locations. Deep seated, or progressive landslides were not noted in the subject area.

The river areas were bedrock controlled with highly variable terrain, generally steep with frequent hazards. The rivers were both stepped with waterfall cascades and pools down their lengths.

Riverwood Developments
Phase 1 – Hazard Report

July 27, 2018

5.2 West side, Main Terrace

This terrace accounts for the majority of the usable land within the property. Duncan Bay Logging road provides access through this area is currently lightly utilized with a fenced storage area on to the west of the road and a frisbee golf course to the east. Recreational trails and river access are also common in this area.

Other than the southwestern corner the terrace was found to be dry with relatively free draining soils and no flood hazard. A rock spur into the Puntledge River (Photo 1) and fisheries enhancements were found in the southwest corner of the property adjacent to Hwy 19. The wetlands were supplied with water from 2 large box culverts under the highway (Photo 2), and were drained back to the Puntledge River. The history and limits for this work will need further investigation prior to development.

There were signs of surficial earth movement across much of the terrace from past industrial use. These earthworks appeared to be limited to thin fills and leveling. There were areas of woody debris, but no garbage or large fills were noted. It is however recommended that further study be completed on a lot by lot basis as the development progresses.

No deep seated landslides were noted in the field reconnaissance or aerial imagery. A typical 10m building set back from slopes less than 10m high is suggested and this set back should be increased to 15m for slopes greater than 10m high. The set back should be measured from the transition between "level" and the initial roll of the crest. These setbacks may be reduced on a lot by lot basis with further study.



Photo 1 and 2 - Puntledge River Dike and Hwy 19 Box Culverts

5.3 Other River/Marine Terraces

The property has a series of other flat river terraces. There were at least 6 other zones which could prove to be suitable for future development. The two larger terraces on the north and south sides of the river adjacent to the river confluence and the stepped terrace terrain below the western "main" terrace maintain development potential. These terraces have significant slopes down to the river but should not be dismissed due to hazard considerations alone. The other terraces are smaller but could prove to be suitable for future phases as well.

5.4 Terrace Slopes

Between the terraces were forested soil slopes. These slope were comprised of the alluvial silty sands and gravels found across the property. Rock exposure was limited to the active river areas alone. The soil slopes ranged between 22 to 35 degrees. This is the expected natural angle of repose for this soil type under varying groundwater conditions. Deep seated failures were not noted, but surficial soil creep was common and localized slumping was identified in several places.

Riverwood Developments
Phase 1 – Hazard Report

July 27, 2018

While there were no distinct slope stability issues, the overall stability and site-specific construction setbacks were not investigated in detail. The typical 10m setback from slopes less than 10m high, and increase to 15m for slopes higher than that is considered appropriate for the basic development planning at this time. Further detailed studies are recommended on a site by site basis as the need arises. Road construction down or across these slopes is not expected to be too challenging if properly planned through the early stages of development.



Photo 3 – typical terrace slope. The undulations and curved trees are indicative of soil creep.

6. Landslides

The upper terrace as defined in Section 5.2 has no landslide hazard. There is no land above and there is no foreseeable risk of toe erosion below. Soil loss through natural weathering on the slopes below have been accounted for within the construction setback. This upper terrace is considered “save for the use intended”.

Riverwood Developments
Phase 1 – Hazard Report

July 27, 2018

7. Flooding

Other than the wetlands area in the southwestern corner the land was dry with no ponding. The only foreseeable flooding hazard within the “main terrace”, as defined in Section 5.2, is from the Puntledge and Browns Rivers. However, the McElhanney “Riverwood Development Floodplain Assessment – Draft”, June 12, 2018, File: 2211-47519-00 shows that the Phase 1 “Main Terrace” area is well above any flood considerations (Figure 2). The physical workings of the constructed wetlands were not fully investigated, but it was clear that the area drains toward the Puntledge River and is not expected to flood anymore than the immediate area. No future work is anticipated, and the area is considered “safe for the use intended”.

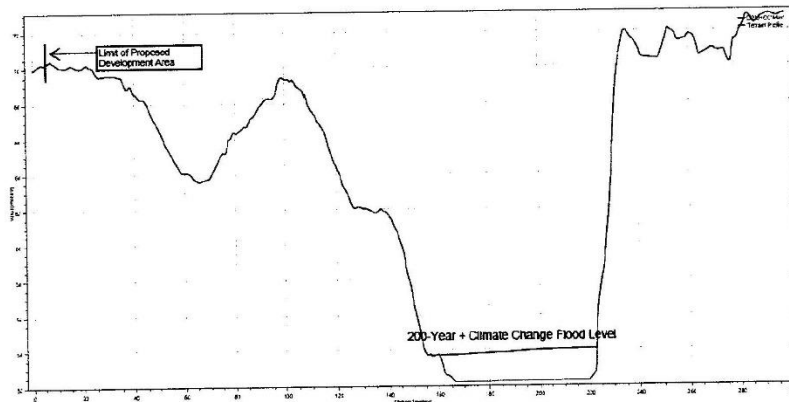


Figure 2 – from the McElhanney Report. This cross section was taken along the Puntledge River approximately 100m below the Duncan Main Logging Road.

8. Summary

The Riverwood Development property has been investigated confirmed to suit the needs of the Phase 1 development. The “Main Terrace” area, as described in Section 5.2 and roughly outlined in Figure 1, is considered to be “safe for the use intended” based on level of safety described in Section 3 of this report.

Sincerely,

P.G. Bullock
#31913
BRITISH COLUMBIA
ENGINEER
July 27/18

Peter Bullock, P.Eng., M.Eng.
Principal
Base Geotechnical Inc.

General Conditions and Limitations

1.0 USE OF REPORT AND OWNERSHIP

This geotechnical report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary geotechnical assessment.

This report and the recommendations contained in it are intended for the sole use of Base Geotechnical Inc.'s (BGI) Client. BGI does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than BGI's Client unless otherwise authorized in writing by BGI. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of BGI. Additional copies of the report, if required, may be obtained upon request.

2.0 ALTERNATE REPORT FORMAT

Where BGI submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed BGI's instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by BGI shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of BGI's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except BGI. BGI's instruments of professional service will be used only and exactly as submitted by BGI.

Electronic files submitted by BGI have been prepared and submitted using specific software and hardware systems. BGI makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

3.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, BGI has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

4.0 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. BGI does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

5.0 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

6.0 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. BGI does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

7.0 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

8.0 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

9.0 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

10.0 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

11.0 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

12.0 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

13.0 SAMPLES

BGI will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

14.0 INFORMATION PROVIDED TO BGI BY OTHERS

During the performance of the work and the preparation of the report, BGI may rely on information provided by persons other than the Client. While BGI endeavours to verify the accuracy of such information when instructed to do so by the Client, BGI accepts no responsibility for the accuracy or the reliability of such information which may affect the report

APPENDIX J: FLOOD HAZARD AND RISK ASSURANCE STATEMENT

Note: This Statement is to be read and completed in conjunction with the "APEGBC Professional Practice Guidelines - Legislated Flood Assessments in a Changing Climate, March 2012 ("APEGBC Guidelines") and is to be provided for flood assessments for the purposes of the Land Title Act, Community Charter or the Local Government Act. Italicized words are defined in the APEGBC Guidelines.

To: The Approving Authority

Date: July 27/18

Ministry of Transportation &
Infrastructure - Courtenay BC

Jurisdiction and address

With reference to (check one):

- ☐ Land Title Act (Section 86) – Subdivision Approval
- ☐ Local Government Act (Sections 919.1 and 920) – Development Permit
- ☐ Community Charter (Section 56) – Building Permit
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Variance
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Exemption

For the Property:

See Attached
Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a *Qualified Professional* and is a *Professional Engineer* or *Professional Geoscientist*.

I have signed, sealed and dated, and thereby certified, the attached flood assessment report on the Property in accordance with the APEGBC Guidelines. That report must be read in conjunction with this Statement. In preparing that report I have:

Check to the left of applicable items

- ☒ 1. Collected and reviewed appropriate background information
- ☒ 2. Reviewed the proposed *residential development* on the Property
- ☒ 3. Conducted field work on and, if required, beyond the Property
- ☒ 4. Reported on the results of the field work on and, if required, beyond the Property
- ☒ 5. Considered any changed conditions on and, if required, beyond the Property
- 6. For a *flood hazard analysis* or *flood risk analysis* I have:
 - ☒ 6.1 reviewed and characterized, if appropriate, floods that may affect the Property
 - ☒ 6.2 estimated the *flood hazard* or *flood risk* on the property
 - ☒ 6.3 included (if appropriate) the effects of climate change and land use change
 - ☒ 6.4 identified existing and anticipated future *elements at risk* on and, if required, beyond the Property
 - ☒ 6.5 estimated the potential *consequences* to those *elements at risk*
- 7. Where the *Approving Authority* has adopted a specific level of *flood hazard* or *flood risk* tolerance or return period that is different from the standard 200-year return period design criteria⁽¹⁾, I have
 - ☐ 7.1 compared the level of *flood hazard* or *flood risk* tolerance adopted by the *Approving Authority* with the findings of my investigation
 - ☐ 7.2 made a finding on the level of *flood hazard* or *flood risk* tolerance on the Property based on the comparison
 - ☐ 7.3 made recommendations to reduce the *flood hazard* or *flood risk* on the Property

⁽¹⁾ *Flood Hazard Area Land Use Management Guidelines* published by the BC Ministry of Forests, Lands, and Natural Resource Operations and the 2009 publication *Subdivision Preliminary Layout Review – Natural Hazard Risk* published by the Ministry of Transportation and Public Infrastructure. It should be noted that the 200-year return period is a standard used typically for rivers and purely fluvial processes. For small creeks subject to debris floods and debris flows return periods are commonly applied that exceed 200 years. For life-threatening events including debris flows, the Ministry of Transportation and Public Infrastructure stipulates in their 2009 publication *Subdivision Preliminary Layout Review – Natural Hazard Risk* that a 10,000-year return period needs to be considered.

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8. Where the Approving Authority has **not** adopted a level of flood risk or flood hazard tolerance I have:
- ☒ 8.1 described the method of flood hazard analysis or flood risk analysis used
 - ☒ 8.2 referred to an appropriate and identified provincial or national guideline for level of flood hazard or flood risk
 - ☒ 8.3 compared this guideline with the findings of my investigation
 - ☒ 8.4 made a finding on the level of flood hazard or flood risk tolerance on the Property based on the comparison
 - ☒ 8.5 made recommendations to reduce flood risks
- ☒ 9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections.

Based on my comparison between

Check one

- ☐ the findings from the investigation and the adopted level of flood hazard or flood risk tolerance (item 7.2 above)
- ☒ the appropriate and identified provincial or national guideline for level of flood hazard or flood risk tolerance (item 8.4 above)

I hereby give my assurance that, based on the conditions contained in the attached flood assessment report,

Check one

- ☒ for subdivision approval, as required by the *Land Title Act* (Section 86), "that the land may be used safely for the use intended".


Check one

- ☐ with one or more recommended registered covenants.
- ☐ without any registered covenant.
- ☐ for a development permit, as required by the *Local Government Act* (Sections 919.1 and 920), my report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".
- ☐ for a building permit, as required by the *Community Charter* (Section 56), "the land may be used safely for the use intended".

Check one

- ☐ with one or more recommended registered covenants.
- ☐ without any registered covenant.
- ☐ for flood plain bylaw variance, as required by the *Flood Hazard Area Land Use Management Guidelines* associated with the *Local Government Act* (Section 910), "the development may occur safely".
- ☐ for flood plain bylaw exemption, as required by the *Local Government Act* (Section 910), "the land may be used safely for the use intended".

Peter Bullock
Name (print)
Peter Bullock
Signature
720 Fern Road E
Address
Qualicum Beach BC V9K1M3
250.228.2421
Telephone

July 27/18
Date

(Affix Professional seal here)

If the *Qualified Professional* is a member of a firm, complete the following.

I am a member of the firm Base Gested Inc
and I sign this letter on behalf of the firm. (Print name of firm)

APPENDIX D: LANDSLIDE ASSESSMENT ASSURANCE STATEMENT

Note: This Statement is to be read and completed in conjunction with the "APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia", March 2006/Revised September 2008 ("APEGBC Guidelines") and the "2006 BC Building Code (BCBC 2006)" and is to be provided for *landslide assessments* (not floods or flood controls) for the purposes of the Land Title Act, Community Charter or the Local Government Act. Italicized words are defined in the APEGBC Guidelines.

To: The Approving Authority

Date: July 27/18

Ministry of Transportation & Infrastructure - Courtenay

Jurisdiction and address

With reference to (check one):

- ☒ Land Title Act (Section 86) – Subdivision Approval
- ☐ Local Government Act (Sections 919.1 and 920) – Development Permit
- ☐ Community Charter (Section 56) – Building Permit
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Variance
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Exemption
- ☐ British Columbia Building Code 2006 sentences 4.1.8.16 (8) and 9.4 4.4.(2) (Refer to BC Building and Safety Policy Branch Information Bulletin B10-01 issued January 18, 2010)

For the Property:

See Attached
Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a *Qualified Professional* and is a *Professional Engineer or Professional Geoscientist*.

I have signed, sealed and dated, and thereby certified, the attached *landslide assessment* report on the Property in accordance with the *APEGBC Guidelines*. That report must be read in conjunction with this Statement. In preparing that report I have:

Check to the left of applicable items

- ☒ 1. Collected and reviewed appropriate background information
- ☒ 2. Reviewed the proposed *residential development* on the Property
- ☒ 3. Conducted field work on and, if required, beyond the Property
- ☒ 4. Reported on the results of the field work on and, if required, beyond the Property
- ☒ 5. Considered any changed conditions on and, if required, beyond the Property
- 6. For a *landslide hazard analysis* or *landslide risk analysis* I have:
 - ☒ 6.1 reviewed and characterized, if appropriate, any *landslide* that may affect the Property
 - ☒ 6.2 estimated the *landslide hazard*
 - ☒ 6.3 identified existing and anticipated future *elements at risk* on and, if required, beyond the Property
 - ☒ 6.4 estimated the potential *consequences* to those *elements at risk*
- 7. Where the *Approving Authority* has adopted a *level of landslide safety* I have:
 - ☐ 7.1 compared the *level of landslide safety* adopted by the *Approving Authority* with the findings of my investigation
 - ☐ 7.2 made a finding on the *level of landslide safety* on the Property based on the comparison
 - ☐ 7.3 made recommendations to reduce *landslide hazards* and/or *landslide risks*
- 8. Where the *Approving Authority* has **not** adopted a *level of landslide safety* I have:

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- ☒ 8.1 described the method of *landslide hazard analysis* or *landslide risk analysis* used
- ☒ 8.2 referred to an appropriate and identified provincial, national or international guideline for *level of landslide safety*
- ☒ 8.3 compared this guideline with the findings of my investigation
- ☒ 8.4 made a finding on the *level of landslide safety* on the Property based on the comparison
- ☒ 8.5 made recommendations to reduce *landslide hazards* and/or *landslide risks*
- ☒ 9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections.

Based on my comparison between

Check one

- ☐ the findings from the investigation and the adopted *level of landslide safety* (item 7.2 above)
- ☒ the appropriate and identified provincial, national or international guideline for *level of landslide safety* (item 8.4 above)

I hereby give my assurance that, based on the conditions⁽¹⁾ contained in the attached *landslide assessment* report,

Check one

- ☒ for subdivision approval, as required by the Land Title Act (Section 86), "that the land may be used safely for the use intended"

Check one

- ☐ with one or more recommended registered covenants.
- ☒ without any registered covenant.

- ☐ for a development permit, as required by the Local Government Act (Sections 919.1 and 920), my report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".

- ☐ for a building permit, as required by the Community Charter (Section 56), "the land may be used safely for the use intended"

Check one

- ☐ with one or more recommended registered covenants.
- ☐ without any registered covenant.

- ☐ for flood plain bylaw variance, as required by the "Flood Hazard Area Land Use Management Guidelines" associated with the Local Government Act (Section 910), "the development may occur safely".

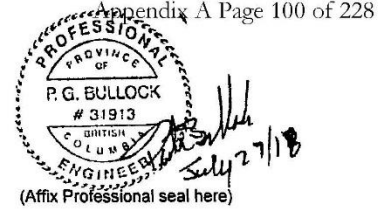
- ☐ for flood plain bylaw exemption, as required by the Local Government Act (Section 910), "the land may be used safely for the use intended".

Peter Bullock
Name (print)
Peter Bullock
Signature

July 27/18
Date

⁽¹⁾ When seismic slope stability assessments are involved, *level of landslide safety* is considered to be a "life safety" criteria as described in the National Building Code of Canada (NBCC 2005), Commentary on Design for Seismic Effects in the User's Guide, Structural Commentaries, Part 4 of Division B. This states:

"The primary objective of seismic design is to provide an acceptable level of safety for building occupants and the general public as the building responds to strong ground motion; in other words, to minimize loss of life. This implies that, although there will likely be extensive structural and non-structural damage, during the DGM (design ground motion), there is a reasonable degree of confidence that the building will not collapse nor will its attachments break off and fall on people near the building. This performance level is termed 'extensive damage' because, although the structure may be heavily damaged and may have lost a substantial amount of its initial strength and stiffness, it retains some margin of resistance against collapse".



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If the *Qualified Professional* is a member of a firm, complete the following.

I am a member of the firm Base Geotechnical Inc.
and I sign this letter on behalf of the firm. (Print name of firm)

LEGAL DESCRIPTION AND OWNERSHIP

- 1. That Part of the NW ¼ of Section 10, Tp. 9, Comox District, Plan 552G, Lying west of Puntledge River except that part in Plan VIP70188 and EPP24391 – PID 000-866-792
Owned by 0768816 BC. Ltd.**
- 2. The SW ¼ of Section 15, Tp. 9, Comox District, Plan 552G, except that part shown coloured red on Plan 79 RW and except that Part in Plan VIP70188 – PID 000-866-814
Owned by 0768816 BC Ltd.**
- 3. Lot A, Sections 10 and 15, Tp. 9, Comox District, Plan EPP23059 – PID 028-915-194. Owned by 3L Developments Inc.**
- 4. That Part of the Nort ¼ of Section 14, Tp. 9, Comox District, Plan 552G lying to the south of the north bank of the Puntledge River – PID 000922-308. Owned by 3L Developments Inc.**
- 5. That Part of the SE ¼, Tp. 9, Comox District, Plan 552G lying to the west of the east bank of the Puntledge River except those parts in Plans 8304 and 9343 – PID 003-922-391. Owned by 3L Developments Inc.**
- 6. The SW ¼ of Section 14, Tp. 9, Comox District, Plan 552G, except that part in Plan 9343 and except that part shown coloured red on Plan 829 RW – PID 003-924-033. Owned by 3L Developments Inc.**

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**RIVERWOOD RESIDENTIAL DEVELOPMENT
TRANSPORTATION ASSESSMENT
FINAL REPORT**

Prepared For:	3L Developments Inc.
Prepared By:	Bunt & Associates Engineering Ltd
File Number:	5804.04
Date of Issue:	October 30, 2009

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Exhibits

- 1 Location of the Site
- 2 Faded road markings on Forbidden Plateau Road approach to Piercy Road
- 3 No road markings on DBM Road northbound approach to Forbidden Plateau Road
- 4 Location of the Site and Southern Access
- 5 Intersection Layouts
- 6 Existing Traffic Volumes
- 7 Existing Heavy Vehicle Volumes
- 8 Cycle Network
- 9 Proposed Greenway Network
- 10 Analysis Forecast Options

Appendix

- A MoT Turning Movement Diagrams
- B Future Traffic Flow Diagrams
- C TAC Signal Warrant Analysis

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Riverwood Residential, Courtenay, BC
Project No. 5804.04



1. Introduction

3L Developments Inc. is proposing to rezone the subject property on Duncan Bay Main Road (DBM Road) in the Comox Valley from the Rural 20 (RU20) district into a Residential Subdivision consisting of 600 properties across 400 acres. Bunt & Associates has been commissioned by 3L Developments Inc. to provide traffic and transportation advice to support their rezoning application to develop the Riverwood Residential development. This report provides an overview of the potential off-site transportation impacts of the proposed development, as well as potential strategies to reduce the auto-dependence of the development in keeping with the principals of sustainability.

This report has been set out in the following manner:

- Section 2 describes the existing conditions in the study area and establishes the general scope for the planned study network;
- Section 3 outlines relevant municipal, regional and provincial transportation plans and policies that need to be considered in the context of the site development;
- Section 4 provides information on the proposal for the site development;
- Section 5 outlines the methodology for predicting the vehicle trip generation by the subdivision, using data that is consistent with the characteristics of the development design and the planned infrastructure and initiatives to support it. It also examines the likely trip distribution, including the potential for internal, linked and diverted trips
- Section 6 will assess the effect of the development traffic on the study road network, it will identify locations where off-site improvements are considered appropriate to support the site redevelopment;
- Section 7 outlines potential sustainable transportation measures for the site;
- Section 8 sets out the conclusions and recommendations of the study.

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2. Existing Conditions

This section will review the existing conditions by describing the site layout, surrounding land uses, the site's current zoning, and the local road network and transportation movements.

2.1 Site Location & Existing Land Uses

The site location is illustrated on **Exhibit 1** in the context of the local road network. The site covers approximately 400 acres of rural land and is bounded by rural properties to the north, Browns River to the east, the Puntledge River to the south, and the Inland Island Highway (Highway 19) to the west. The site is divided by the Duncan Bay Main Road / Comox Logging Co. Road (referred throughout as DBM Road) which runs from north to south through the middle of the site and from which site access will be provided.

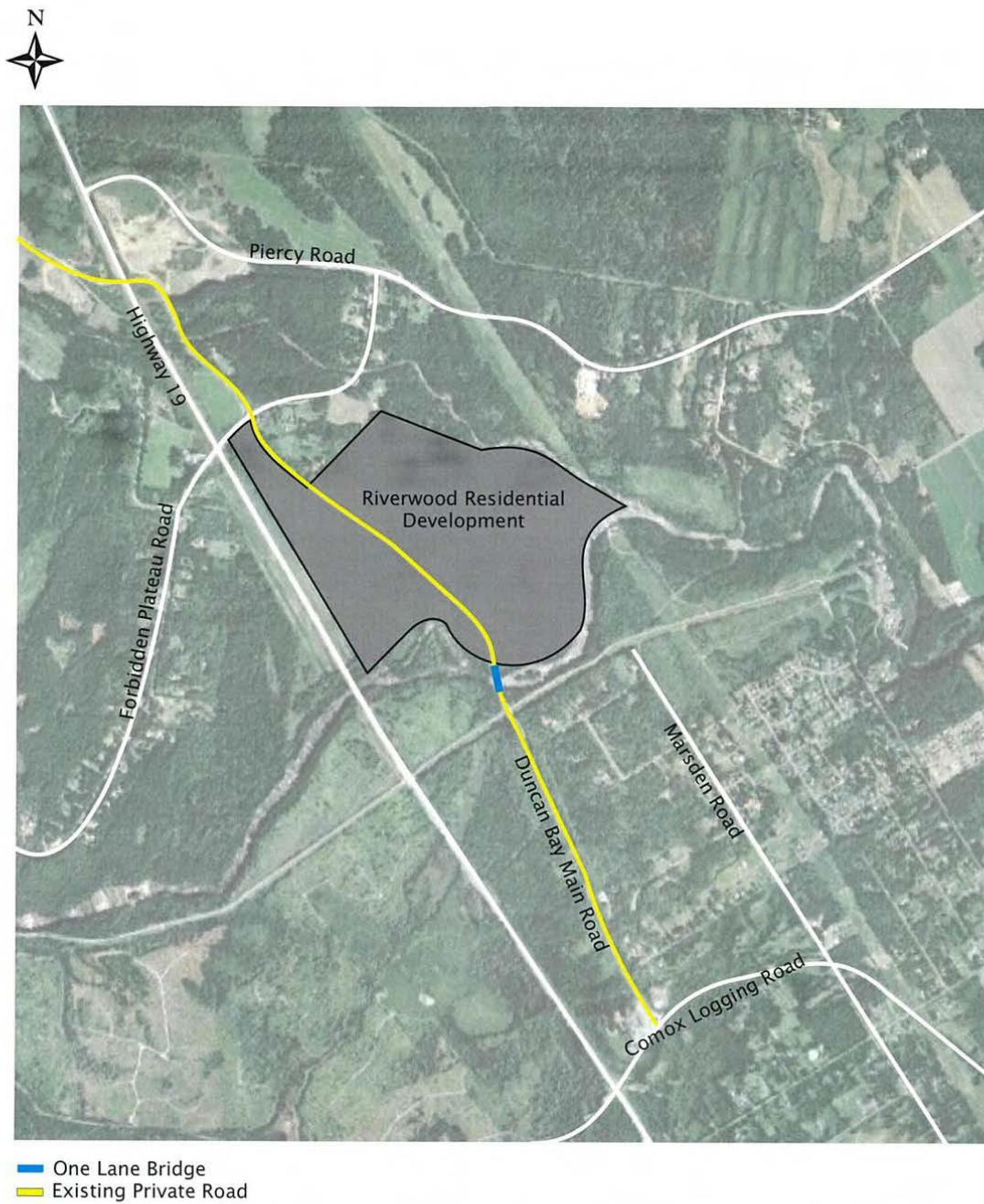
2.2 Current Zoning

The development site is subject to a rezoning application. At present, the site is zoned RU20 Rural. While the southern area of the site bordering on the Puntledge River is not zoned as a park, it is currently used as a recreational area by those accessing the river and existing trails along the north side of the river.

2.3 Existing Road Network

Highway 19 is a limited access Arterial Highway that runs parallel to the Island Highway (Highway 19A) from Parkville to Campbell River. Highway 19 is a four-lane divided facility with a mix of grade separated interchanges and at-grade signals that provide an alternative and more direct route along the eastern coast line than the Old Island Highway.

To access the site from the north, vehicles are required to take exit 127 from Highway 19 at Piercy Road, turn right onto Forbidden Plateau Road before turning left onto DBM Road to access the site. The intersection of the Highway 19 and Piercy Road is a signalized T-intersection with separate right turn lanes on all approaches. On the Highway 19 approaches to the intersection the posted speed limit is 90km/hr and on Piercy Road the speed limit of 70km/hr. Pedestrian crossing facilities are provided at the intersection; however pedestrians are not permitted to walk along the highway and sidewalks are not



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Location of the site and Northern Access

Riverwood Residential Development, Courtenay

Exhibit

1

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provided on any of the approaches. Road condition, pavement marking and signage are currently of a high standard.

Piercy Road is a Rural Collector road providing access from Highway 19 into the northern part of downtown Courtenay. Forbidden Plateau Road is a Rural Local road providing access to adjacent residential properties as well as industrial, agricultural and forestry block properties located south and west of its intersection with DBM Road.

The intersection of Piercy Road and Forbidden Plateau Road is a stop controlled intersection, with priority afforded to Piercy Road. A 30m long left turn bay is provided on the westbound approach on Piercy Road and 30m right and left turn bays are provided on the Forbidden Plateau Road approach. The posted speed limit on both roads in this location is 60km/hr and paved shoulders are also provided on both roads. While the road pavement at the intersection is currently in good condition; however the pavement markings are very faded on the northbound approach, as shown in **Exhibit 2**. During the site visit, it was observed that this intersection is used by a significant number of heavy vehicles turning to and from Forbidden Plateau Road, including oversize loads. On the day of the site visit the sight distance from a car stopped at the stop bar looking west to approaching traffic on Piercy Road was measured and it was noted that a row of pine trees on the southern side of Piercy Road, just west of the intersection limited the available sight distance for vehicles exiting Forbidden Plateau Road. In keeping with the rural environment, pedestrian facilities are not provided at this intersection.

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Exhibit 2 – Faded road markings on Forbidden Plateau Road approach to Piercy Road

The intersection of Forbidden Plateau Road and DBM Road is stop sign controlled with priority afforded to traffic on Forbidden Plateau Road. The intersection is elevated via fill from the surrounding rural properties in order to tie-in with the Forbidden Plateau Road overpass of Highway 19, some 200m west of the intersection. As a result, there are no shoulders provided on DBM Road and there is Concrete Roadside Barrier provided to protect a residential property in the southeast quadrant of the intersection. The elevation of the intersection assists with good sight distances from all approaches. The pavement is currently in good condition; however the pavement markings are worn on Forbidden Plateau Road and not provided on DBM Road, as shown in **Exhibit 3**. During the site visit, it was observed that this intersection is also used by a large number of heavy vehicles as well as cyclists.

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Exhibit 3 – No road markings on DBM Road northbound approach to Forbidden Plateau Road

DBM Road is a Ministry of Forests road for several hundred metres south of its intersection with Forbidden Plateau Road, then becomes a private road which runs through the site from Forbidden Plateau Road to the private one lane bridge crossing the Puntledge River. Although it is a private road, DBM Road is currently available for use by the public and it was observed during the site visit that the route is well used by both vehicular and cycling traffic. Once the site is redeveloped, it is proposed to make the section of DBM Road between Forbidden Plateau Road to just north of the one-lane bridge over the Puntledge River a public road. South of the one-lane bridge, the DMB Road continues through private property and across a private gravel industrial yard, used as the headquarters for a logging operation, to the intersection of Comox Logging Road. This gravel yard begins 150m north of the intersection, and where the two roads meet is about 50m wide. There is no positive guidance to drivers through this gravel yard.

The intersection of Comox Logging Road and Marsden Road is stop sign controlled with priority afforded to traffic on Comox Logging Road. The pavement is currently in good condition, but markings at this intersection are very faded. Unsealed shoulders are provided on all approaches and the posted speed limit is 60km/hr.

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To access the site from the south (if the private section of DBM Road is available) vehicles would take exit 117 from Highway 19 at the Comox Valley Parkway interchange. This interchange is about 8km south of the site and the most direct route from this exit point is left onto Cumberland Road, left onto Marsden Road, left onto Comox Logging Road and right onto DBM Road. The route travels through forestry and agricultural land along these minor roads and is shown in the context of the wider road network in **Exhibit 4**.

The most convenient route to the southern part of Downtown Courtenay from the site is to travel south of the site on DBM Road via Comox Logging Road, onto Lake Trail Road, Pidcock Avenue and Cumberland Road. The most convenient route to Comox is north along DBM Road to Piercy Road, via Forbidden Plateau Road. At the end of Piercy Road vehicles turn right onto Dove Creek Road, cross a signalized one lane bridge, and follow Headquarters Road and Vanier Drive to Veterans Memorial Parkway. The Parkway then becomes Lenwick Road and Guthrie Road, before intersecting Anderton Road in Comox.

2.4 Study Road Network

The study area for the traffic impact assessment was agreed with the Ministry of Transportation and Infrastructure (MoTI) as follows:

Signalized Intersections:

- Highway 19 and Piercy Road

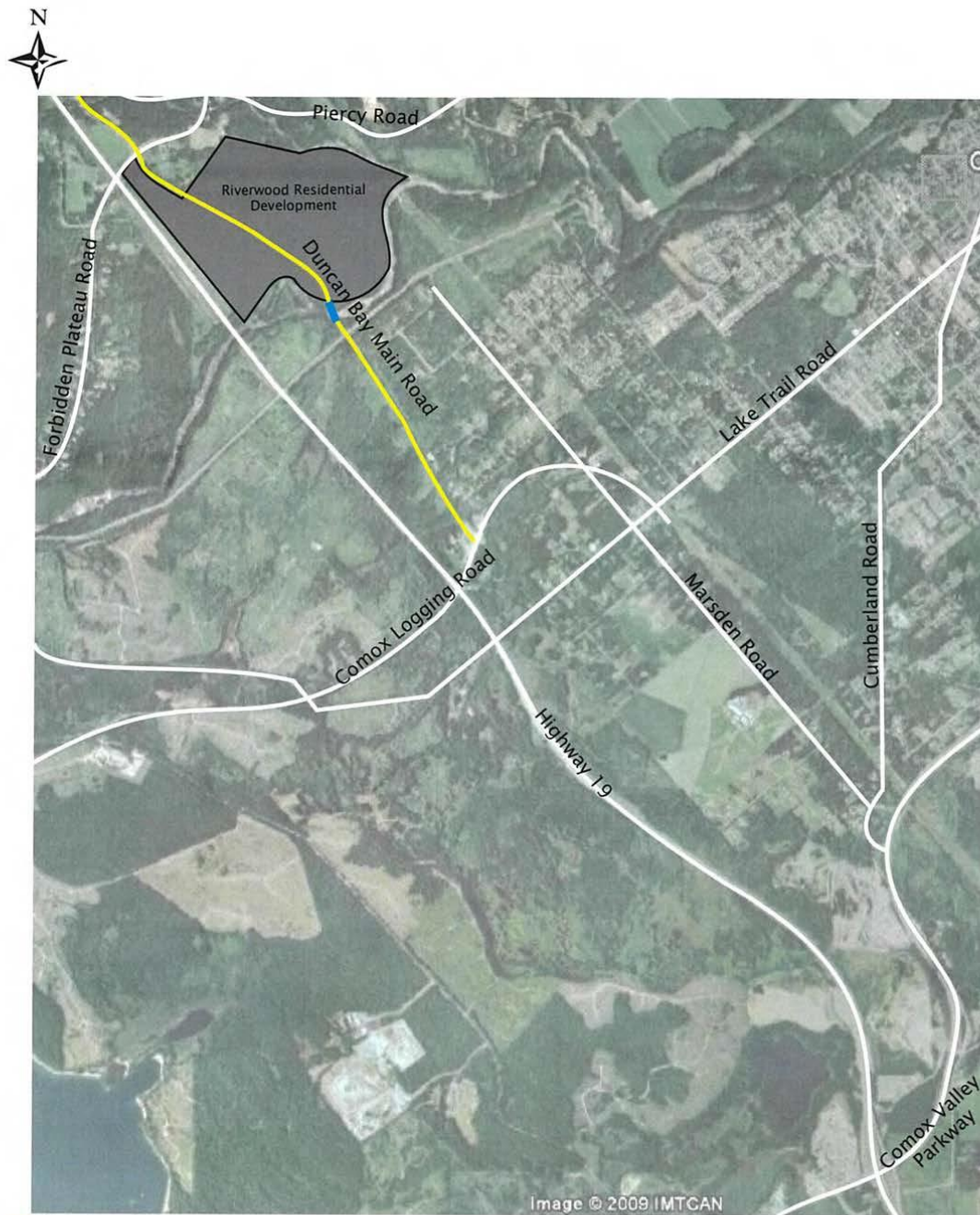
Unsignalized Intersections:

- Piercy Road and Forbidden Plateau Road
- Forbidden Plateau Road and DBM Road
- Comox Logging Road and Marsden Road

The laning and form of traffic control at these key intersections are shown in **Exhibit 5**.

Given the development will be primarily residential, the peak periods for the traffic impact assessment were agreed to be the weekday morning, weekday afternoon and the Saturday midday peak hours.

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— One Lane Bridge
— Existing Private Road

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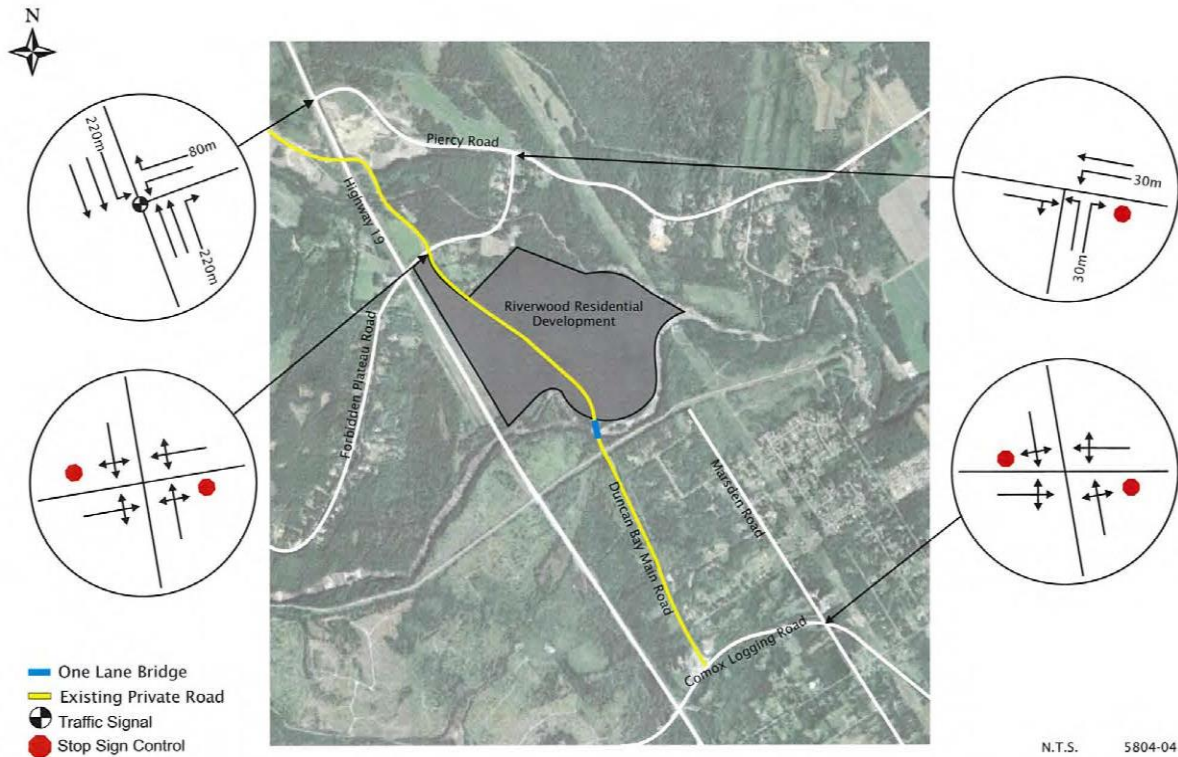


Location of the site and Southern Access

Riverwood Residential Development, Courtenay

Exhibit

4

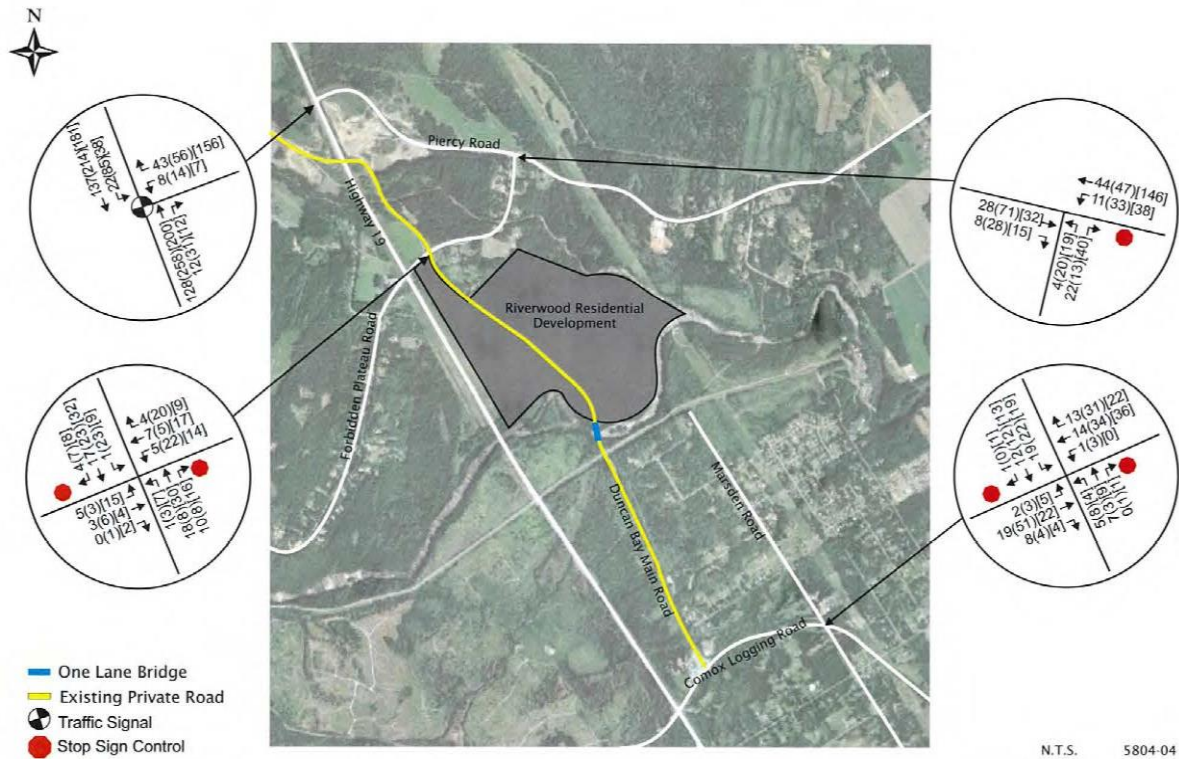


Intersection Layouts

Riverwood Residential Development, Courtenay

Exhibit

5

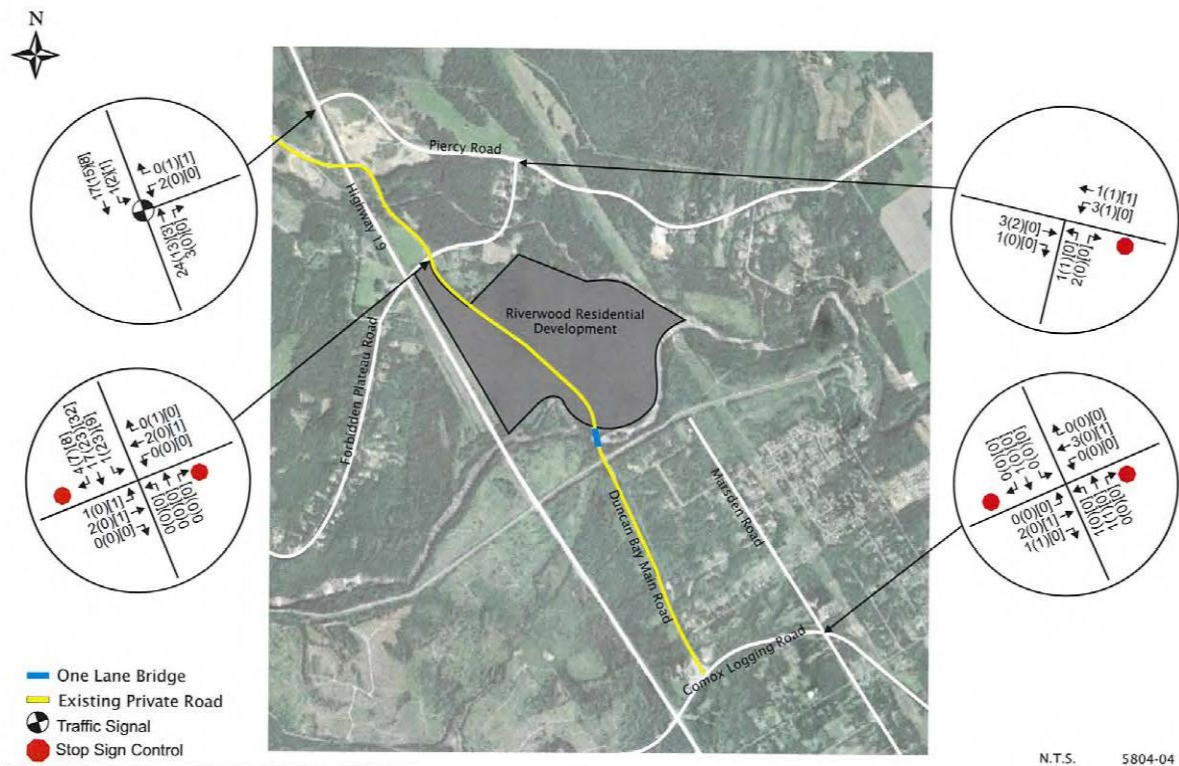


Existing Total Traffic Volumes

Riverwood Residential Development, Courtenay

Exhibit

6



Existing Heavy Vehicle Volumes

Riverwood Residential Development, Courtenay

Exhibit

7

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3. Current Transportation Plans & Infrastructure Change

3.1 Provincial Plans

As part of this study, discussion with MoTI District staff confirmed that MoTI has no plans for any roadway or traffic control improvements associated with roadways in the study area.

3.2 Regional Plans & Policies

Both the Regional Growth Strategy (RGS) and the Comox Valley Sustainability Strategy (CVSS) are currently being drafted. At this stage it is envisioned that a preliminary draft of the RGS will be available in January 2010, with a final draft by July 2010. A final draft for the CVSS was issued in July 2009. Both these documents provide a good indication of the direction of both land use and transportation plans and policies in the area of the site; each of these plans aim to introduce a number of transportation changes in the Comox valley to reduce the reliance upon the private automobile.

This section will first describe the policies identified in the RGS and the CVSS. Brief descriptions will then be provided for each of the transportation infrastructure schemes identified above.

Regional Growth Strategy

The document "Understanding Our Choices" was prepared in June 2009 to provide the foundation from which the RGS is to be developed. Therefore, this document outlines the role of the RSG, describes the trends and issues and then raises points for discussion. This document provides a good overview of how the region currently operates and with regards to transport it outlines the key infrastructure elements in the Comox Valley.

Further to this, the document suggests "Points for Discussion" and identifies proper land use planning, management of development at highway exits, support transit-first development, encourage transportation demand management, evaluate intelligent transportation systems and advocate cycle lanes on all major regional roads as policy ideas for consideration.

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Comox Valley Sustainability Strategy

The CVSS provides a series of goals that are addressed with objectives, targets and actions. With respect to transportation these goals are primarily focused on reducing the reliance upon private vehicles with the draft goals outlined as follows:

- Reduce the need for single occupant vehicles;
- Promote high-efficiency, low emission, and no-emission vehicles and alternative fuels; and,
- Implement transportation programs that increase walking, cycling and transit use.

The proposed Riverwood Residential development aims to address these goals. Section 7 below offers some options for implementing sustainable transportation measures for the development.

The Comox Valley Regional District currently has Cycleway and Greenway Plans that will be reviewed as part of the CVSS. Exerts from the Cycleway map is shown in **Exhibit 8** and the Greenway map is shown in **Exhibit 9**. A cycleway is shown following Forbidden Plateau Road and continues along Piercy Road, to the north of the site. This cycleway intersects with Dove Creek Road and then heads south into Courtenay. To the south of the site a cycleway follows Lake Trail Road and this also takes cyclists into Courtenay.

The Regional District Greenway plan shows the various greenway trails and roads. Within the study area a greenway is shown running parallel to the Highway, along Piercy Road, adjacent to a section of Forbidden Plateau Road and adjacent to both the Brown's River and Puntledge River. In addition to these, a trail is shown running adjacent to DBM Road from the one lane bridge to Comox Logging Road. Given that there are Greenway trails to the north and south of the proposed site, it is recommended that the possibility of connecting up these greenways be considered as part of the improvements to DBM Road.

3.3 Municipal Plans

The site lies outside of the boundary of the cities of Courtenay and Comox so municipal improvement plans will only indirectly impact the site. Courtenay and Comox have plans to connect Piercy Road directly with Veterans Memorial Parkway via a river crossing, which would make a more direct northern connection between Highway 19 and Comox. However, the timing of this improvement is unknown. The impact of this new connection will be to make Piercy Road more attractive as an access to Highway 19, so traffic volumes are expected to increase. In this study, background traffic growth scenarios have been selected

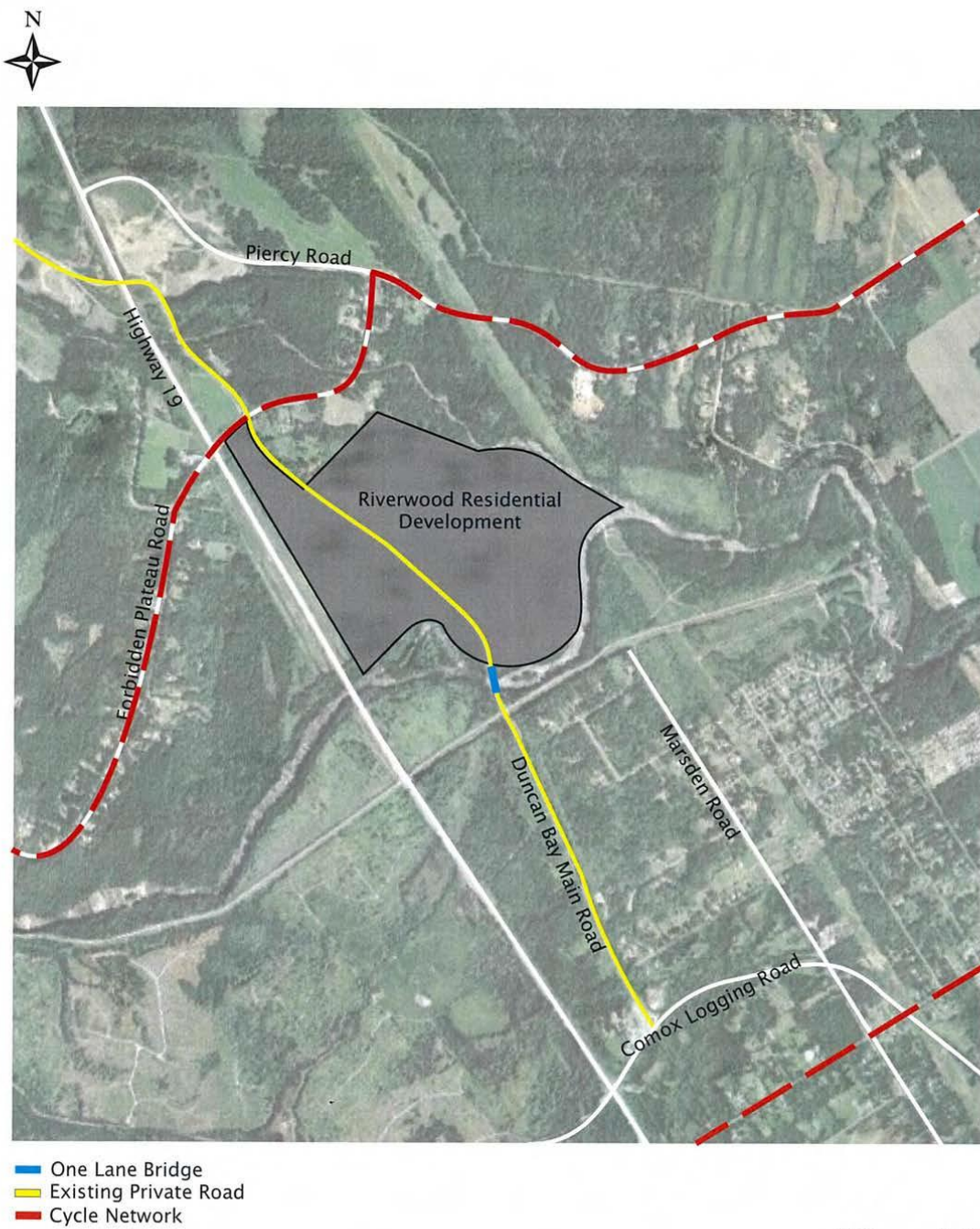
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which, in our view, would address the range of volumes anticipated on Piercy Road if the connection to Veteran's Memorial Parkway was completed within the study time horizons.

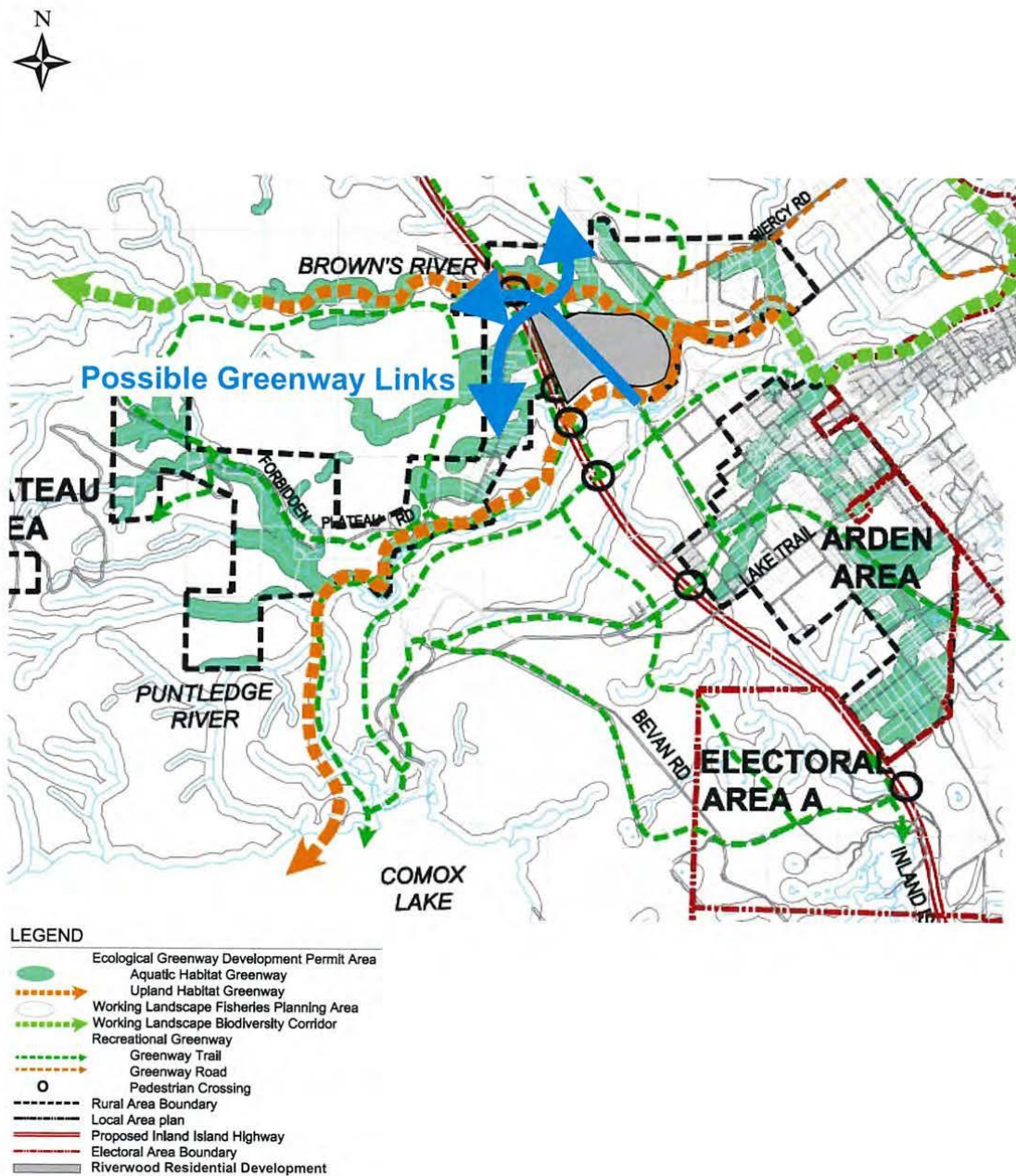
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Cycle Network

Riverwood Residential Development, Courtenay

Exhibit
8



Source: Map #6: Area C Greenway Plan, Regional District of Comx-Strathcona Electoral Area C

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Proposed Greenway Network

Riverwood Residential Development, Courtenay

Exhibit

9

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4. Development Plan

3L Developments Inc. is proposing to rezone the property on DBM Road from the Rural 20 (RU20) district into a Residential Subdivision consisting of 600 properties across 400 acres.

It is anticipated that the development will be developed in phases, with the first phase of 60 homes being completed by 2012 and all remaining phases with 540 homes and some neighbourhood retail completed by 2022. The planned uses and areas for the development are summarized in **Table 4.1** below.

Table 4-1: Proposed Development Content

Land Use	Number / Area
Residential – Single Family Residence	450 house
Residential – Patio Homes, Carriage Homes	150 houses
Neighbourhood Retail	n/a*

Note that the amount of neighbourhood retail development is not yet known although it will be intended to be relatively small scale; therefore for the purposes of this analysis, no retail has been assumed to be present. This is a conservative approach, as the presence of some local retail opportunities would reduce the vehicle trip generation of the site development, without adding vehicle trips from those originating outside of the site development.

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5. Traffic Forecasts

This section provides estimates of the number of vehicle trips that could potentially be generated by the proposed development given, a range of development scenarios. It will also outline the key assumptions applied in determining the site-generated trips and how these are distributed on the road network.

5.1 Site Trip Generation

The proposed residential development is planned to provide mainly single family residential properties with some smaller townhouses also available.

In order to determine the likely trip generation rate of the site both the MoTI rates and the ITE rates have been reviewed for comparison. The rates obtained from ITE assume 75% of trips are from single family properties, and 25% are from townhouses (representing the smaller Patio Homes and Carriage Homes). This distinction within residential properties was not available from the MoTI data and as a result all trips have been conservatively assigned a single family residential trip rate. **Table 5-1** sets out the MoTI generation rates for the proposed Riverwood Residential Development. It should be noted that MoTI do not provide a trip generation rate for the Saturday midday peak period.

Table 5-1: MoTI Trip Generation Rates for the Proposed Development

Land Use	Weekday Morning			Weekday Afternoon		
	In	Out	Total	In	Out	Total
Single Family residential	0.26	0.74	1.00	0.77	0.43	1.20

By comparison the ITE trip generation rates are outlined below in **Table 5-2**.

Table 5-2 ITE Trip Generation Rates for the Proposed Development

Land Use	Weekday Morning			Weekday Afternoon			Saturday Midday		
	In	Out	Total	In	Out	Total	In	Out	Total
Single Family Residential	0.19	0.56	0.75	0.64	0.37	1.01	0.49	0.44	0.93
Townhouse Residential (Patio Homes, Carriage Homes)	0.07	0.37	0.44	0.35	0.17	0.52	0.25	0.22	0.47

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As shown in **Table 5-2**, the ITE rates for a single family residential property are lower than the MoTI rates, and as expected the ITE townhouse rate representing the Patio and Carriage Homes is lower again. In the analysis to follow both the MoTI and ITE rates have been applied and compared to determine the number of trips generated by the site. As expected the number of trips generated was much higher when the MoTI rate was applied.

5.2 Site Vehicle Trip Summary & Distribution

The number of trips generated by the development was estimated and is summarized by phase in the tables below. Once again the analysis has been carried out using both the MoTI rates and the ITE rates. These results are outlined in **Tables 5-3 and 5-4**.

Table 5-3: MoTI Trip Generation Levels for the Proposed Development

Phase	Total Number of properties	Weekday Morning			Weekday Afternoon		
		In	Out	Total	In	Out	Total
Phase 1 (2012)	60	16	44	60	46	26	72
Phase 2* (2022)	600	156	444	600	461	259	720

Table 5-4 ITE Trip Generation Levels for the Proposed Development

Phase	Total Number of Properties	Weekday Morning			Weekday Afternoon			Saturday Midday		
		In	Out	Total	In	Out	Total	In	Out	Total
Phase 1 (2012)	60	9	29	39	32	19	50	25	22	47
Phase 2* (2022)	600	90	293	384	321	148	506	247	218	466

*Phase 2 is the full development

The ITE trip generation results shown in **Table 5-4** have also been reduced by 5% to account for internal trips within the development due to the presence of the neighbourhood commercial shops and the surrounding parks, which would be attractive for some walking or cycling trips.

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As **Tables 5-3 and 5-4** demonstrate, the proposed development will generate between of 720 and 506 trips (two-way) during the afternoon peak period and between 600 and 384 trips during the morning peak period.

Trip distribution of the residential development has been assigned according to two different scenarios. The first scenario assumes that all development traffic must enter and exit the site from the north, as would be the case if the private road to the south of the site is closed to public use. The second scenario assumes that 60% of traffic will enter and exit the site from the north and 40% from the south. This second scenario is in keeping with the existing traffic patterns in the area and assumes that the private road is used by residents to travel south of the site. **Tables 5-5 and 5-6** show the predicted traffic distribution patterns for the two scenarios during the peak periods.

Table 5-5: Predicted Traffic Distribution Pattern – 100% North

Street	Weekday Morning		Weekday Afternoon		Saturday Midday	
	In	Out	In	Out	In	Out
Piercy Road (east)	85%	85%	85%	85%	68%	68%
Highway 19 (north)	10%	13%	11%	12%	24%	30%
Highway 19 (south)	5%	2%	4%	3%	8%	2%
Comox Logging Road (east)	0%	0%	0%	0%	0%	0%
Marsden Road (south)	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%

Table 5-6: Predicted Traffic Distribution Pattern – 60% North, 40% South

Street	Weekday Morning		Weekday Afternoon		Saturday Midday	
	In	Out	In	Out	In	Out
Piercy Road (east)	51%	51%	51%	51%	41%	41%
Highway 19 (north)	6%	8%	7%	7%	14%	18%
Highway 19 (south)	3%	1%	2%	2%	5%	1%
Comox Logging Road (east)	30%	30%	30%	30%	30%	30%
Marsden Road (south)	10%	10%	10%	10%	10%	10%
Total	100%	100%	100%	100%	100%	100%

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5.3 Site Traffic Assignment

Flow diagrams of site traffic have been produced to cover each step of the analysis for the two trip generation scenarios and the two trip distribution patterns. These flow diagrams are included in **Appendix B**.

5.4 Traffic Forecast Scenarios

For the purposes of the transportation assessment, two background growth rate scenarios were considered. The first scenario assumes a background growth rate of 2% on Highway 19 and Piercy Road, and a 1% growth rate on all other roads. The second scenario assumes a background growth rate of 4% on Highway 19 and Piercy Road, and a 2% growth rate on all other roads. The first scenario reflects average historical growth on Highway 19 near Piercy, according to MoTI data, and the second scenario reflects peak directional growth in the same location.

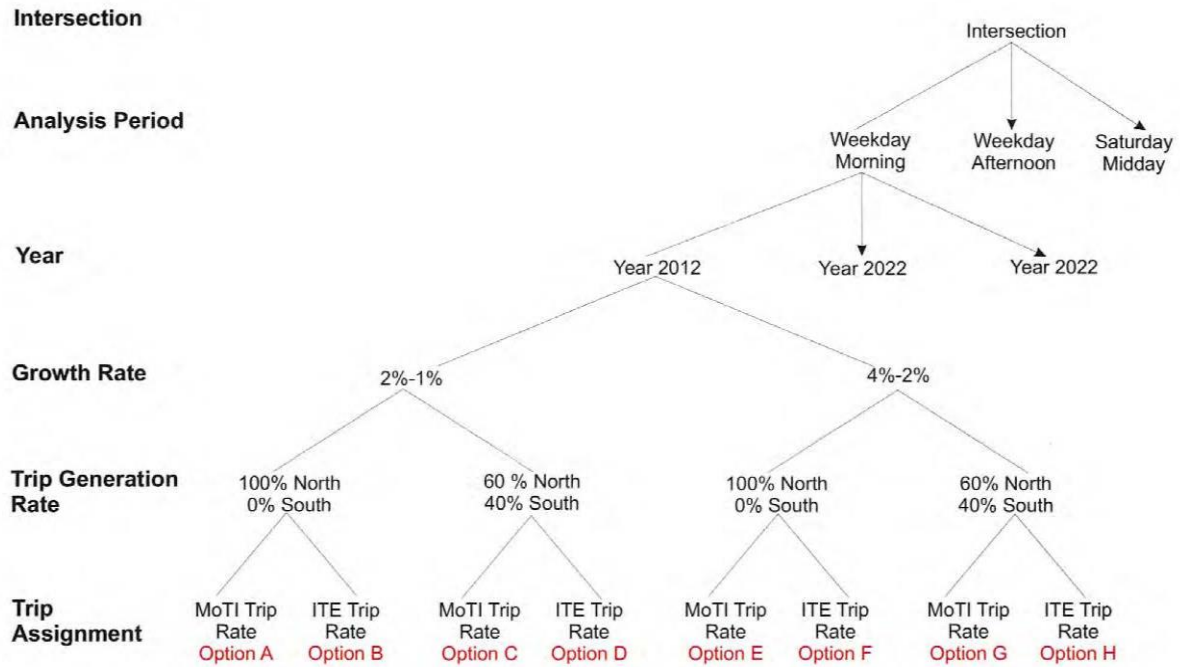
Each intersection in the study area has been assessed under the various scenarios and the resulting options are shown in **Exhibit 10**. These options have been analysed for each peak period, year and intersection and are summarised as follows:

Option A: this has a growth rate of 2% on Highway 19 and Piercy Road and a growth rate of 1% on all other roads, 100% of traffic travel to and from the north and the MoTI trip generation rate has been used.

Option B: this has a growth rate of 2% on Highway 19 and Piercy Road and a growth rate of 1% on all other roads, 100% of traffic travel to and from the north and the ITE trip generation rate has been used.

Option C: this has a growth rate of 2% on Highway 19 and Piercy Road and a growth rate of 1% on all other roads, 60% of traffic travel north, 40% of traffic travel south and the MoTI trip generation rate has been used.

Option D: this has a growth rate of 2% on Highway 19 and Piercy Road and a growth rate of 1% on all other roads, 60% of traffic travel north, 40% of traffic travel south and the ITE trip generation rate has been used.



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Analysis Forecast Options

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Exhibit

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Option E: this has a growth rate of 4% on Highway 19 and Piercy Road and a growth rate of 2% on all other roads, 100% of traffic travel to and from the north and the MoTI trip generation rate has been used.

Option F: this has a growth rate of 4% on Highway 19 and Piercy Road and a growth rate of 2% on all other roads, 100% of traffic travel to and from the north and the ITE trip generation rate has been used.

Option G: this has a growth rate of 4% on Highway 19 and Piercy Road and a growth rate of 2% on all other roads, 60% of traffic travel north, 40% of traffic travel south and the MoTI trip generation rate has been used.

Option H: this has a growth rate of 4% on Highway 19 and Piercy Road and a growth rate of 2% on all other roads, 60% of traffic travel north, 40% of traffic travel south and the ITE trip generation rate has been used.

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6. Traffic Operations with Site Developed

This section provides an assessment of the off-site impacts of the development traffic within the local road network and it draws upon the traffic surveys presented in Section 2, along with the trip generation and distribution figures outlined in Section 5.

This assessment considers the operation of the road network on Opening Day in 2012 (phase 1), Build-Out in 2022 (phase 2) and Build-Out plus 10 years in 2032 for both the three peak periods. A summary of the capacity analysis for the intersections in the study network is presented in tabular format.

The traffic operations at the study intersections were evaluated using Trafficware's Synchro 6.0 traffic analysis model. This model uses Highway Capacity Manual (HCM) procedures to assess the Volume to Capacity ratio (v/c) and the corresponding delay-based traffic Level of Service (LOS) at each of the intersections on the study network. For the Level of Service indicator, the following summarize the range of delays (in seconds per vehicle) for signalized and unsignalized intersections:

- For signalized intersection, the Level of Service ranging from LOS 'A' conditions with minimal delay (< 10 sec per vehicle) through to LOS 'E' 'near capacity' conditions (> 55 sec to ≤ 80 sec per vehicle) and LOS 'F' 'over-saturated' conditions (> 80 sec per vehicle).
- For unsignalized intersection, the Level of Service ranging from LOS 'A' conditions with minimal delay (< 10 sec per vehicle) through to LOS 'E' 'near capacity' conditions (> 35 sec to ≤ 50 sec per vehicle) and LOS 'F' 'over-saturated' conditions (> 50 sec per vehicle).

For the purposes of this analysis, we have assumed that the following performance thresholds would trigger the need for off-site improvements to support the site development:

- V/C ratios greater than 0.85; and,
- LOS D or worse.

6.1 Intersection of Highway 19 and Piercy Road

The Volume to Capacity (v/c) ratio and the Level of Service (LOS) for the intersection of Highway 19 and Piercy Road has been reported in **Table 6-1** for the various scenarios. The signal timing of this intersection has been modelled with the existing signal timing and phasing information as provided by the MoTI.

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Table 6-1: Highway 19 / Piercy Road Intersection Operations Summary

Year	Option	Morning Peak		Afternoon Peak		Saturday Peak	
		V/C	LOS	V/C	LOS	V/C	LOS
2012	A	0.24	A	0.25	A		
	B	0.24	A	0.25	A	0.47	A
	C	0.23	A	0.25	A		
	D	0.23	A	0.25	A	0.46	A
	E	0.25	A	0.26	A		
	F	0.24	A	0.26	A	0.48	A
	G	0.24	A	0.26	A		
	H	0.24	A	0.26	A	0.48	A
2022	A	0.38	A	0.34	A		
	B	0.34	A	0.32	A	0.57	A
	C	0.34	A	0.32	A		
	D	0.31	A	0.30	A	0.54	A
	E	0.40	A	0.37	A		
	F	0.37	A	0.36	A	0.62	A
	G	0.36	A	0.35	A		
	H	0.34	A	0.34	A	0.60	A
2032	A	0.40	A	0.36	A		
	B	0.36	A	0.35	A	0.61	A
	C	0.36	A	0.34	A		
	D	0.33	A	0.33	A	0.59	A
	E	0.45	A	0.50	A		
	F	0.42	A	0.47	A	0.76	A
	G	0.42	A	0.47	A		
	H	0.40	A	0.45	A	0.72	A

The intersection of Highway 19 and Piercy Road recorded a maximum volume to capacity ratio of 0.76 during the Saturday midday peak period. As shown the intersection maintains a level of service of A across all time periods and options. Option E is found to represent the worst case scenario at this intersection when the growth rate is 4%, all traffic enters and exit the site from the north and the MoTI trip generation rate is used. Even under this scenario the intersection operates well and as a result no capacity or traffic control improvements are required at this intersection to support the site development.

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6.2 Intersection of Piercy Road and Forbidden Plateau Road

The Volume to Capacity (v/c) ratio and the Level of Service (LOS) for the critical movement at the intersection of Piercy Road and Forbidden Plateau Road has been reported in **Table 6-2** for the various scenarios.

Table 6-2: Piercy Road / Forbidden Plateau Road Operational Analysis Summary

Year	Option	Weekday Morning			Weekday Afternoon			Saturday MIDDAY		
		Critical move-ment	v/c	LOS	Critical move-ment	v/c	LOS	Critical move-ment	v/c	LOS
2012	A	NBL	0.06	A	EBT	0.07	A			
	B	NBL	0.05	A	EBT	0.07	A	NBL	0.10	A
	C	NBL	0.05	A	EBT	0.07	A			
	D	NBL	0.04	A	EBT	0.07	A	NBL	0.10	A
	E	NBL	0.06	A	EBT	0.08	A			
	F	NBL	0.05	A	EBT	0.07	A	NBL	0.10	A
	G	NBL	0.05	A	EBT	0.07	A			
	H	NBL	0.04	A	EBT	0.07	A	NBL	0.10	A
2022	A	NBL	0.43	B	NBL	0.49	C			
	B	NBL	0.29	A	WBL	0.25	A	NBL	0.32	B
	C	NBL	0.27	B	WBL	0.22	A			
	D	NBL	0.19	A	WBL	0.16	A	NBL	0.17	B
	E	NBL	0.45	B	NBL	0.56	C			
	F	NBL	0.30	B	NBL	0.29	C	NBL	0.39	C
	G	NBL	0.28	B	WBL	0.23	A			
	H	NBL	0.19	A	WBL	0.18	A	NBL	0.21	B
2032	A	NBL	0.44	B	NBL	0.56	C			
	B	NBL	0.30	B	NBL	0.28	B	NBL	0.38	C
	C	NBL	0.28	B	WBL	0.23	A			
	D	NBL	0.19	A	WBL	0.17	A	NBL	0.20	B
	E	NBL	0.47	B	NBL	0.88	E			
	F	NBL	0.32	B	NBL	0.43	C	NBL	0.59	C
	G	NBL	0.30	B	NBL	0.34	B			
	H	NBL	0.21	A	NBL	0.22	B	NBL	0.31	B

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The critical approach to this intersection is the north bound left turn movement on Forbidden Plateau Road, which is required to stop and yield to traffic on Piercy Road. This movement is expected to operate at LOS C or better under all scenarios and all horizon years, except for Scenario E in 2031. In this case, the northbound left turn is expected to operate with a weekday peak hour volume to capacity ratio of 0.88 and a level of service E in 2032, under Option E. This same movement had a 95th percentile queue length of 67m (around 10 vehicles) in this scenario. When the intersection is modelled with just the background traffic flow and with no development traffic it is found to operate with a LOS B on the worst approach (northbound left turn movement) and a volume to capacity ratio of 0.07. Therefore, it is concluded that the site development traffic is responsible for the significant increase in delay and decrease in capacity.

We have estimated that by 2024, the northbound left turn movement under Option E drops below the desired level of service threshold of LOS D in 2024 when the volume to capacity ratio is 0.63; therefore, it is also concluded that some kind of off-site improvement is required under Option E by the year 2024 to meet operational targets.

To improve the level of service at this intersection to meet the performance threshold targets, both a roundabout and traffic signals have been considered for implementation at this intersection. A TAC Signal Warrant Analysis was completed for this intersection and the results are attached as **Appendix C**. The analysis found that a traffic signal would not be warranted at the intersection of Forbidden Plateau Road and Piercy Road in 2032 under the worst case traffic forecast scenario of Option E.

The operation of the roundabout has also been reviewed and was analysed using Sidra Intersection software. The Volume to Capacity (v/c) ratio and the Level of Service (LOS) for the intersection in 2032 is shown in **Table 6-3**.

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Table 6-3: Piercy Road / Forbidden Plateau Road Roundabout

Year	Option	Morning Peak		Afternoon Peak		Saturday Peak	
		V/C	LOS	V/C	LOS	V/C	LOS
2032	A	0.32	A	0.35	B		
	B	0.22	A	0.27	B	0.33	A
	C	0.20	A	0.24	B		
	D	0.14	A	0.20	A	0.27	A
	E	0.33	A	0.40	B		
	F	0.23	A	0.32	B	0.44	A
	G	0.28	A	0.29	B		
	H	0.15	A	0.24	A	0.38	A

As shown in **Table 6-3** the introduction of a roundabout at this intersection will reduce the volume to capacity ratio and improve the level of service from an E to a B (assuming one circulating lane and one approach lane on each leg). Queue lengths on the critical northbound left turn are also reduced from 67m to 14m.

Based on the above analysis, we would conclude that under Option E, a roundabout would be the preferred off-site improvement to support the site development and that this roundabout should be in place by 2024. However, we are also of the opinion that the Option E forecast assumptions are unrealistically conservative:

- a 4% annual growth rate per year, extended through 20 years, is a very high level of growth sustained for a considerable period of time. Historical growth of traffic in the area has, on average, been closer to 2%;
- The MoTI trip rates were developed from studies conducted many years ago and are unrealistically high compared to other sources. We have been advised by MoTI staff from the Lower Mainland District that the MoTI has actually abandoned use of these rates as they are considered too high;
- The MoTI rates do not reflect the significant portion of patio homes or carriage houses, which will be smaller than the single family homes and therefore are expected to generate less vehicle trips;
- The site trip generation calculations do not include the effect of the retail component on the site, nor the adjacent recreational facilities, which could both serve to reduce vehicle trip generation;
- The site trip distribution assumes 100% of all traffic originates to and from the north. This results in a high volume turning left from Forbidden Plateau Road to Piercy

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Road; this forecast would be very unrealistic if the private road to the south of the site remains open.

For these reasons, it is our opinion that the site development will not require any off-site roadway capacity or traffic control improvements at this intersection to support the additional traffic generated by the site development.

Option D is the most realistic option and under this scenario westbound left turn (the worst approach) queues reach 1 vehicle. Therefore it is concluded that the existing intersection layout can accommodate this level of traffic. However, several improvements to the existing layout are recommended.

To improve the sight distance from Forbidden Plateau Road to the west it recommended that the trees planted along the fence line of the property at 3976 Forbidden Plateau Road be removed. It was also noted that the stop bar on the Forbidden Plateau Road approach is set back from the intersection and as a result vehicles move forward over the line to gain better sight distance. It is our opinion that the stop line not be moved to ensure that the turning path of westbound left turning heavy vehicles does not cross into the northbound approach lanes.

In addition, it is recommended that the pavement markings on the northbound approach and the westbound left turn bay be repainted as they have been worn away.

6.3 Intersection of Forbidden Plateau Road and Duncan Bay Main Road

The Volume to Capacity (v/c) ratio and the Level of Service (LOS) for the critical movement at the intersection of Forbidden Plateau Road and DBM Road has been reported in **Table 6-4** for the various scenarios. For the purposes of this summary, it is assumed that Duncan Bay Main Road runs north-south and Forbidden Plateau runs east-west.

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Table 6-4: Forbidden Plateau Road / Duncan Bay Main Road Operational Analysis Summary

Year	Option	Weekday Morning			Weekday Afternoon			Saturday Midday		
		Critical move-ment	v/c	LOS	Critical move-ment	v/c	LOS	Critical move-ment	v/c	LOS
2012	A	NBL	0.08	A	SBL	0.02	B			
	B	NBL	0.07	A	SBL	0.02	B	SBL	0.07	B
	C	NBL	0.06	A	SBL	0.01	B			
	D	NBL	0.05	A	NBL	0.07	A	SBL	0.07	B
	E	NBL	0.08	A	SBL	0.02	B			
	F	NBL	0.07	A	SBL	0.02	B	SBL	0.08	B
	G	NBL	0.06	A	SBL	0.02	B			
	H	NBL	0.05	A	NBL	0.07	A	SBL	0.07	B
2022	A	NBL	0.50	B	SBL	0.11	E			
	B	NBL	0.34	B	SBL	0.06	C	SBL	0.20	C
	C	NBL	0.32	B	SBL	0.05	C			
	D	NBL	0.22	B	SBL	0.03	C	NBL	0.24	B
	E	NBL	0.51	B	SBL	0.14	E			
	F	NBL	0.35	B	SBL	0.07	D	SBL	0.24	C
	G	NBL	0.32	B	SBL	0.06	C			
	H	SBL	0.04	B	SBL	0.04	C	NBL	0.26	B
2032	A	NBL	0.51	B	SBL	0.14	E			
	B	NBL	0.35	B	SBL	0.07	C	SBL	0.23	C
	C	NBL	0.32	B	SBL	0.06	C			
	D	SBL	0.04	B	SBL	0.04	C	NBL	0.26	B
	E	NBL	0.23	B	SBL	0.19	F			
	F	NBL	0.36	B	SBL	0.09	D	SBL	0.31	C
	G	NBL	0.34	B	SBL	0.07	C			
	H	SBL	0.06	B	SBL	0.05	C	NBL	0.30	B

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As shown in the table above the critical movement for this intersection is the southbound left turn movement during the weekday afternoon peak hour of traffic. There is no development traffic associated with this movement; that is, all of the southbound left turn traffic is background traffic that would be present regardless of whether the Riverwood project proceeded, or not. Therefore, it is concluded that the Riverwood project would not generate the need for any roadway or traffic control improvements to address this problem.

It is important to note that while the delays associated with this movement are relatively high for some forecast scenarios resulting in LOS D-F, the volume impacted is very low, at 5 vehicles per hour. This very low level of traffic demand would not, in our view, justify any kind of roadway capacity or traffic control improvement.

From the site visit undertaken in August it was noted that existing pavement markings at this intersection are significantly faded and repainting is recommended on all approaches, regardless of whether the site redevelops.

6.4 Intersection of Comox Logging Road and Marsden Road

The Volume to Capacity (v/c) ratio and the Level of Service (LOS) for the critical movement at the intersection of Comox Logging Road and Marsden Road has been reported in **Table 6-5** for the various scenarios.

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Table 6-5: Comox Logging Road / Marsden Road

Year	Option	Weekday Morning			Weekday Afternoon			Saturday Midday		
		Critical move-ment	v/c	LOS	Critical movem-ent	v/c	LOS	Critical move-ment	v/c	LOS
2012	A	SBL	0.04	A	SBL	0.05	A			
	B	SBL	0.04	A	SBL	0.05	A	SBL	0.04	A
	C	SBL	0.04	A	SBL	0.05	A			
	D	SBL	0.04	A	SBL	0.05	A	SBL	0.04	A
	E	SBL	0.04	A	SBL	0.05	A			
	F	SBL	0.04	A	SBL	0.05	A	SBL	0.05	A
	G	SBL	0.04	A	SBL	0.05	A			
	H	SBL	0.04	A	SBL	0.05	A	SBL	0.05	A
2022	A	SBL	0.05	A	SBL	0.05	A			
	B	SBL	0.05	A	SBL	0.05	A	SBL	0.05	A
	C	SBL	0.06	B	NBL	0.12	B			
	D	SBL	0.06	B	NBL	0.08	B	NBL	0.07	B
	E	SBL	0.05	A	SBL	0.06	B			
	F	SBL	0.05	A	SBL	0.06	B	SBL	0.06	A
	G	SBL	0.07	B	NBL	0.13	B			
	H	SBL	0.06	B	NBL	0.09	B	SBL	0.07	B
2032	A	SBL	0.05	A	SBL	0.06	A			
	B	SBL	0.05	A	SBL	0.06	A	SBL	0.05	A
	C	SBL	0.07	B	NBL	0.12	B			
	D	SBL	0.06	B	NBL	0.09	B	SBL	0.07	B
	E	SBL	0.07	A	SBL	0.08	B			
	F	SBL	0.07	A	SBL	0.08	B	SBL	0.07	A
	G	SBL	0.09	B	NBL	0.14	B			
	H	SBL	0.08	B	SBL	0.11	B	SBL	0.09	B

The intersection of Comox Logging Road and Marsden Road will continue to operate with a low volume to capacity ratio with the additional traffic from the development. The critical northbound left turn movement was found to have a maximum 95th percentile queue length

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of 3.8m (less than one vehicle) in the weekday afternoon peak period, for 2032 Option G, which can easily be accommodated on this approach.

6.5 Summary of Traffic Impact

If the private road to the south of the site remains open, then no off-site roadway capacity or traffic control improvements on public roads will be required to support the site redevelopment, although sight distance (tree removal) and pavement marking improvements are recommended at Piercy Road & Forbidden Plateau Road, and pavement marking improvements are recommended at Forbidden Plateau Road and DBM Road. If site traffic is permitted to use the private portion of DBM Road to the south, then some positive guidance to drivers through the private gravel works yard is recommended for safety reasons; this could include paving a road surface, signage and pavement markings.

If the private road to the south of the site is closed to the public, in all forecast scenarios but one, no off-site improvements other than those noted above at Piercy Road & Forbidden Plateau Road and at Forbidden Plateau Road and DBM Road will be necessary. Only if traffic grows on Piercy Road at about 4% per year and the site generates over 720 vehicles per hour during the weekday PM Peak Hour will there be a need to address northbound left turn delays at Piercy Road & Forbidden Plateau Road by about 2024. Traffic signals will not be warranted, but a roundabout may be an effective solution to traffic operations and reduce delays.

However, it is our opinion that the latter scenario is highly unlikely: 4% growth for 20 years is extremely high, MoTI trip rates are considered inappropriately high for this site and the trip generation estimates do not reflect the mixed use nature of the site and adjacent recreational opportunities which would generate more walking trips. In our opinion, the most likely forecast scenario is one with 2% growth for 20 years, with ITE trip rates and with the private road remaining open. In our view, the likelihood of the private road being closed is not high, given its significant level of use by the community.

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7. Sustainable Transportation Measures

The Comox Valley Sustainability Strategy (CVSS) provides a series of goals that are addressed with objectives, targets and actions. With respect to transportation, these goals are primarily focused on reducing the reliance upon private vehicles with the draft goals outlined below:

- Reduce the need for single occupant vehicles;
- Promote high-efficiency, low emission and no-emission vehicles and alternative fuels;
- Implement transportation programs that increase walking, cycling and transit use.

To support site planning, Bunt & Associates has researched sustainable transportation measures that could be applicable to this site. The measures identified herein are based on best practices from other developments in British Columbia and across North America (some of which originated in Europe). The measures selected are specifically intended to maximize the sustainable elements of the Riverwood neighbourhood based on its scale, mix, and location. They have three primary objectives:

- Minimize automobile use (number and length of trips)
- Optimize transportation choice
- Reduce vehicle ownership

Strategy 1: Encourage Walking

Walking trips can be encouraged through a number of design aspects of the development, including:

- Centrally located services (convenience shopping, daycare, etc.) to reduce the need to travel out of the neighbourhood;
- Walkable access to a variety of transportation or community services;
- Traffic calmed streets with achieve 20-30 km/h operating speeds;
- An extensive, inviting, and safe network of sidewalks and trails within the neighbourhood and connecting to destinations outside of the neighbourhood with good lighting, signage and way finding maps; and
- Pedestrian-permeable and/or small development blocks.

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Approximately half of the development land is dedicated as park land to ensure continued public access to the Puntledge River and Browns River Trail systems and other natural amenities of the area.

Strategy 2: Encourage Cycling

Cycling trips for transportation (not recreational) purposes can be encouraged through a number of design aspects of the development by incorporating the following features:

- New cycling facilities (on-street bike lanes, multi-use paved pathways within the street right-of-way, or off-street paved multi-use pathways to/from key travel destinations);
- Convenient connections to the existing and planned future cycling network;
- Way-finding and signage;
- Short term (bike racks) and long term (bike rooms, bike cages) parking located near neighbourhood services and transit hubs, and within multi-family developments;
- A charging station for electric bikes and scooters located near neighbourhood services.

Besides site design elements, developers can also support cycling through a "free bike" program with the sale of every home or provide seed money for a community bike share program.

The Comox Valley Cycling Task Force is working to develop a comprehensive cycling strategy. Its goal is to improve cycling access in the Comox Valley, both recreationally and for commuting, and to improve safe travel for all members of the public and safe access to regional bikeways. The Task Force focuses on education, recreation, and transportation. The developer could work with the Task Force, along with the Regional District, to identify and fund key cycling projects which would benefit cycling in the study area as a whole.

Strategy 3: Provide Transit to Key Destinations

Currently, there is no transit service to the proposed development area and we understand that discussions with BC Transit staff indicate that such service is unlikely given the development's lack of proximity to existing urban services and relative small population. However, the developer could provide a community shuttle van and operating funds for a private transit service to take residents into downtown Courtenay and Comox for work, shopping and personal business trips. This could be an on-demand or regularly scheduled service, originating out of the central area, which could become a transportation hub focussed around community services.

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If community demand for transit use increases and ultimately could justify the investment in public transit services, a program could be implemented similar to that for residents in the Cape Lazo/Point Holmes area and the Huband Road/Seal Bay area, who have Community Bus service. This service is available three times a day, Monday to Friday. Passengers are bussed to key exchange points where they can then transfer to and from regular Comox Valley Transit trips.

Strategy 4: Encourage Car Pooling

A carpool consists of two or more people sharing a ride in a vehicle to travel to a common destination. Ride sharing may involve one person who does all the driving, with riders volunteering to pay for a share of fuel and operating costs. Drivers can also rotate with any kind of mutually acceptable cost sharing agreement.

At Riverwood, the developer could include a community amenity space in the central transportation hub that includes a "Ride Share Board" and/or internet access that would allow residents to match to other residents when making regular trips.

Strategy 5: Encourage Car Sharing

Car-sharing in BC and Canada is growing exponentially as more and more people become aware of the benefits it brings. In particular, it provides a low cost and flexible alternative to private vehicle ownership, while developers benefit by being able to reduce parking requirements and therefore achieving cost savings (for example, in the Lower Mainland the cities of Vancouver and Burnaby now allow reductions in parking supply if car-share stalls, and agreements with car-share providers are provided by developers).

Typically, 1 car-share vehicle can support somewhere between 150 and 200 units if at least one person per unit is a member of the car-share program. Vehicles are purchased by the developer (\$25,000 to \$35,000 depending on the model) and maintained by the car-share operator (Cooperative Auto Network, Car Share Co-op, Zip Car; all operating in BC). Members must pay a fee to join (typically, about \$500 which is refundable if a member leaves the program) and then must pay for use of the vehicle by the hour or day. Members pre-book vehicles over the phone or through the internet. Best practice suggests that vehicles should be located in publically accessible and visible locations and preferably be located close to the community facilities.

In the case of Riverwood, the neighbourhood could potentially support two car-share vehicles, which should be centrally located in the development. However, as the

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neighbourhood is primarily single family and patio/carriage homes, it is unlikely a parking supply reduction could be justified for these individual properties as they do not share parking supply. It is recommended that the developer contact the three car share operators and determine whether Riverwood would meet their criteria for provision of car share vehicles; it may be that the development is too small or not sufficiently dense to be a good candidate.

Strategy 6: Discourage Excessive Parking Supply

Excessive parking provision can undermine sustainability provisions and negatively impact walkable and cycling-friendly urban design. In single family development without lanes, providing one garage space per unit plus space for one additional vehicle in the driveway should be sufficient, with on-street parking supporting any resident or visitor vehicle overflow. Also, providing on-street parking on only one side of the street is usually more than sufficient for single family neighbourhoods. For single family homes with rear lanes there is more on-street supply available as there are no driveways present, so again, one-car garages should be sufficient. This approach encourages on-street parking which has been proved to reduce vehicle speeds, thereby creating a more pedestrian and cycle friendly neighbourhood.

For "pod" townhouse development with minimal street frontage that could be used for on-street parking, a maximum of 1.2 stalls per unit on-site should be provided. On-site visitor parking should be pooled rather than spread over the development site and should be a maximum of 10% of the total number of townhouse units. For street-oriented townhouse development, rear lanes with one car garages should be used and on-street parking should be provided on both sides of the street to support both resident overflow and visitor parking.

Strategy 7: Eliminate Trips

The impetus behind electronic or e-transport is to eliminate the need to make particular trips altogether, in particular shopping, education, and commuter trips. From a development perspective, high-speed internet should form a key requirement for the development and it should be something delivered to each unit at time of purchase. Those who can work from home should be encouraged to do so. The developer could also establish a neighbourhood work centre equipped with video and phone conferencing facilities.

Transportation Assessment Report – FINAL
Riverwood Residential, Courtenay, BC
Project No. 5804.04



8. Conclusions & Recommendations

The following key points summarise the findings of the Traffic Assessment for the proposed Riverwood Residential Development in Courtenay:

1. Existing traffic volumes in the study area are relatively low, except on Highway 19.
2. Existing traffic operations in the study area are good, at LOS B or better, with no queuing problems.
3. Existing pavement markings at Piercy Road & Forbidden Plateau Road are faded.
4. There is an existing sight distance obstruction for northbound drivers at Piercy Road & Forbidden Plateau Road; it appears an adjacent home owner has planted trees which block drivers' views to eastbound traffic approaching the intersection. Drivers are forced to cross the northbound stop bar in order to see oncoming traffic.
5. The first phase of development, planned to be completed by 2012, will be 60 homes and is expected to generate 39 to 60 vph in the Weekday AM Peak Hour; 50 to 72 vph in the Weekday PM Peak Hour and 47 vph in the Saturday Mid-day Peak Hour. In our view, the lower end of the range of trip generation is more likely, as the MoTI trip rates are considered too conservative for this development..
6. By build-out in 2022, the additional 540 homes and neighbourhood retail is expected to generate, in total, 384 to 600 vph in the Weekday AM Peak Hour, 506 to 720 vph in the Weekday PM Peak Hour and 466 vph in the Saturday Mid-Day Peak Hour. Again, the lower end of the range of trip generation is considered to be more likely for this development.
7. If the private road to the south of the site remains open, then no off-site roadway capacity or traffic control improvements on public roads will be required to support the site redevelopment, although sight distance (removal of trees) and pavement marking improvements are recommended at Piercy Road & Forbidden Plateau Road, and pavement marking improvements are recommended at Forbidden Plateau Road and DBM Road. If site traffic is permitted to use the private portion of DBM Road to the south, then some positive guidance to drivers through the private gravel works yard is recommended for safety reasons; this could include paving a road surface, signage and pavement markings.

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Transportation Assessment Report - FINAL
Riverwood Residential, Courtenay, BC
Project No. 5804.04



Appendix A - MoT Turning Movement Summary Sheets

VEHICLE TURNING MOVEMENT SURVEY **Ministry of Transportation & Highways** **South Coast Region**

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Major Route: HW 19
 Minor Route: Piercy Road
 Municipality: Comox Valley Regional District
 Filename: MoT - HW19 & Piercy Site Code: 00000

Date: Sept 18, 2009
 Day-of-week: Friday

Speed Limit Major Rte: 90
 Speed Limit Minor Rte: 70

East/West Route: Piercy Road
 Intersection Type: 5 ---> 3-leg east approach
 Signalized (y/n?): Yes
 Weather: dry and sunny

	Lanes						L	Grade	Bus Stop		Bus Bay
	TLR	R	(ch)	TR	T	TL			Near	Far	
North Approach					2		1				
South Approach		1			2						
West Approach		1					1				
East Approach											

note: (ch) - channelized A: parallel lane B: taper

	Start	Duration
A.M. Shift	07:30	3.25
Noon Shift	11:00	2.00
P.M. Shift	15:00	3.00
Total		8.25

Note: duration: decimal hours
 start time: 24 hr clock (15 min increments)

Comments:

Notes: North Approach - vehicles approaching intersection from the north
 15x4 - 15 min volume (from max 15 minute period [+] in peak hour period [*]) x 4
 Pedestrians - N indicates pedestrians crossing north approach (east/west)

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Survey Data

Location: HW 19 @ Piercy Road
Date: Sept 18, 2009

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Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0				
07:45	4	37	0	0	31	3	0	0	0	4	0	7	86				
08:00	8	28	0	0	36	1	0	0	0	2	0	10	85				
08:15	2	42	0	0	30	6	0	0	0	0	0	6	86				
08:30	5	25	0	0	29	2	0	0	0	3	0	8	72				
08:45	10	37	0	0	26	1	0	0	0	2	0	13	89				
09:00	5	33	0	0	43	3	0	0	0	3	0	16	103				
09:15	3	43	0	0	33	3	0	0	0	3	0	3	88				
09:30	9	34	0	0	33	4	0	0	0	3	0	4	87 *				
09:45	8	42	0	0	31	3	0	0	0	2	0	10	96 +				
10:00	8	49	0	0	27	0	0	0	0	3	0	9	96 +				
10:15	10	41	0	0	31	1	0	0	0	3	0	10	96 +				
Total	72	411	0	0	350	27	0	0	0	28	0	96	984	0	0	0	0
Pk Hr	35	166	0	0	122	8	0	0	0	11	0	33	375 *	0	0	0	0
15x4	40	164	0	0	124	4	0	0	0	12	0	40	384 +	0	0	0	0
11:00													0				
11:15													0				
11:30													0				
11:45													0				
12:00													0 +				
12:15													0 +				
12:30													0 +				
12:45													0 +				
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pk Hr	0	0	0	0	0	0	0	0	0	0	0	0	0 *	0	0	0	0
15x4	0	0	0	0	0	0	0	0	0	0	0	0	0 +	0	0	0	0
15:00	20	55	0	0	37	3	0	0	0	5	0	3	123				
15:15	13	46	0	0	40	2	0	0	0	0	0	10	111				
15:30	21	63	0	0	59	4	0	0	0	12	0	9	168				
15:45	18	67	0	0	50	1	0	0	0	1	0	10	147				
16:00	20	63	0	0	53	6	0	0	0	1	0	9	152				
16:15	22	50	0	0	71	11	0	0	0	4	0	11	169 +				
16:30	17	44	0	0	71	5	0	0	0	8	0	19	164 *				
16:45	20	54	0	0	61	11	0	0	0	0	0	14	160 *				
17:00	26	66	0	0	55	4	0	0	0	2	0	12	165 *				
17:15	12	57	0	0	43	6	0	0	0	1	0	11	130				
17:30	21	44	0	0	56	8	0	0	0	1	0	8	138				
17:45	18	38	0	0	54	3	0	0	0	2	0	7	122				
Total	228	647	0	0	650	64	0	0	0	37	0	123	1749	0	0	0	0
Pk Hr	85	214	0	0	258	31	0	0	0	14	0	56	658 *	0	0	0	0
15x4	88	200	0	0	284	44	0	0	0	16	0	44	676 +	0	0	0	0

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AM Peak Period

Location: HW 19 @ Piercy Road

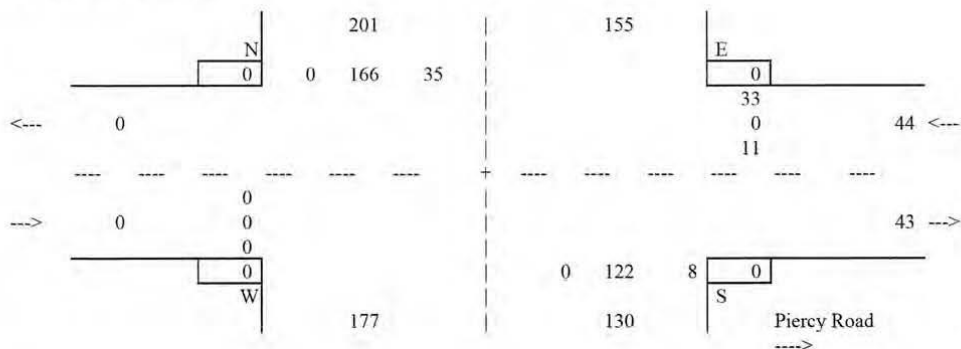
Date: Sept 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	4	37	0	0	31	3	0	0	0	4	0	7	86	0	0	0	0
08:00	8	28	0	0	36	1	0	0	0	2	0	10	85	0	0	0	0
08:15	2	42	0	0	30	6	0	0	0	0	0	6	86	0	0	0	0
08:30	5	25	0	0	29	2	0	0	0	3	0	8	72	0	0	0	0
08:45	10	37	0	0	26	1	0	0	0	2	0	13	89	0	0	0	0
09:00	5	33	0	0	43	3	0	0	0	3	0	16	103	0	0	0	0
09:15	3	43	0	0	33	3	0	0	0	3	0	3	88	0	0	0	0
09:30	9	34	0	0	33	4	0	0	0	3	0	4	87	*	0	0	0
09:45	8	42	0	0	31	3	0	0	0	2	0	10	96	+	0	0	0
10:00	8	49	0	0	27	0	0	0	0	3	0	9	96	+	0	0	0
10:15	10	41	0	0	31	1	0	0	0	3	0	10	96	+	0	0	0

Total	72	411	0	0	350	27	0	0	0	28	0	96	984	0	0	0	0
Peak Hr	35	166	0	0	122	8	0	0	0	11	0	33	375	*	0	0	0
15x4	40	164	0	0	124	4	0	0	0	12	0	40	384	+	0	0	0
Avg Hr	22	126	0	0	108	8	0	0	0	9	0	30	303		0	0	0

Peak Hour 09:30
Peak 15min 10:15
North approach PHF 0.99
South approach PHF 1.02
West approach PHF n/a
East approach PHF 0.85

AM Peak Hour Volumes



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M Peak Period

Location: HW 19 @ Piercy Road

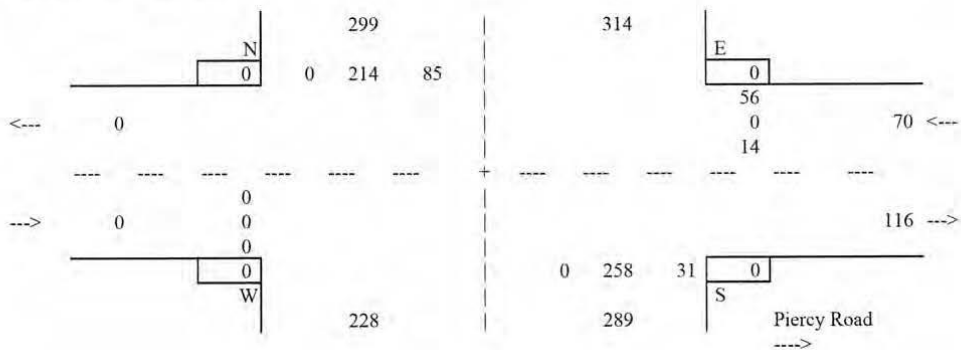
Date: Sept 18, 2009

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Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
15:00	20	55	0	0	37	3	0	0	0	5	0	3	123	0	0	0	0
15:15	13	46	0	0	40	2	0	0	0	0	0	10	111	0	0	0	0
15:30	21	63	0	0	59	4	0	0	0	12	0	9	168	0	0	0	0
15:45	18	67	0	0	50	1	0	0	0	1	0	10	147	0	0	0	0
16:00	20	63	0	0	53	6	0	0	0	1	0	9	152	0	0	0	0
16:15	22	50	0	0	71	11	0	0	0	4	0	11	169 +	0	0	0	0
16:30	17	44	0	0	71	5	0	0	0	8	0	19	164 *	0	0	0	0
16:45	20	54	0	0	61	11	0	0	0	0	0	14	160 *	0	0	0	0
17:00	26	66	0	0	55	4	0	0	0	2	0	12	165 *	0	0	0	0
17:15	12	57	0	0	43	6	0	0	0	1	0	11	130	0	0	0	0
17:30	21	44	0	0	56	8	0	0	0	1	0	8	138	0	0	0	0
17:45	18	38	0	0	54	3	0	0	0	2	0	7	122	0	0	0	0
Total	228	647	0	0	650	64	0	0	0	37	0	123	1749	0	0	0	0
Peak Hr	85	214	0	0	258	31	0	0	0	14	0	56	658 *	0	0	0	0
x4	88	200	0	0	284	44	0	0	0	16	0	44	676 +	0	0	0	0
Avg Hr	76	216	0	0	217	21	0	0	0	12	0	41	583	0	0	0	0

N
^
.

Peak Hour 16:15
Peak 15min 16:15
North Leg PHF 1.04
South Leg PHF 0.88
West Leg PHF n/a
East Leg PHF 1.17

PM Peak Hour Volumes

VEHICLE TURNING MOVEMENT SURVEY

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Ministry of Transportation & Highways

South Coast Region

Major Route: Piercy Road
 Minor Route: Forbidden Plateau Road
 Municipality: Comox valley Regional District
 Filename: MoT Intersection Count templ Site Code: 00000

Date: September 18, 2009
 Day-of-week: Friday

Speed Limit Major Rte: 70 km/hr
 Speed Limit Minor Rte: 60

East/West Route: Piercy Road
 Intersection Type: 3 ---> 3-leg south approach
 Signalized (y/n?): No
 Weather: Dry and Sunny

	Lanes						L	Grade	Bus Stop		Bus Bay
	TLR	R	(ch)	TR	T	TL			Near	Far	
North Approach											
South Approach	0	1	0	0	0	0	1				
West Approach	0	0	0	1	0	0	0				
East Approach	0	0	0	0	1	0	1				

note: (ch) - channelized A: parallel lane B: taper

	Start	Duration
A.M. Shift	07:30	3.00
Noon Shift	11:00	2.00
P.M. Shift	15:00	3.00
Total		8.00

Note: duration: decimal hours
 start time: 24 hr clock (15 min increments)

Comments:

Notes: North Approach - vehicles approaching intersection from the north
 15x4 - 15 min volume (from max 15 minute period [+] in peak hour period [*]) x 4
 Pedestrians - N indicates pedestrians crossing north approach (east/west)

Survey Data

Location: Piercy Road @ Forbidden Plateau Road
Date: September 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	6	0	7	0	4	2	8	11	0	38	0	0	0	0
08:00	0	0	0	1	0	7	0	7	1	1	8	0	25	0	0	0	0
08:15	0	0	0	1	0	7	0	8	2	0	5	0	23	0	0	0	0
08:30	0	0	0	0	0	2	0	4	0	4	9	0	19	0	0	0	0
08:45	0	0	0	2	0	7	0	6	2	6	13	0	36 *	0	0	0	0
09:00	0	0	0	1	0	6	0	10	4	1	17	0	39 +	0	0	0	0
09:15	0	0	0	2	0	1	0	2	3	4	5	0	17 *	0	0	0	0
09:30	0	0	0	4	0	3	0	8	3	5	3	0	26 *	0	0	0	0
09:45	0	0	0	3	0	8	0	7	1	7	8	0	34	0	0	0	0
10:00	0	0	0	1	0	7	0	9	0	4	13	0	34	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	21	0	55	0	65	18	40	92	0	291	0	0	0	0
Pk Hr	0	0	0	9	0	17	0	26	12	16	38	0	118 *	0	0	0	0
x4	0	0	0	4	0	24	0	40	16	4	68	0	156 +	0	0	0	0
11:00													0				
11:15													0				
11:30													0				
11:45													0				
12:00													0 +				
12:15													0 +				
12:30													0 +				
12:45													0 +				
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pk Hr	0	0	0	0	0	0	0	0	0	0	0	0	0 *	0	0	0	0
x4	0	0	0	0	0	0	0	0	0	0	0	0	0 +	0	0	0	0
15:00	0	0	0	1	0	12	0	19	1	3	10	0	46	0	0	0	0
15:15	0	0	0	3	0	6	0	12	5	8	7	0	41	0	0	0	0
15:30	0	0	0	4	0	15	0	16	5	8	17	0	65	0	0	0	0
15:45	0	0	0	3	0	5	0	13	6	2	11	0	40	0	0	0	0
16:00	0	0	0	3	0	3	0	16	8	8	5	0	43	0	0	0	0
16:15	0	0	0	3	0	4	0	19	6	7	10	0	49	0	0	0	0
16:30	0	0	0	8	0	1	0	20	7	10	3	0	49 *	0	0	0	0
16:45	0	0	0	4	0	5	0	17	7	12	17	0	62 +	0	0	0	0
17:00	0	0	0	5	0	3	0	15	8	4	7	0	42 *	0	0	0	0
17:15	0	0	0	1	0	8	0	15	8	8	12	0	52 *	0	0	0	0
17:30	0	0	0	3	0	8	0	16	5	5	9	0	46	0	0	0	0
17:45	0	0	0	4	0	5	0	19	3	9	7	0	47	0	0	0	0
Total	0	0	0	42	0	75	0	197	69	84	115	0	582	0	0	0	0
Pk Hr	0	0	0	18	0	17	0	67	30	34	39	0	205 *	0	0	0	0
x4	0	0	0	16	0	20	0	68	28	48	68	0	248 +	0	0	0	0

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AM Peak Period

Location: Piercy Road @ Forbidden Plateau Road

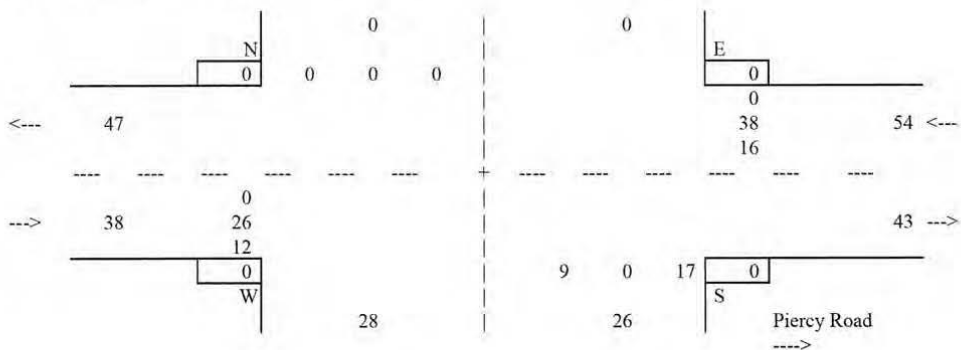
Date: September 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	6	0	7	0	4	2	8	11	0	38	0	0	0	0
09:00	0	0	0	1	0	7	0	7	1	1	8	0	25	0	0	0	0
09:15	0	0	0	1	0	7	0	8	2	0	5	0	23	0	0	0	0
09:30	0	0	0	0	0	2	0	4	0	4	9	0	19	0	0	0	0
09:45	0	0	0	2	0	7	0	6	2	6	13	0	36 *	0	0	0	0
10:00	0	0	0	1	0	6	0	10	4	1	17	0	39 +	0	0	0	0
10:15	0	0	0	2	0	1	0	2	3	4	5	0	17 *	0	0	0	0
10:30	0	0	0	4	0	3	0	8	3	5	3	0	26 *	0	0	0	0
10:45	0	0	0	3	0	8	0	7	1	7	8	0	34	0	0	0	0
11:00	0	0	0	1	0	7	0	9	0	4	13	0	34	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total	0	0	0	21	0	55	0	65	18	40	92	0	291	0	0	0	0
Peak Hr	0	0	0	9	0	17	0	26	12	16	38	0	118 *	0	0	0	0
15x4	0	0	0	4	0	24	0	40	16	4	68	0	156 +	0	0	0	0
Avg Hr	0	0	0	7	0	18	0	22	6	13	31	0	97	0	0	0	0

Peak Hour 08:45
Peak 15min 09:00
North approach PHF n/a
South approach PHF 0.93
West approach PHF 0.68
East approach PHF 0.75

AM Peak Hour Volumes



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Noon Peak Period

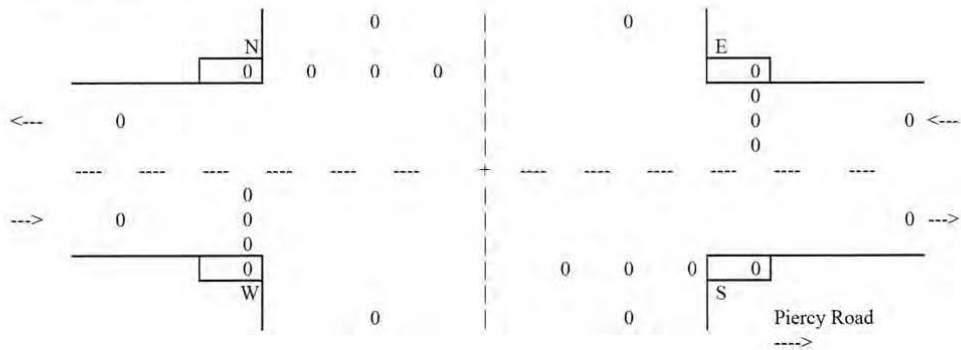
Location: Piercy Road @ Forbidden Plateau Road
 Date: September 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4x4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avg Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour 12:00
 Peak 15min 12:45
 North Leg PHF n/a
 South Leg PHF #DIV/0!
 West Leg PHF #DIV/0!
 East Leg PHF #DIV/0!

Noon Peak Hour Volumes



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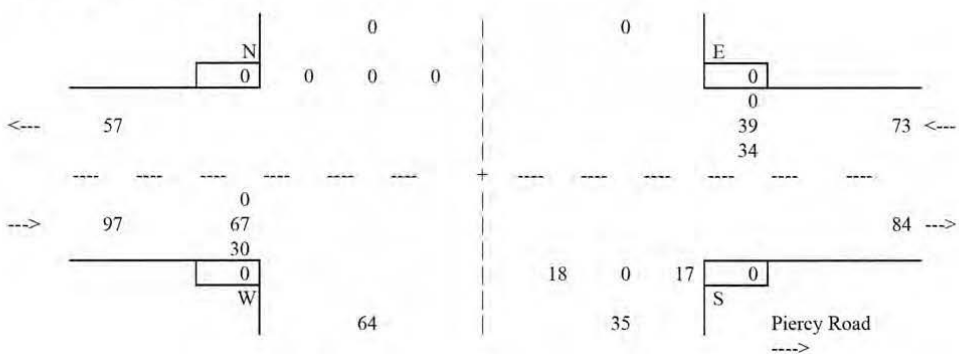
PM Peak Period

Location: Piercy Road @ Forbidden Plateau Road

Date: September 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
15:00	0	0	0	1	0	12	0	19	1	3	10	0	46	0	0	0	0
15:15	0	0	0	3	0	6	0	12	5	8	7	0	41	0	0	0	0
15:30	0	0	0	4	0	15	0	16	5	8	17	0	65	0	0	0	0
15:45	0	0	0	3	0	5	0	13	6	2	11	0	40	0	0	0	0
16:00	0	0	0	3	0	3	0	16	8	8	5	0	43	0	0	0	0
16:15	0	0	0	3	0	4	0	19	6	7	10	0	49	0	0	0	0
16:30	0	0	0	8	0	1	0	20	7	10	3	0	49 *	0	0	0	0
16:45	0	0	0	4	0	5	0	17	7	12	17	0	62 +	0	0	0	0
17:00	0	0	0	5	0	3	0	15	8	4	7	0	42 *	0	0	0	0
17:15	0	0	0	1	0	8	0	15	8	8	12	0	52 *	0	0	0	0
17:30	0	0	0	3	0	8	0	16	5	5	9	0	46	0	0	0	0
17:45	0	0	0	4	0	5	0	19	3	9	7	0	47	0	0	0	0
Total	0	0	0	42	0	75	0	197	69	84	115	0	582	0	0	0	0
Pl. Hr	0	0	0	18	0	17	0	67	30	34	39	0	205 *	0	0	0	0
x4	0	0	0	16	0	20	0	68	28	48	68	0	248 +	0	0	0	0
Avg Hr	0	0	0	14	0	25	0	66	23	28	38	0	194	0	0	0	0

Peak Hour 16:30
Peak 15min 16:45
North Leg PHF n/a
South Leg PHF 0.97
West Leg PHF 1.01
East Leg PHF 0.63

PM Peak Hour Volumes

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Average Hour Period

Location: Piercy Road @ Forbidden Plateau Road
September 18, 2009

	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume	N	S	W	E
Survey																	
Total	0	0	0	63	0	130	0	262	87	124	207	0	873	0	0	0	0
Hours	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Avg Hr	0	0	0	8	0	16	0	33	11	16	26	0	109	0	0	0	0

AM Period																	
Total	0	0	0	21	0	55	0	65	18	40	92	0	291	0	0	0	0
Hours	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
avg Hr	0	0	0	7	0	18	0	22	6	13	31	0	97	0	0	0	0

Noon Period																	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hours	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
avg Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM Period																	
Total	0	0	0	42	0	75	0	197	69	84	115	0	582	0	0	0	0
Hours	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
avg Hr	0	0	0	14	0	25	0	66	23	28	38	0	194	0	0	0	0

Average Hour Volumes

				Total	0	0	0				
				AM	0	0	0				
				Noon	0	0	0				
				PM	0	0	0				
								PM	Noon	AM	Total
								0	0	0	0
								38	0	31	26
								28	0	13	16
				0	0	0	0				
				33	22	0	66				
				11	6	0	23				
				Total	AM	Noon	PM				
				14	0	25	PM				
				0	0	0	Noon				
				7	0	18	AM				
				8	0	16	Total				

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VEHICLE TURNING MOVEMENT SURVEY **Ministry of Transportation & Highways** **South Coast Region**

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Major Route: Forbidden Plateau Road
 Minor Route: Duncan Bay Main Road
 Municipality: Comox Valley Regional District
 Filename: MoT - FP & DBM Site Code: 00000

Date: Sept 18, 2009
 Day-of-week: Friday

Speed Limit Major Rte: 60
 Speed Limit Minor Rte: 60

East/West Route: Forbidden Plateau Road
 Intersection Type: 1 ---> 4-leg
 Signalized (y/n?): No
 Weather: dry and sunny

	Lanes							Grade	Bus Stop		Bus Bay
	TLR	R	(ch)	TR	T	TL	L		Near	Far	
North Approach	1										
South Approach	1										
West Approach	1										
East Approach	1										

note: (ch) - channelized A: parallel lane B: taper

	Start	Duration
A.M. Shift	07:30	2.75
Noon Shift	11:00	2.00
P.M. Shift	15:00	3.00
Total		7.75

Note: duration: decimal hours
 start time: 24 hr clock (15 min increments)

Comments:

Notes: North Approach - vehicles approaching intersection from the north
 15x4 - 15 min volume (from max 15 minute period [+] in peak hour period [*]) x 4
 Pedestrians - N indicates pedestrians crossing north approach (east/west)

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Survey Data

Location: Forbidden Plateau Road @ Duncan Bay Main Road
Date: Sept 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0				
07:45	0	11	2	0	3	2	2	1	0	1	1	2	25				
08:00	0	2	0	0	10	4	1	1	0	4	5	0	27				
08:15	1	1	1	1	3	2	0	1	0	0	0	1	11				
08:30	0	3	1	0	2	2	2	0	0	0	1	1	12				
08:45	1	3	1	0	7	2	0	2	0	1	0	1	18				
09:00	1	1	0	0	3	0	1	3	0	0	2	1	12				
09:15	0	6	2	0	2	1	0	2	1	1	2	2	19 *				
09:30	2	5	1	0	4	2	2	1	0	3	3	2	25 +				
09:45	0	2	3	0	6	0	3	1	0	3	1	0	19 *				
10:00	1	1	0	0	1	3	2	2	1	2	5	3	21 *				
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0				
Total	6	35	11	1	41	18	13	14	2	15	20	13	189	0	0	0	0
Pk Hr	3	14	6	0	13	6	7	6	2	9	11	7	84 *	0	0	0	0
5x4	8	20	4	0	16	8	8	4	0	12	12	8	100 +	0	0	0	0
11:00													0				
11:15													0				
11:30													0				
11:45													0				
12:00													0 +				
12:15													0 +				
12:30													0 +				
12:45													0 +				
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pk Hr	0	0	0	0	0	0	0	0	0	0	0	0	0 *	0	0	0	0
5x4	0	0	0	0	0	0	0	0	0	0	0	0	0 +	0	0	0	0
15:00	1	4	1	0	2	1	1	2	1	1	1	3	18				
15:15	6	5	2	0	9	5	1	3	0	4	5	7	47				
15:30	6	4	2	0	10	2	3	3	0	3	0	4	37				
15:45	5	4	0	1	2	3	0	1	0	1	1	2	20				
16:00	5	11	0	0	2	5	1	2	1	1	1	2	31				
16:15	5	4	0	0	2	3	1	0	0	3	1	6	25				
16:30	7	7	5	1	2	2	1	1	0	7	3	6	42 +				
16:45	5	8	1	1	1	3	1	3	0	8	0	3	34 *				
17:00	6	4	1	1	3	0	0	2	1	4	1	5	28 *				
17:15	7	8	0	0	5	1	1	2	2	4	1	3	34 *				
17:30	5	3	1	0	5	2	1	0	0	3	0	2	22				
17:45	2	8	0	0	2	1	0	2	0	7	0	6	28				
Total	60	70	13	4	45	28	11	21	5	46	14	49	366	0	0	0	0
Pk Hr	25	27	7	3	11	6	3	8	3	23	5	17	138 *	0	0	0	0
5x4	28	28	20	4	8	8	4	4	0	28	12	24	168 +	0	0	0	0

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AM Peak Period

Location: Forbidden Plateau Road @ Duncan Bay Main Road

Date: Sept 18, 2009

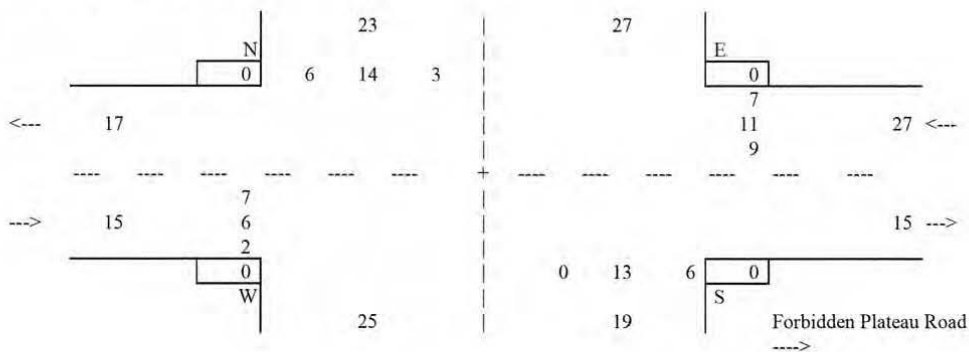
Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	11	2	0	3	2	2	1	0	1	1	2	25	0	0	0	0
8:00	0	2	0	0	10	4	1	1	0	4	5	0	27	0	0	0	0
8:15	1	1	1	1	3	2	0	1	0	0	0	1	11	0	0	0	0
8:30	0	3	1	0	2	2	2	0	0	0	1	1	12	0	0	0	0
8:45	1	3	1	0	7	2	0	2	0	1	0	1	18	0	0	0	0
9:00	1	1	0	0	3	0	1	3	0	0	2	1	12	0	0	0	0
9:15	0	6	2	0	2	1	0	2	1	1	2	2	19 *	0	0	0	0
9:30	2	5	1	0	4	2	2	1	0	3	3	2	25 +	0	0	0	0
9:45	0	2	3	0	6	0	3	1	0	3	1	0	19 *	0	0	0	0
10:00	1	1	0	0	1	3	2	2	1	2	5	3	21 *	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total	6	35	11	1	41	18	13	14	2	15	20	13	189	0	0	0	0
Peak Hr	3	14	6	0	13	6	7	6	2	9	11	7	84 *	0	0	0	0
15x4	8	20	4	0	16	8	8	4	0	12	12	8	100 +	0	0	0	0
Avg Hr	2	13	4	0	15	7	5	5	1	5	7	5	69	0	0	0	0

Peak Hour 09:15
Peak 15min 09:30
North approach PHF 0.72
South approach PHF 0.79
West approach PHF 1.25
East approach PHF 0.84

N
^
-

AM Peak Hour Volumes



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Noon Peak Period

Location: Forbidden Plateau Road @ Duncan Bay Main Road

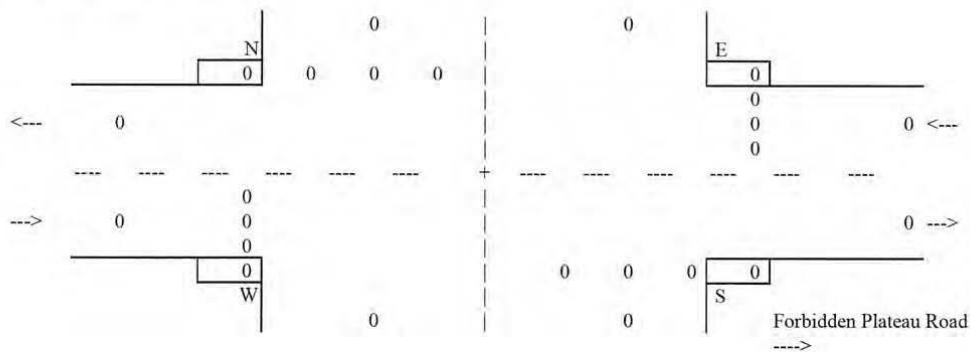
Date: Sept 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avg Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour 12:00
Peak 15min 12:45
North Leg PHF #DIV/0!
South Leg PHF #DIV/0!
West Leg PHF #DIV/0!
East Leg PHF #DIV/0!

Noon Peak Hour Volumes

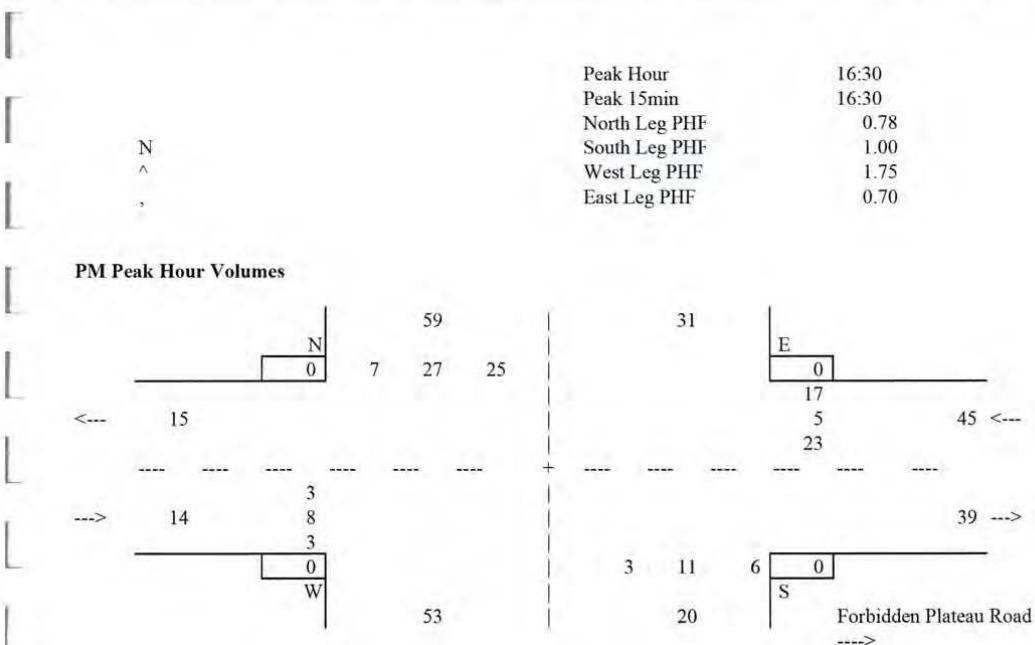


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M Peak Period

Location: Forbidden Plateau Road @ Duncan Bay Main Road
 Date: Sept 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
15:00	1	4	1	0	2	1	1	2	1	1	1	3	18	0	0	0	0
15:15	6	5	2	0	9	5	1	3	0	4	5	7	47	0	0	0	0
15:30	6	4	2	0	10	2	3	3	0	3	0	4	37	0	0	0	0
15:45	5	4	0	1	2	3	0	1	0	1	1	2	20	0	0	0	0
16:00	5	11	0	0	2	5	1	2	1	1	1	2	31	0	0	0	0
16:15	5	4	0	0	2	3	1	0	0	3	1	6	25	0	0	0	0
16:30	7	7	5	1	2	2	1	1	0	7	3	6	42 +	0	0	0	0
16:45	5	8	1	1	1	3	1	3	0	8	0	3	34 *	0	0	0	0
17:00	6	4	1	1	3	0	0	2	1	4	1	5	28 *	0	0	0	0
17:15	7	8	0	0	5	1	1	2	2	4	1	3	34 *	0	0	0	0
17:30	5	3	1	0	5	2	1	0	0	3	0	2	22	0	0	0	0
17:45	2	8	0	0	2	1	0	2	0	7	0	6	28	0	0	0	0
Total	60	70	13	4	45	28	11	21	5	46	14	49	366	0	0	0	0
Pl. Hr	25	27	7	3	11	6	3	8	3	23	5	17	138 *	0	0	0	0
x4	28	28	20	4	8	8	4	4	0	28	12	24	168 +	0	0	0	0
Avg Hr	20	23	4	1	15	9	4	7	2	15	5	16	122	0	0	0	0



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Average Hour Period

Location: Forbidden Plateau Road @ Duncan Bay Main Road
Sept 18, 2009

	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
Survey																	
Total	66	105	24	5	86	46	24	35	7	61	34	62	555	0	0	0	0
Hours	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Avg Hr	9	14	3	1	11	6	3	5	1	8	4	8	72	0	0	0	0

M Period																		
Total	6	35	11	1	41	18	13	14	2	15	20	13	189	0	0	0	0	
Hours	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Avg Hr	2	13	4	0	15	7	5	5	1	5	7	5	69	0	0	0	0	

Noon Period																	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hours	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
/g Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

M Period																	
Total	60	70	13	4	45	28	11	21	5	46	14	49	366	0	0	0	0
Hours	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
/g Hr	20	23	4	1	15	9	4	7	2	15	5	16	122	0	0	0	0

Average Hour Volumes

				Total	3	14	9				
				AM	4	13	2				
				Noon	0	0	0				
				PM	4	23	20				
Forbidden Plateau Road											
</											

VEHICLE TURNING MOVEMENT SURVEY **Ministry of Transportation & Highways** **South Coast Region**

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Major Route: Comox Logging Road
 Minor Route: Marsden Road
 Municipality: Comox Valley Regional District
 Filename: MoT - Comox & marsden Site Code: 00000

Date: Sept 18, 2009
 Day-of-week: Friday

Speed Limit Major Rte: 50
 Speed Limit Minor Rte: 50 km/hr

East/West Route: Comox Logging Road
 Intersection Type: 1 ---> 4-leg
 Signalized (y/n?): No
 Weather: dry and sunny

	Lanes						L	Grade	Bus Stop		Bus Bay
	TLR	R	(ch)	TR	T	TL			Near	Far	
North Approach	1										
South Approach	1										
West Approach	1										
East Approach	1										

note: (ch) - channelized A: parallel lane B: taper

	Start	Duration
A.M. Shift	07:30	3.25
Noon Shift	11:00	0.00
P.M. Shift	15:00	3.00
Total		6.25

Note: duration: decimal hours
 start time: 24 hr clock (15 min increments)

Comments:

Notes: North Approach - vehicles approaching intersection from the north
 15x4 - 15 min volume (from max 15 minute period [+] in peak hour period [*]) x 4
 Pedestrians - N indicates pedestrians crossing north approach (east/west)

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Survey Data

Location: Comox Logging Road @ Marsden Road
 Date: Sept 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0				
07:45	1	1	1	0	3	1	2	4	0	1	4	0	18				
08:00	7	4	2	0	2	3	0	1	2	1	0	0	22				
08:15	7	6	1	0	5	3	1	2	0	0	4	1	30 +				
08:30	8	2	0	0	1	4	0	0	0	2	4	2	23 *				
08:45	2	2	0	0	6	3	4	0	0	0	5	2	24 *				
09:00	2	2	0	1	2	3	0	5	0	0	6	3	24 *				
09:15	1	2	0	0	2	2	2	1	0	0	6	1	17				
09:30	6	2	0	0	6	1	3	1	0	2	2	2	25				
09:45	2	2	0	2	4	3	2	1	0	0	5	0	21				
10:00	4	1	0	0	7	2	2	3	0	0	3	0	22				
10:15	3	5	1	0	5	3	1	2	1	0	4	3	28				
Total	43	29	5	3	43	28	17	20	3	6	43	14	254	0	0	0	0
Pk Hr	19	12	1	1	14	13	5	7	0	2	19	8	101 *	0	0	0	0
x4	28	24	4	0	20	12	4	8	0	0	16	4	120 +	0	0	0	0
11:00													0				
11:15													0				
11:30													0				
11:45													0				
12:00													0				
12:15													0 +				
12:30													0 +				
12:45													0 +				
13:00													0 +				
13:15													0 +				
13:30													0 +				
13:45													0 +				
14:00													0				
14:15													0				
14:30													0 *				
14:45													0 +				
15:00													0				
15:15													0				
15:30													24				
15:45													41				
16:00													27				
16:15													27				
16:30													46 +				
16:45													46 +				
17:00													43 *				
17:15													37 *				
17:30													29				
17:45													36				
18:00													25				
Total	42	25	2	4	65	65	18	14	2	7	114	23	381	0	0	0	0
Pk Hr	22	12	0	3	34	31	8	3	1	3	51	4	172 *	0	0	0	0
x4	16	4	0	4	56	40	8	4	0	0	48	4	184 +	0	0	0	0

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AM Peak Period

Location: Comox Logging Road @ Marsden Road

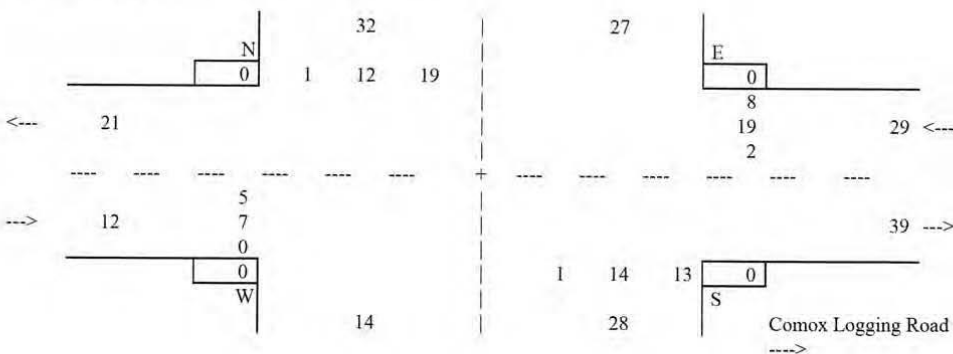
Date: Sept 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	1	1	1	0	3	1	2	4	0	1	4	0	18	0	0	0	0
08:00	7	4	2	0	2	3	0	1	2	1	0	0	22	0	0	0	0
08:15	7	6	1	0	5	3	1	2	0	0	4	1	30 +	0	0	0	0
08:30	8	2	0	0	1	4	0	0	0	2	4	2	23 *	0	0	0	0
08:45	2	2	0	0	6	3	4	0	0	0	5	2	24 *	0	0	0	0
09:00	2	2	0	1	2	3	0	5	0	0	6	3	24 *	0	0	0	0
09:15	1	2	0	0	2	2	2	1	0	0	6	1	17	0	0	0	0
09:30	6	2	0	0	6	1	3	1	0	2	2	2	25	0	0	0	0
09:45	2	2	0	2	4	3	2	1	0	0	5	0	21	0	0	0	0
10:00	4	1	0	0	7	2	2	3	0	0	3	0	22	0	0	0	0
10:15	3	5	1	0	5	3	1	2	1	0	4	3	28	0	0	0	0

Total	43	29	5	3	43	28	17	20	3	6	43	14	254	0	0	0	0
Peak Hr	19	12	1	1	14	13	5	7	0	2	19	8	101 *	0	0	0	0
15x4	28	24	4	0	20	12	4	8	0	0	16	4	120 +	0	0	0	0
avg Hr	13	9	2	1	13	9	5	6	1	2	13	4	78	0	0	0	0

Peak Hour 08:15
Peak 15min 08:15
North approach PHF 0.57
South approach PHF 0.88
West approach PHF 1.00
East approach PHF 1.45

AM Peak Hour Volumes



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Noon Peak Period

Location: Comox Logging Road @ Marsden Road

Date: Sept 18, 2009

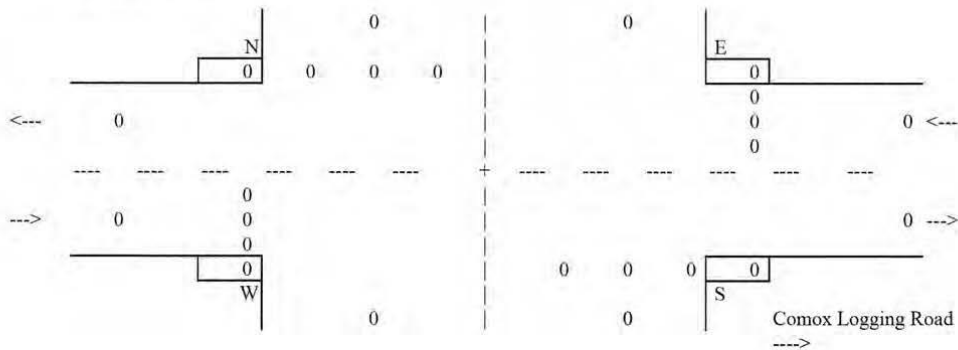
Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	*	0	0	0
Max4	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0
Avg Hr	####	####	####	####	####	####	####	####	####	####	####	####	#DIV/0!	####	####	####	####

Peak Hour n/a
Peak 15min n/a
North Leg PHF #DIV/0!
South Leg PHF #DIV/0!
West Leg PHF #DIV/0!
East Leg PHF #DIV/0!

N
^
,

Noon Peak Hour Volumes



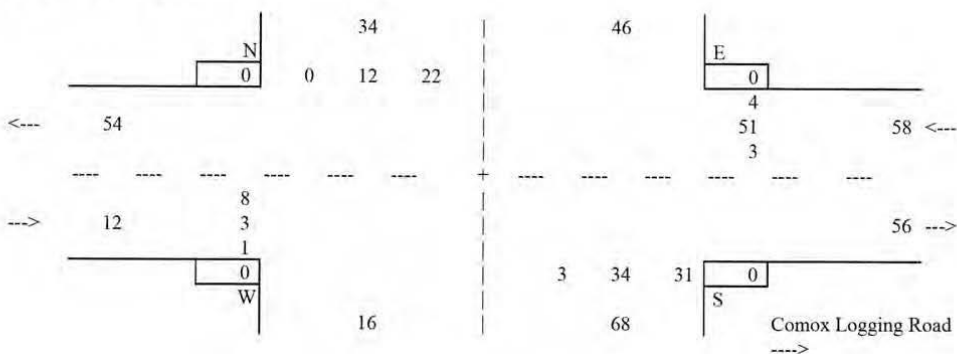
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PM Peak Period

Location: Comox Logging Road @ Marsden Road
 Date: Sept 18, 2009

Time Period	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	1	0	0	4	4	0	2	1	0	9	3	24	0	0	0	0
15:30	5	6	1	1	3	4	0	2	0	2	7	10	41	0	0	0	0
15:45	4	0	0	0	5	3	1	2	0	1	9	2	27	0	0	0	0
16:00	2	2	0	0	3	5	1	0	0	0	12	2	27	0	0	0	0
16:15	10	7	0	0	10	7	1	1	0	1	9	0	46 +	0	0	0	0
16:30	4	1	0	1	14	10	2	1	0	0	12	1	46 +	0	0	0	0
16:45	3	2	0	2	6	10	2	0	1	2	14	1	43 *	0	0	0	0
17:00	5	2	0	0	4	4	3	1	0	0	16	2	37 *	0	0	0	0
17:15	0	1	0	0	10	7	2	0	0	0	8	1	29	0	0	0	0
17:30	3	2	1	0	6	7	4	1	0	1	10	1	36	0	0	0	0
17:45	6	1	0	0	0	4	2	4	0	0	8	0	25	0	0	0	0
Total	42	25	2	4	65	65	18	14	2	7	114	23	381	0	0	0	0
Plr Hr	22	12	0	3	34	31	8	3	1	3	51	4	172 *	0	0	0	0
x4	16	4	0	4	56	40	8	4	0	0	48	4	184 +	0	0	0	0
avg Hr	14	8	1	1	22	22	6	5	1	2	38	8	127	0	0	0	0

Peak Hour 16:15
 Peak 15min 16:30
 North Leg PHF 1.70
 South Leg PHF 0.68
 West Leg PHF 1.00
 East Leg PHF 1.12

PM Peak Hour Volumes

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Average Hour Period

Location: Comox Logging Road @ Marsden Road
Sept 18, 2009

	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			Total Volume	Pedestrians			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		N	S	W	E
Survey																	
Total	85	54	7	7	108	93	35	34	5	13	157	37	635	0	0	0	0
Hours	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Avg Hr	14	9	1	1	17	15	6	5	1	2	25	6	102	0	0	0	0

AM Period																	
Total	43	29	5	3	43	28	17	20	3	6	43	14	254	0	0	0	0
Hours	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Avg Hr	13	9	2	1	13	9	5	6	1	2	13	4	78	0	0	0	0

Noon Period																	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avg Hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM Period																	
Total	42	25	2	4	65	65	18	14	2	7	114	23	381	0	0	0	0
Hours	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Avg Hr	14	8	1	1	22	22	6	5	1	2	38	8	127	0	0	0	0

Average Hour Volumes

				Total	1	9	14				
				AM	2	9	13				
				Noon	0	0	0				
				PM	1	8	14				
								PM	Noon	AM	Total
								8	0	4	6
								38	0	13	25
								2	0	2	2
				6	5	0	6				
				5	6	0	5				
				1	1	0	1				
				Total	AM	Noon	PM				
								1	22	22	PM
								0	0	0	Noon
								1	13	9	AM
								1	17	15	Total

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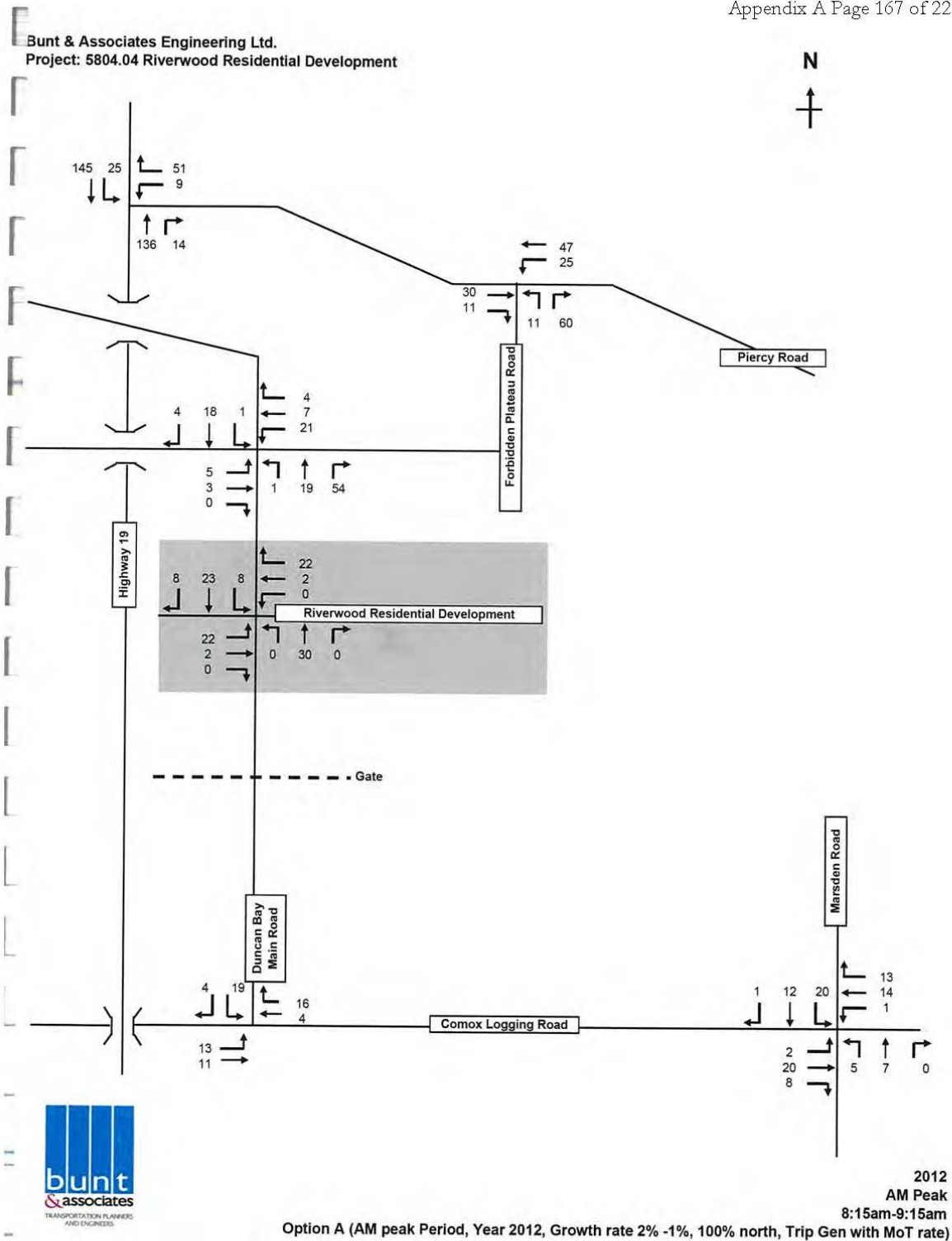
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Transportation Assessment Report - FINAL
Riverwood Residential, Courtenay, BC
Project No. 5804.04



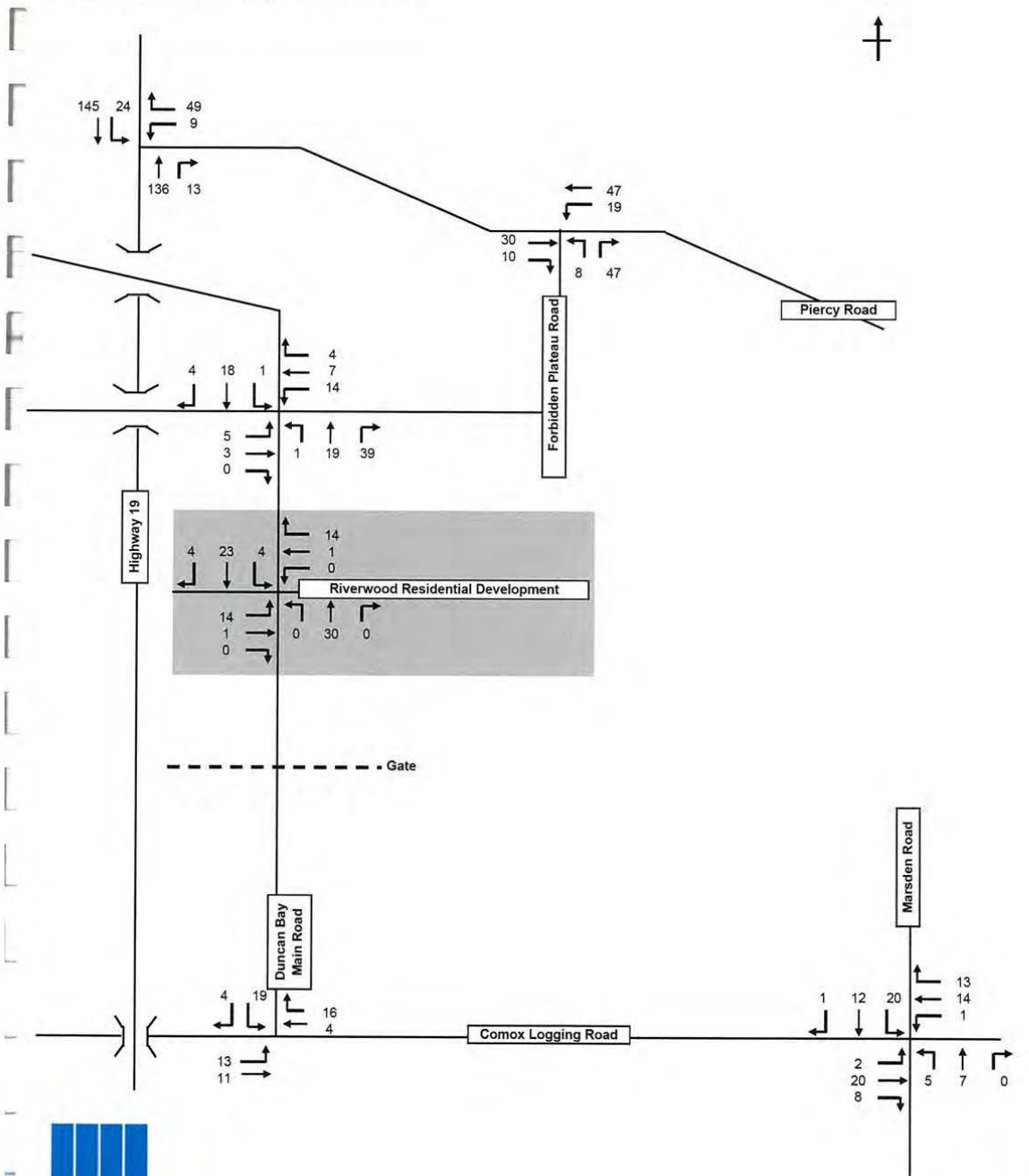
Appendix B - Future Traffic Flow Diagrams

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Bunt & Associates Engineering Ltd.
Project: 5804.04 Riverwood Residential Development

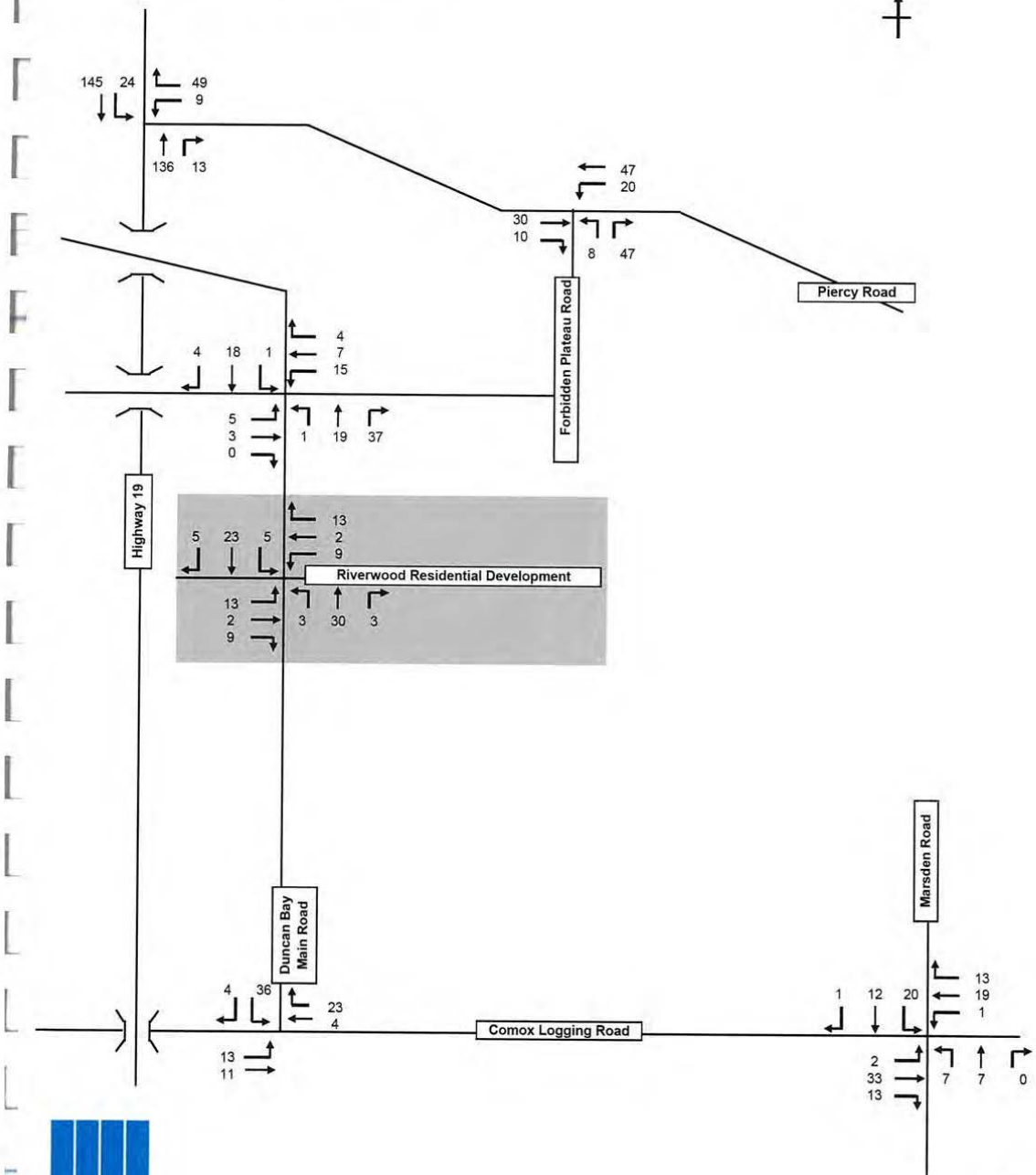


2012
AM Peak
8:15am-9:15am
Option B (AM Peak Period, Year 2012, Growth rate 2% -1%, 100% north, Trip Gen with ITE rate)

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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

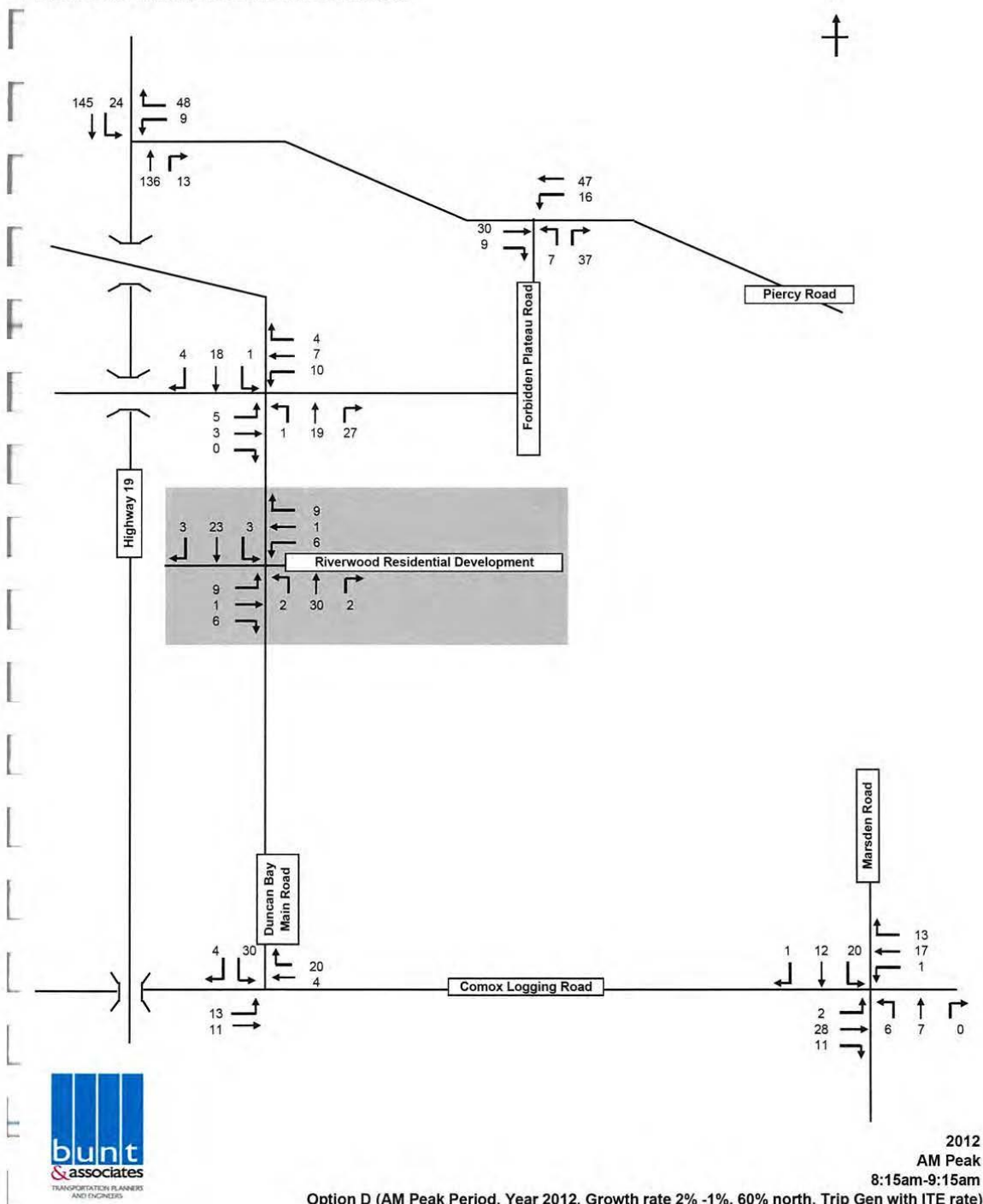


2012
AM Peak
8:15am-9:15am
Option C (AM Peak Period, Year 2012, Growth rate 2% -1%, 60% north, Trip Gen with MoT rate)

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Bunt & Associates Engineering Ltd.

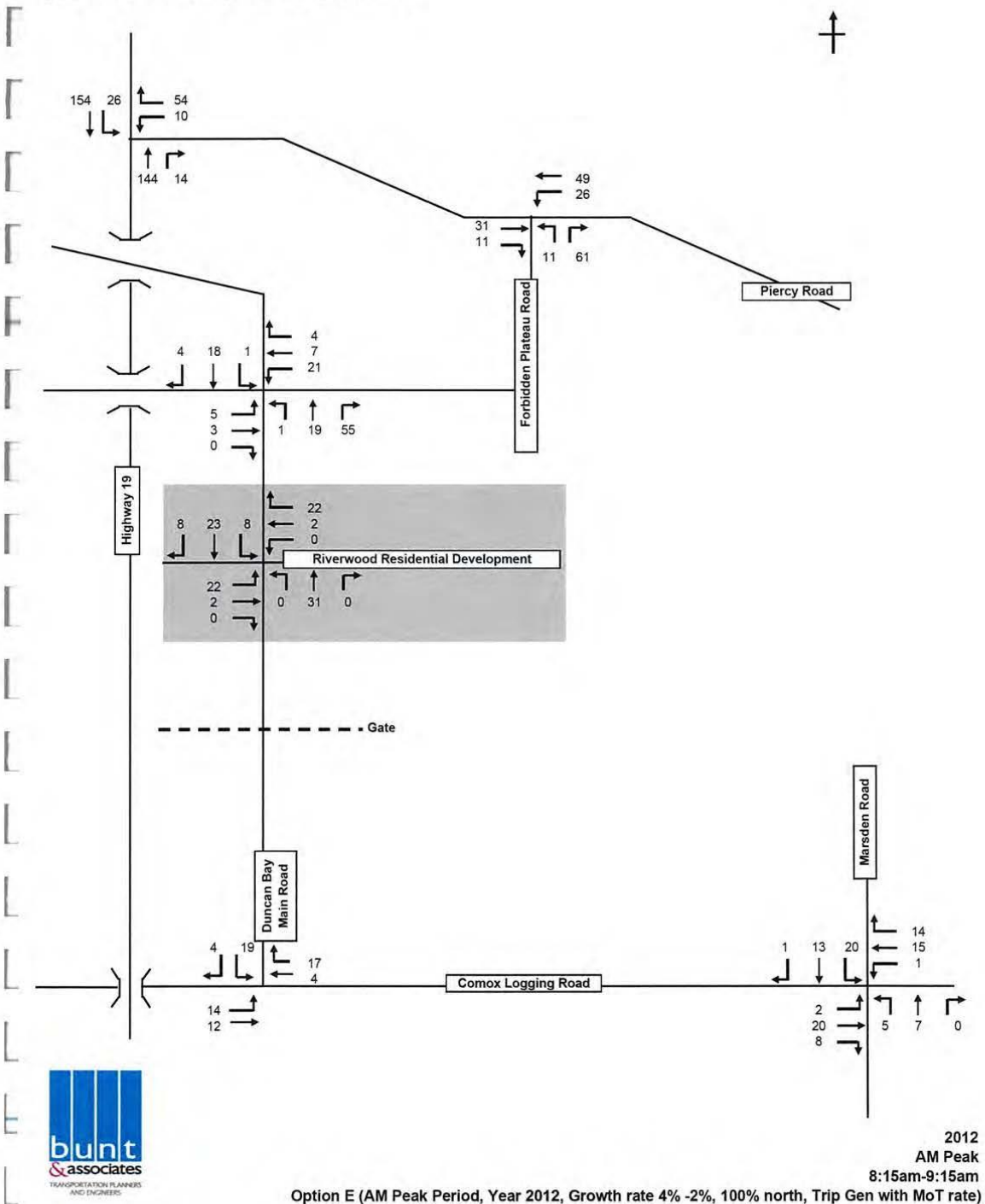
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Bunt & Associates Engineering Ltd.

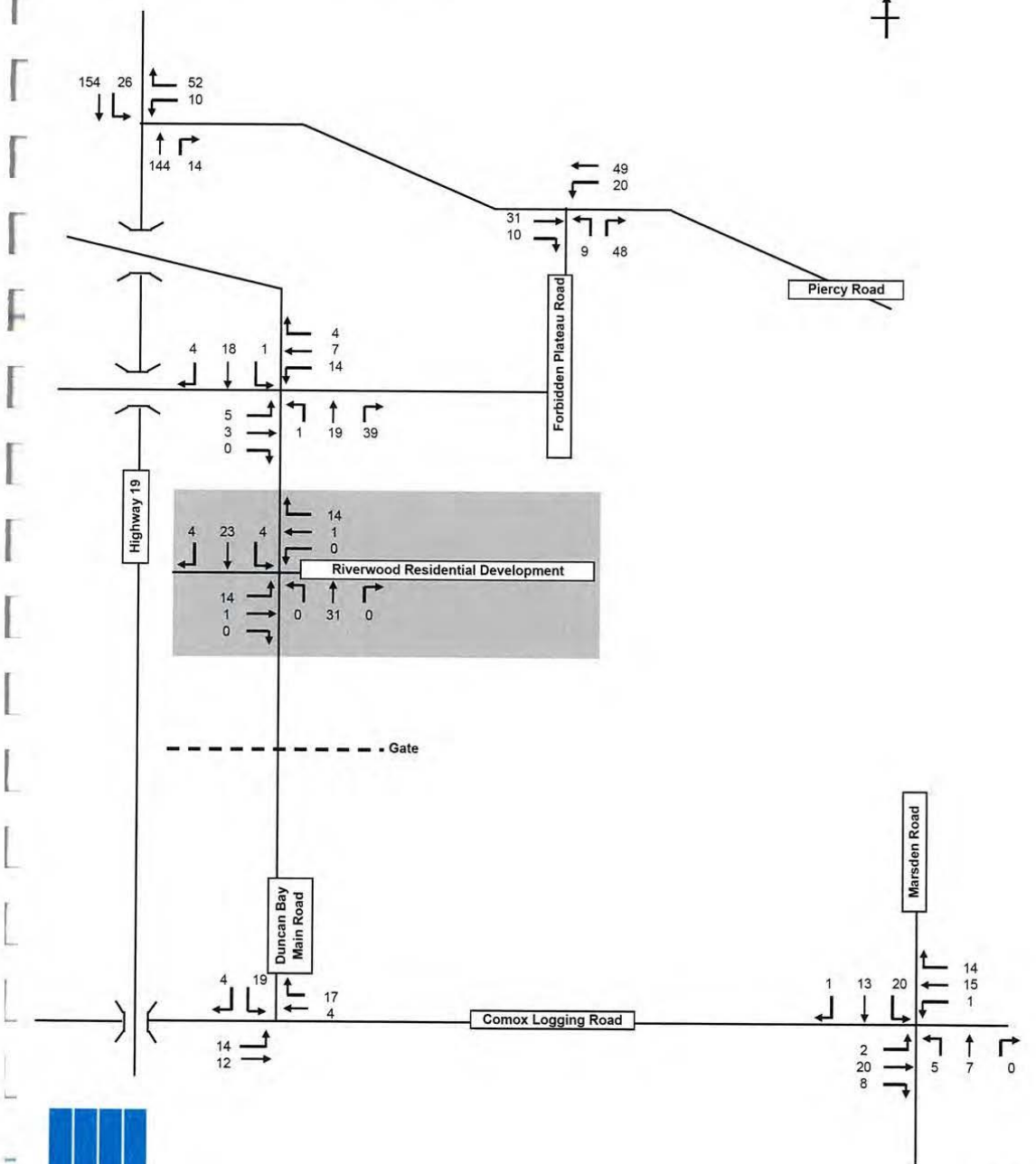
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

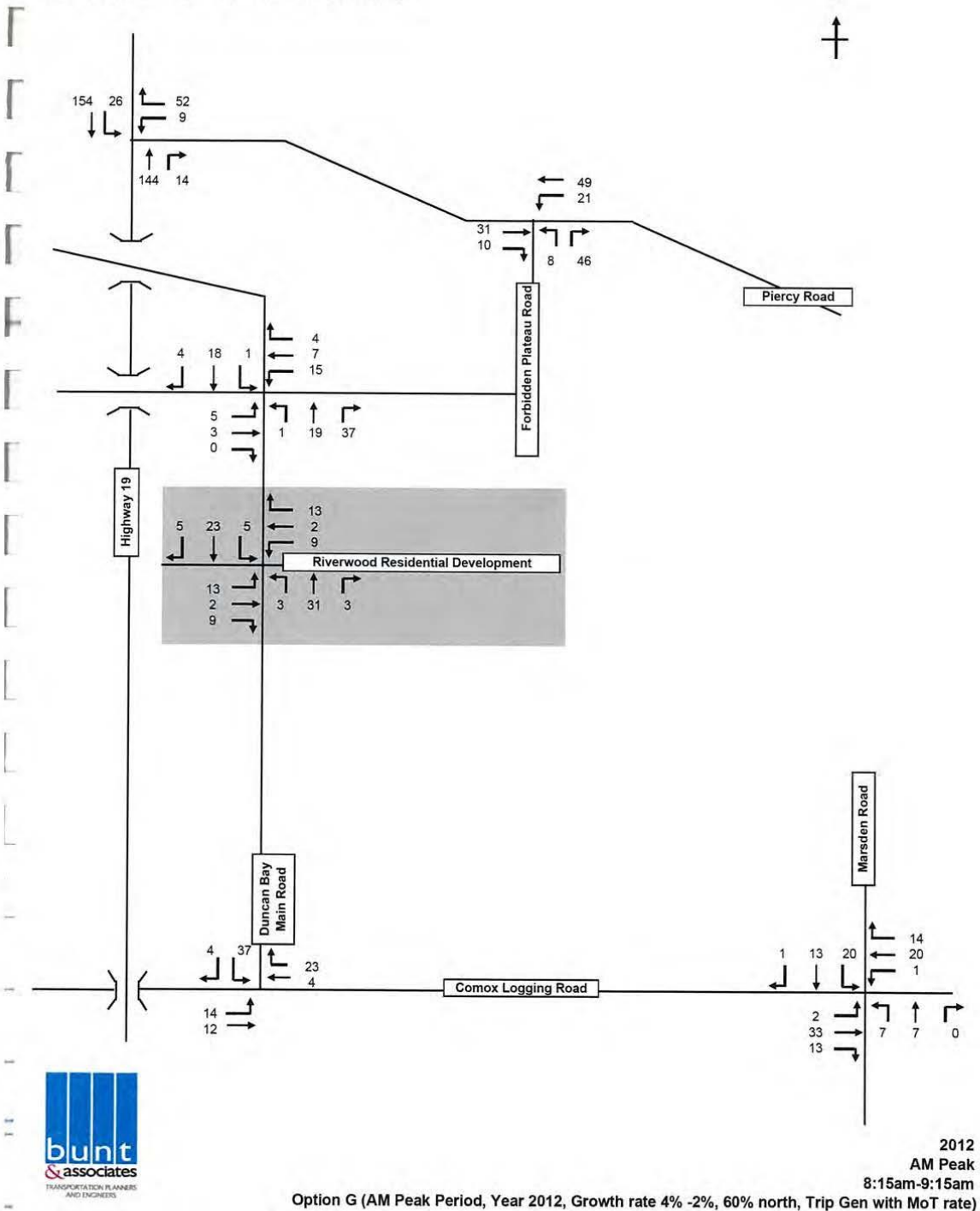


2012
AM Peak
8:15am-9:15am
Option F (AM Peak Period, Year 2012, Growth rate 4% -2%, 100% north, Trip Gen with ITE rate)

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Bunt & Associates Engineering Ltd.

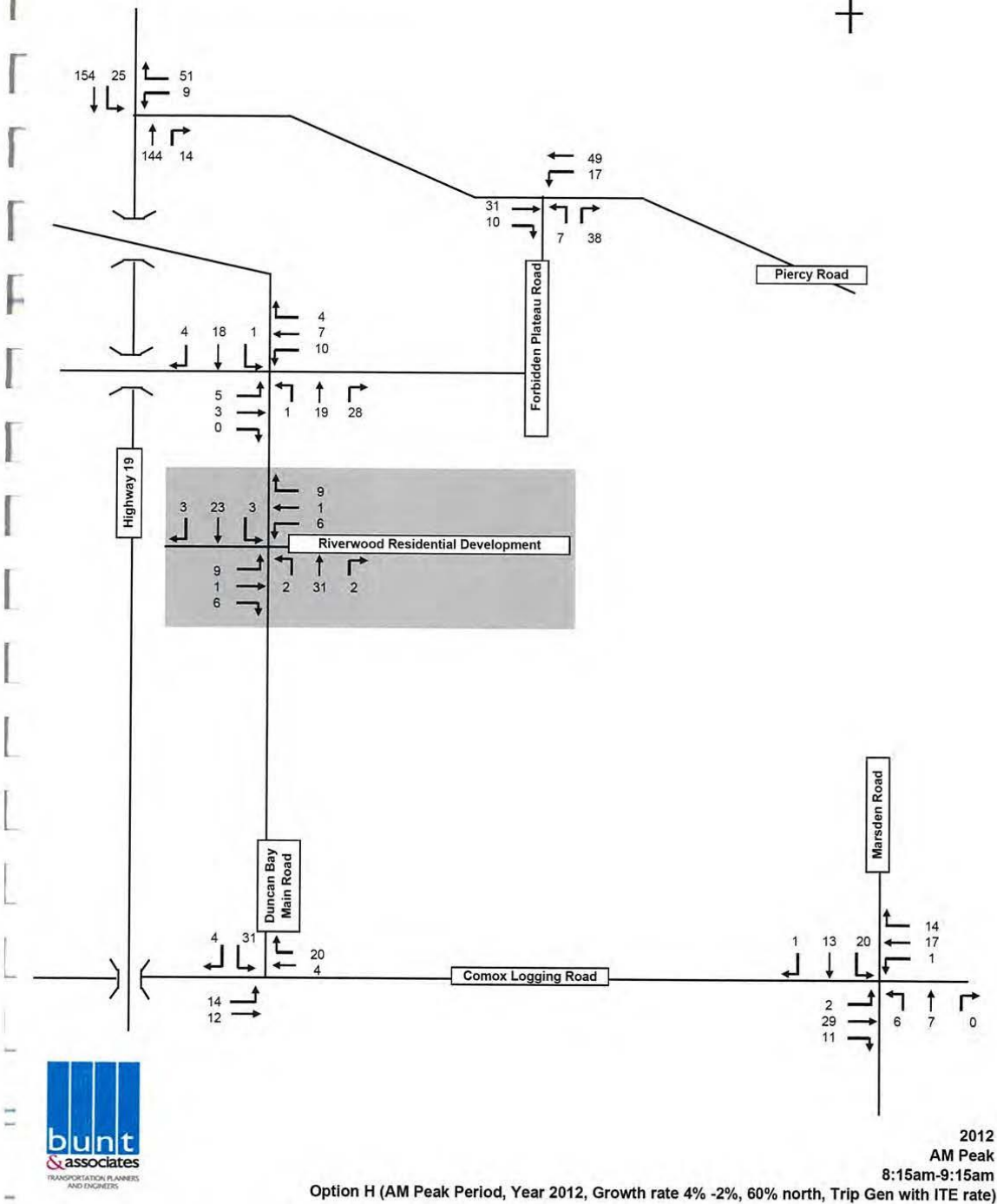
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Bunt & Associates Engineering Ltd.

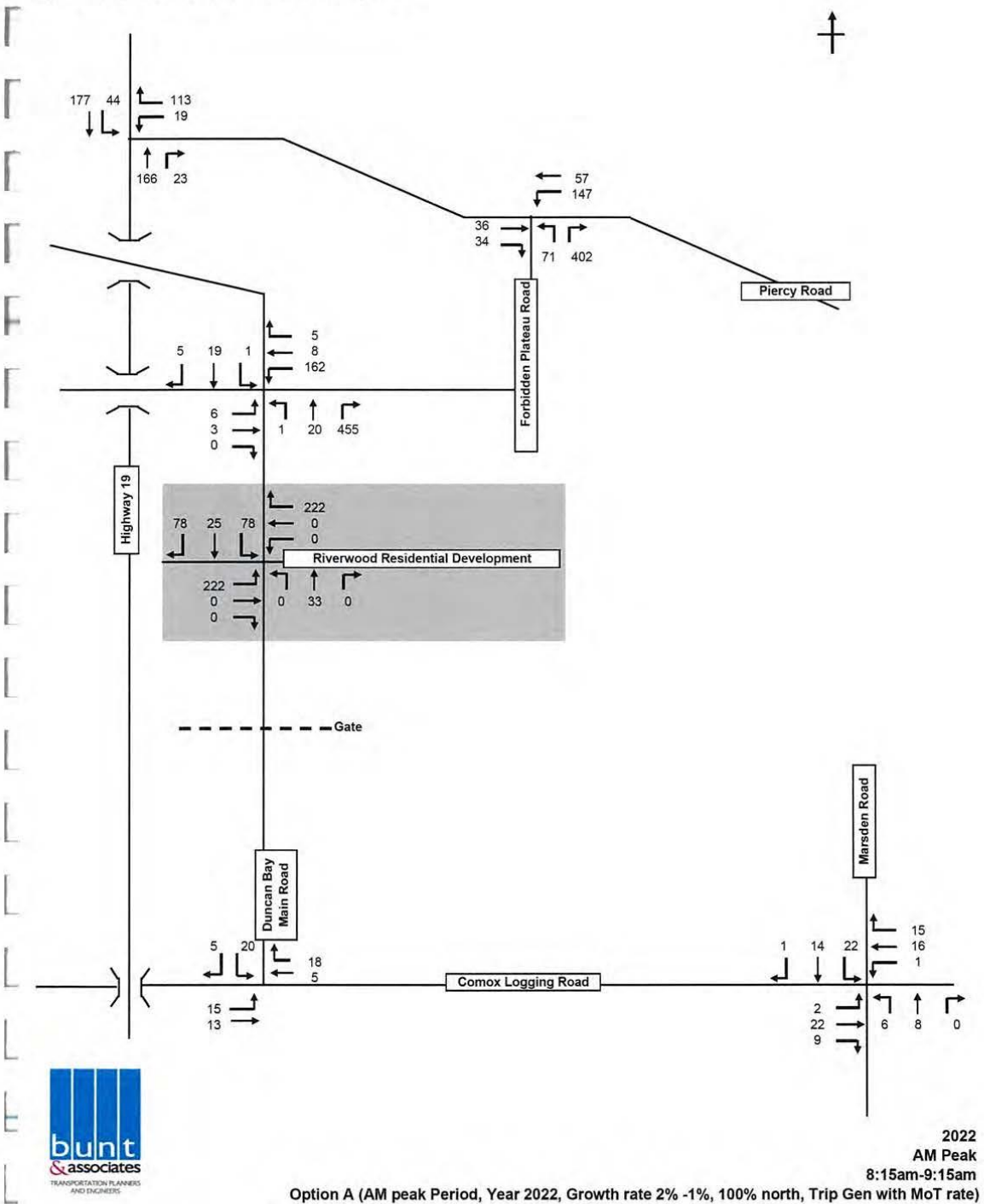
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

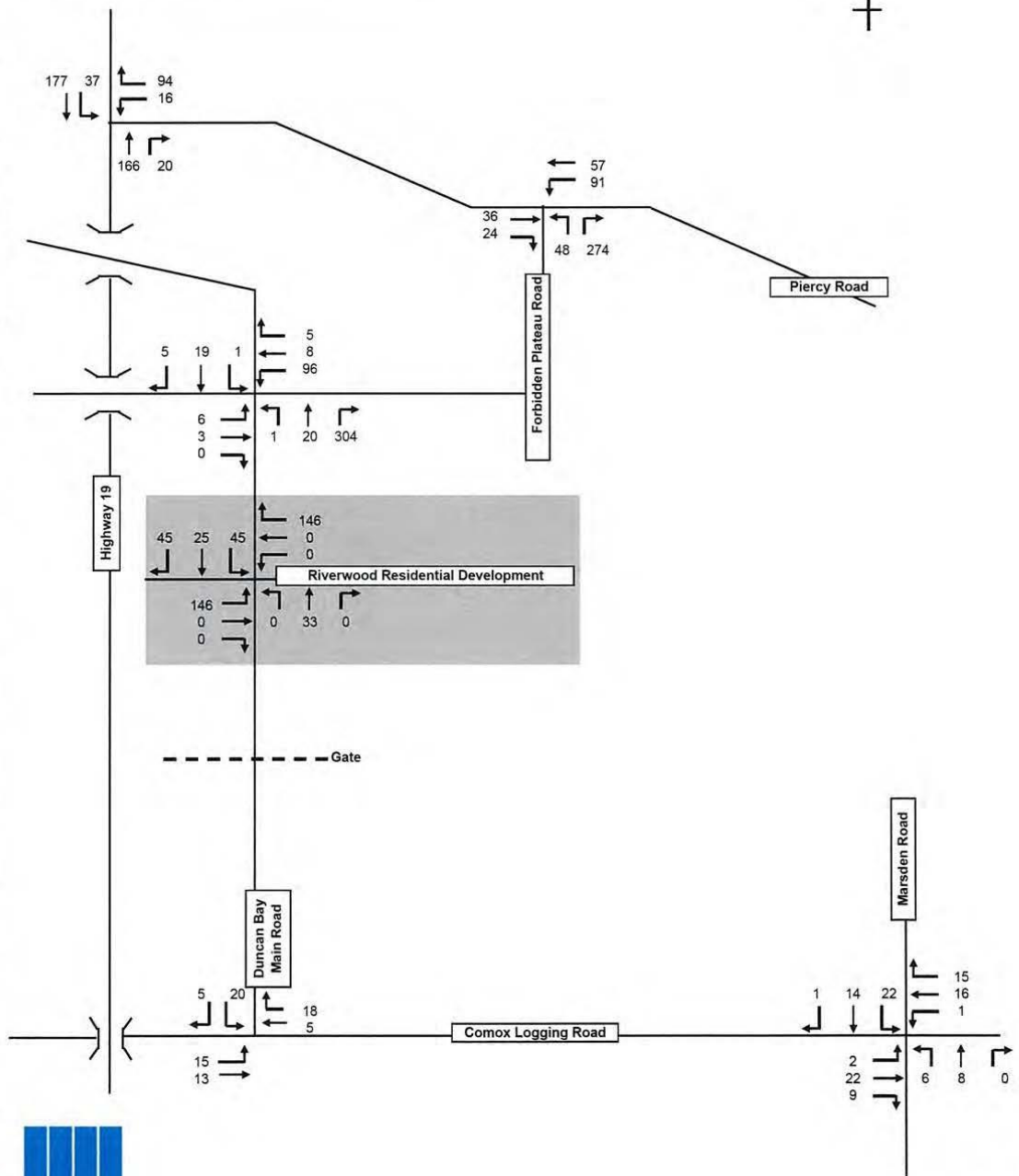
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

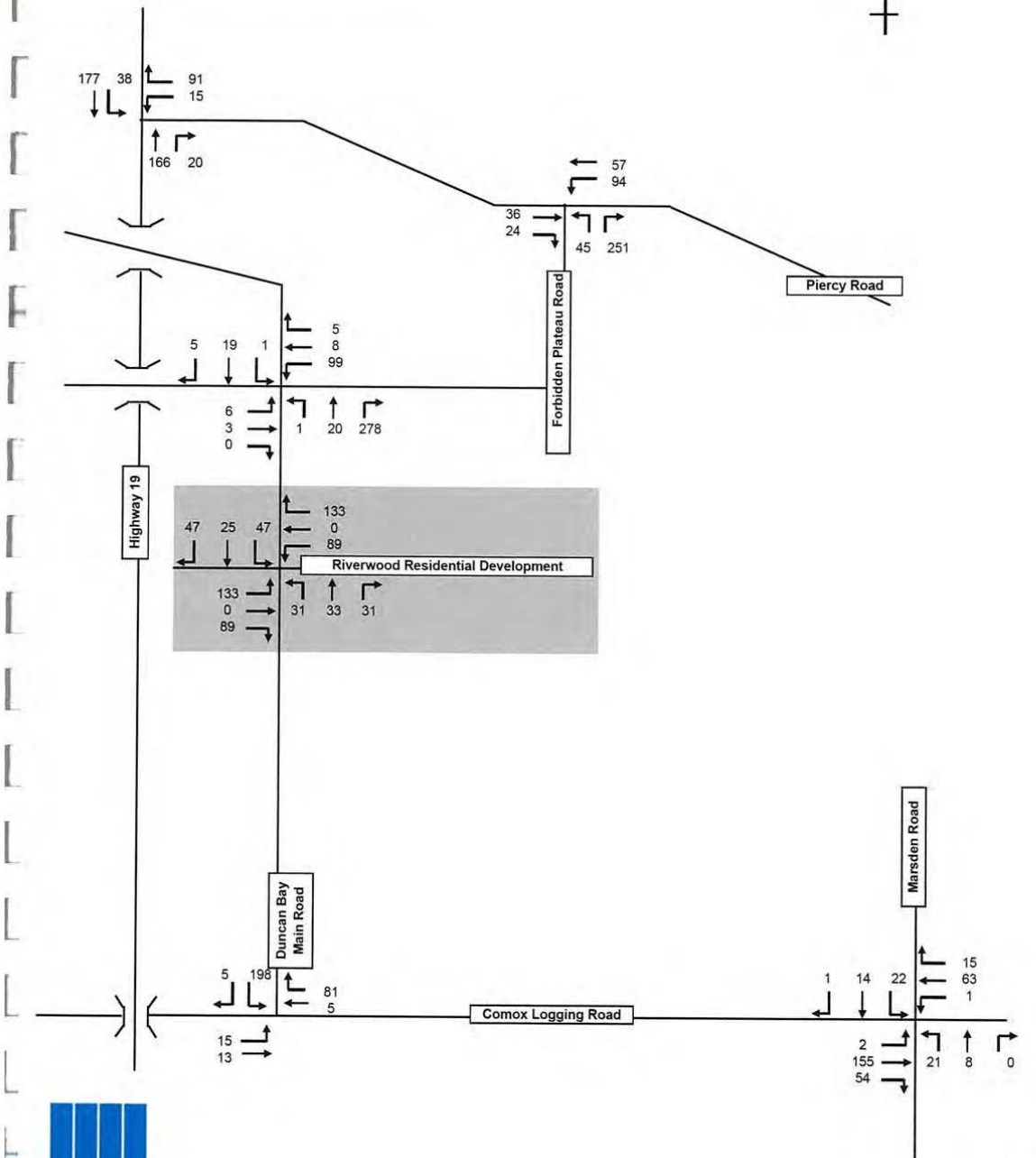


2022
AM Peak
8:15am-9:15am
Option B (AM Peak Period, Year 2022, Growth rate 2% -1%, 100% north, Trip Gen with ITE rate)

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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

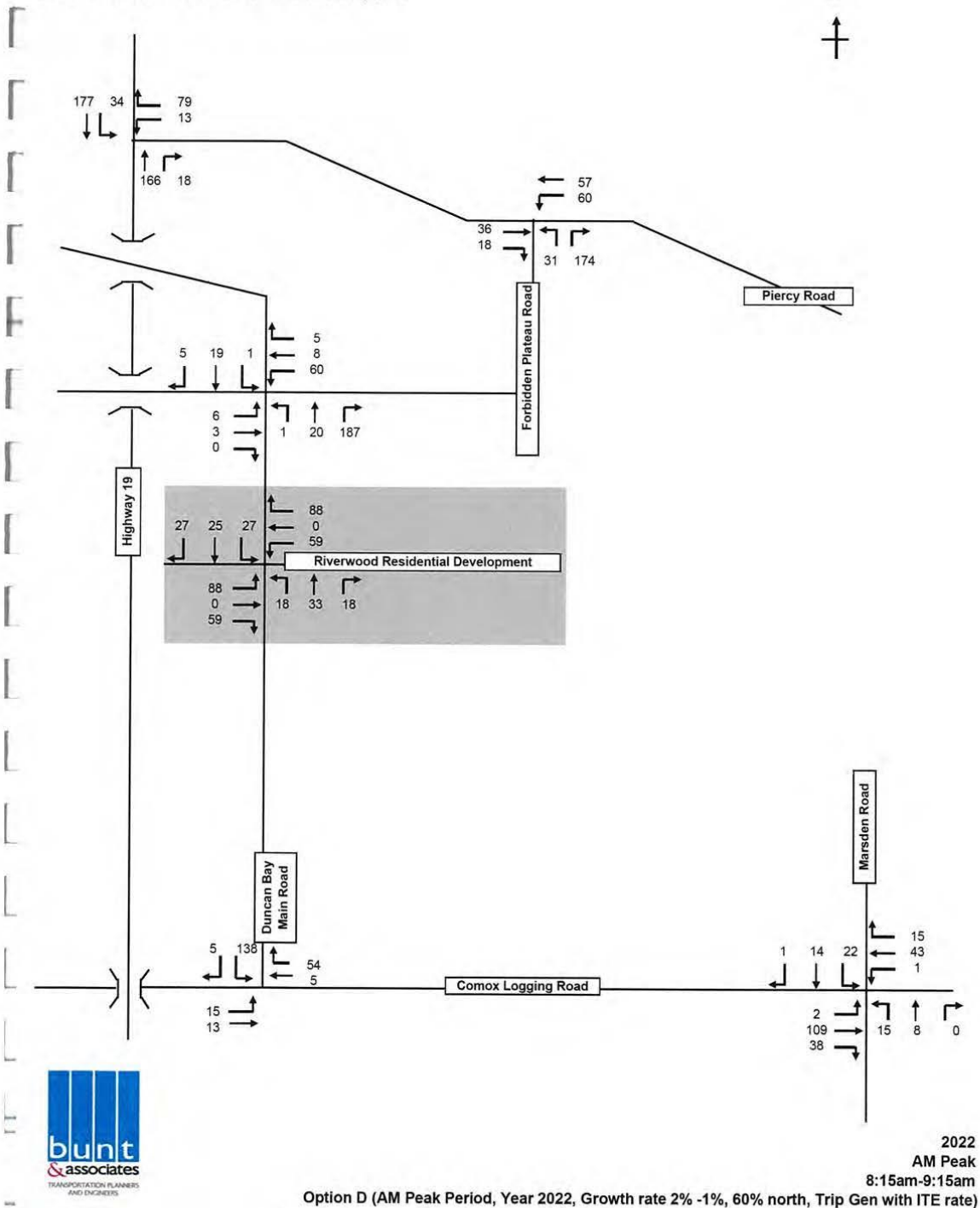


2022
AM Peak
8:15am-9:15am
Option C (AM Peak Period, Year 2022, Growth rate 2% -1%, 60% north, Trip Gen with MoT rate)

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Bunt & Associates Engineering Ltd.

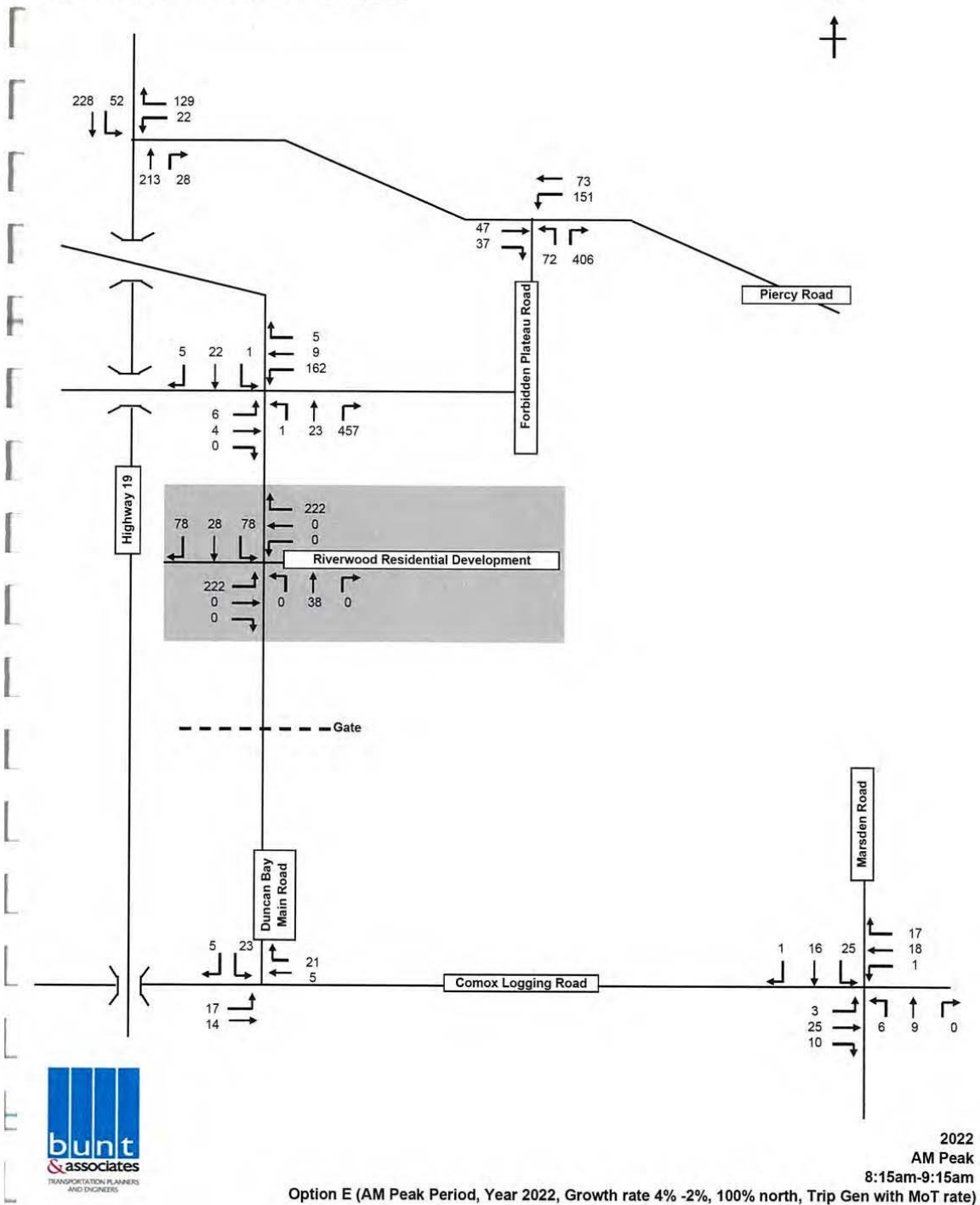
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

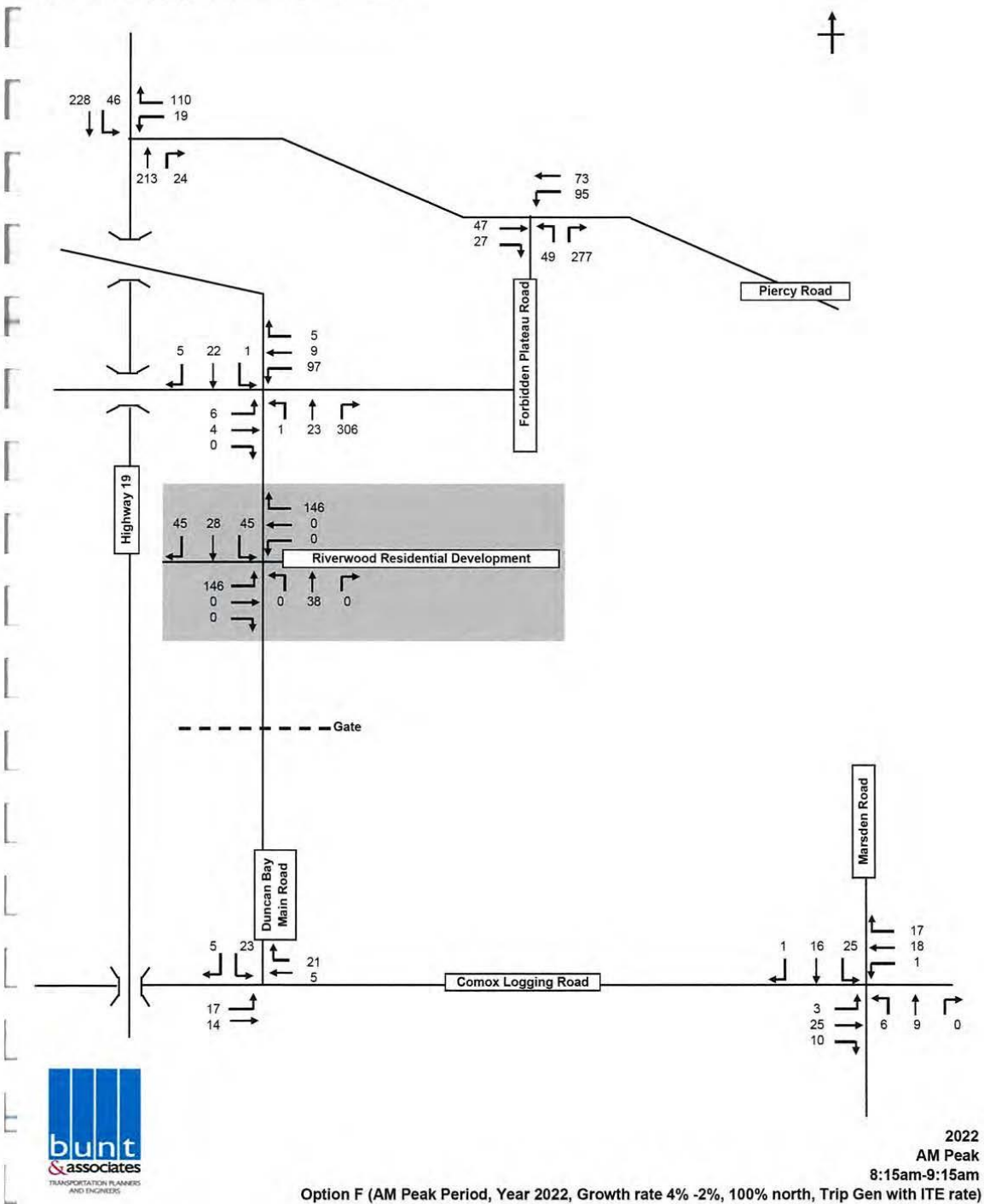
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

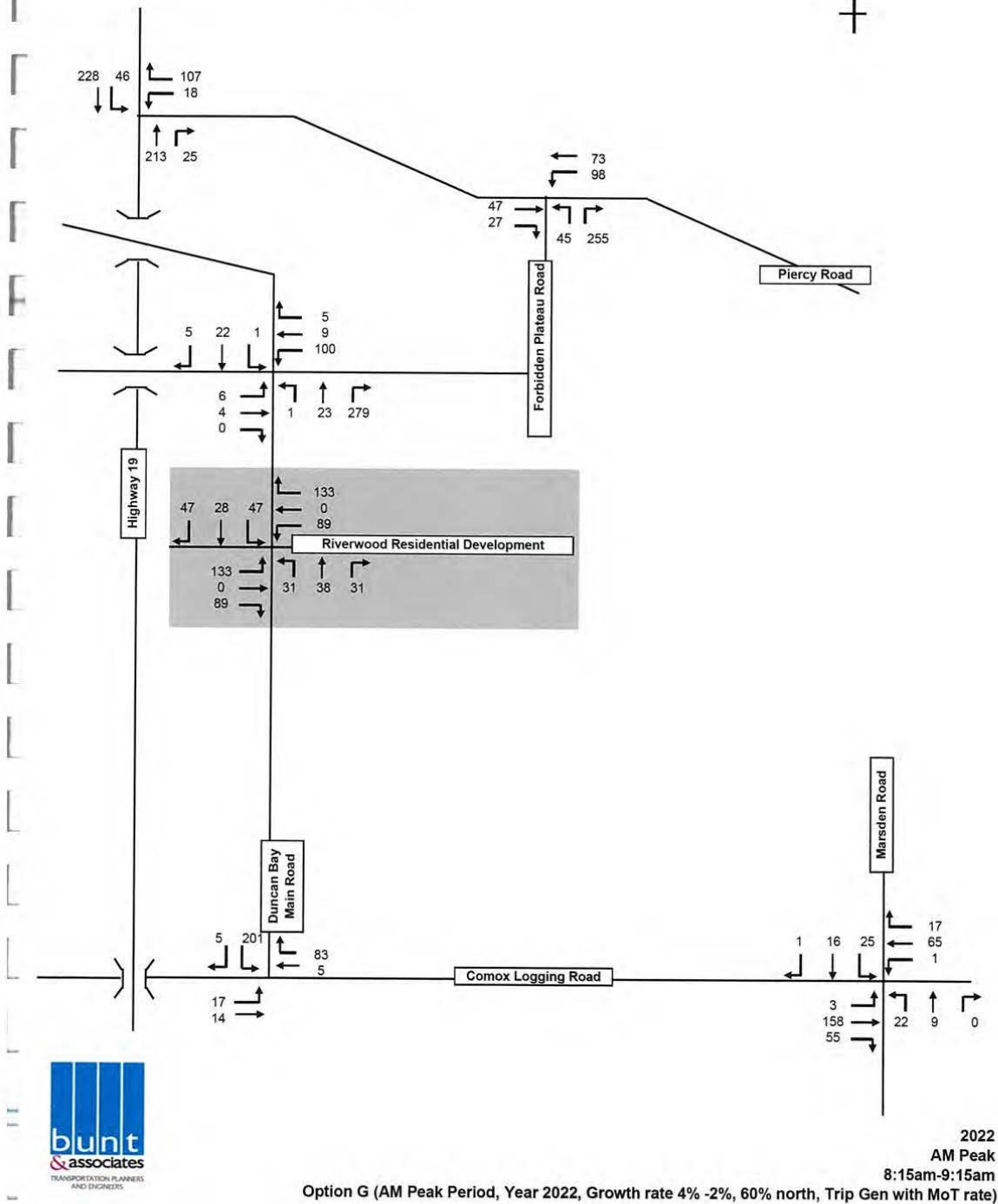
Project: 5804.04 Riverwood Residential Development



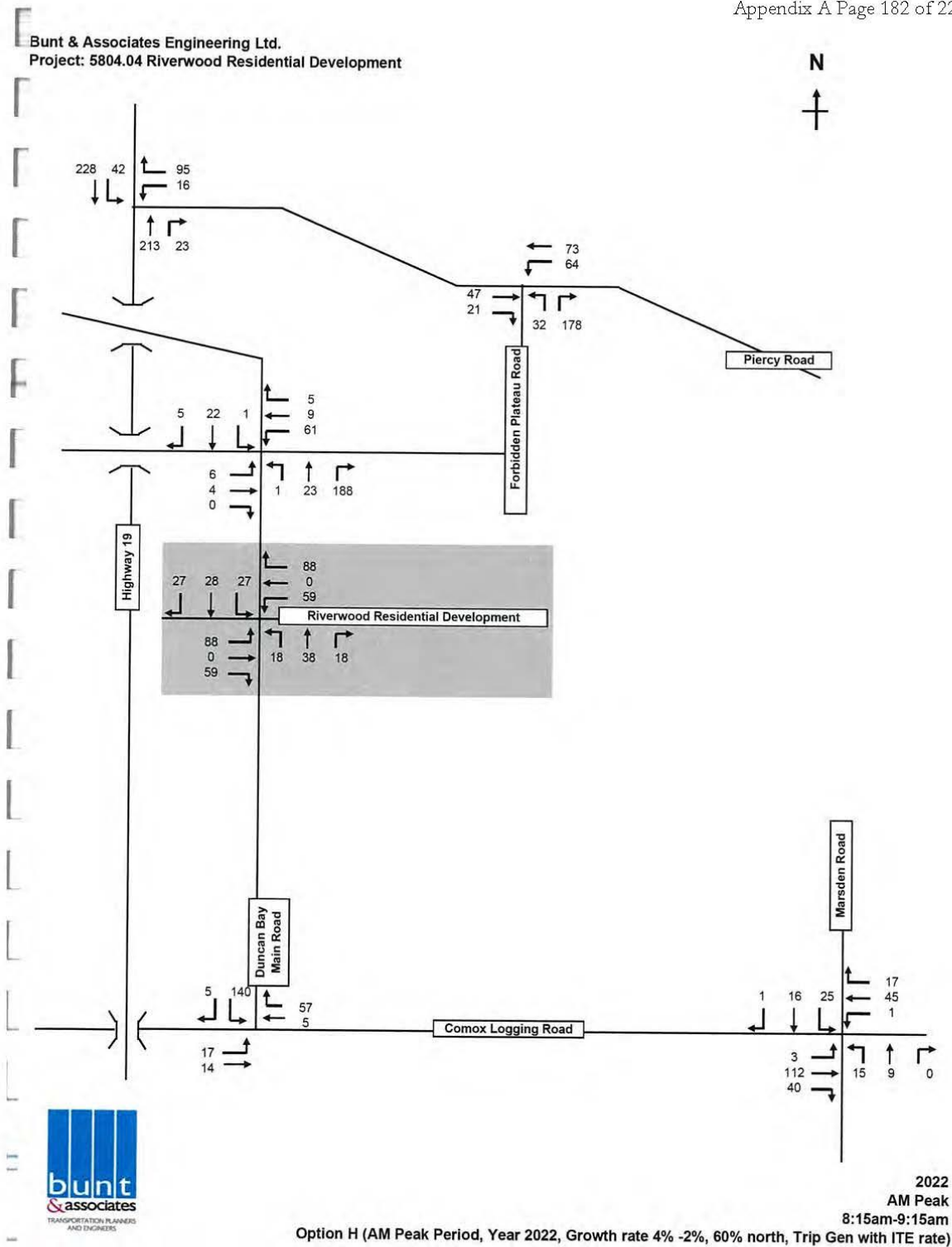
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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development



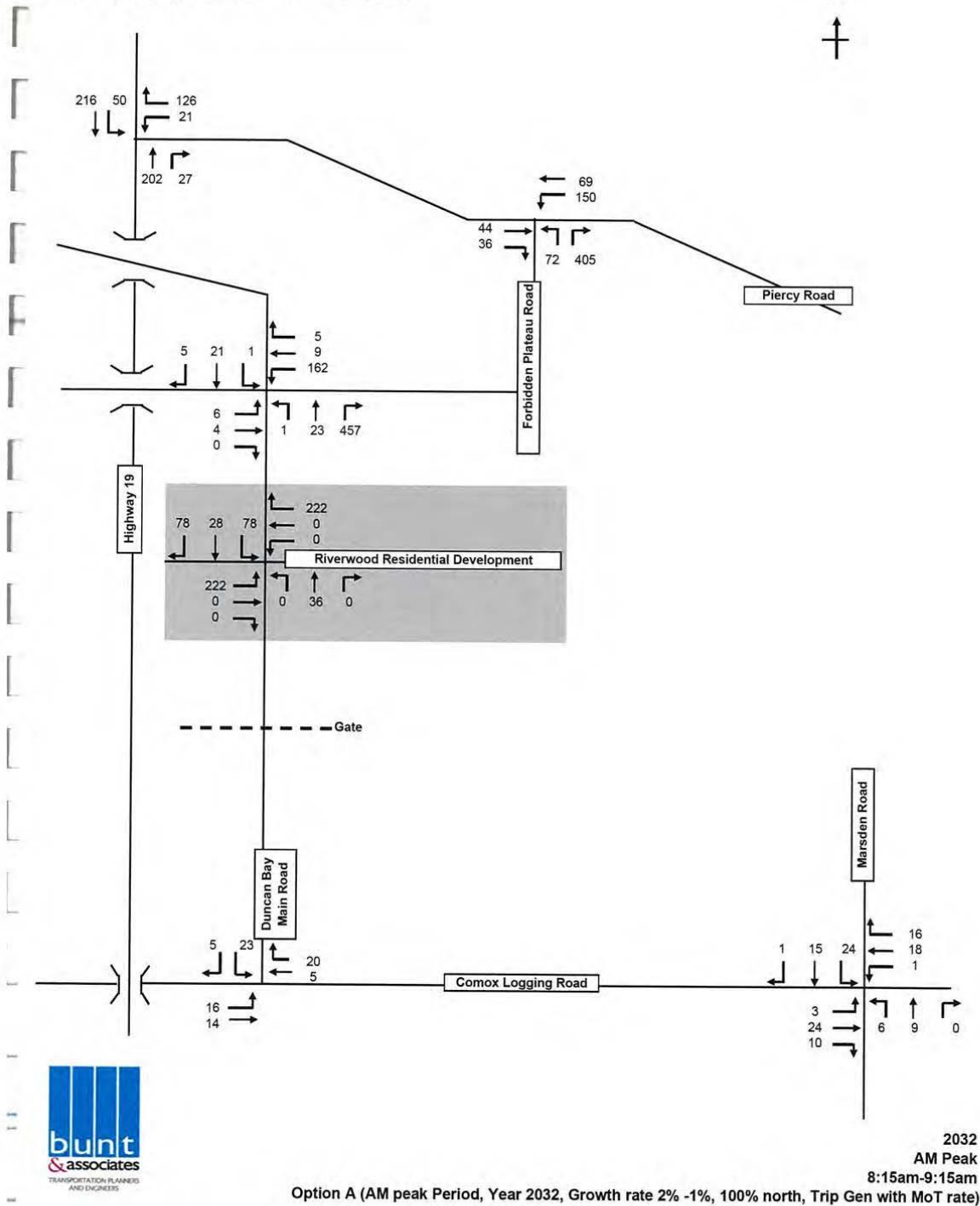
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Bunt & Associates Engineering Ltd.

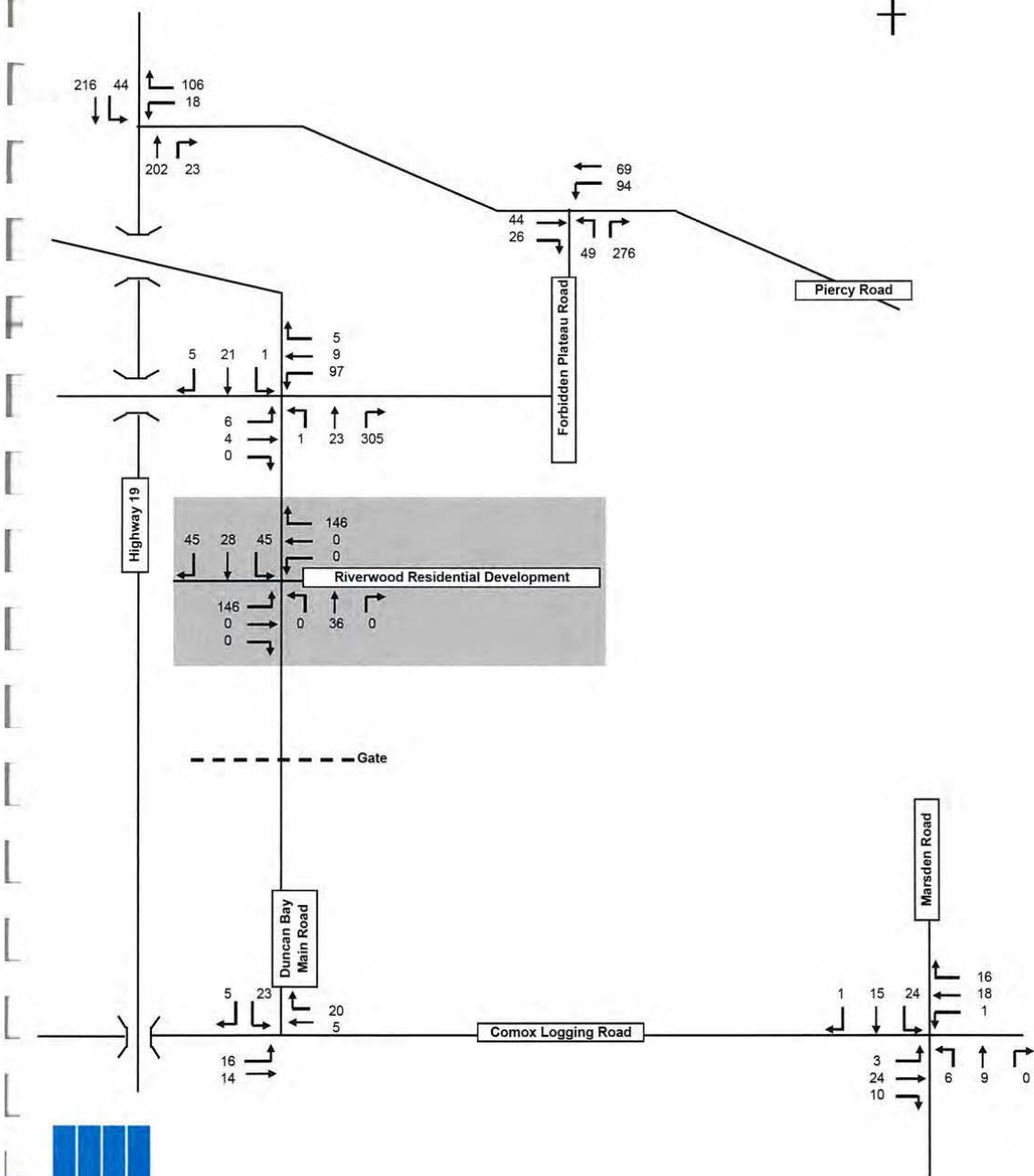
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

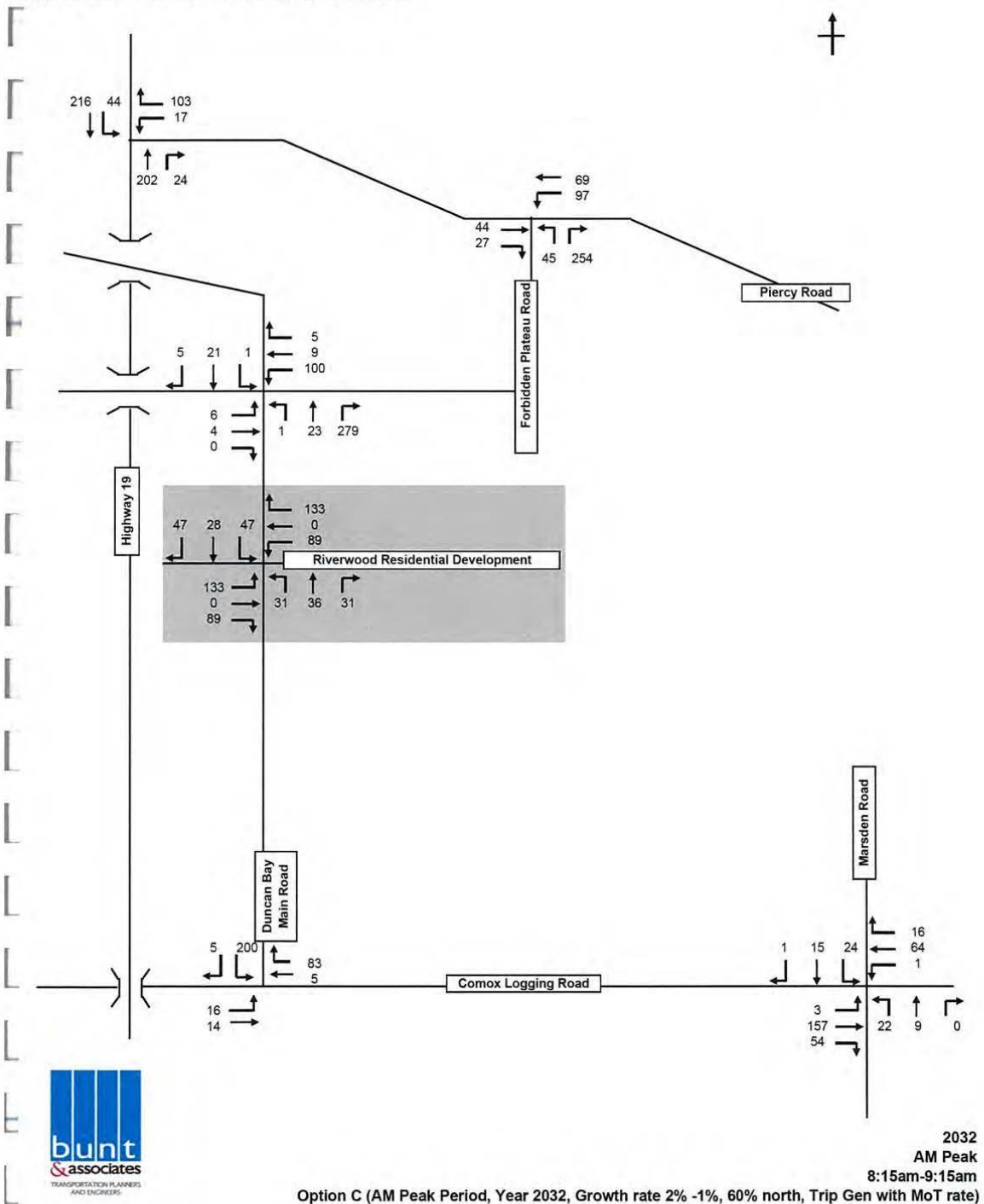


2032
AM Peak
8:15am-9:15am
Option B (AM Peak Period, Year 2032, Growth rate 2% -1%, 100% north, Trip Gen with ITE rate)

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Bunt & Associates Engineering Ltd.

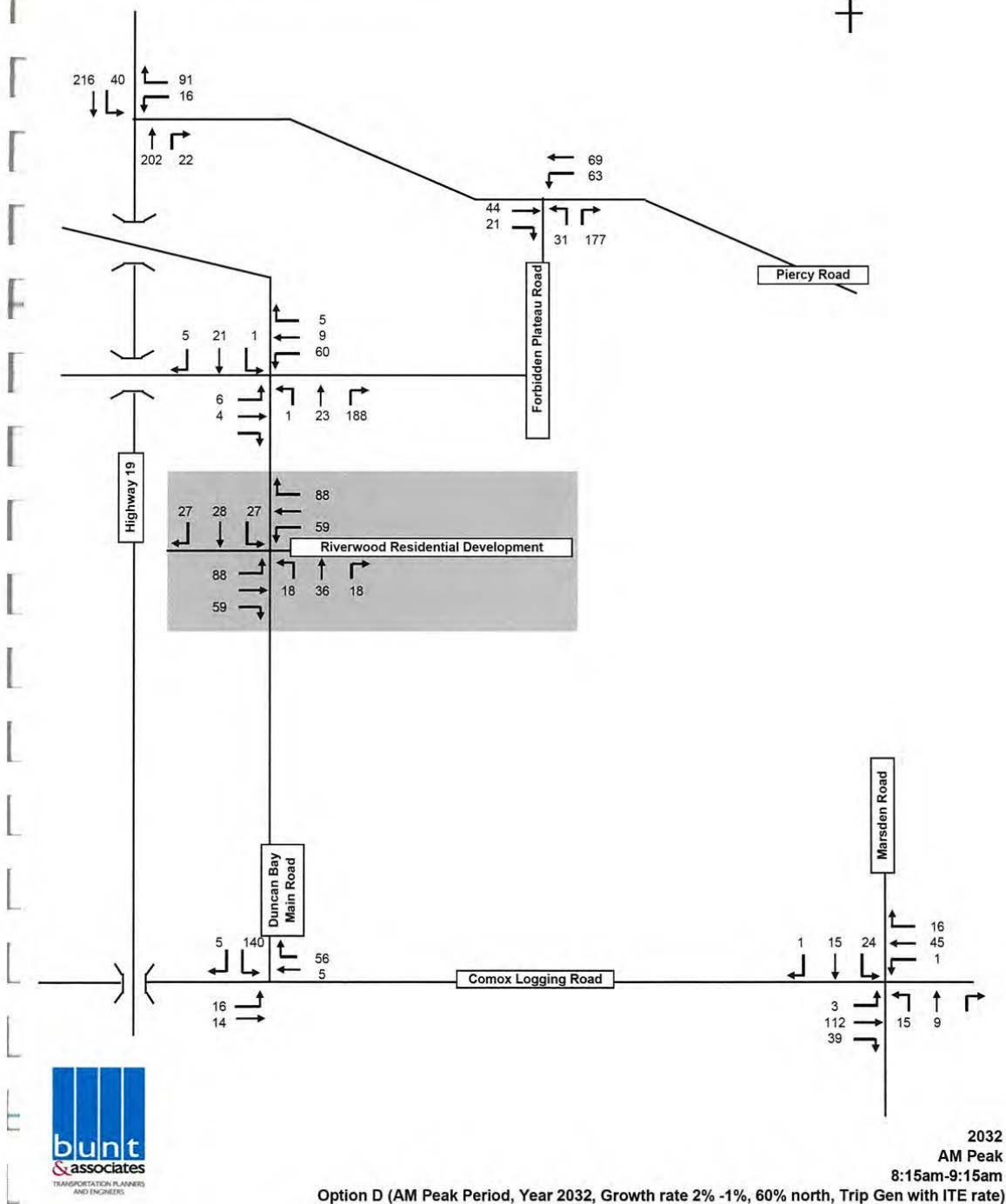
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

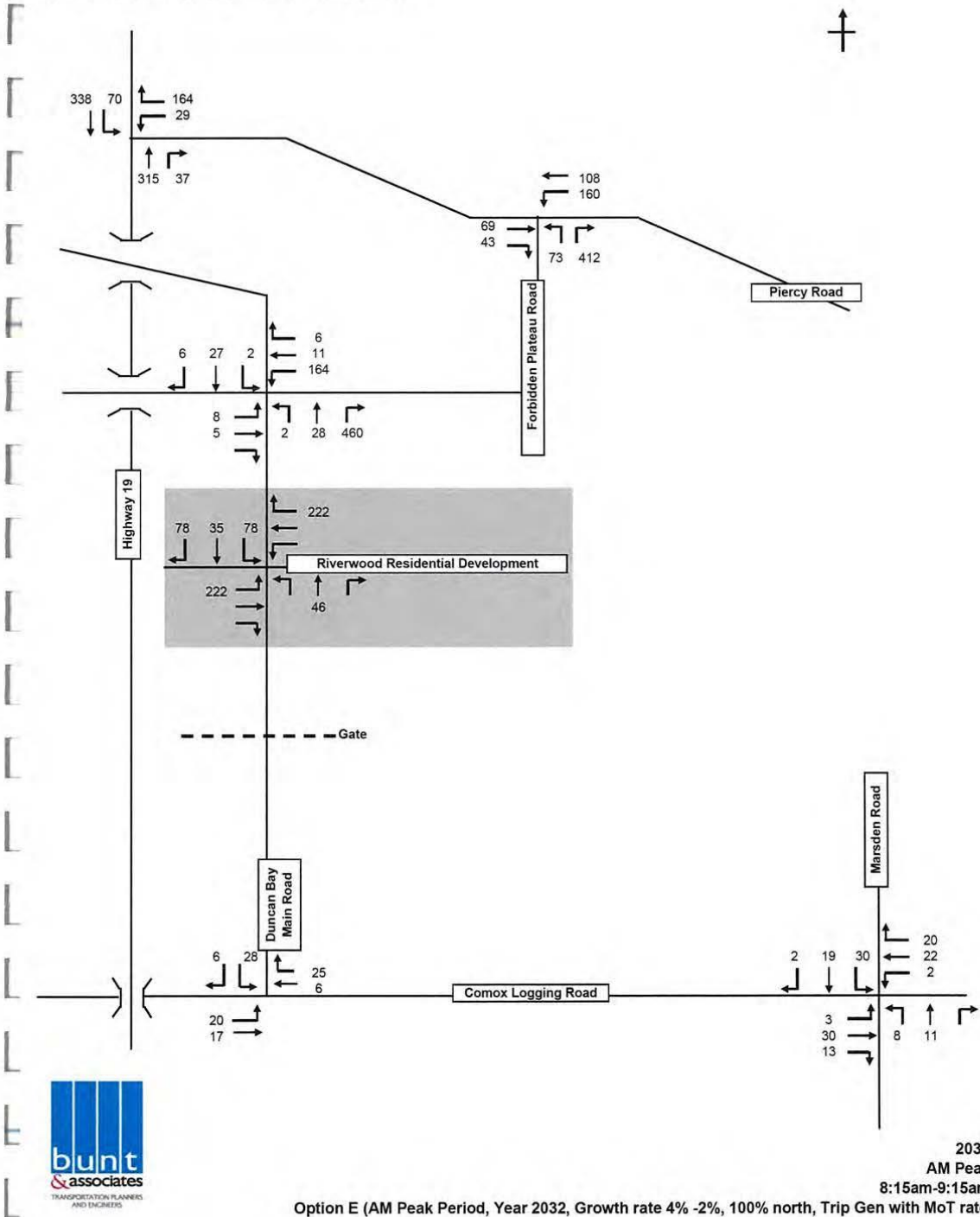
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

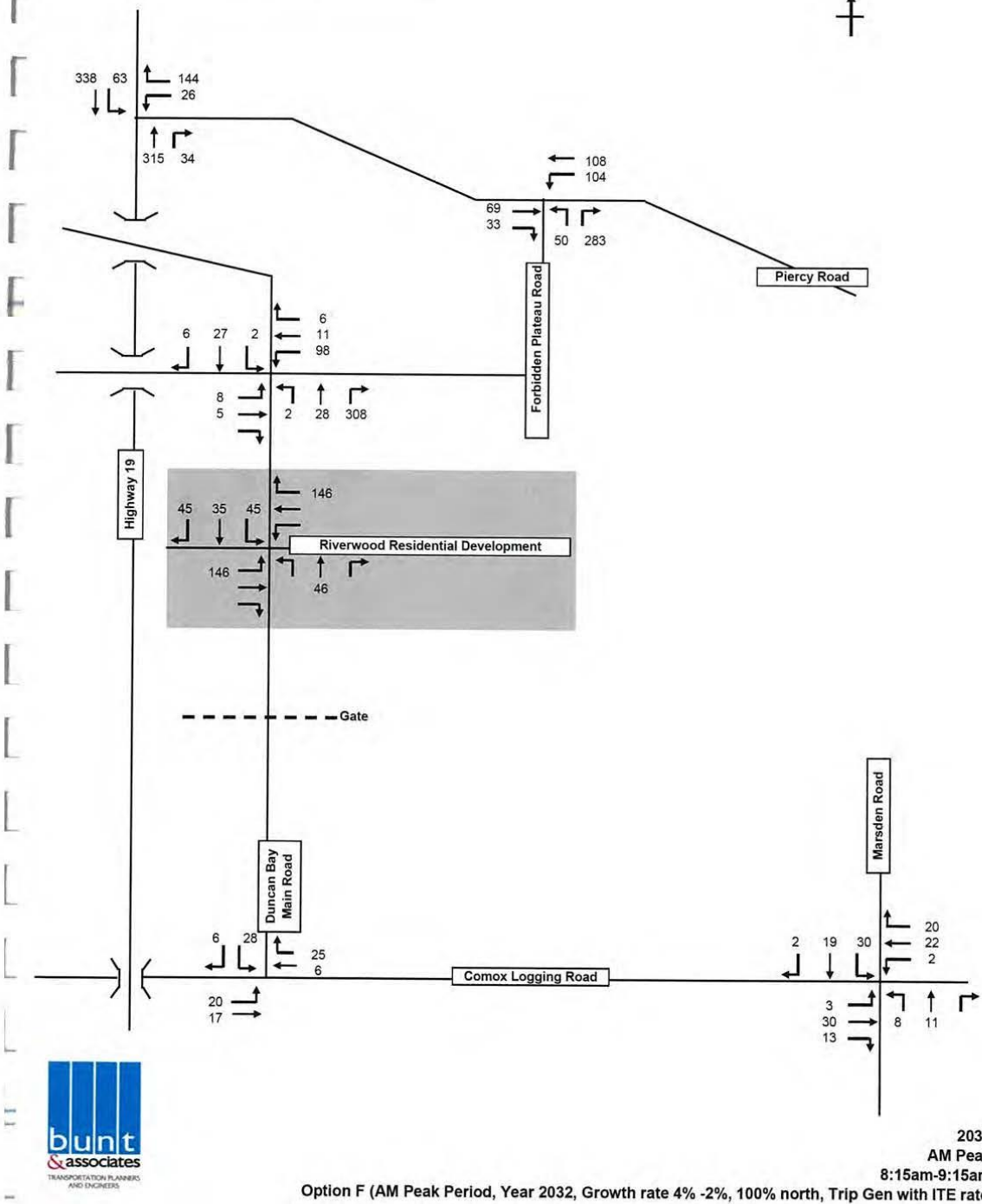
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

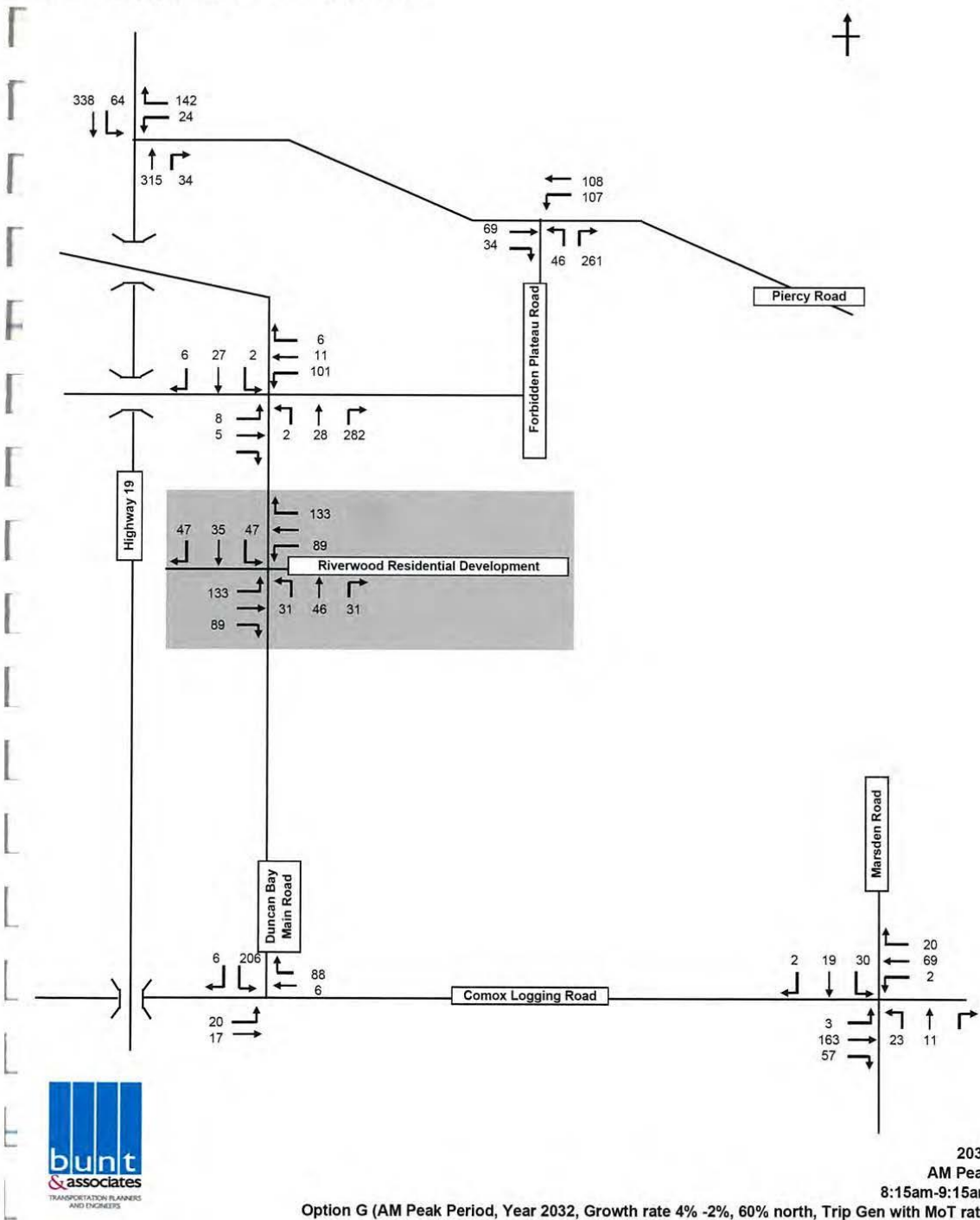
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

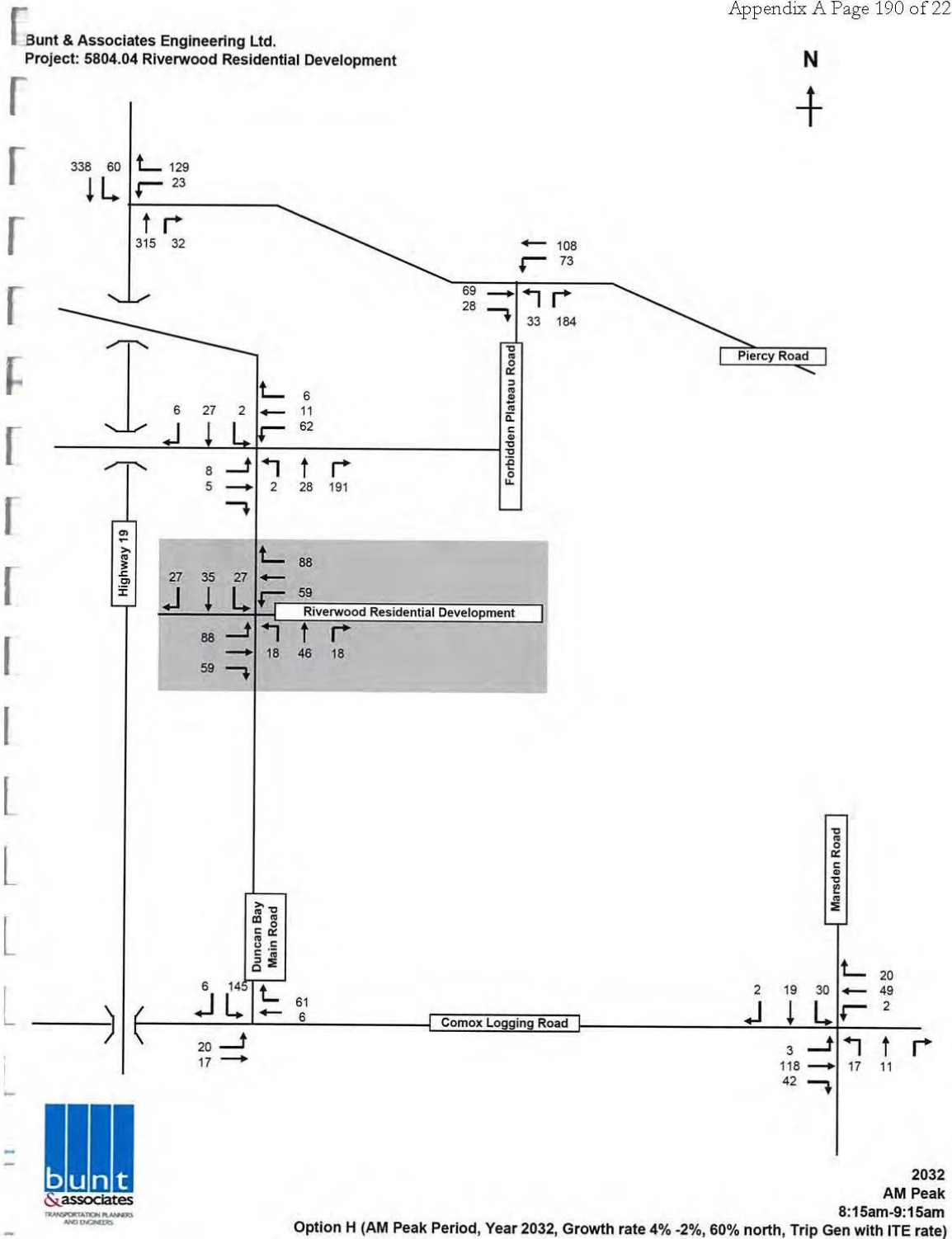
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

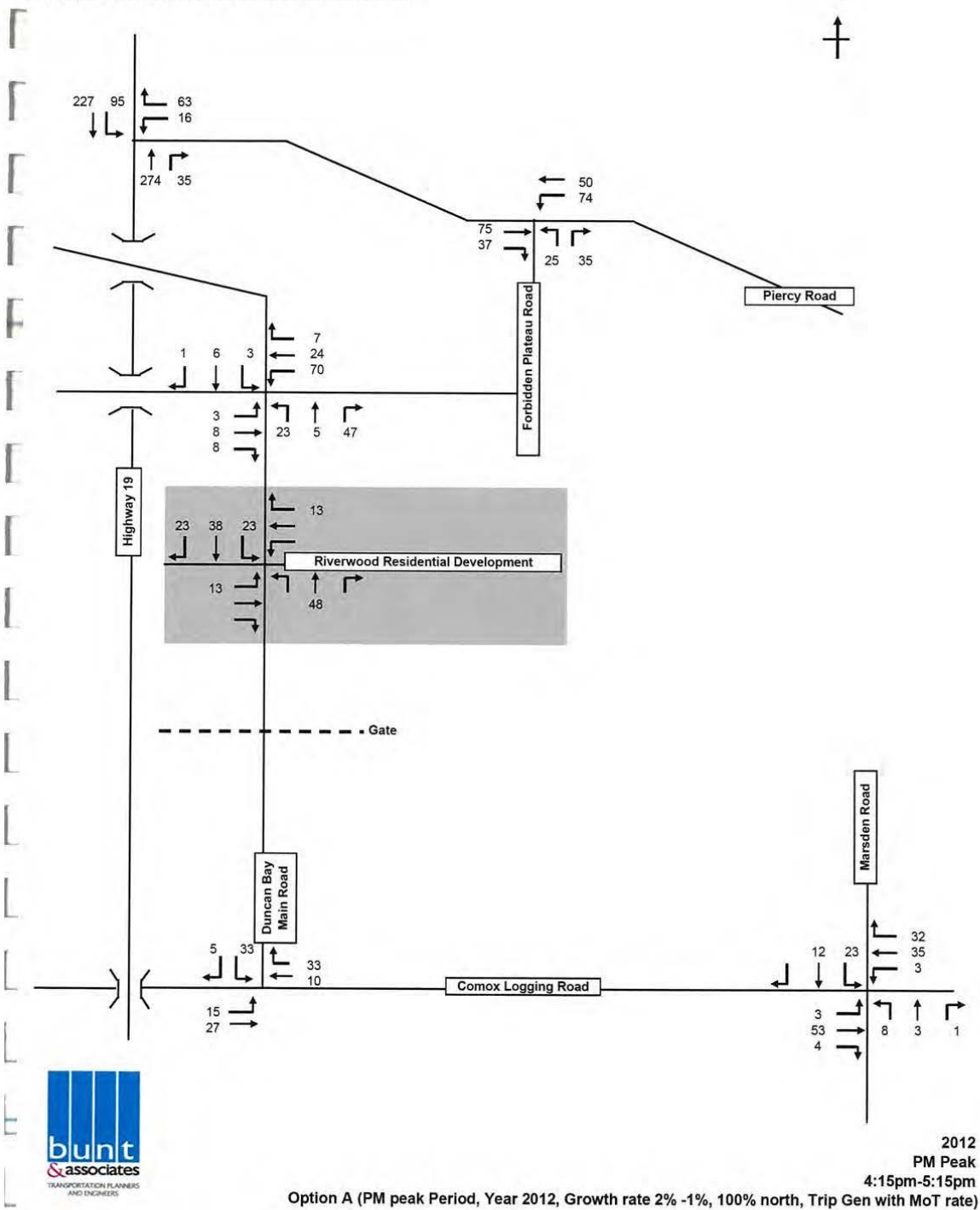
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

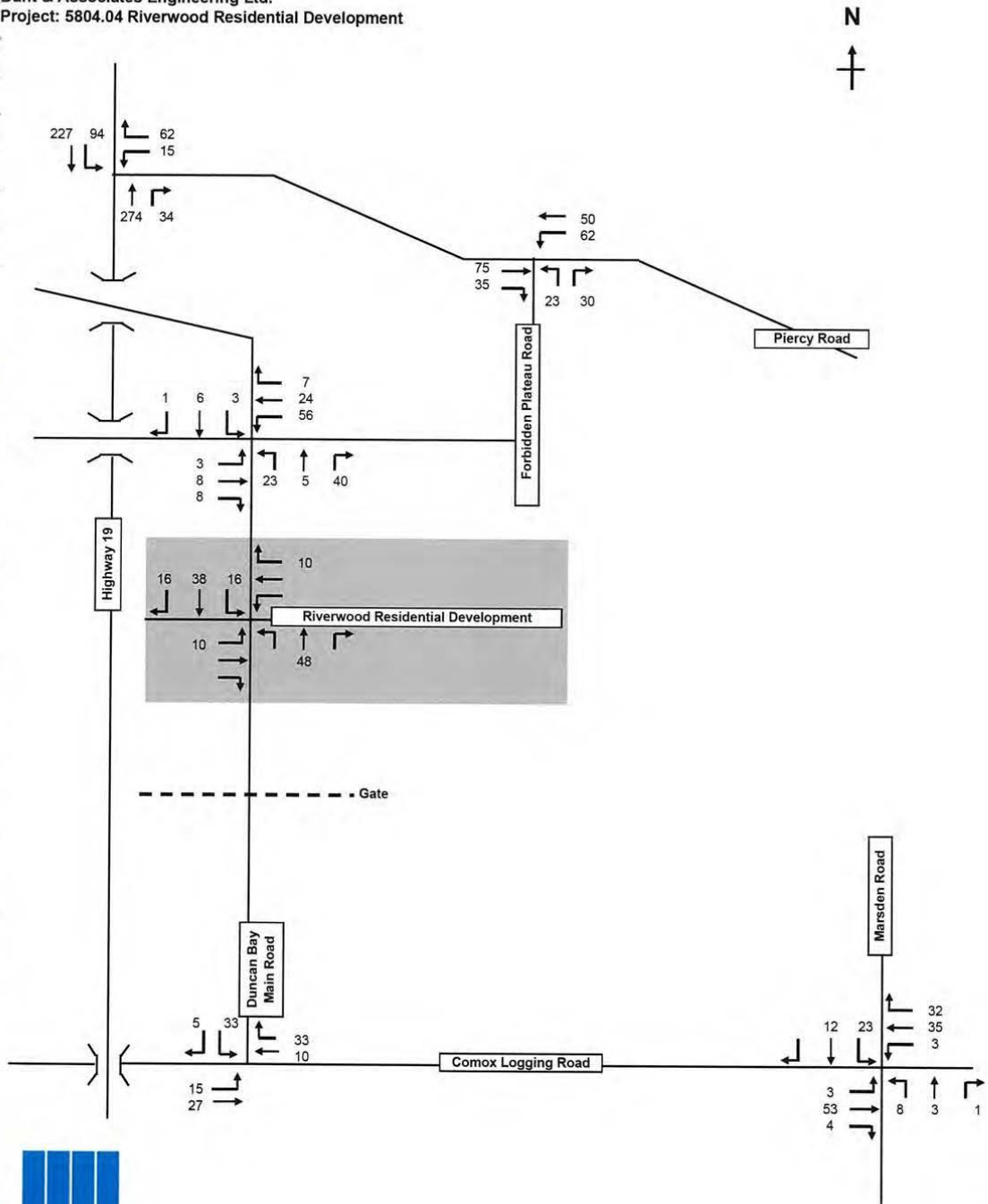
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

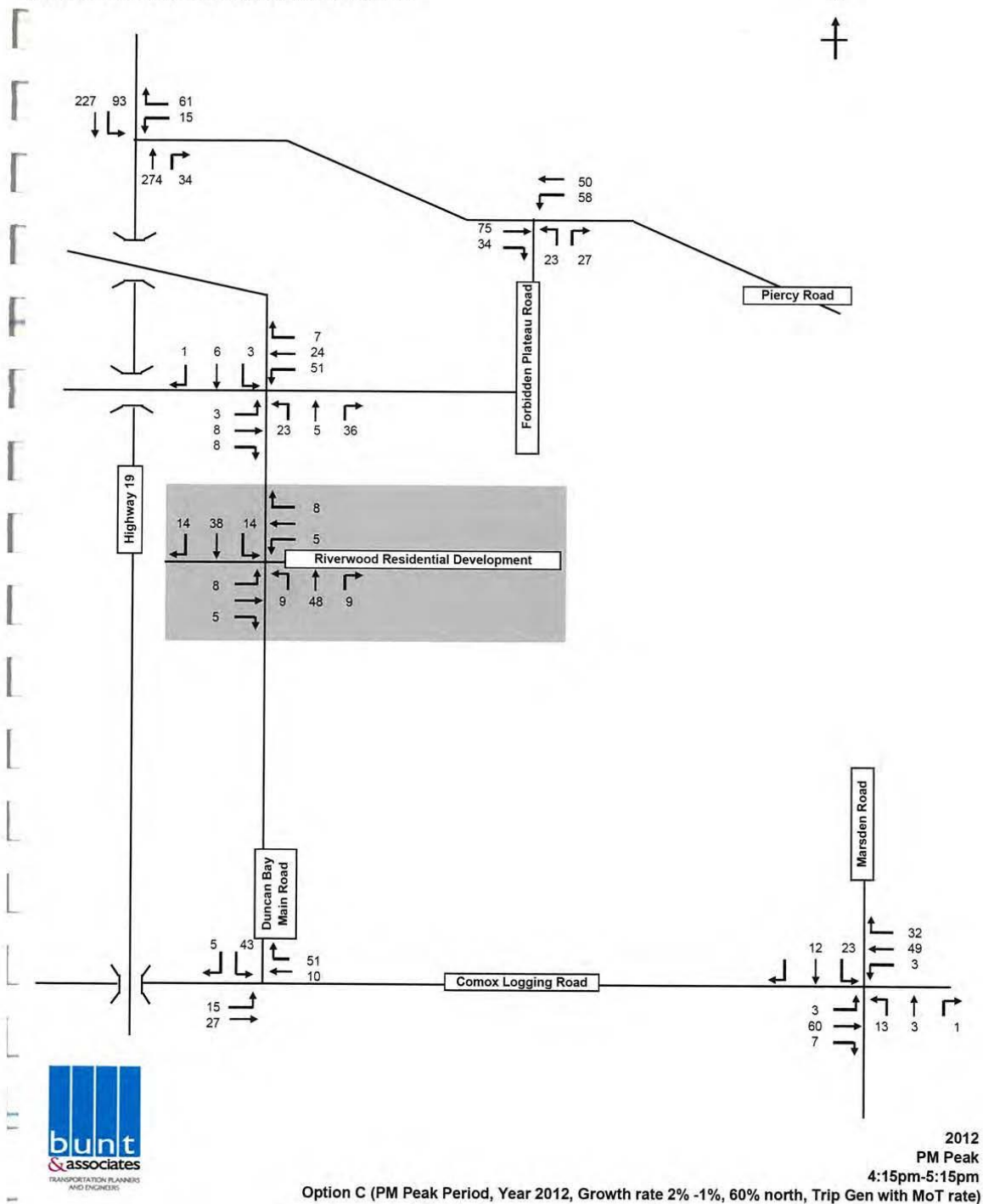


2012
PM Peak
4:15pm-5:15pm
Option B (PM Peak Period, Year 2012, Growth rate 2% -1%, 100% north, Trip Gen with ITE rate)

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Bunt & Associates Engineering Ltd.

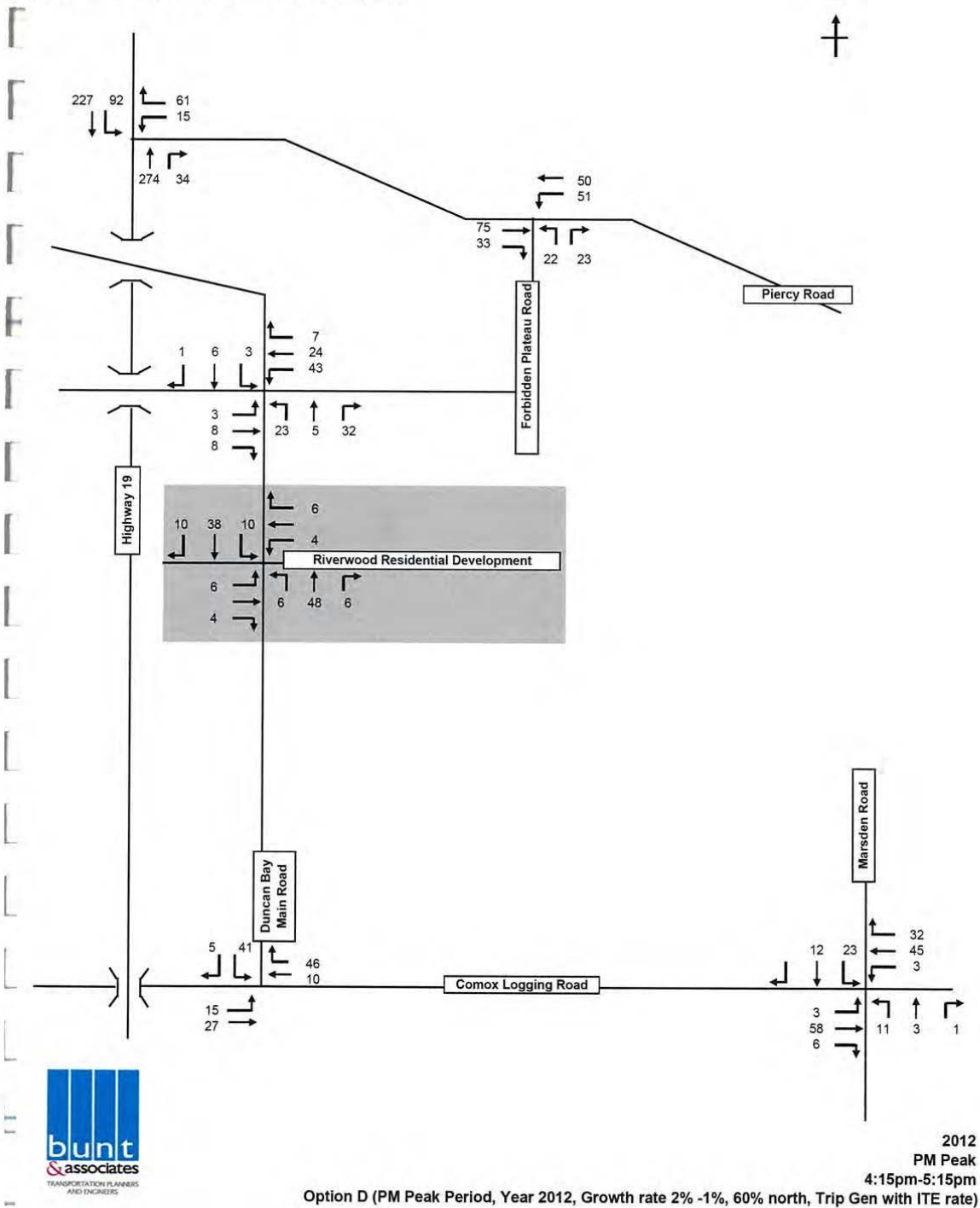
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

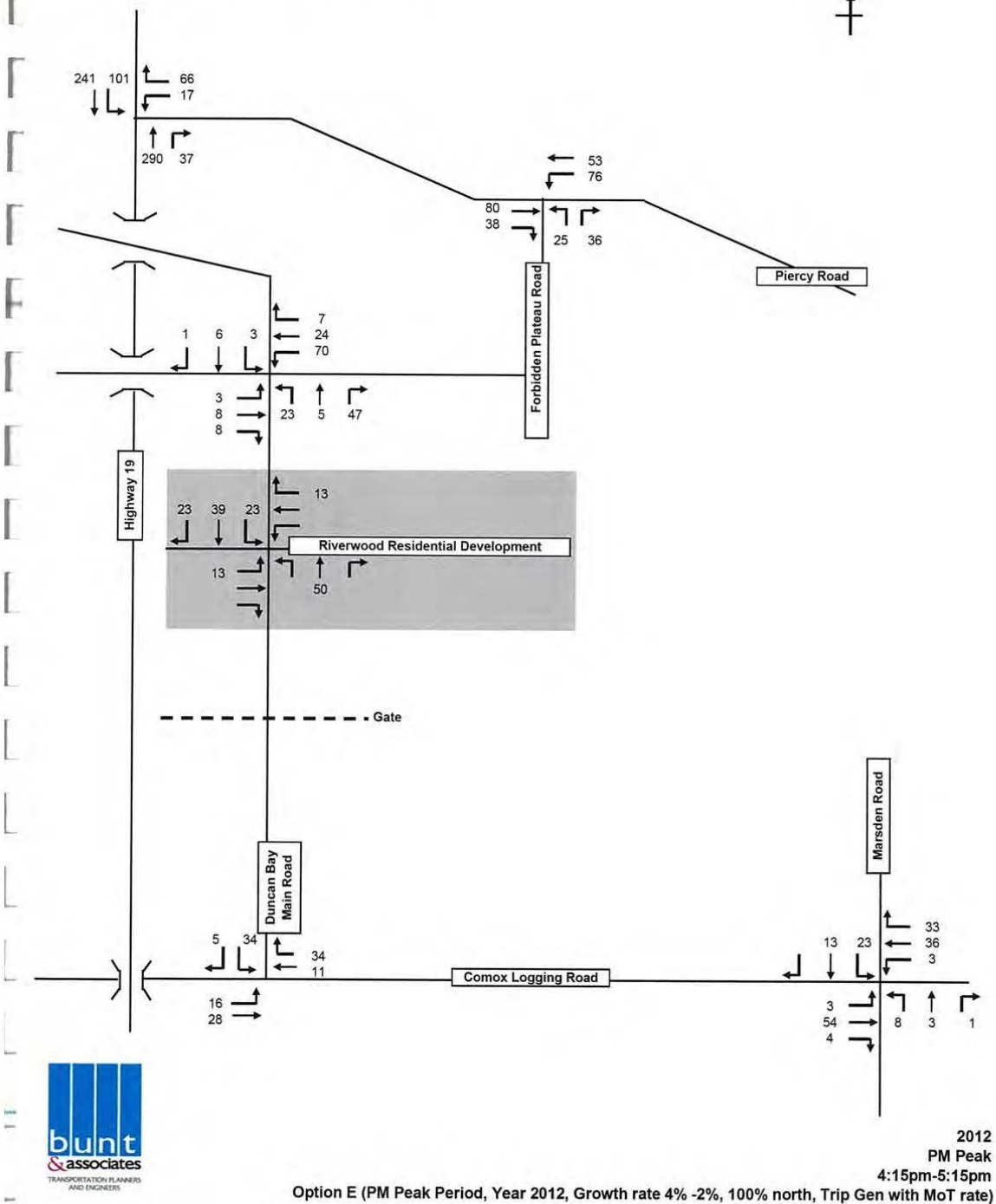
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

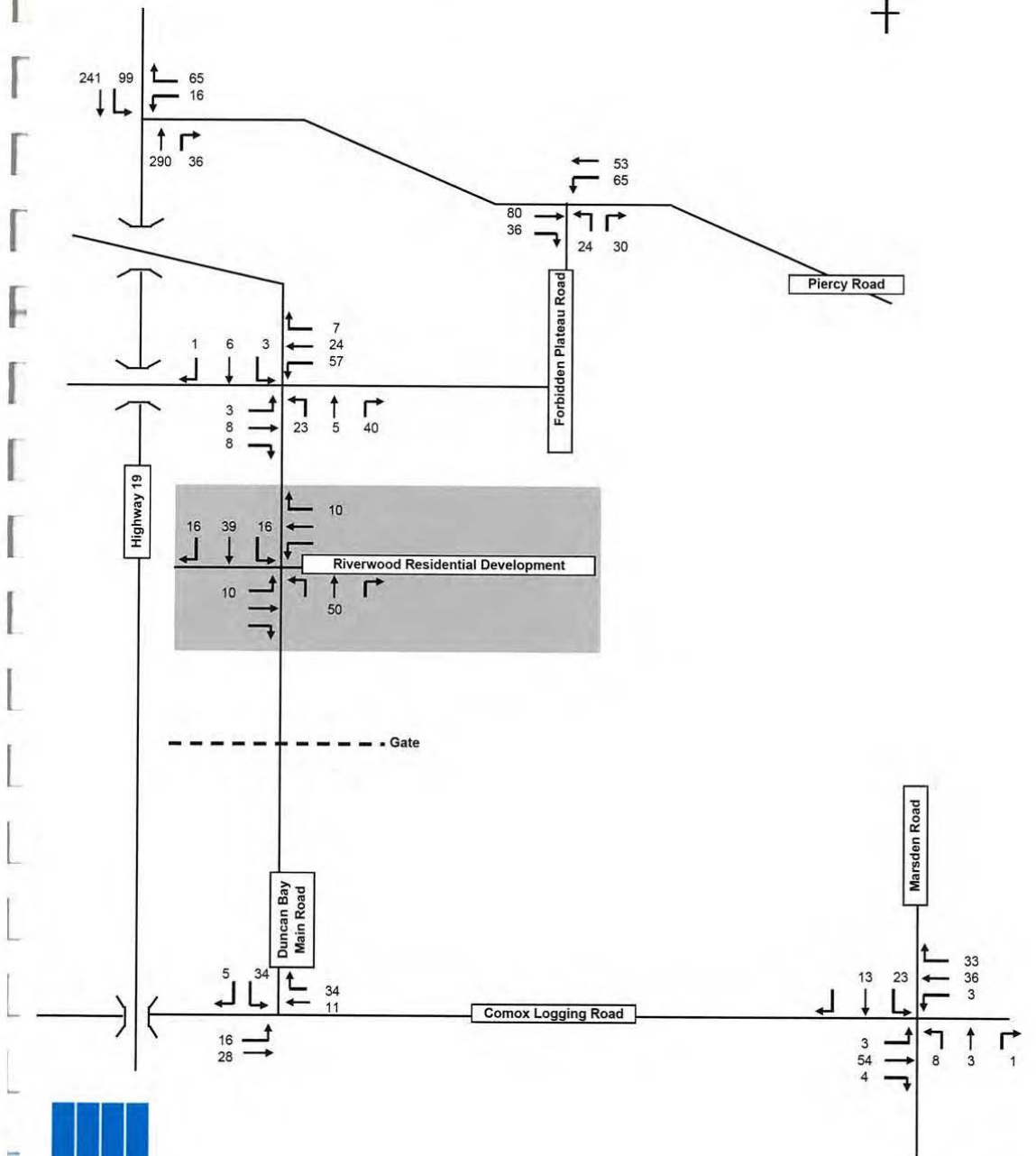
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

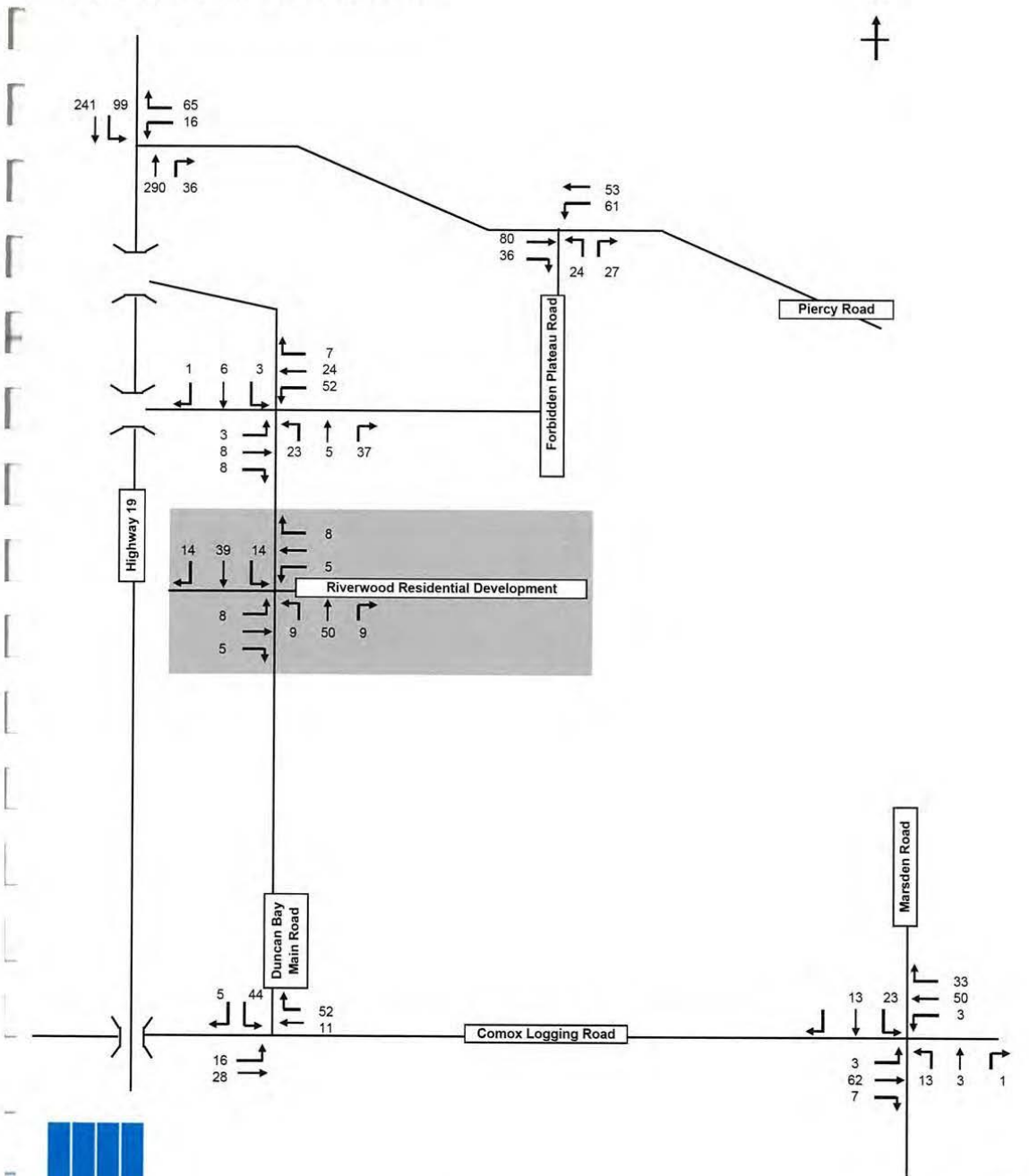


2012
PM Peak
4:15pm-5:15pm
Option F (PM Peak Period, Year 2012, Growth rate 4% -2%, 100% north, Trip Gen with ITE rate)

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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

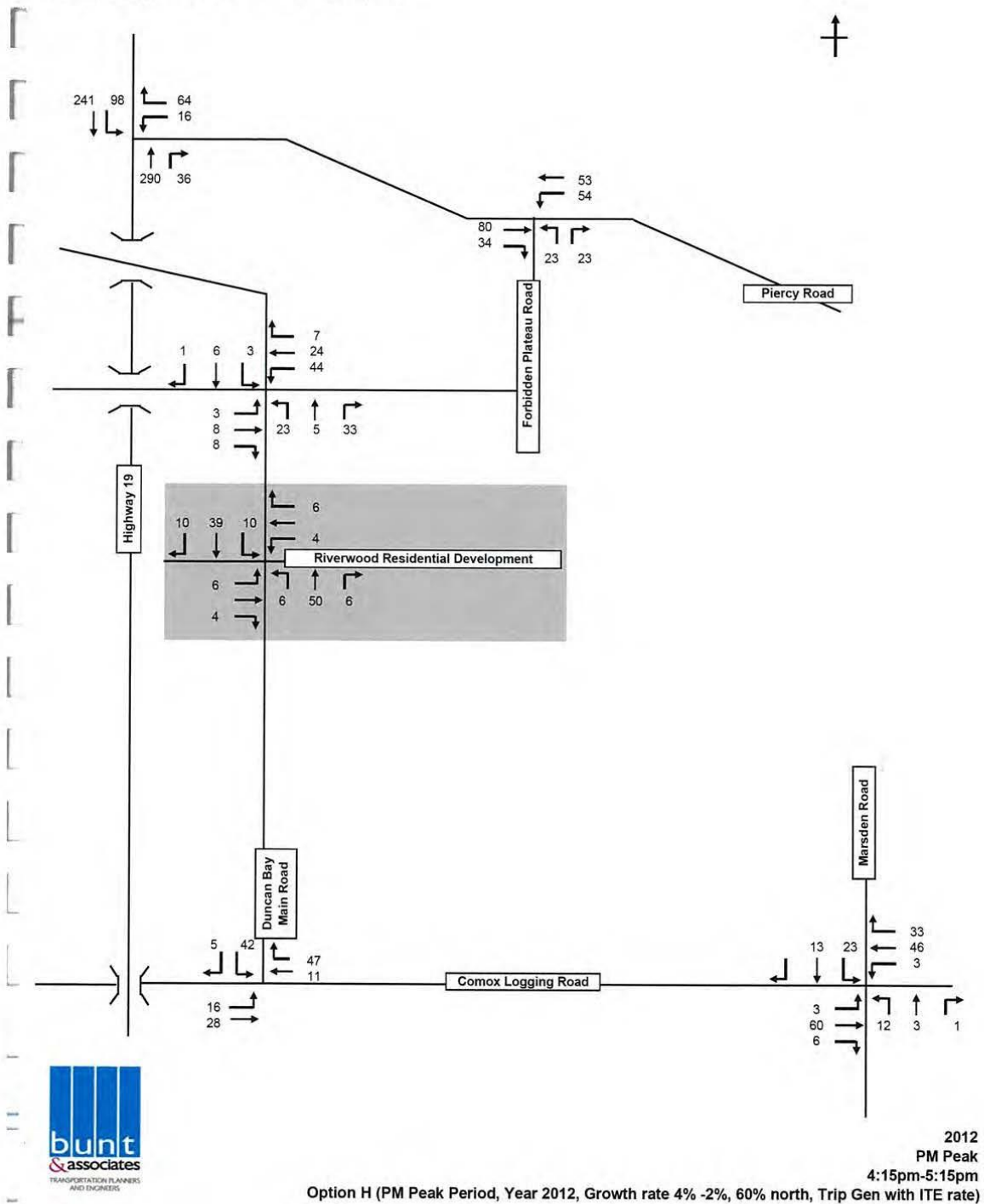


2012
PM Peak
4:15pm-5:15pm
Option G (PM Peak Period, Year 2012, Growth rate 4% -2%, 60% north, Trip Gen with MoT rate)

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Bunt & Associates Engineering Ltd.

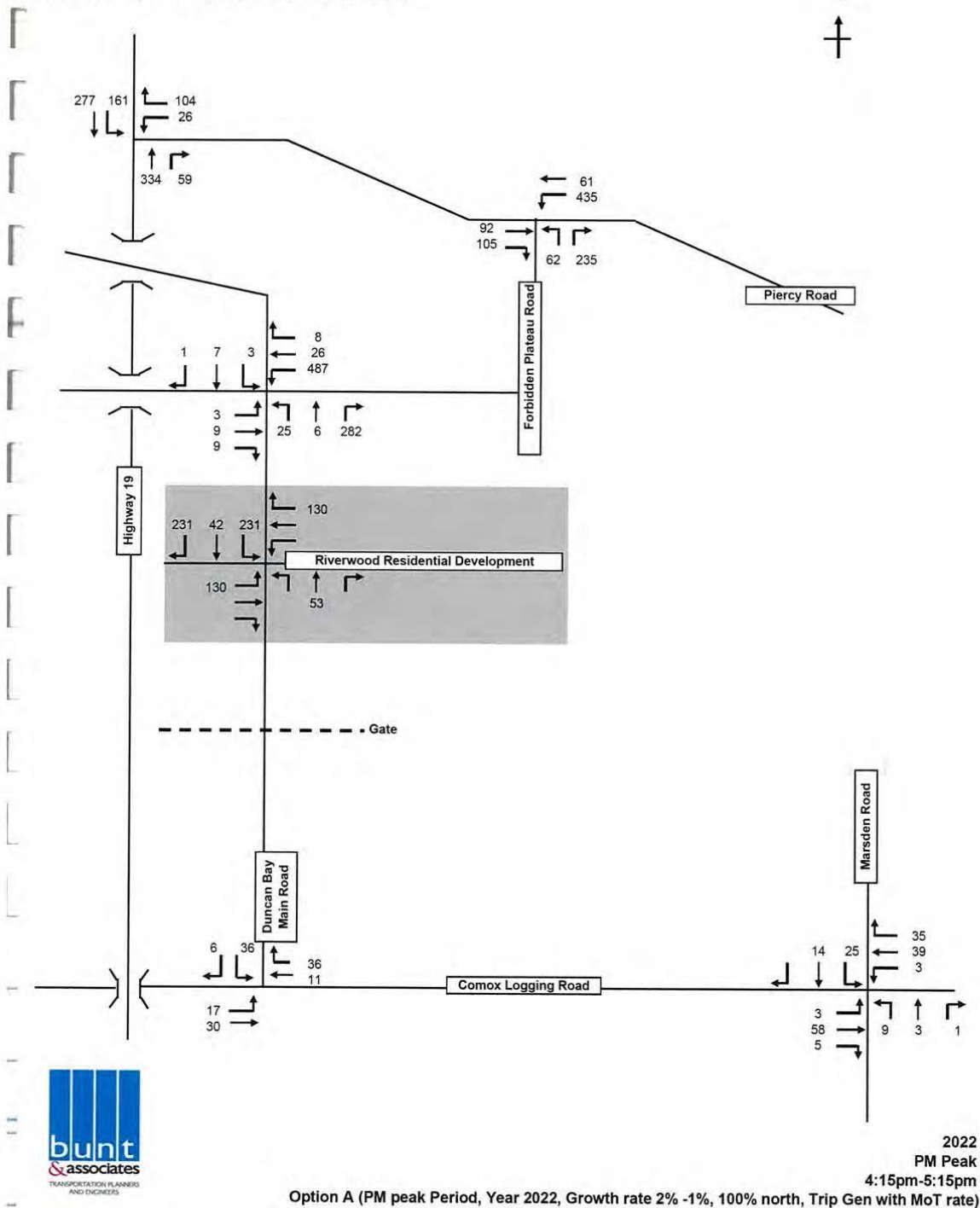
Project: 5804.04 Riverwood Residential Development



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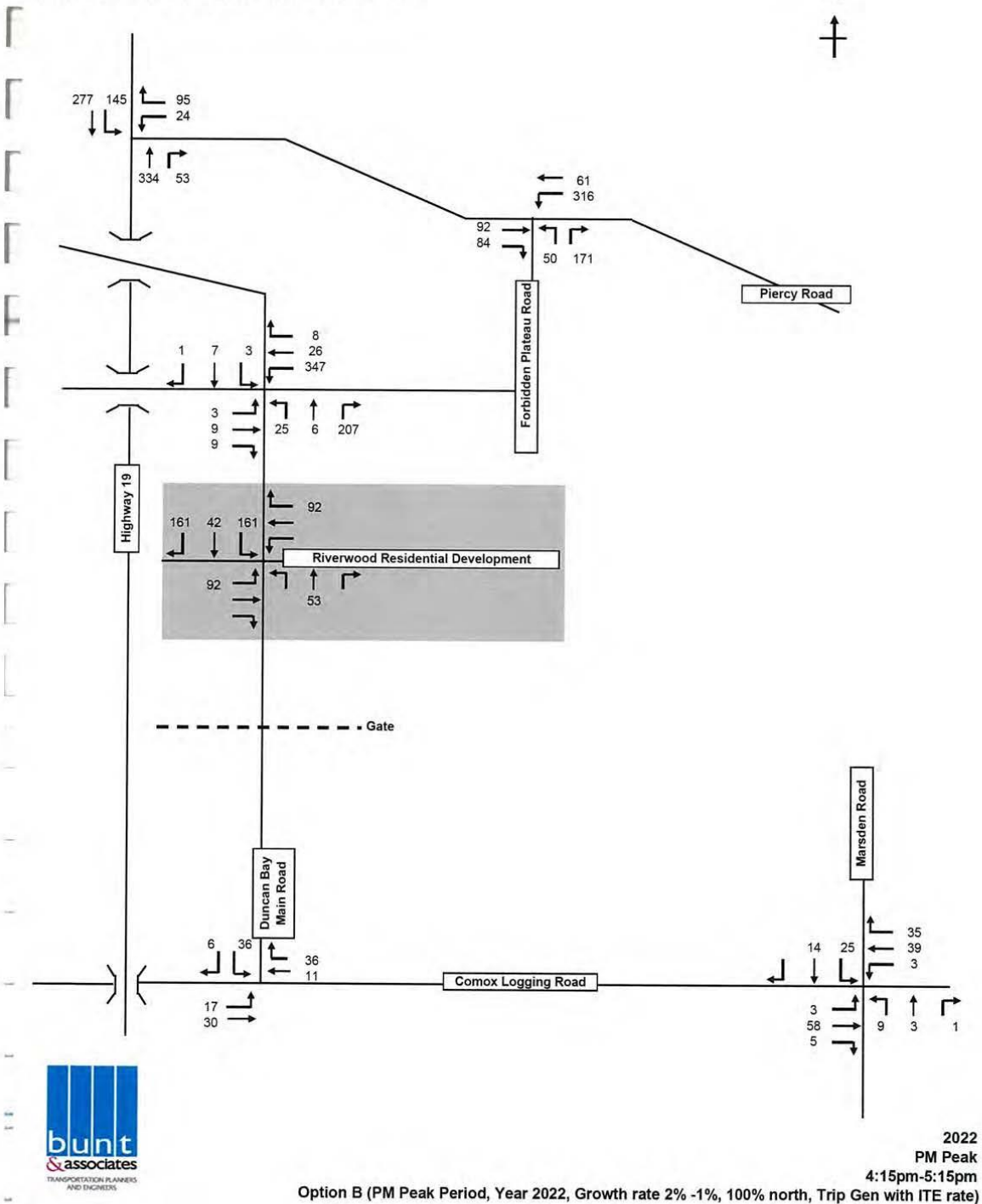
Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development



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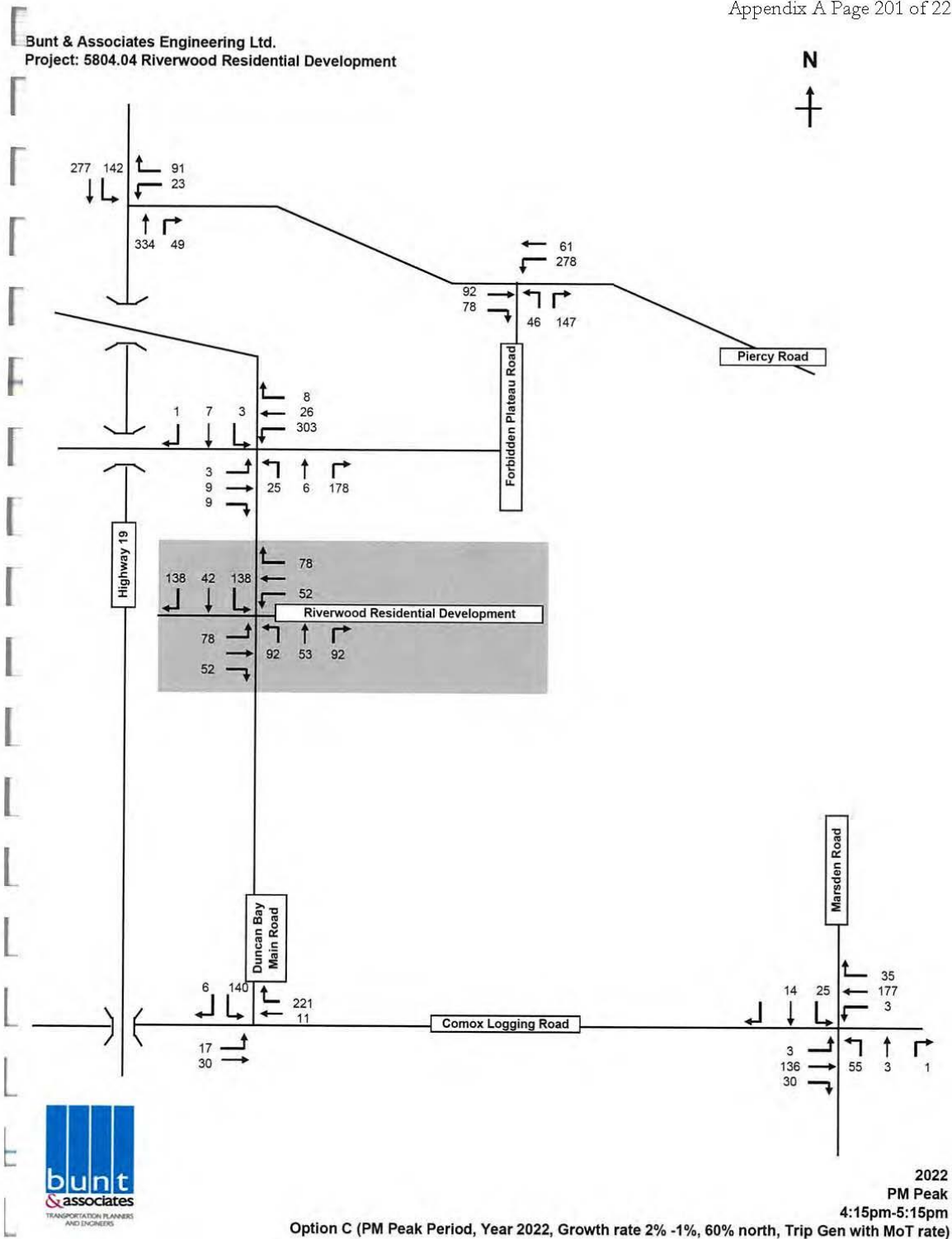
Bunt & Associates Engineering Ltd.
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

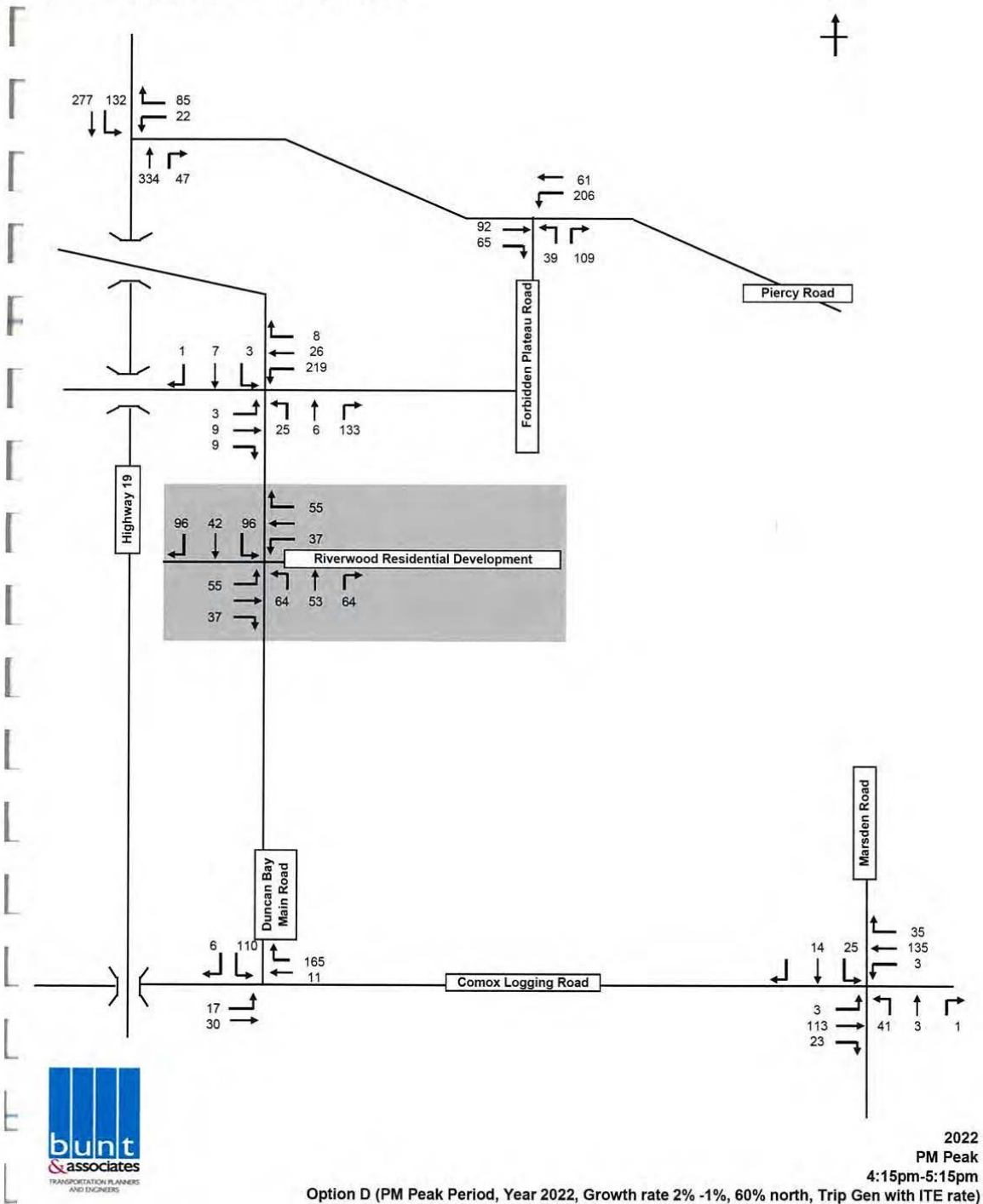
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

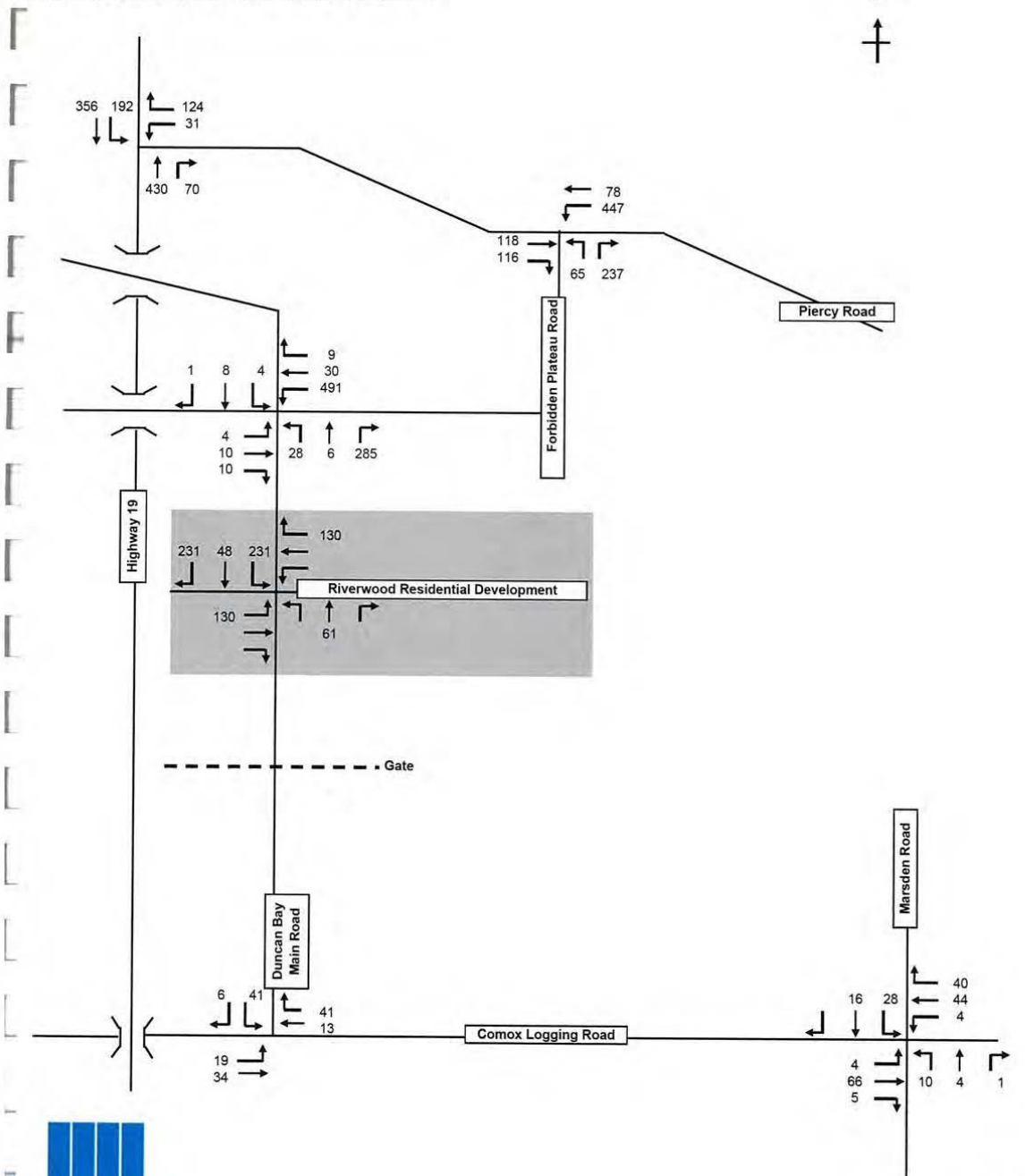
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

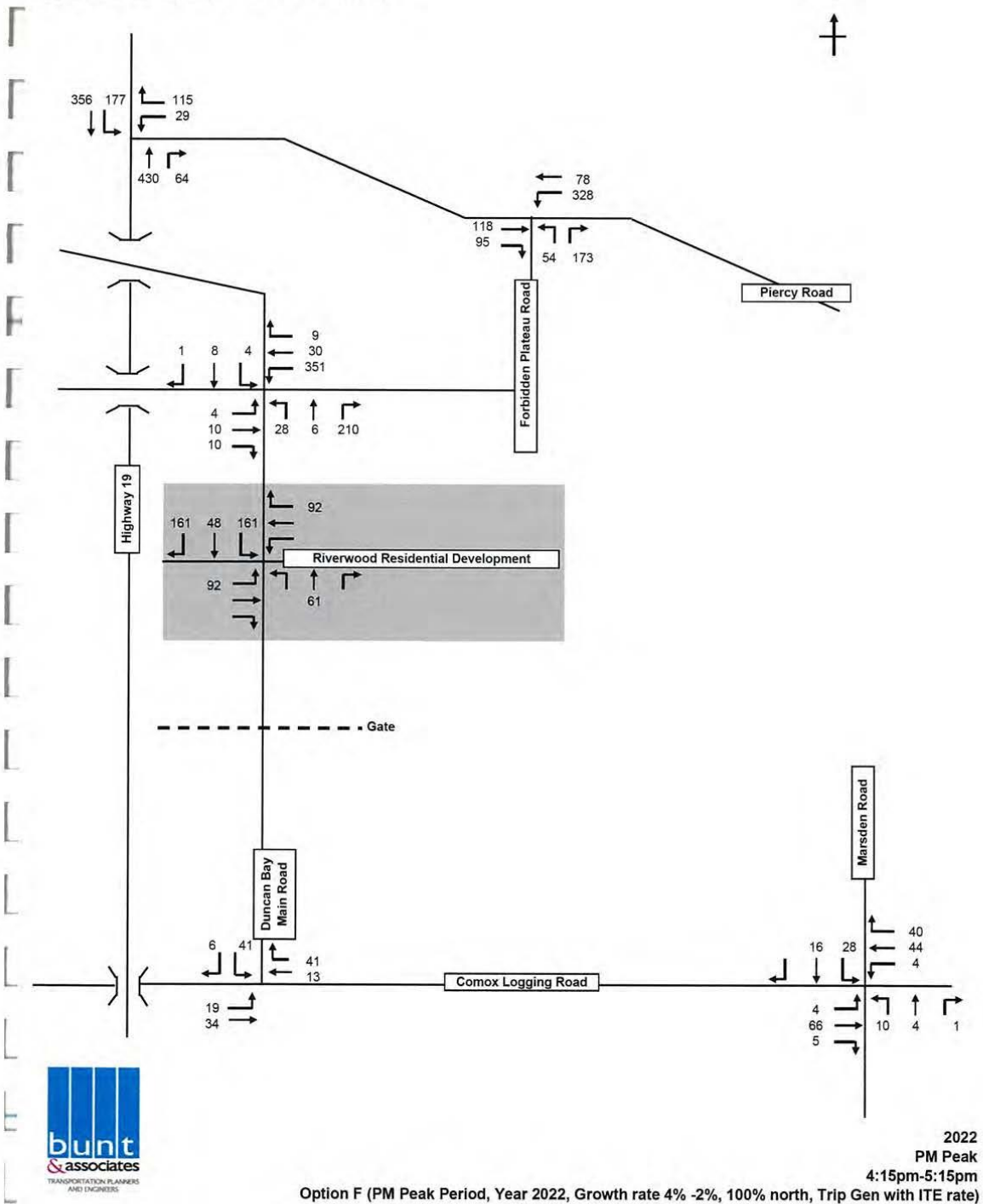


2022
PM Peak
4:15pm-5:15pm
Option E (PM Peak Period, Year 2022, Growth rate 4% -2%, 100% north, Trip Gen with MoT rate)

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Bunt & Associates Engineering Ltd.

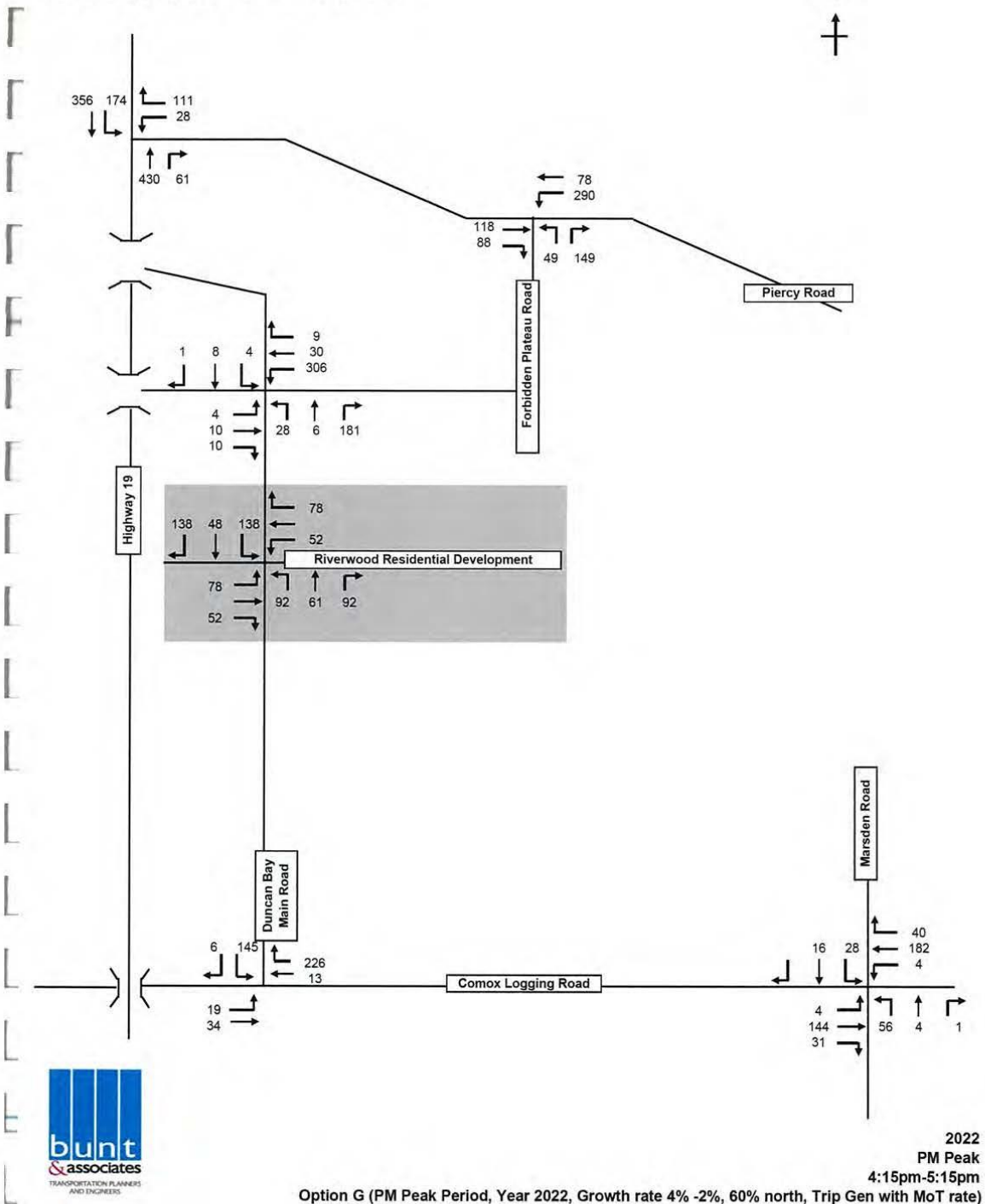
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

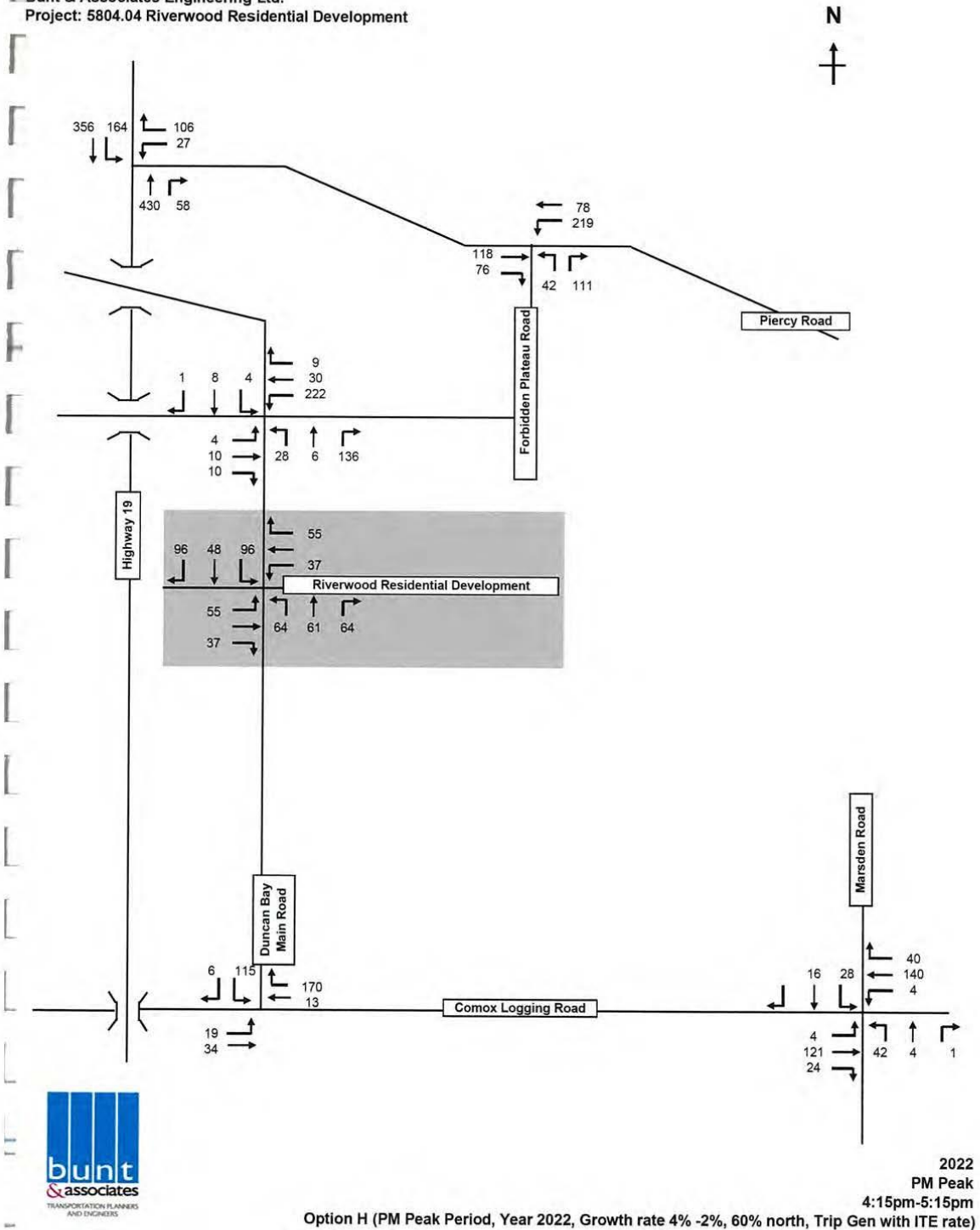
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

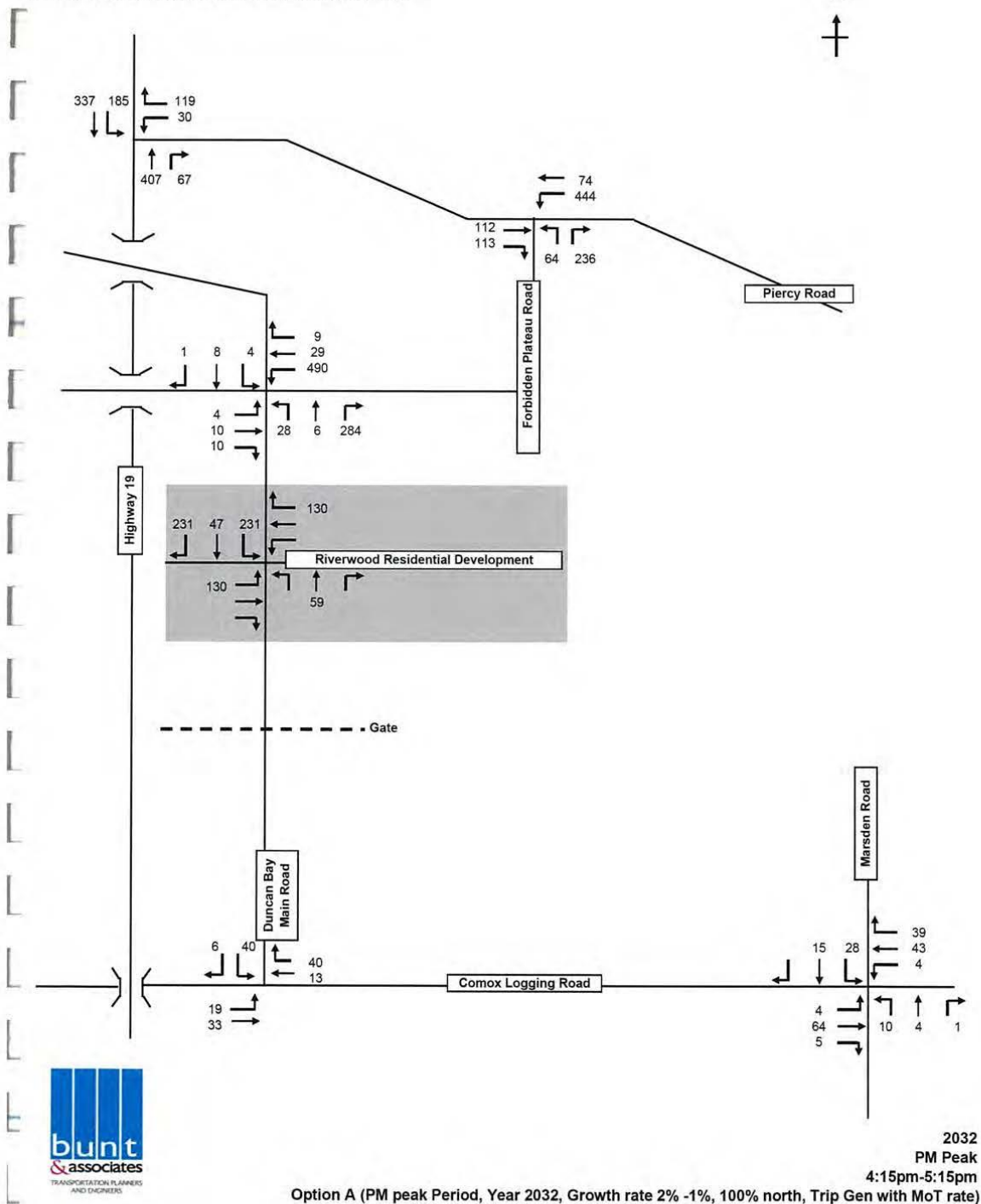
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

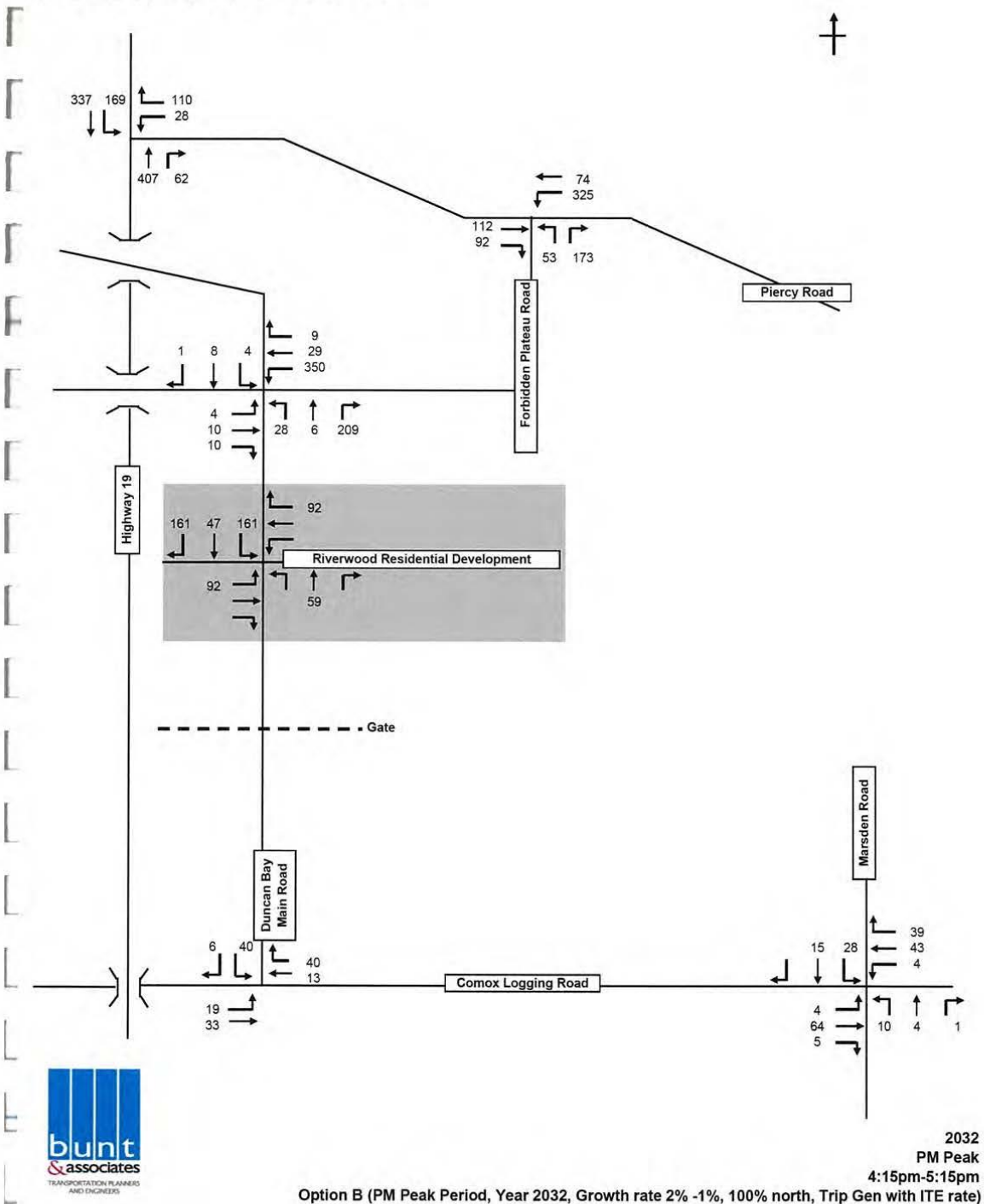
Project: 5804.04 Riverwood Residential Development



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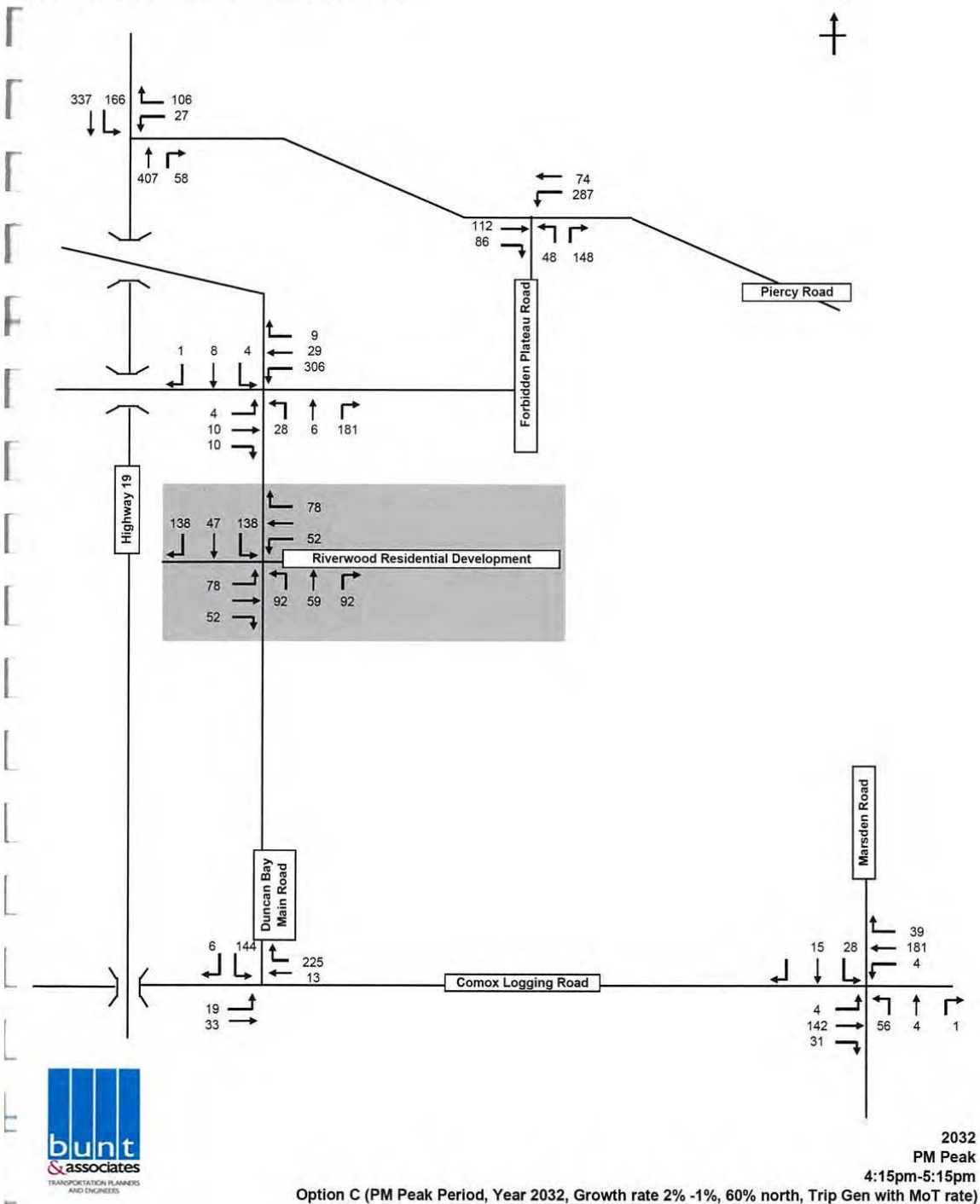
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

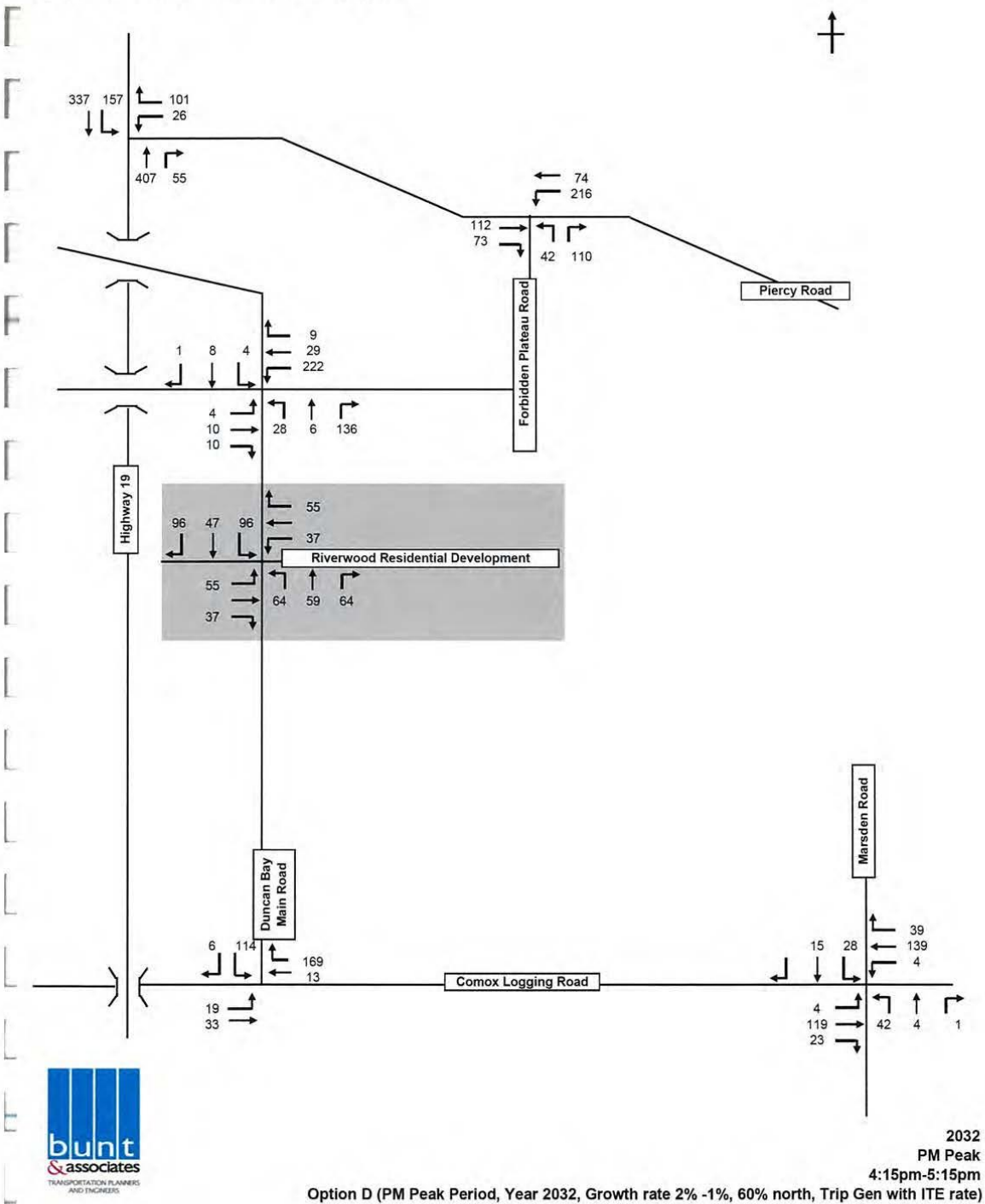
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

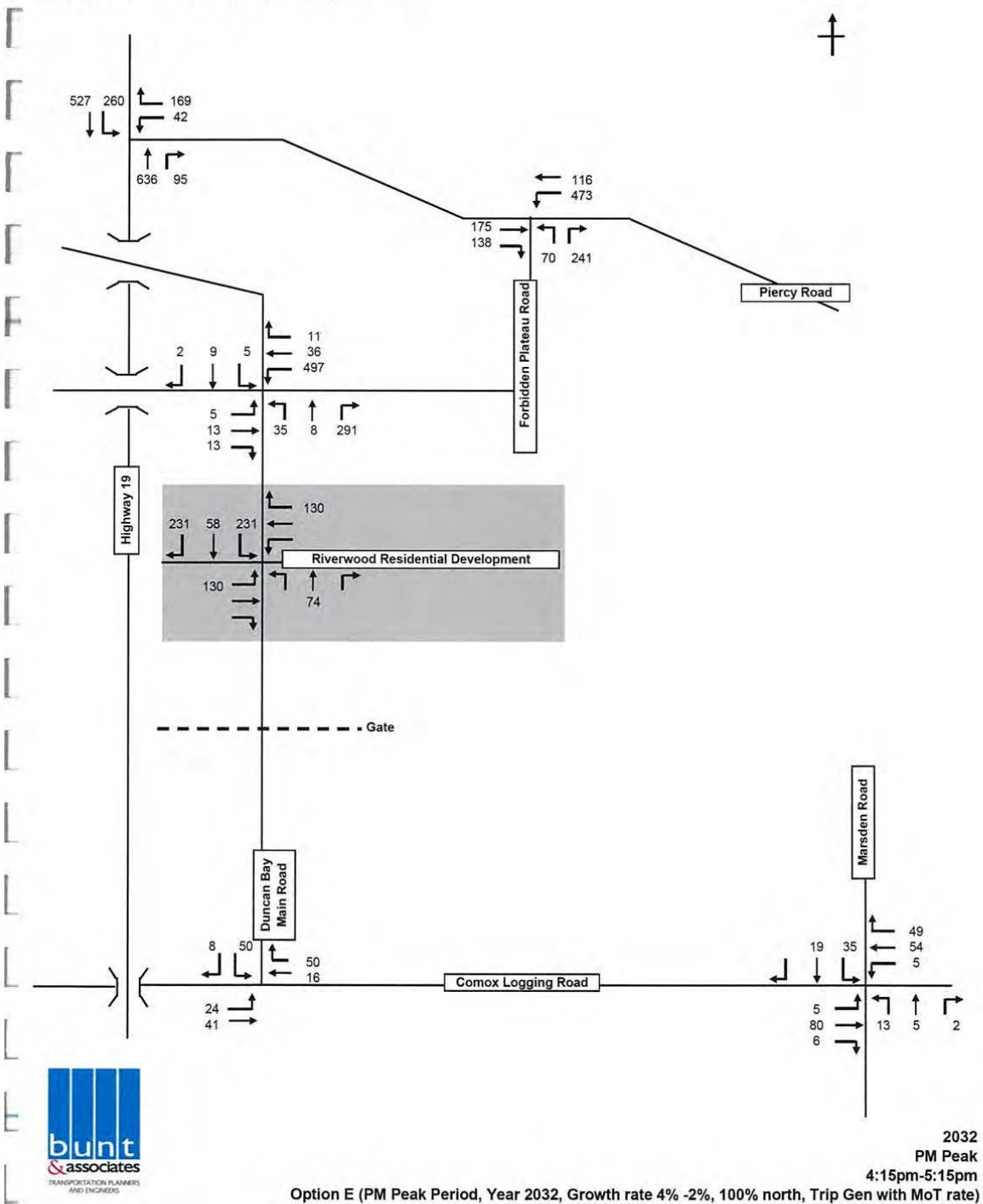
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

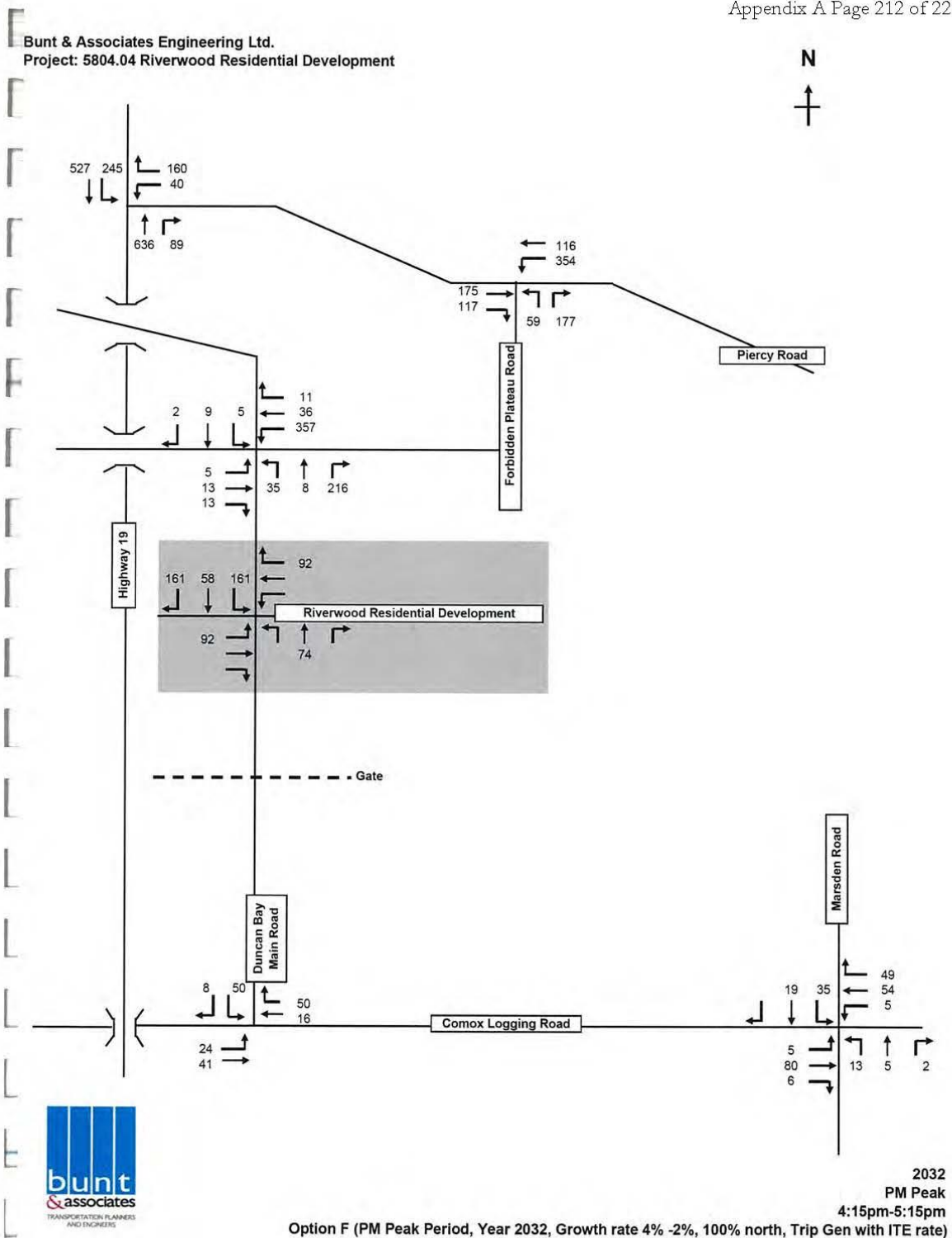
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

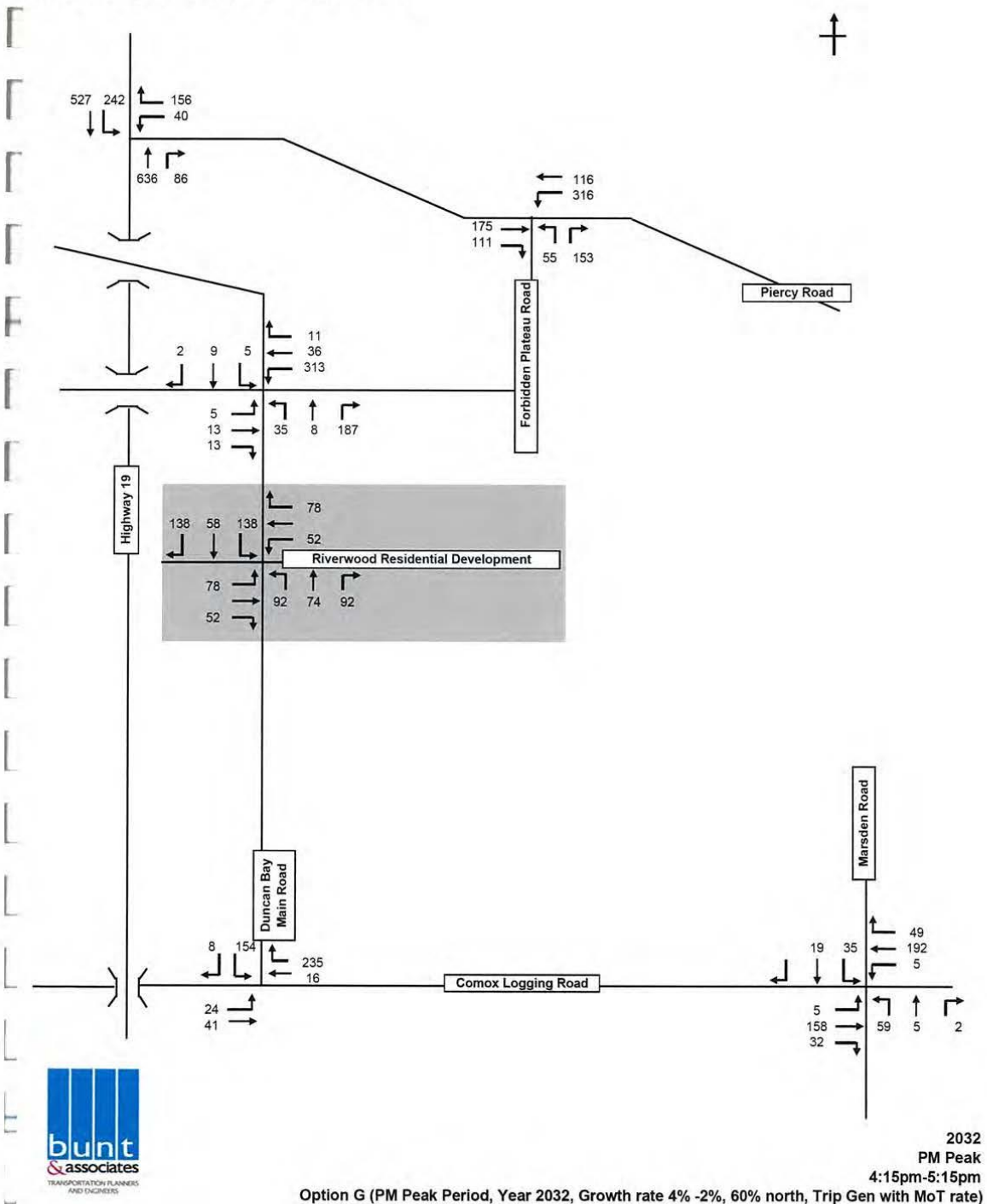
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

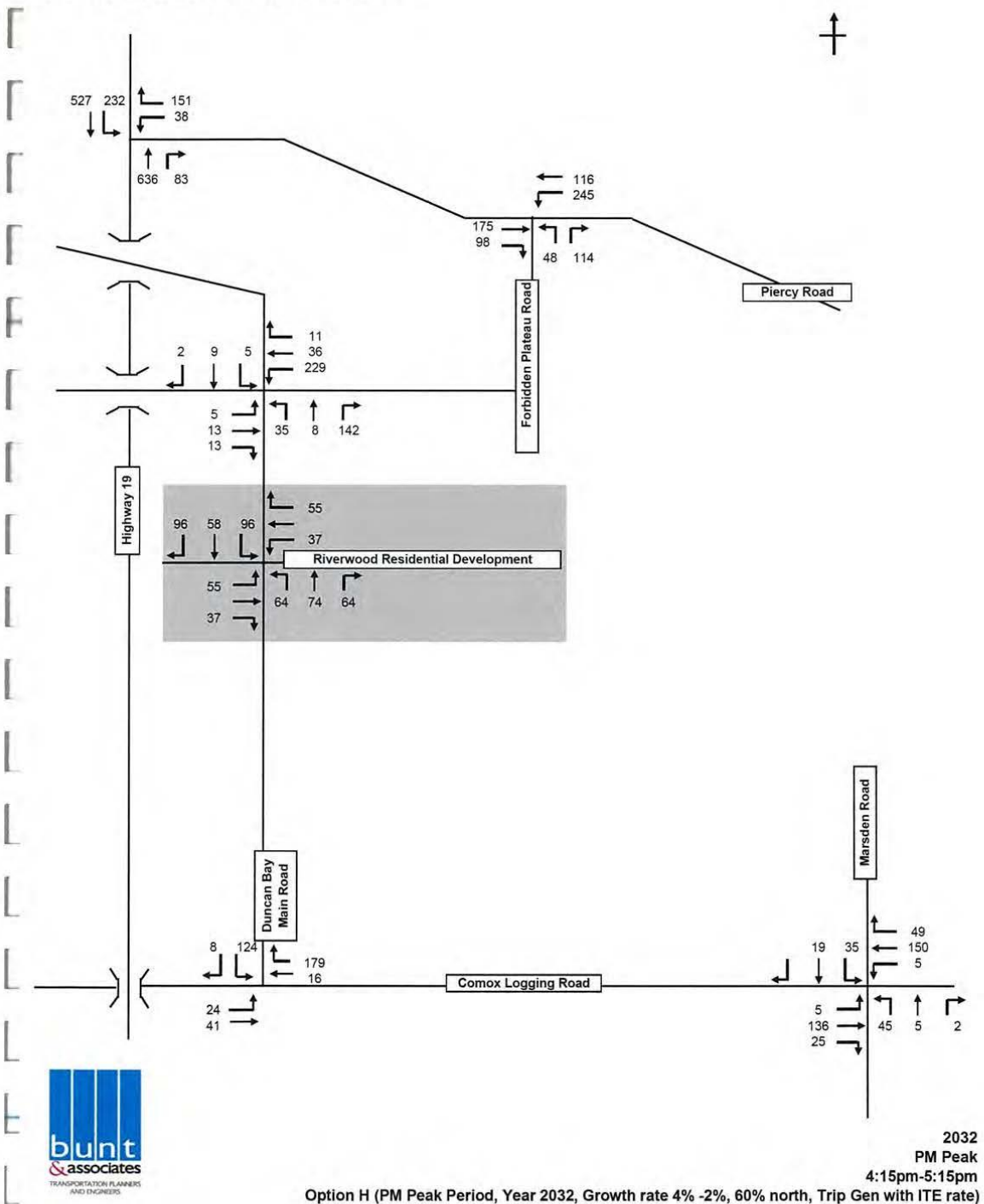
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

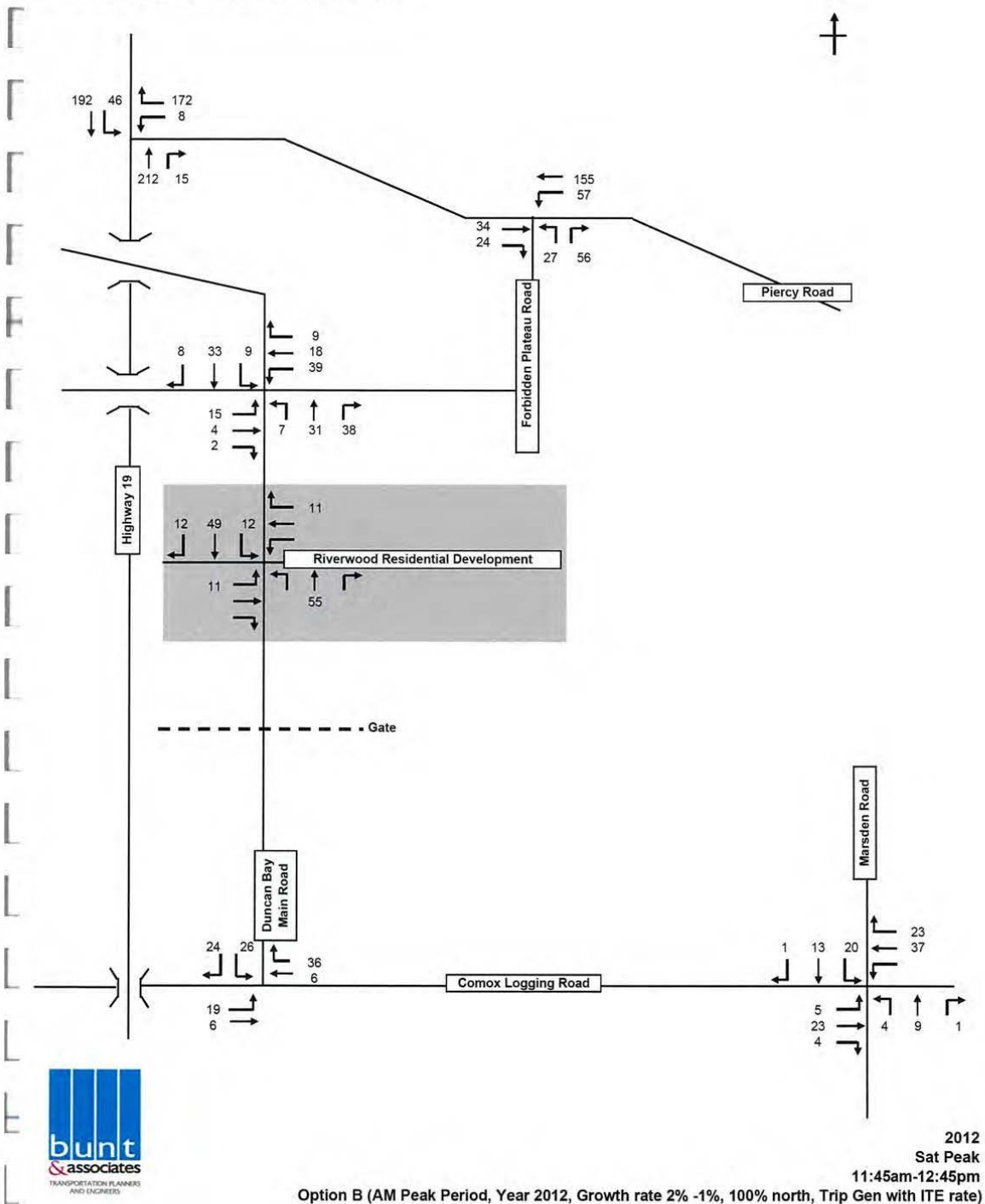
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

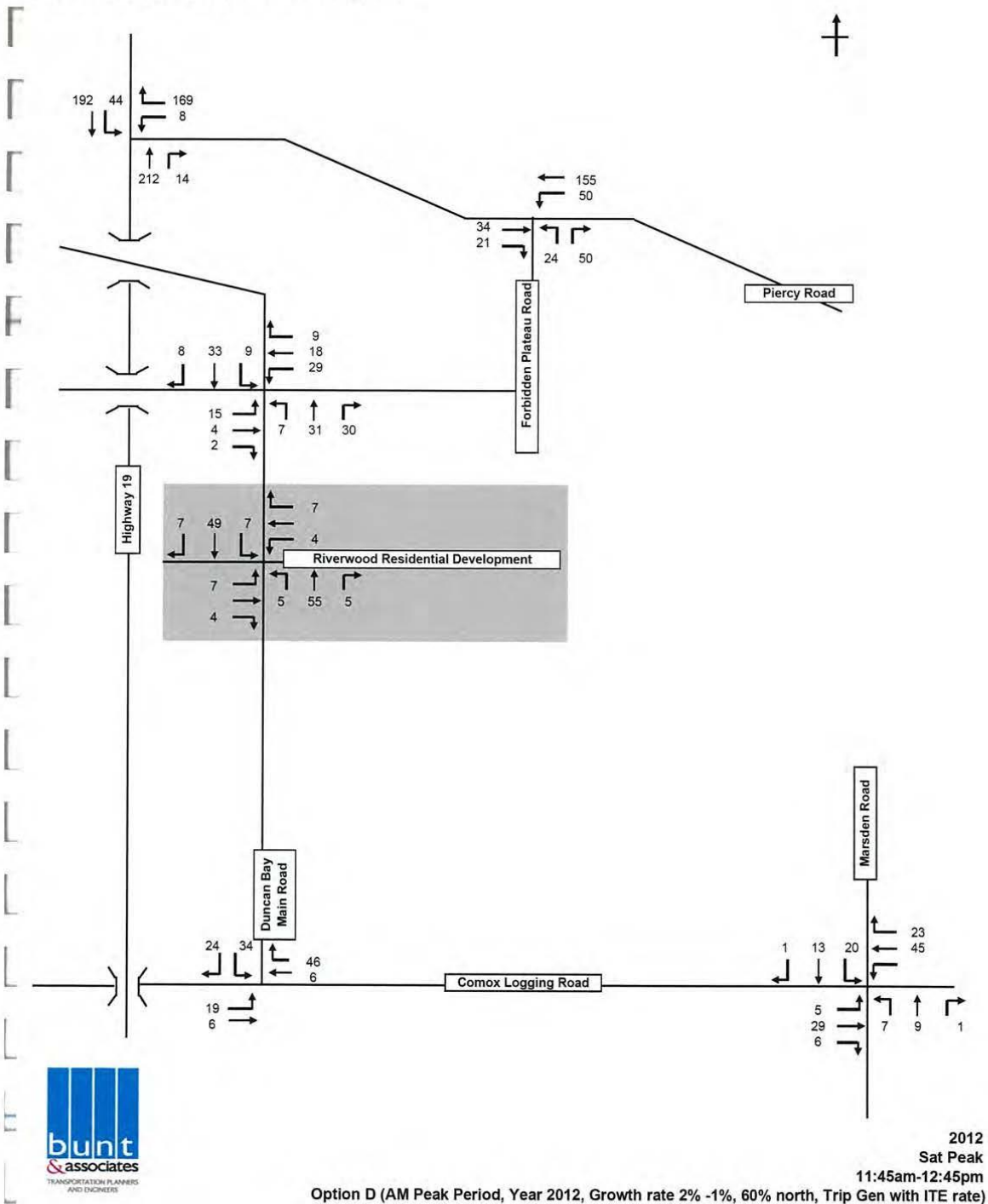
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

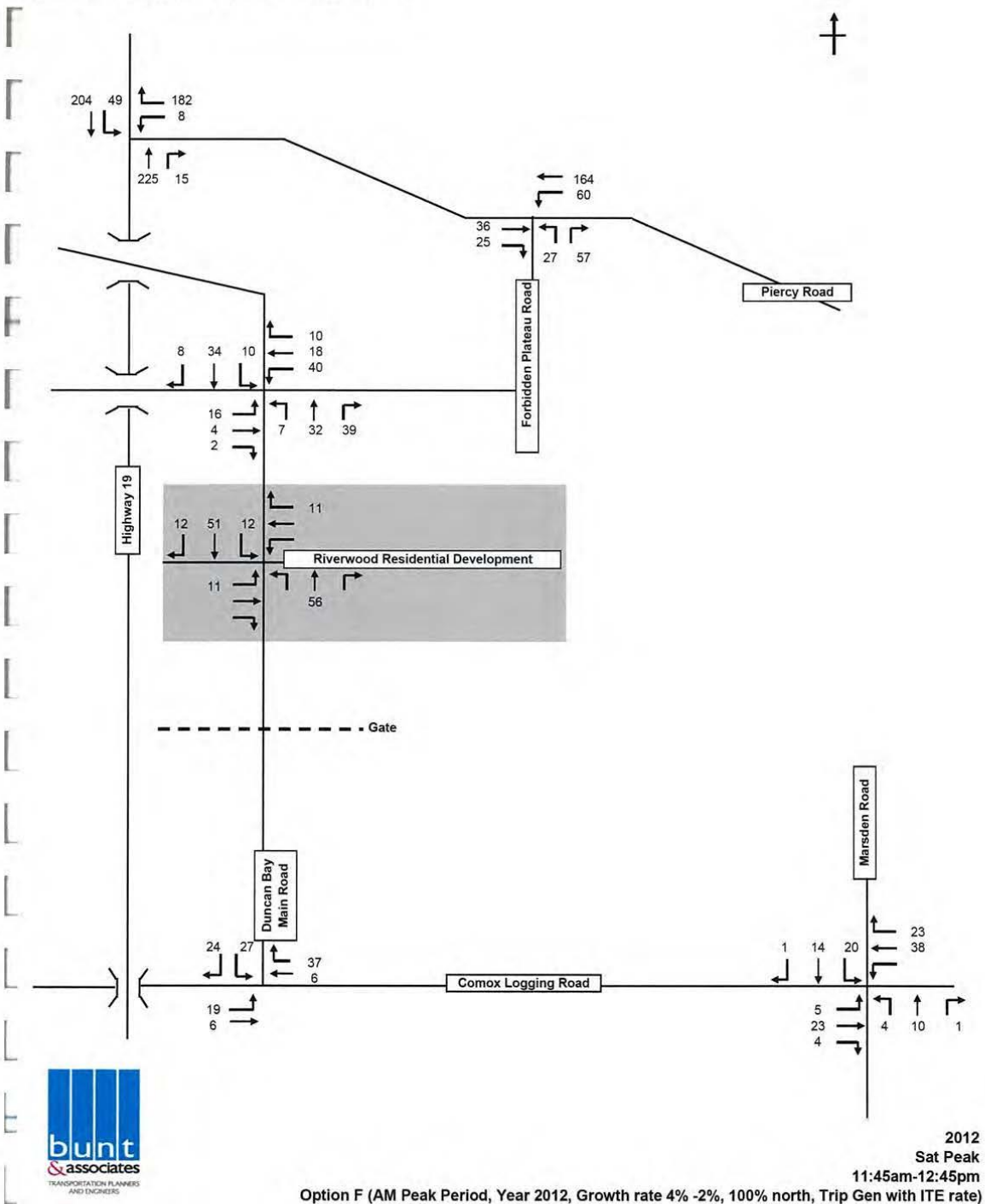
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

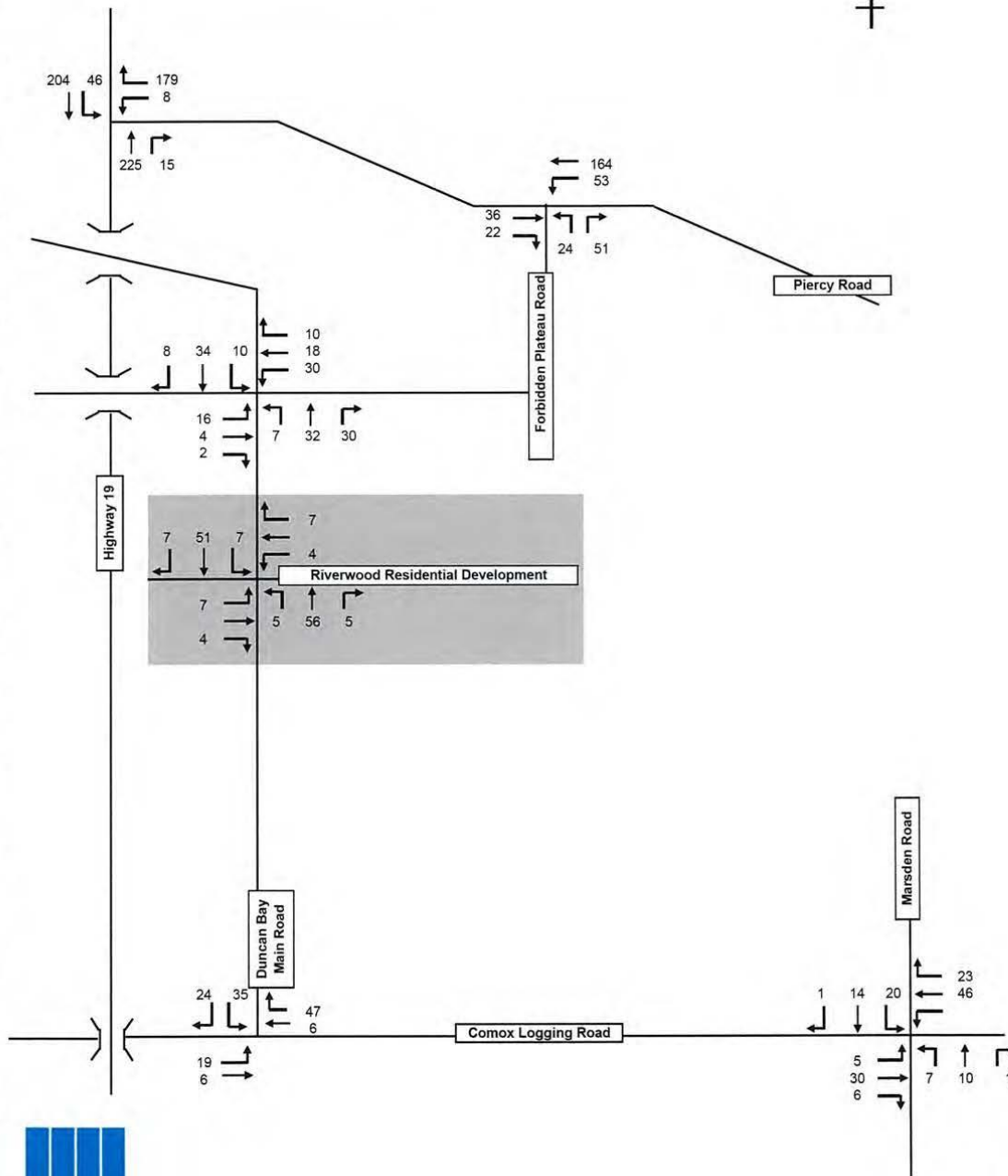
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

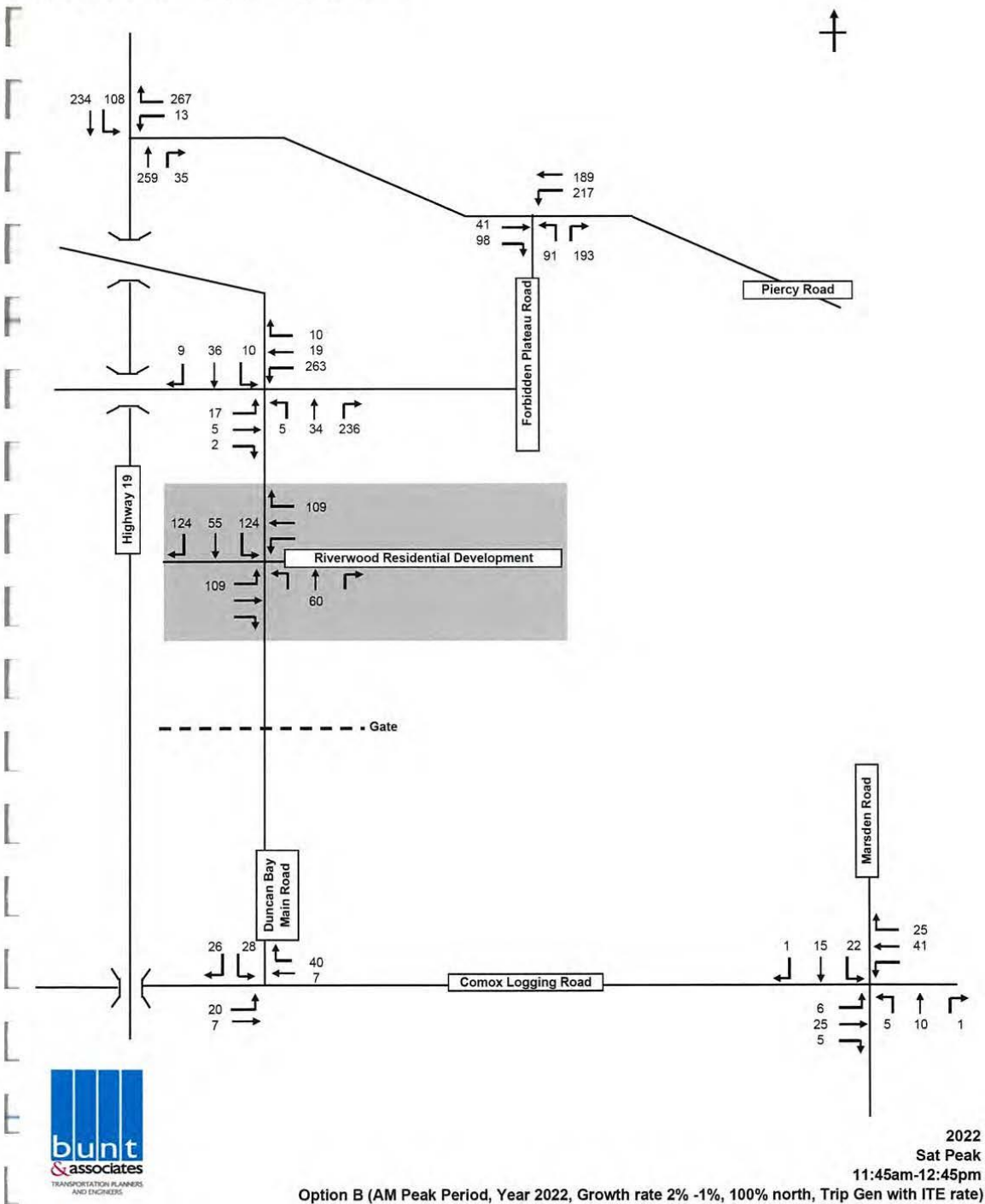


2012
Sat Peak
11:45am-12:45pm
Option H (AM Peak Period, Year 2012, Growth rate 4% -2%, 60% north, Trip Gen with ITE rate)

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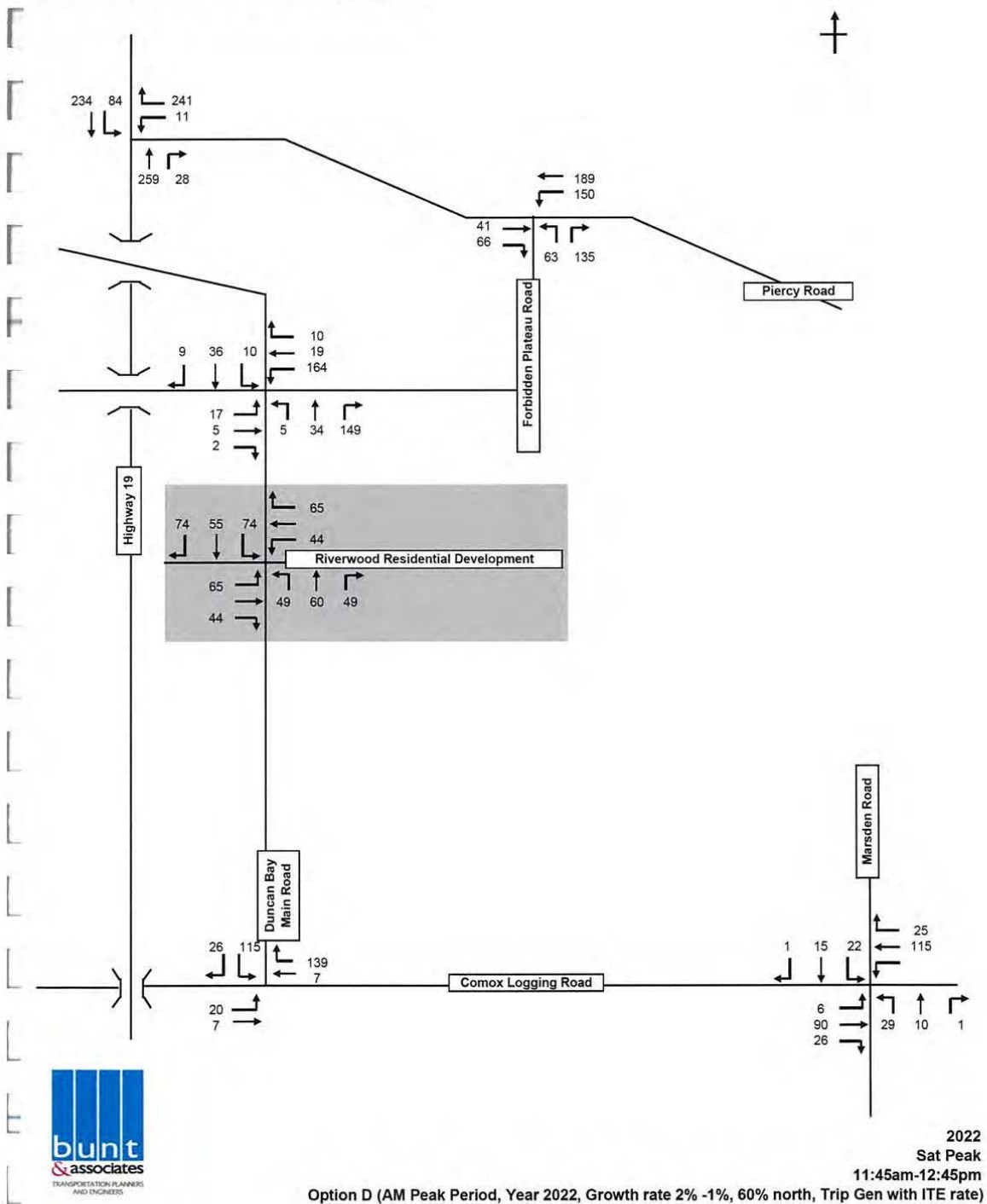
Project: 5804.04 Riverwood Residential Development



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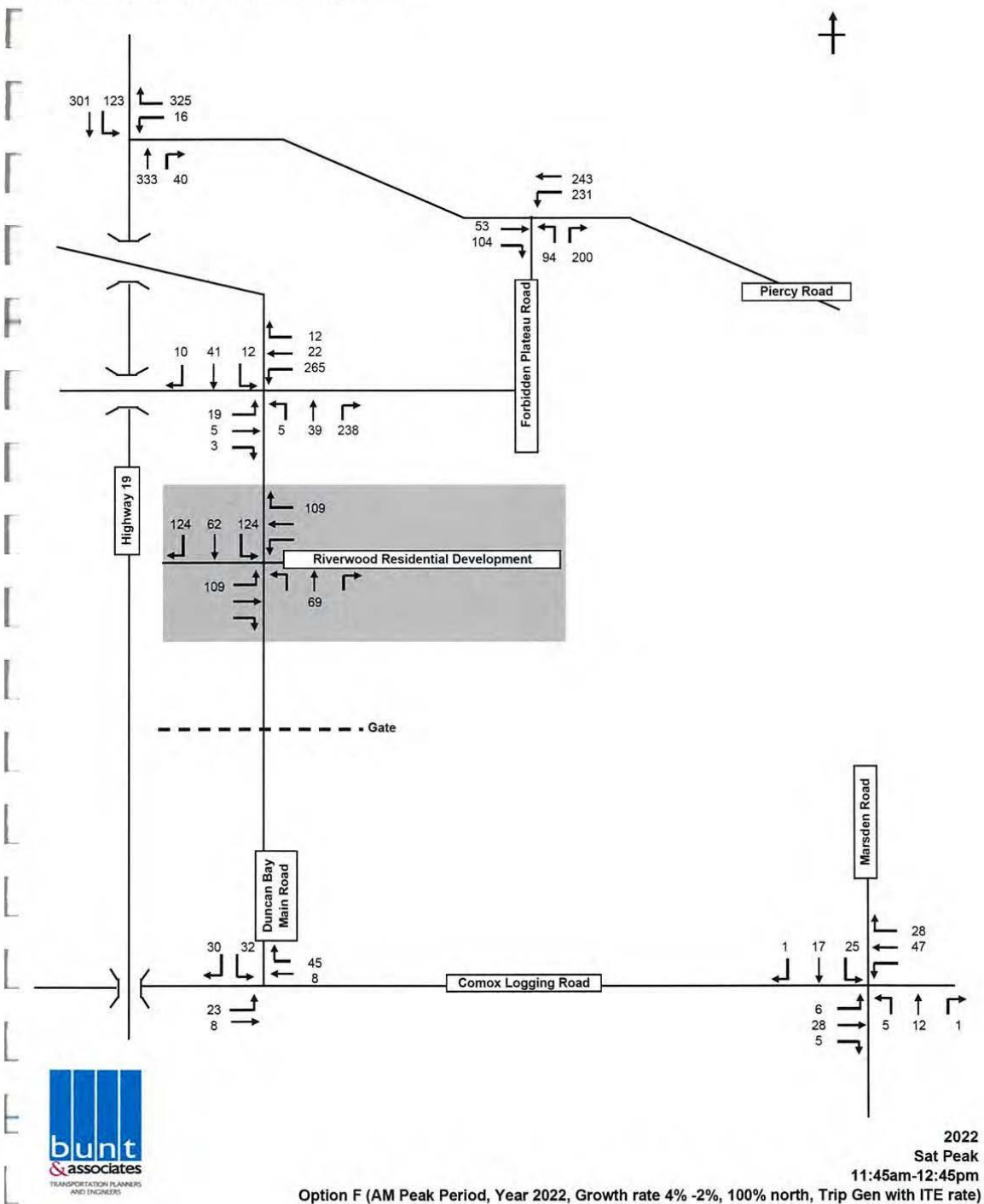
Project: 5804.04 Riverwood Residential Development



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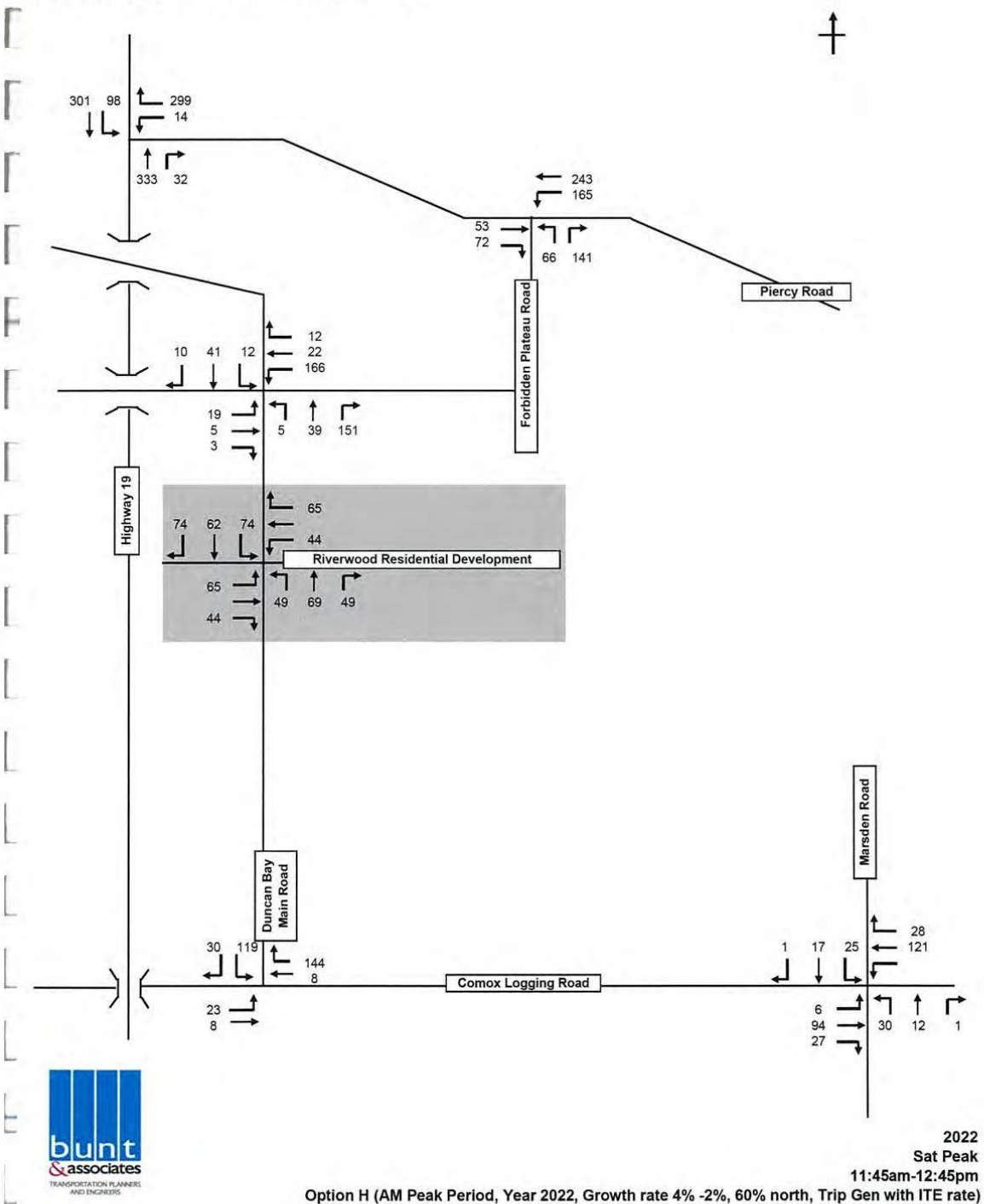
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

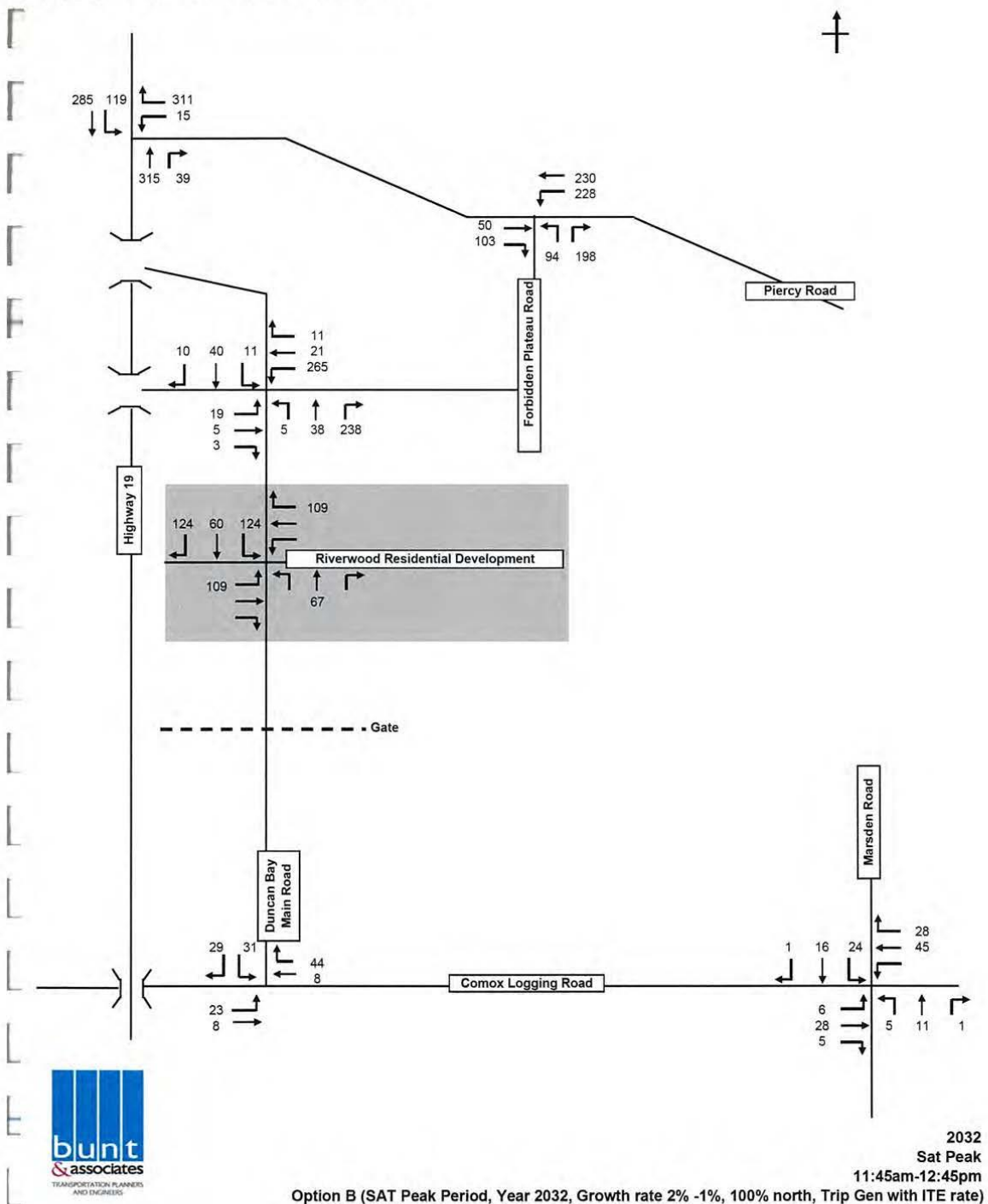
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

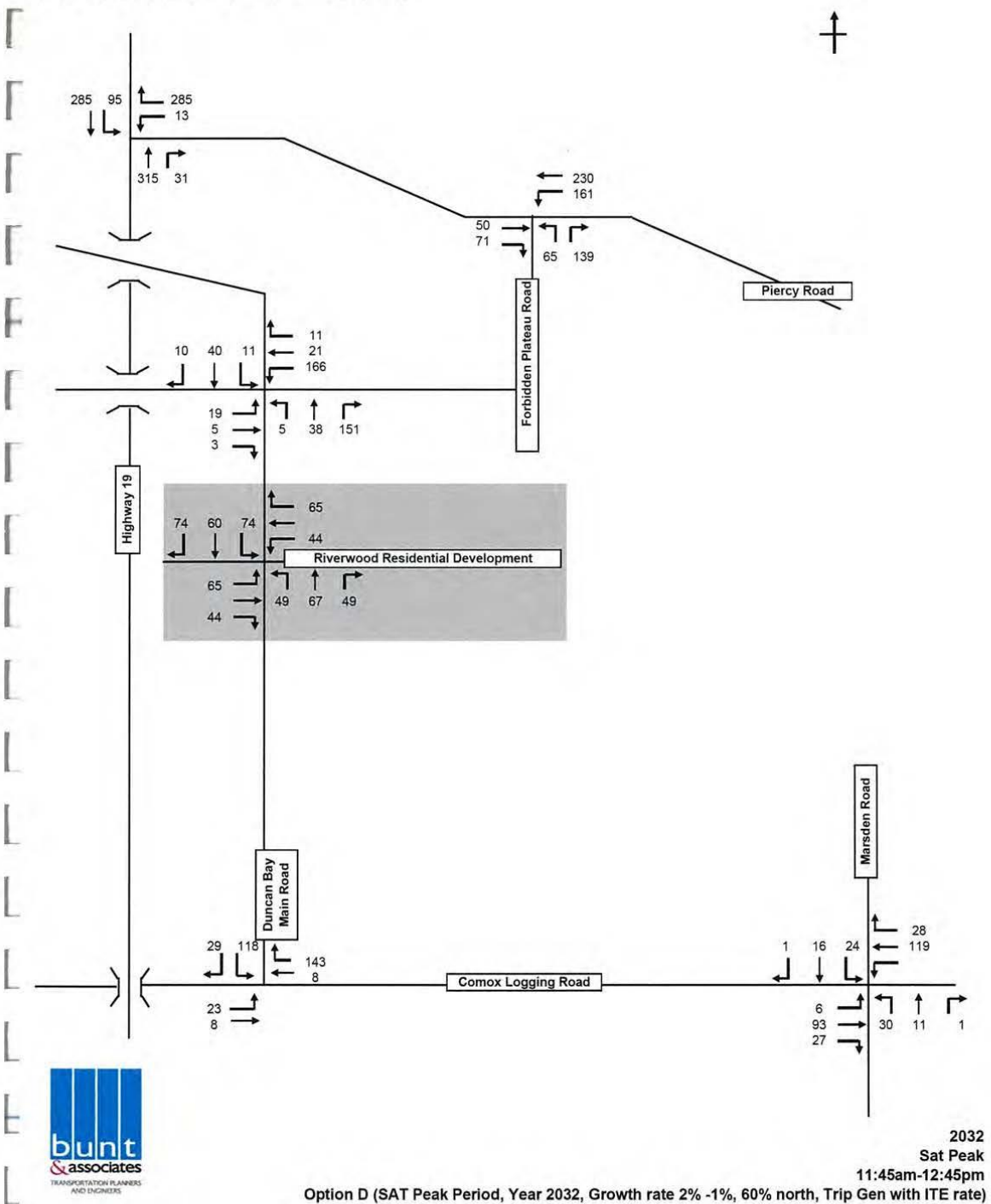
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Bunt & Associates Engineering Ltd.

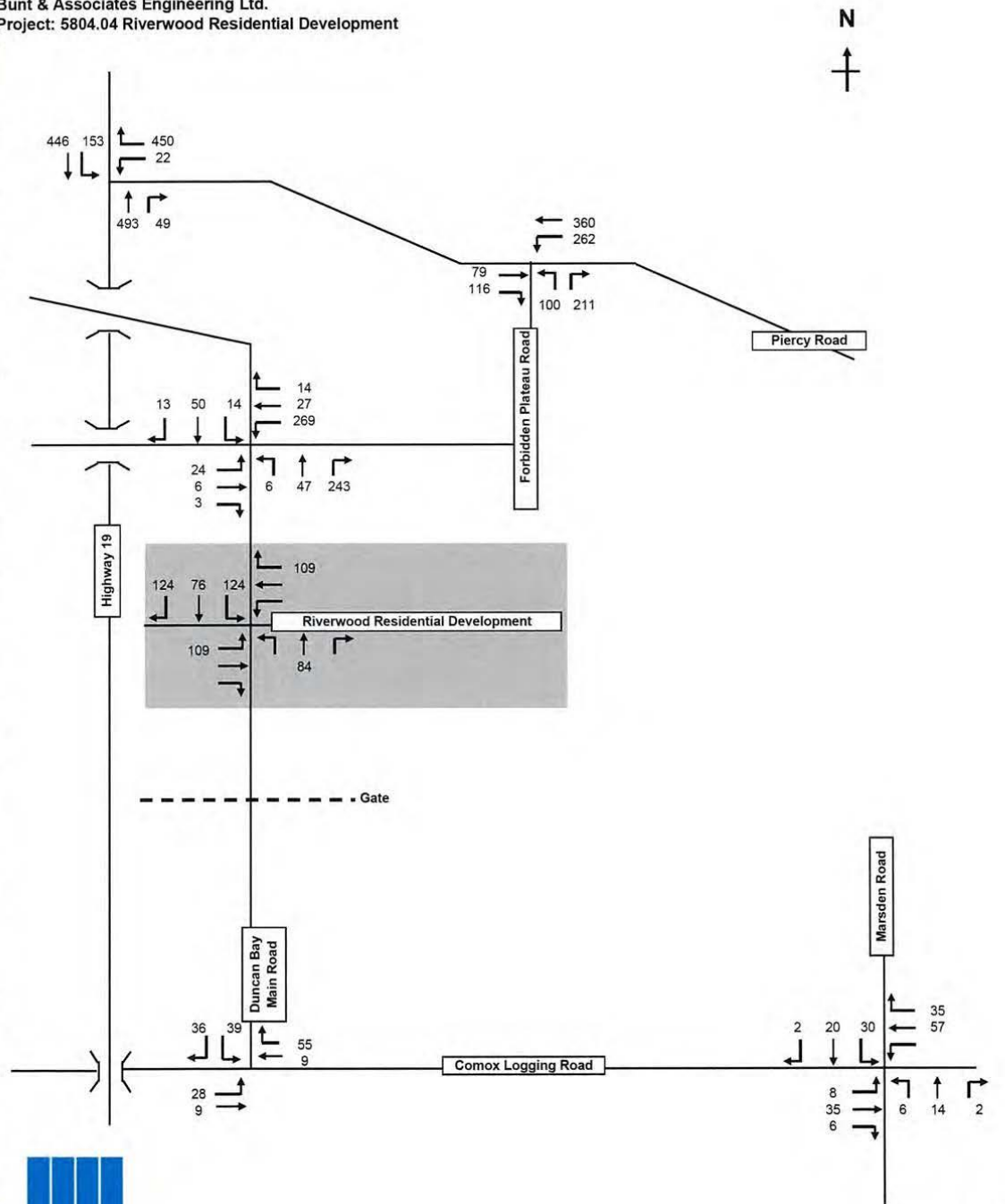
Project: 5804.04 Riverwood Residential Development



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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development

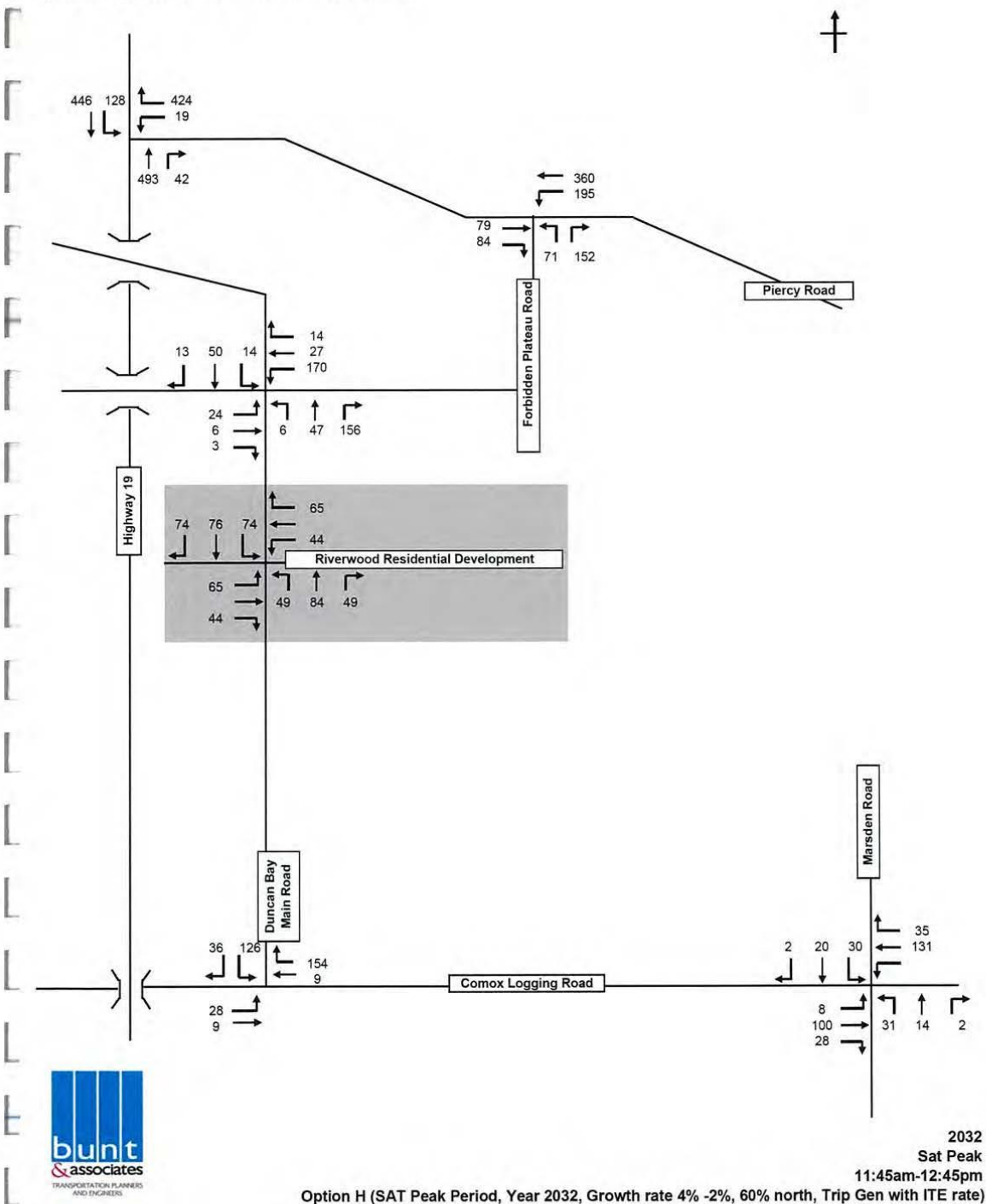


2032
Sat Peak
11:45am-12:45pm
Option F (SAT Peak Period, Year 2032, Growth rate 4% -2%, 100% north, Trip Gen with ITE rate)

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Bunt & Associates Engineering Ltd.

Project: 5804.04 Riverwood Residential Development



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***Transportation Assessment Report - FINAL
Riverwood Residential, Courtenay, BC
Project No. 5804.04***



Appendix C - TAC Signal Warrant Analysis

2005 Canadian Matrix Traffic Signal Warrant Analysis

Main Street (name)	Piercy Road	Direction (EW or NS)	EW
Side Street (name)	Forbidden Plateau Road	Direction (EW or NS)	NS
Quadrant (if appl)			

Date: Oct 05, 2009
City: Comox Valley Regional District

Lane Configuration		Excl LT	Th & LT	Through or Th+RT+LT	Th & RT	Excl RT	Upstream Signal (m)	# of Thru Lanes
Piercy Road WB		1	0	1	0	0	1.444	1
Piercy Road EB		0	0	1	0	0		
Forbidden Plateau Road NB		1	0	0	0	1		
Forbidden Plateau Road SB		0	0	0	0	0		

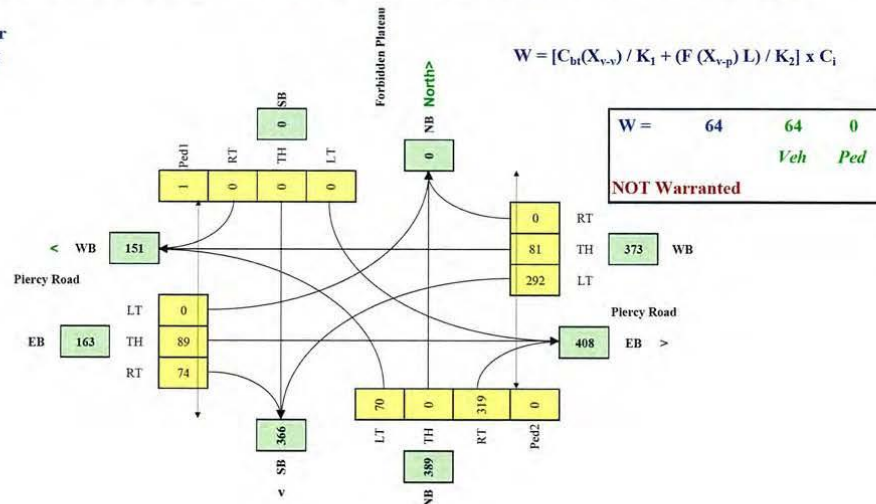
Demographics		
Elementary School	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	
Central Business District	(y/n)	n

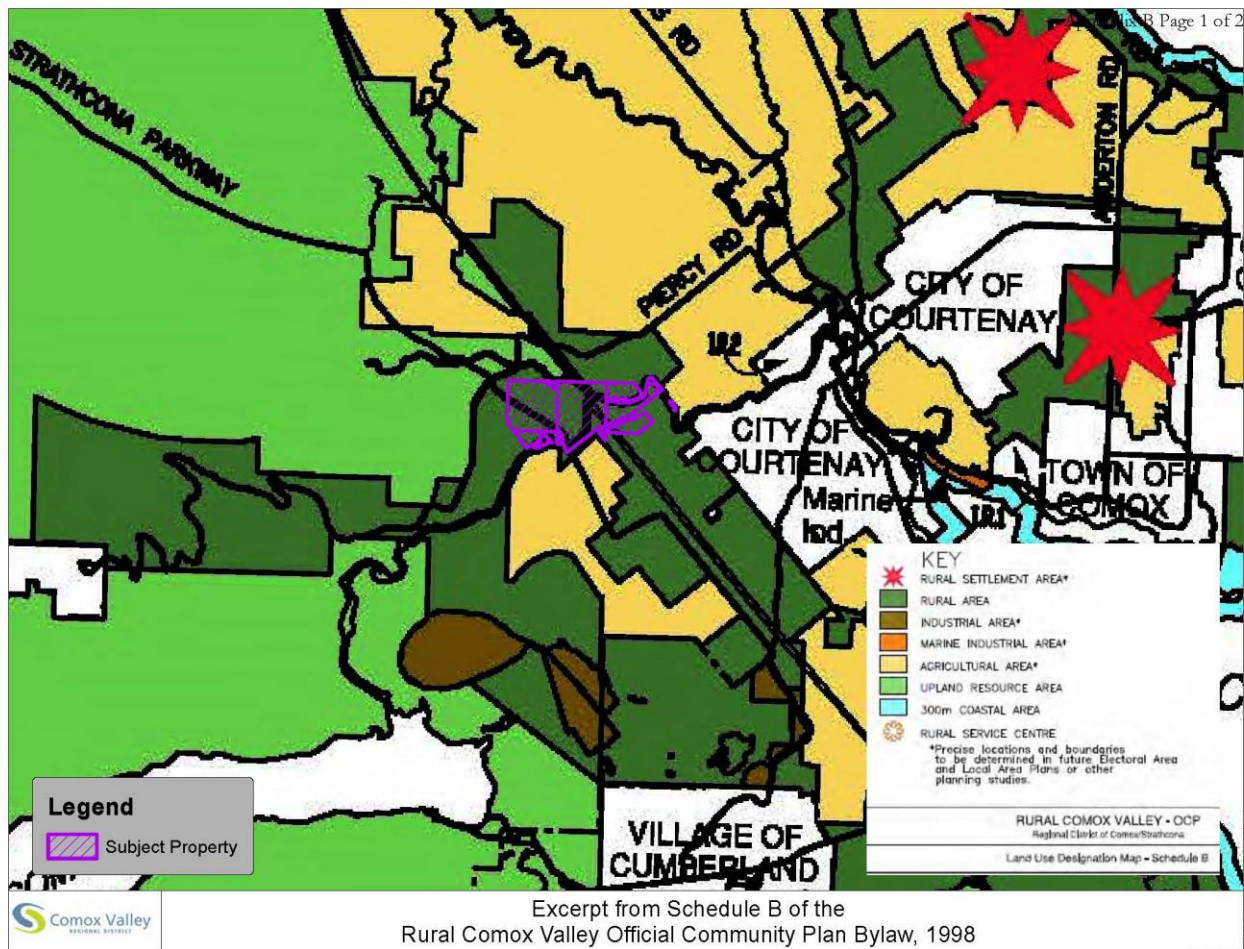
Other input		Speed (km/h)	Trucks %	Bus Rt (y/n)	Median (m)
Piercy Road	EW	70	7.0%	n	0.0
Forbidden Plateau Road	NS		4%	n	

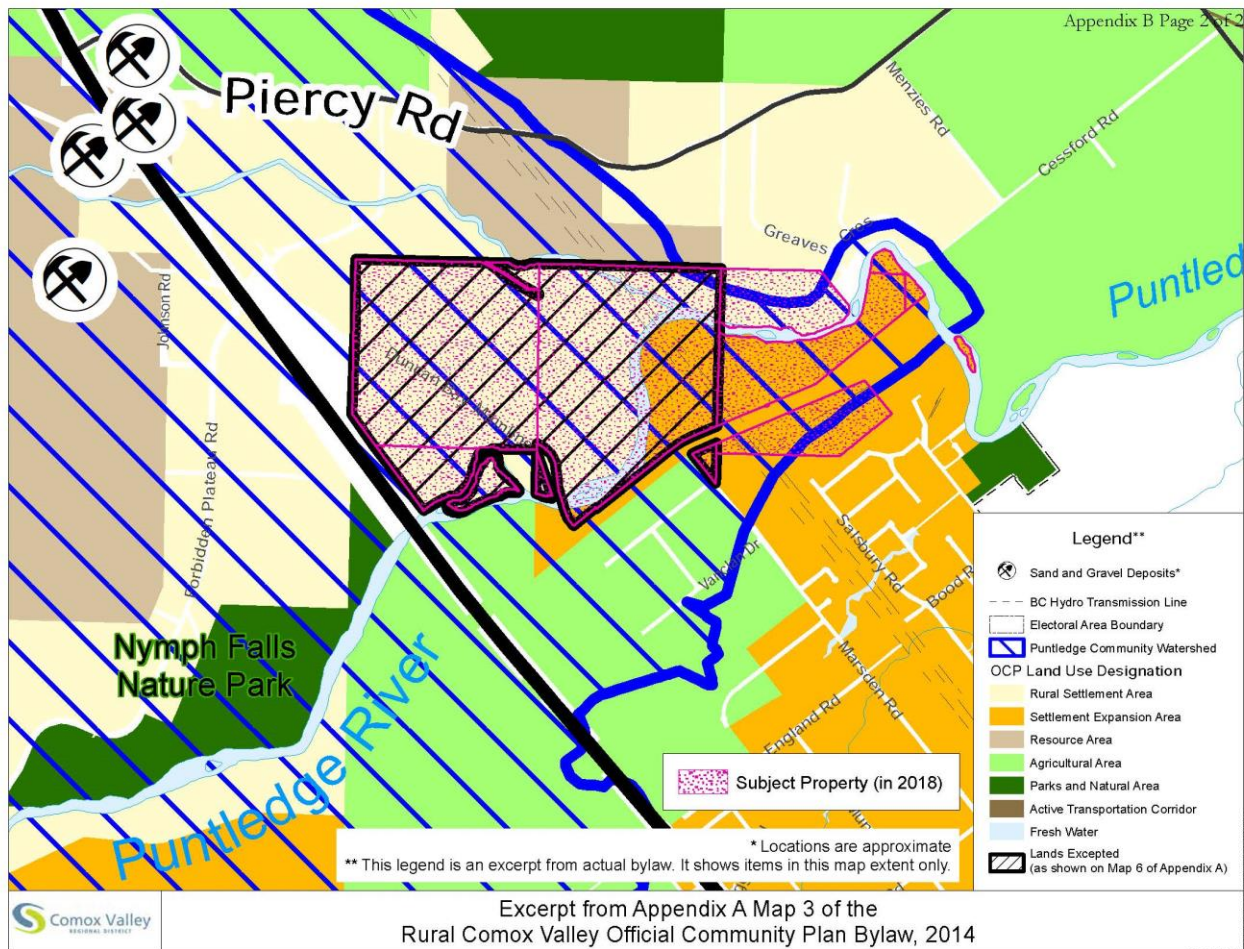
Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	0	E Side	N Side	S Side
7:30 - 8:30	116	0	540	0	0	0	89	60	0	0	60	43	4	0	0	0
8:30 - 9:30	73	0	412	0	0	0	160	108	0	0	69	24	0	0	0	0
11:30 - 12:30	32	0	294	0	0	0	436	77	0	0	36	51	0	0	0	0
12:30 - 13:30	39	0	130	0	0	0	226	58	0	0	62	58	0	0	0	0
16:00 - 17:00	63	0	241	0	0	0	530	111	0	0	136	138	0	0	0	0
17:00 - 18:00	97	0	294	0	0	0	311	73	0	0	171	127	1	0	0	0
Total (6-hour peak)	429	0	1,911	0	0	0	1,752	487	0	0	534	441	5	0	0	0
Average (6-hour peak)	70	0	319	0	0	0	292	81	0	0	89	74	1	0	0	0

Average 6-hour Peak Turning Movements

$$W = [C_{bt}(X_{v-v}) / K_1 + (F(X_{v-p}) L) / K_2] \times C_i$$







802

Rural Twenty (RU-20)

1. Principal Use

- i) **On any lot:**
 - a) Single detached dwelling
 - b) Agricultural use
 - c) Veterinary establishment
 - d) Plant nursery and greenhouse
 - e) Silviculture
 - f) Fish Hatchery (including community based)
- ii) **On any lot greater than 2.0 hectares in area the following uses are also permitted:**
 - a) Animal kennel
 - b) Riding academy
- iii) **On any lot greater than 4.0 hectares in area the following uses are also permitted:**
 - a) Wood processing
 - b) Sawmill including portable sawmill
 - c) Gravel, mineral or peat extraction, gravel crushing and screening, excluding manufacturing or sales of concrete or concrete products
- iv) **On any lot 4.0 hectares in area or larger classified as private managed forest land or farm pursuant to the *Assessment Act* or within a license area under the *Forest Act* the following uses are also permitted:**
 - a) Research and teaching facility
 - b) Rural resource centre to a maximum floor area of 300.0 square metres

2. Accessory Uses

- i) **On any lot:**
 - a) Carriage house
 - b) Secondary suite
 - c) Secondary dwelling
 - d) Bed and Breakfast
 - e) Home occupation
 - f) Domestic industrial use
 - g) Retail and wholesale sales of agricultural and forestry products to a maximum floor area of 100.0 square metres

3. Conditions of Use

- i) **Animal kennels shall be subject to the following conditions:**

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- a) Maintain a minimum setback of buildings and structures of 15.0 metres along all lot lines.
 - b) All structures and area utilized in association with the animal kennel, shall be sited at least 30.0 metres from the boundary of any lake, sea or watercourse.
 - c) No parking, loading or storage areas shall be located in any required setback area.
 - d) Screening shall be provided at not less than 1.5 metres in height for animal kennel.
 - e) No more than one sign, not exceeding 1.0 square metre in area on each side may be placed on the lot on which the animal kennel use is carried out.
- ii) **Wood processing, gravel, sand and mineral extraction (including crushing and screening of aggregate extracted onsite), research and teaching facilities, and rural resource centres shall be subject to the following conditions:**
- a) A minimum setback for buildings and structures of 15.0 metres along all lot lines.
 - b) Minimum setback requirement for stockpiles shall be 15.0 metres along all lot lines.
 - c) A minimum setback for buildings and structures of 30.0 metres from any lot line abutting a lot zoned Residential or Country Residential.
 - d) No loading or storage areas shall be located in any required setback.
 - e) Screening of not less than 2.0 metres in height shall be provided for wood processing uses and a rural resource centre abutting a lot zoned Residential.
 - f) Screening of not less than 1.5 metres in height shall be provided for wood processing uses and a rural resource centre abutting a lot zoned Country Residential.

4. Density

- i) **Residential density is limited to two dwellings units:**
- a) **On any lot:** one single detached dwelling and one carriage house, secondary suite, or secondary dwelling limited in area to 90.0 square metres are permitted.
 - b) **On a lot greater than 1.0 hectare in area:** two single detached dwellings.

5. Siting and Height of Buildings and Structures

The maximum height of principal buildings is 10.0 metres and the maximum height of accessory buildings is 8.0 metres.

- i) The setbacks required for buildings and structures shall be as set out in the table below.

Appendix C Page 3 of 5

Type of Use	Height of Structure	Required Setback				
		Front Yard	Rear Yard	Side Yard		Side Yard Abutting Road
				Front Lot Line <31m	Front Lot Line >31m	
Principal	10.0m	7.5m	7.5m	1.75m	3.5m	7.5m
Accessory	4.5m or less	7.5m	1.0m	1.0m	1.0m	7.5m
Accessory	8.0m - 4.6m	7.5m	7.5m	1.75m	3.5m	7.5m

6. **Floor Area Requirements**

- i) The combined floor area of all buildings and structures shall not exceed 15 per cent.

7. **Subdivision Requirements**

- i) **Minimum lot area:** 20.0 hectares

End • RU-20

804

Upland Resource (UR)

1. Principal Use

- i) **On any lot:**
 - a) Silviculture
 - b) Agricultural use
 - c) Fish hatchery
 - d) Explosives sales, storage manufacturing and distribution
 - e) Firearm range
 - f) Wood processing
 - g) Gravel, mineral or peat extractions, gravel crushing and screening, bulk mixing, processing of soil mixtures for commercial resale
 - h) On any lot in the Agriculture Land Reserve any other use specifically permitted by the *Agricultural Land Commission Act*, regulations and orders

2. Accessory Uses

- i) **On any lot:**
 - a) Single detached dwelling

3. Conditions of Use

- i) **All wood processing, gravel, sand and mineral extraction (including crushing and screening of aggregate extracted onsite), bulk mixing, processing of soil mixtures shall be subject to the following conditions:**
 - a) A minimum setback of 15.0 metres along all lot lines.
 - b) A minimum setback of 30.0 metres from any lot line abutting an area zoned under Part 700, Residential Zones, and Water Supply and Resource Area zones.
 - c) No loading or storage areas shall be located in any required setbacks.
 - d) Uses abutting an area zoned under Part 700, Residential Zones, shall be screened and buffered from adjacent properties through the use of fencing, berm and evergreen vegetation being not less than 2.0 metres in height.
 - e) All structures and area utilized in association with wood processing, gravel, sand and mineral extraction (including crushing and screening of aggregate extracted onsite), bulk mixing, processing of soil mixtures shall be sited at least 30.0 metres from the boundary of any lake, sea, watercourse or wetland.

4. Density

- i) **Residential density is limited to:**
 - a) **On any lot:** One single detached dwelling.

Appendix C Page 5 of 5

5. Lot Coverage

- i) The lot coverage of all buildings and structures is 35 per cent to a maximum of 1000.0 square metres.

6. Siting and Height of Buildings and Structures

The maximum height of principal buildings and accessory single detached dwellings is 10.0 metres and the maximum height of accessory buildings is 7.0 metres.

- i) The setbacks required for buildings and structures shall be as set out in the table below.

Type of Use	Height of Structure	Required Setback				
		Front Yard	Rear Yard	Side Yard		Side Yard Abutting Road
				Front Lot Line <31m	Front Lot Line >31m	
Principal	10.0m	7.5m	7.5m	1.75m	3.5m	7.5m
Accessory	4.5m or less	7.5m	1.0m	1.0m	1.0m	7.5m
Accessory	7.0m - 4.6m	7.5m	7.5m	1.75m	3.5m	7.5m

7. Subdivision Requirements

- i) The minimum lot area for subdivision shall be as follows:
- 40.0 hectares for the area east of the most westerly boundary of the BC Hydro transmission right-of-way Plans 509, 510, 511, 512, 914, 932, 933 and 934.
 - 40.0 hectares for the area within 1.0 kilometre west of the most westerly boundary of the said rights-of-way, with measurement made perpendicularly to the boundary of the said rights-of-way, except as modified in Clause (e).
 - 40.0 hectares for the areas approximately 1.0 kilometre east, south, and west of the Village of Cumberland, except as modified in Clause (e).
 - 400.0 hectares for the area more than 1.0 kilometre west of the most westerly boundary of the said right-of-way's, with measurement made perpendicularly to the boundary of the said rights-of-way except as modified in Clause (e).
 - Where a lot is subject to both the 40.0 and 400.0 hectare minimum lot area, the minimum lot area which applies to the greatest portion of the lot shall be the minimum lot area for creation of that lot. Where a lot is divided into portions of equal area, the minimum lot area in respect of the entire lot shall be 40 hectares.
- ii) The minimum permitted highway frontage for lots created by subdivision shall be 100.0 metres.

End • UR



THE CORPORATION OF THE CITY OF COURTENAY

BRIEFING NOTE

To: Ministry of Finance
From: Courtenay City Council
Date: Wednesday, September 16, 2020, 3:20 - 3:50 p.m.
Location: 2020 UBCM Virtual Convention
Subject: **Property Transfer Tax (PTT), Provincial Sales Tax (PST) and Liquor Tax (LT) Revenues Redistribution**

ISSUE:

The City of Courtenay hosts services that benefit the entire Comox Valley region, including supportive housing and shelters, health and social services, and provides financial support for community outreach efforts. The demand and expectation for these social services has increased dramatically, along with pressures on policing and bylaw enforcement. At the same time the City is responsible for maintaining essential services and infrastructure. While Courtenay's financial and social burden has increased, provincial funding has not kept pace.

REQUEST:

That the provincial government return a portion of its:

- 1. Property Transfer Tax (PTT)**
- 2. Provincial Sales Tax (PST)**
- 3. Liquor Tax (LT)**

revenues to local governments for reinvestment in municipal infrastructure, solid waste services, policing, and affordable housing and homelessness initiatives; and, that the funding be distributed equitably to the communities from which it originated.

BACKGROUND:

The City of Courtenay, Town of Comox, Village of Cumberland, and the Comox Valley Regional District share numerous services, including policing, solid waste, water and sewer services, and core housing needs. As the City of Courtenay is the urban centre of the Comox Valley, and hosts the majority of social services for the region, some issues disproportionately impact our municipality's budget and operations.

Homelessness and Encampments

The City of Courtenay and the surrounding jurisdictions have experienced increasing social issues in recent years, including homelessness and addiction.

Homeless encampments have dramatically increased, putting a strain on the City's limited Bylaw Enforcement staff, as well as Courtenay Public Works Services, Administration and the Fire Department. This impacts the City's resources and budget, including staff time and contributions of land, facilities, services, utilities, and grants. Courtenay also provides emergency and annual funding to various non-profit community organizations providing direct outreach and support to those experiencing homelessness.

Social pressures from the challenges of homelessness and addiction are also resulting in additional pressure on the Comox Valley RCMP. Other pressures include an increase in reports of overdoses, property crime, and vandalism, as indicated by feedback from the Downtown Courtenay Business Improvement Association membership, business and public complaints to the City of Courtenay and reporting from City operations staff. The head of the Comox Valley RCMP detachment, Inspector Mike Kurvers, has confirmed this increase in his reports to Courtenay Council. In addition, crime statistics do not capture all of the work performed by the police and are not a true reflection of police effort in each jurisdiction. For example, additional resources such as bike patrol and school liaison officers work in Courtenay and the wider region in a preventative capacity.

Escalating Costs of Essential Services

In addition to the above-noted social concerns, Courtenay also faces increasing costs for essential services, and maintaining and constructing infrastructure both within and outside our jurisdiction.

For example, Courtenay is contributing funds toward a new regional composting facility that will remove organic material, extend the life of the regional landfill, and reduce our community's climate footprint; Courtenay's contribution towards regional capital projects and in-service asset operating expenses is estimated at 25 - 30% annually.

Financial Impacts from COVID-19

The City of Courtenay is forecasting significant budget impacts due to COVID-19, including a \$1 million shortfall in our general operating budget, as well as a loss of \$700,000 in gaming revenue this year. Third quarter financial reports in 2020 will provide more clarity on losses.

KEY CONSIDERATIONS:

As community leaders, City staff and elected officials are being called upon by residents to provide amenities and fund social support services, food sources, and dwelling options. Staff and Council are dealing with issues management and participating in regular, ongoing meetings in response to these community concerns. These services are not within the core municipal mandate, budget, or staff capacity.

The City of Courtenay understands the tremendous need for these social services, both in the region and throughout the province. In the Comox Valley, Courtenay hosts the majority of these services and in some cases also provides the land, services, utilities, and facilities required for them.

Meanwhile, local governments are also facing infrastructure deficits, as the roads, utilities, and facilities installed over many decades reach the end of their useful lives.

Courtenay is focused on asset management, with a goal of achieving "sustainable service delivery" by ensuring that current community services are delivered in a socially, economically, and environmentally responsible manner that does not compromise the ability of future generations to meet their own needs. Courtenay is the first jurisdiction in British Columbia, and one of the first in Canada, to adopt an Asset Management Bylaw, which formally stipulates that decisions on the renewal, upgrade, and acquisition of the City's assets must consider the full cost throughout the expected lifespan of the asset.

As a coastal community, the City of Courtenay is also considering the impacts of climate change. The City of Courtenay's Official Community Plan (OCP) Update process is underway. The ultimate objective of the OCP update is to generate "climate friendly" community planning solutions in line with Courtenay Council's 2019 declaration of a Climate Crisis.

Courtenay has experienced the direct consequences of climate change through flooding in low-lying areas, most notably in December 2014. These impacts are expected to worsen over the coming decades. Courtenay is participating in a pilot project with the Municipal Natural Assets Initiative, and is reviewing opportunities for natural asset management throughout the flood plain, including through the Kus-kus-sum property (formerly Fields Sawmill).

Returning a portion of PTT, PST, and LT revenues to the local economy where it originated would enhance the ability of local governments to support the vast range of services they now provide to their communities.



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BRIEFING NOTE

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REQUEST:

That the provincial government return a portion of tax revenues to local governments:

1. **Property Transfer Tax (PTT)**
2. **Provincial Sales Tax (PST)**
3. **Liquor Tax (LT)**

These funds would assist in for reinvestment in municipal infrastructure, solid waste services, policing, and affordable housing and homelessness initiatives; and, that the funding be distributed equitably to the communities from which it originated.

In addition, review the following rebates while considering impacts from COVID-19 and anticipated lower returns to local governments:

4. **Gas Tax**
5. **Gaming Funds**

BACKGROUND:

The City of Courtenay, Town of Comox, Village of Cumberland, and the Comox Valley Regional District share numerous services, including policing, solid waste, water and sewer services, and core housing needs. As the City of Courtenay is the urban centre of the Comox Valley, and hosts the majority of social services for the region, some issues disproportionately impact our municipality's budget and operations.

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Financial Impacts from COVID-19

The City of Courtenay is forecasting significant budget impacts due to COVID-19, including a \$1 million shortfall in our general operating budget, as well as a loss of \$700,000 in gaming revenue from the ongoing closure of Chances Casino in Courtenay this year. Third quarter financial reports in 2020 will provide more clarity on losses. The City of Courtenay is also concerned that gas tax revenues will be reduced in 2020 as a result of the reduction in transportation and fuel consumption as a result of COVID-19.

KEY CONSIDERATIONS:

As community leaders, City staff and elected officials are being called upon by residents to provide amenities and fund social support services, food sources, and dwelling options. Staff and Council are dealing with issues management and participating in regular, ongoing meetings in response to these community concerns. These services are not within the core municipal mandate, budget, or staff capacity.

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As a coastal community, the City of Courtenay is also considering the impacts of climate change. The City of Courtenay's Official Community Plan (OCP) Update process is underway. The ultimate objective of the OCP update is to generate "climate friendly" community planning solutions in line with Courtenay Council's 2019 declaration of a Climate Crisis.

Courtenay has experienced the direct consequences of climate change through flooding in low-lying areas, most notably in December 2014. These impacts are expected to worsen over the coming decades. Courtenay is participating in a pilot project with the Municipal Natural Assets Initiative, and is reviewing opportunities for natural asset management throughout the flood plain, including through the Kus-kus-sum property (formerly Fields Sawmill).

Returning a portion of PTT, PST and LT revenues to the local economy where it originated, in addition to reviewing the levels of Gas Tax and Gaming Fund rebates, would enhance the ability of local governments to support the vast range of services they now provide to their communities



BRIEFING NOTE

To: Ministry of Municipal Affairs and Housing
From: Courtenay City Council
Date: Monday, September 14, 2020, 09:00 - 09:20 a.m.
Location: 2020 UBCM Virtual Convention
Subject: **Affordable and Co-Op Housing Initiatives, and Supports for People Experiencing Homelessness**

ISSUE:

Housing is one of our community's biggest challenges, affecting every age group and demographic. Housing costs in Courtenay and the Comox Valley have dramatically increased in recent years, putting suitable housing out of reach for many. Courtenay Council is also dealing with concerns from area residents around existing supportive housing and complaints about decreased quality of life in their neighbourhood.

REQUEST:

The City of Courtenay is asking the Province to:

- 1. Provide more affordable and supportive housing options, and mandate and assure that community outreach services and skilled staff are components of supportive housing**
- 2. Develop a framework for municipal affordable and co-op housing initiatives**

BACKGROUND:

Courtenay City Council has identified support for housing diversity and affordable housing among its strategic priorities, including the need for homes for people with low to moderate incomes, seniors, those at risk of homelessness and housing insecurity. The lack of affordable housing impacts vulnerable citizens, emergency and social services, and the municipalities that support them.

Housing is also a key economic factor in business retention and expansion. The City of Courtenay is working with B.C. Housing, The Co-Op Housing Federation of B.C., regional partners and organizations on various programs and housing models to expand affordable housing in the Comox Valley.

The Need for Affordable and Supportive Housing Options in Courtenay

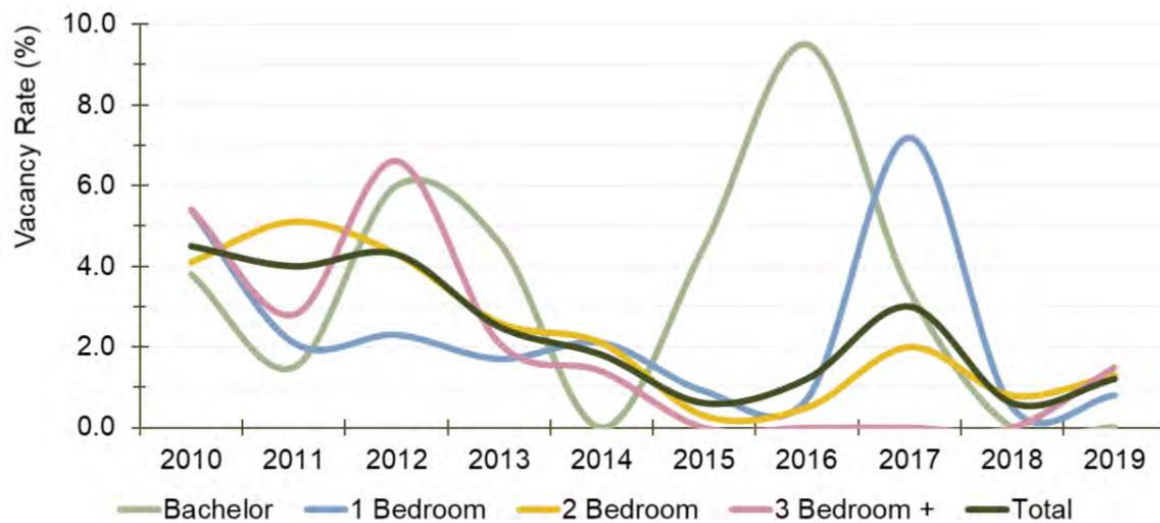
Municipalities are struggling with inquiries from citizens needing help to find affordable housing, and from people impacted by homelessness in our communities. The [2018 Report on Homeless Counts in B.C.](https://www.bchousing.org/research-centre/housing-data/homeless-counts)¹ identified 117 people in the Comox Valley as experiencing homelessness. The issue of homeless encampments in Courtenay has dramatically increased, putting a strain on the City's limited bylaw enforcement staff, as well as the City's Public Works Services and Administration, the Courtenay Fire Department, Comox Valley RCMP, and the various non-profit community organizations providing direct outreach and support to those experiencing homelessness.

Even for those who currently have housing, the decreasing availability of housing supply coupled with increasing costs have made it more difficult to remain adequately housed. According to the [Comox Valley Regional Housing Needs Assessment](https://www.comoxvalleyrd.ca/projects-initiatives/post-current-projects/comox-valley-regional-housing-needs-assessment) completed in August 2020, 58.6 percent of renter households in the City of Courtenay make less than \$39,999 annually, with 18.2 percent of Courtenay residents falling below low income thresholds. As of 2016, 760 households² reported an extreme core housing need.

¹ <https://www.bchousing.org/research-centre/housing-data/homeless-counts>

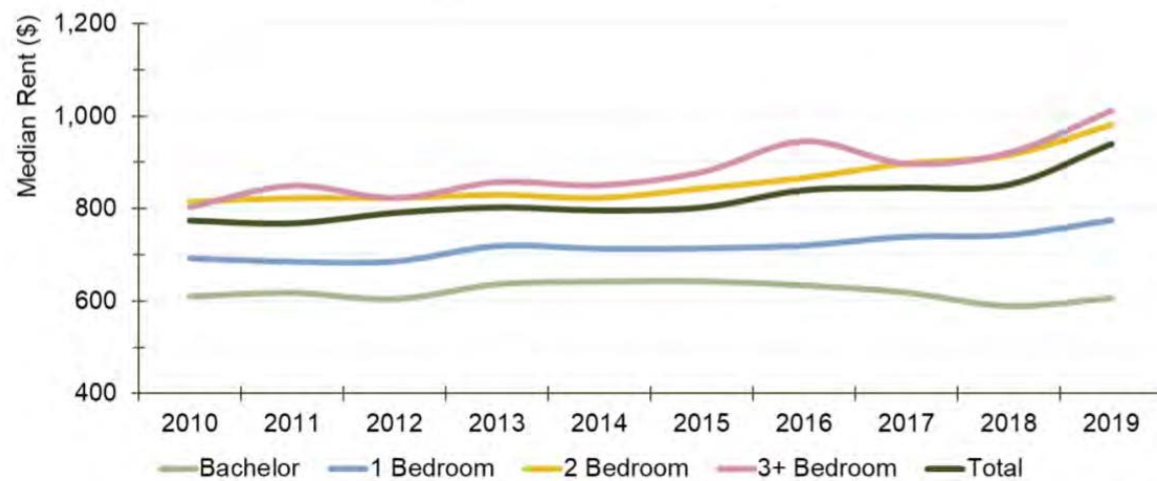
² <https://www.comoxvalleyrd.ca/projects-initiatives/post-current-projects/comox-valley-regional-housing-needs-assessment>

Historical Rental Housing Vacancy by Unit Type (CMHC)



The report states, “Much of the last decade has seen vacancy below 2 percent, including 2015 and 2018 which even dropped far below 1 percent.” At the same time, market rents have been increasing, most dramatically in 2019.

Historical Median Market Rents by Unit Type, 2019 dollars (CMHC)



Community Outreach Services and Skilled Staff in Supportive Housing

The City of Courtenay is grateful for the supportive housing installed in our community in 2019 at 988 8th Street (The Junction). While the benefits of this housing cannot be overstated, it has come at some cost.

The adult supportive housing funded by B.C. Housing provides accommodation for people with a history of severe trauma, often resulting in difficult behaviours that can have significant impact on surrounding neighbourhoods and requiring skilled caregivers to manage.

It has become apparent that B.C. Housing does not have sufficient funding to either provide neighbourhood outreach services or assure skilled staff and minimal turnover. B.C. Housing advised the City of Courtenay they had not received Treasury Board approval to perform the desired level of neighbourhood and community outreach services. It is the City of Courtenay’s opinion that this outreach, and a more stable support staff earning higher wages, would have helped address these neighbourhood concerns. Funding approval for community outreach on supportive housing in neighbourhoods before, during, and after construction would help problem solve neighbourhood issues. Proactively addressing

these concerns before they have a chance to become entrenched would be a win-win for B.C. Housing, the host municipality, the supportive housing staff and residents, and the surrounding neighbourhood.

The City of Courtenay is requesting that the provincial government increase funding levels to B.C. Housing in order to mandate and assure that community outreach services and the stability of an adequately skilled staff are components of supportive housing developments that are viable in local communities.

Co-op Housing

Additional housing opportunities such as co-op housing would improve access for people with low to moderate incomes and those at risk of homelessness or housing insecurity to obtain suitable, affordable housing options. Access to housing enables our residents to live in dignity, stay healthy, and continue to work and support their families.

A province-wide framework for municipal co-op housing initiatives would increase co-op housing facilities and development opportunities in communities throughout British Columbia to help alleviate the affordable housing crisis. Increasing opportunities for co-operative housing would also provide much-needed diversity in the housing market, and associated economic benefits to communities.

KEY CONSIDERATIONS:

The lack of affordable housing causes a ripple effect that impacts vulnerable citizens, as well as the municipalities and emergency and social services that provide direct support.

The City of Courtenay has experienced a significant increase in social issues in recent years, including homelessness and addiction. Financial impacts and other stresses due to COVID-19 have exacerbated these concerns. As Courtenay is the regional municipality which hosts the bulk of social services for the Comox Valley region, we experience a disproportionate level of social concerns in the region.

As community leaders, City staff and elected officials are being called upon by residents to provide amenities and fund social support services, food source and dwelling options. Staff and Council are also dealing with ongoing issues management and participating in regular, ongoing meetings to deal with these community concerns. These services are not within the municipal mandate, budget, or staff capacity.

The City of Courtenay is working closely with Comox Valley Coalition to End Homelessness and the Comox Valley Transition Society and providing funding and facilities for a warming centre, shower program, kitchen facility for emergency food program, public washroom programs, and other funding and in-kind support and grants-in aid. Courtenay Council also approved emergency COVID-19 funding for the Comox Valley Care-a-Van mobile nursing unit, LUSH Valley Food Action Society, Comox Valley Food Bank, and the Comox Valley Transition Society.

The City of Courtenay is also forecasting significant budget impacts from COVID-19, including a \$1 million shortfall in our general operating budget, as well as a loss of \$700,000 in gaming revenue this year.

By accommodating these much-needed regional social services, (and in some cases also providing the land, services, utilities, and facilities required for them), our community also ends up paying a premium for the increased need for social supports that can result.

In summary, a range of solutions are needed to help alleviate this housing crisis in the Comox Valley and particularly the City of Courtenay. Assistance from higher levels of government is desperately needed.

Attachments:

1. *Comox Valley Housing Needs Assessment*
2. *Community Profiles - Comox Valley 2018 Report on Homeless Counts in B.C.*



THE CORPORATION OF THE CITY OF COURTENAY

BRIEFING NOTE

To: Ministry of Transportation and Infrastructure
From: Courtenay City Council
Date: Tuesday, September 15, 2020, 11:00 - 11:20 a.m.
Location: 2020 UBCM Virtual Convention
Subject: Capital Projects in Courtenay's Transportation Master Plan

ISSUE:

Courtenay in partnership with MoTI, with support from regional local governments, completed major master plans in 2019 with a focus on multi-modal transportation, consideration of shared municipal and provincial road networks, and infrastructure. The City of Courtenay wishes to continue collaborative discussions with MoTI on shared road network initiatives and funding opportunities for key capital projects.

REQUEST:

That the Ministry of Transportation and Infrastructure and the City of Courtenay continue to collaborate and explore funding opportunities on the following key capital projects:

1. Hwy 19A (Bypass) road improvements and flood mitigation
2. Ryan Rd sidewalk improvements
3. Ryan Road widening and multi-use bike/pedestrian path and options for an east/west connector
4. Pedestrian crossing on Cliffe Avenue between 19th and 26th Streets

BACKGROUND:

The City of Courtenay adopted the Connecting Courtenay Transportation Master Plan in the fall of 2019. The plan provides direction on transportation infrastructure for the next 20 years, as well as 10 and 20-year investment strategies. Courtenay has more than doubled in size over the past 25 years, and our community's transportation needs have evolved. Courtenay also adopted a new Cycling Network Plan and a Parks and Recreation Master Plan in 2019 which included recommendations for the city-wide cycling and trail networks. View these plans at www.courtenay.ca/masterplans

Community input combined with extensive technical analysis revealed strong themes for vehicles, cyclists, pedestrians, and transit. Multiple stakeholder groups and regional partners were involved at each stage, including K'ómoks First Nation, MoTI, Town of Comox, Village of Cumberland, CVRD, Comox Valley Cycling Coalition, Comox Valley Accessibility Committee, School District No. 71, and BC Transit.

Transportation engineers reviewed existing and future mobility and safety needs, and assessed a variety of options for all transportation modes to reduce congestion and better connect people to key destinations. Consultants reviewed traffic patterns, geometry of roads and intersections, and associated considerations such as environmental impacts and drainage. Key findings indicate that downtown bridges and some major routes are over-capacity at peak times.

Peak vehicle travel demands are projected to increase substantially across the river and along major corridors without significant investments in transit, walking and cycling. Demands for crossing the river between the eastern and western areas of the City are expected to increase by approximately 20% over the next 20 years, contributing to increased congestion and reduced mobility for car and truck travel.

A variety of improvements were assessed to improve safety across all modes, reduce congestion and better connect people to key destinations. Growth pressures on the crossings, downtown and northeast areas, as well

specifically Ryan Road and Highway 19A Bypass were areas of concern for many residents. In particular, the limited river crossings, congested traffic flow and adjacent intersections were mentioned.

The City of Courtenay is encouraging housing diversity and higher density development in the downtown core and other development nodes, however many of these areas lack sufficient pedestrian and cycling infrastructure. For this densification to be successful, residents, businesses, and visitors will require cost-effective, alternative, and active transportation options, as identified in the City of Courtenay's Strategic Priorities. www.courtenay.ca/strategicpriorities.

Several key recommendations involve infrastructure that is either under MoTI's jurisdiction, or that serves the broader Comox Valley region:

1. **Hwy 19A Bypass (17th Street to Ryan Road):** Increase from two to four-lanes, incorporating 200-year provincial flooding guidelines and Courtenay's evaluation of stormwater outflows through our Flood Management Strategy and Integrated Rainwater Management Plan. MoTI has advised the City of Courtenay that Phase 1 widening (Comox Road to 17th Street) will be completed in the coming years. MoTI has committed to scheduling the work around the rehabilitation of the 5th Street Bridge in 2021, to avoid exacerbating expected traffic issues from that work. Courtenay appreciates MoTI's collaborative approach, and is pleased the project is continuing through MoTI's capital approvals process.
2. **Ryan Rd sidewalk improvements:** The Connecting Courtenay Transportation Plan recommended new sidewalks on urban area highways, arterial roads, and collector roads that currently have one or no sidewalks and are in areas around schools, in commercial areas, and along transit routes.

Currently, large sections of Ryan Road under MoTI's jurisdiction have no pedestrian sidewalk on the north side of the road, leaving pedestrians to share the shoulder with cyclists. Meanwhile, the sidewalk on the south side of Ryan Road is not wide enough to safely accommodate wheelchairs, strollers, and scooters traveling in both directions.

With a significant number of new and upcoming multi-family and seniors housing in the area around the north side of Ryan Road, this is an issue of increasing concern. The City of Courtenay recently approved a development permit with variances for a 161-unit seniors residence at 925 Braidwood Road that will incorporate a new pedestrian corridor from Braidwood Road to Ryan Road. The City respectfully requests that MoTI consider completing these sidewalk connections for the safety and comfort of pedestrians of all ages and abilities.

3. **Ryan Road widening and multi-use bike/pedestrian path and options for an east/west connector:** The lack of pedestrian and cycling infrastructure on or around Ryan Road has been identified as a major community concern. The Connecting Courtenay Transportation Master Plan highlighted the need for a number of improvements to the Ryan Road corridor, including:
 - Widening Ryan Road hill from 3 to 4 vehicle lanes
 - A multi-use path adjacent to the street along Ryan Road between Back Road and Lerwick Road for pedestrians and cyclists, as well as a pedestrian crossing at Cowichan Avenue, the main entrance to North Island College. Substantial growth has occurred in east Courtenay on or near the Ryan Road corridor since Ryan Road was originally constructed, including the North Island College (NIC) campus serving over 4,000 students. NIC is also planning to construct student housing in the coming years. Other major changes include the 153-bed North Island Hospital Comox Valley completed in 2017, and significant commercial and residential development.
 - A very limited network of continuous east-west roadways in Courtenay means that Ryan Road is simultaneously serving provincial, regional, City-wide and local functions. The extension of Tunner Drive to connect with Highway 19A would provide residents with an alternate route for

local area travel between Back Road and Lerwick Road, south of Ryan Road. It would also form the spine of the pedestrian and cycling route between this area and downtown.

4. Pedestrian crossing on Cliffe Avenue

The Connecting Courtenay Transportation Master Plan recommended new pedestrian crossings of Cliffe Avenue. In particular, Courtenay has identified the need for a crossing on Cliffe Avenue in the area between 19th and 26th Street. This section extends almost 0.8 km, and includes a number of current and anticipated multi-family and commercial developments. A new crossing would also improve accessibility and safety from Cliffe Avenue to Mansfield Drive and the Courtenay Riverway, our community's most popular active transportation corridor.

KEY CONSIDERATIONS:

The City of Courtenay greatly appreciates MoTI's ongoing collaboration on these initiatives. MoTI representatives last presented an update to Courtenay City Council in July 2019.

Highway 19A Bypass

MoTI is working on plans to increase the Highway 19A Bypass from 2 to 4 Lanes between 17th Street and Comox Road, approximately 0.6 km, and to install larger culverts. The City of Courtenay is extremely pleased with the progress on these plans. These improvements will help improve traffic flow along this busy corridor between 17th Street Bridge and Comox Road, in particular traffic flow off the 17th Street Bridge, which has been identified as over-capacity at peak times.

Continuing these improvements an additional 0.9 km to Ryan Road will further improve connectivity and align with City initiatives to mitigate flooding impacts to the adjacent Puntledge Business District, as well as flood overtopping which has resulted in full closures of the Highway 19A Bypass during past major flood events.

Ryan Road Improvements

The City of Courtenay appreciates MoTI's willingness to consider improvements to the heavily used Ryan Road corridor.

The proposed pedestrian crossing at Cowichan Avenue, at the entrance to North Island College, would address safety concerns at this location. Combined with other multi-modal network improvement projects, this crossing would help encourage more people of all ages and abilities to use alternate modes of transportation.

MoTI representatives have advised the City of Courtenay of the significant challenges associated with a proposed multi-use pathway on Ryan Road hill. The City of Courtenay continues to advocate for any pedestrian and cyclist improvements along this major transportation corridor, which represents the main arterial connection between East and West Courtenay. The current lack of multi-modal options is a significant barrier for cyclists, pedestrians, and people with mobility challenges.

Cliffe Avenue Pedestrian Crossing

The proposed pedestrian crossing is part of an overall effort by the City of Courtenay to invest funding and capacity into multi-modal transportation options.

Courtenay has installed new bicycle lanes in various locations throughout the City in recent years, including a new 1.7 km buffered bicycle lane along the Veterans Memorial Parkway between the Old Island Highway and Mission Road completed in August 2020. This Cliffe Avenue crossing would improve options for active transportation in an area that is currently underserved, and has become increasingly challenging for vehicles, cyclists, and pedestrians to navigate due to increased traffic from overall community growth.

As a number of the above projects would serve the wider Comox Valley region, the City of Courtenay is advocating for ongoing discussion between MoTI and municipal partners regarding project cost allocations.



THE CORPORATION OF THE CITY OF COURTENAY

BRIEFING NOTE

To: Ministry of Environment and Climate Change Strategy
From: Courtenay City Council
Date: Thursday, September 17, 2020, 1:20 –1:50 p.m.
Location: 2020 UBCM Virtual Convention
Subject: Adapting Planning, Land Use and Development Practices for Climate Change

ISSUE:

Courtenay is in the process of updating the Official Community Plan (OCP) with a climate friendly lens on future planning, land use and development policies. Council identified the OCP update, climate change mitigation and adaption, air quality, and commitment to the BC Climate Action Charter as top strategic priorities. We are seeking the province's input into Courtenay's OCP review and to explore options to work with the province on shared initiatives and funding opportunities on future projects.

REQUEST:

We are asking the Province to:

- Review and provide input into the City of Courtenay's Official Community Plan update process
- Explore options to work with the City of Courtenay on potential future shared initiatives and funding opportunities

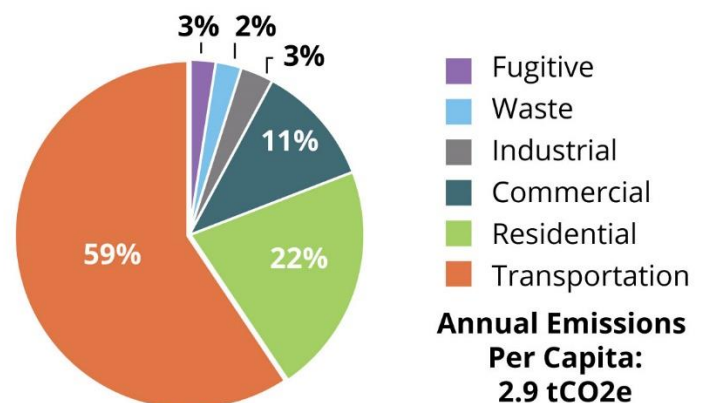
BACKGROUND:

As a coastal community, the City of Courtenay is on the front lines of climate change. With a projected increase of 1.5 degrees Celsius in the Comox Valley by 2050, Courtenay can expect to see more frequent flooding, salinization of agricultural soils due to sea level rise, more summer droughts due to decreased snow pack, and increased wildfire risks.

Courtenay is prioritizing actions that include both mitigation (to reduce greenhouse gas emissions) and adaptation (to prepare for the changes that are coming).

This work will be part of a broader aim to achieve an ambitious Greenhouse Gas (GHG) reduction target: to become a net zero GHG emission community by 2050. Achieving this vision will require sound policies, and the City of Courtenay is working hard to properly identify and respond to emerging policy issues identified through public and stakeholder consultation.

Courtenay Emissions by Sector, 2016



KEY CONSIDERATIONS:

The City of Courtenay has committed to make progress on the objectives of the BC Climate Action Charter and has included this goal in our strategic priorities. Courtenay is also a signatory to the Global Covenant of Mayors for Climate and Energy as a demonstration of our commitment to local climate action.

Transportation is the largest contributor to GHG emissions

Transportation amounts to 59 percent of total annual GHG emissions in Courtenay. Approximately half is a result of personal vehicles, and the remainder from commercial vehicles. Around 85 percent of all trips in Courtenay are by private vehicle. This number is high relative to both B.C. as a whole, and other similar sized communities in the province.

Local ecology offers unique character and the vital services of nature

Natural asset management is a major component of the Official Community Plan update. Our natural assets will be recognized as powerful allies in climate action and essential to citizen quality of life to be protected, reclaimed, and expanded throughout Courtenay. From the scale of regional biodiversity corridors to individual trees, rain gardens and yards, our natural assets will be a visible and celebrated part of Courtenay's identity.

Action on flood mitigation

Over many decades, the natural flow of the Courtenay River has been modified through a combination of privately and publicly-owned dykes, berms, seawalls, and bridge abutments. Responsibility for nearly all of these constructed assets now falls under the City of Courtenay.

Courtenay is developing an action plan for flood mitigation in the downtown core, through a combination of natural assets and the built environment.

Air quality

The impact of wood smoke to local air quality and health is a major concern in our community. Smoke from woodstoves and fireplaces is the most significant source of air pollution in the Comox Valley because of the valley's frequent temperature inversions and calm winds in winter when people are burning wood as their primary source of heat. West Courtenay is an area of particular concern. In 2020, the City of Courtenay adopted new regulations that prohibit the installation of stoves in new construction, and require a building permit to fix or replace an existing wood burning appliance to ensure they meet EPA or CSA standards.

Courtenay is working with the Comox Valley Regional District and other regional jurisdictions on a Wood Stove Reduction Program. In addition, an Airshed Roundtable Project will collaboratively develop and implement a Regional Airshed Protection Strategy.

Single-Use plastics regulations

The City of Courtenay applauds the recent announcement from the Province of BC approving single-use plastics regulations in several local governments, and other measures to either reduce the volume of single-use plastics generated in the province, or remove them from circulation through expanded recycling programs. The potential for greater influence on packaging producers through a province-wide ban on certain products through the CleanBC Plastics Action Plan is encouraging.

OCP update process re-tooled in response to COVID-19

Courtenay has launched a broad public and stakeholder engagement effort for the Official Community Plan update. The City established an OCP Advisory Committee in fall 2019, and public consultation launched in February 2020 at an Ideas Fair, and continues through online surveys and activities. While COVID-19 is limiting options for in-person engagement, the project team has re-tooled their efforts to ensure the community can participate in this important community planning process, with a goal of delivering the plan in 2021. Learn more: www.courtenay.ca/ocpupdate



September 16, 2020

Re: Letter of Request for Support for a Fall/Winter Market Venue

To: Courtenay City Council

The Comox Valley Farmers' Market is looking for support from City Council and staff to help find a semi-permanent space to hold our Fall and Winter markets.

Between October 17, 2020 and April 3, 2021, the Farmers' Market was scheduled to move to the Native Sons Hall for its weekly Saturday Farmers' Market (except for the 2 weeks over the Christmas break). As a result of COVI-19, we are unable to fit in the hall while continuing to implement measures, such as physical distancing, to minimize the risk of COVID-19. Some options that we would like to pursue include closing the parking lot between the Sid Williams Theater and the Native Sons Hall so that the market could expand outdoors using either a series of individual 10'x10' tents or a larger semi-permanent event tent. Another option would be to use the Conference Hall of the Florence Filberg Center and close the lower Native Sons Hall/Upper Florence Filberg Center parking lot to expand outdoors using either a series of individual 10'x10' tents or a larger semi-permanent event tent. To accommodate setup/tear down as well as operating hours of the market we would require the parking lot to be closed between 6:30 AM and 2:00 PM.

I would be happy to appear as a delegation at a Council Meeting or provide additional written details should you require more information or want further discussion.

Sincerely,

Twila Skinner, General Manager

Comox Valley Farmers' Market

THE CORPORATION OF THE CITY OF COURTENAY

BYLAW NO. 2996

The Council of the Corporation of the City of Courtenay in open meeting assembled enacts as follows:

1. This bylaw may be cited for all purposes as **“Official Community Plan Amendment Bylaw No. 2996, 2020”**.
2. That Official Community Plan Bylaw No. 2387, 2005 be amended as follows:
 - a) By changing the land use designation of Lot A, District Lot 236, Comox District, Plan 43411 (2700 Mission Road) from Industrial to Multi Residential as shown in Attachment A.
 - b) That Map #2, Land Use Plan be amended accordingly;
3. This bylaw shall come into effect upon final adoption hereof.

Read a first time this _____ day of _____, 2020

Read a second time this _____ day of _____, 2020

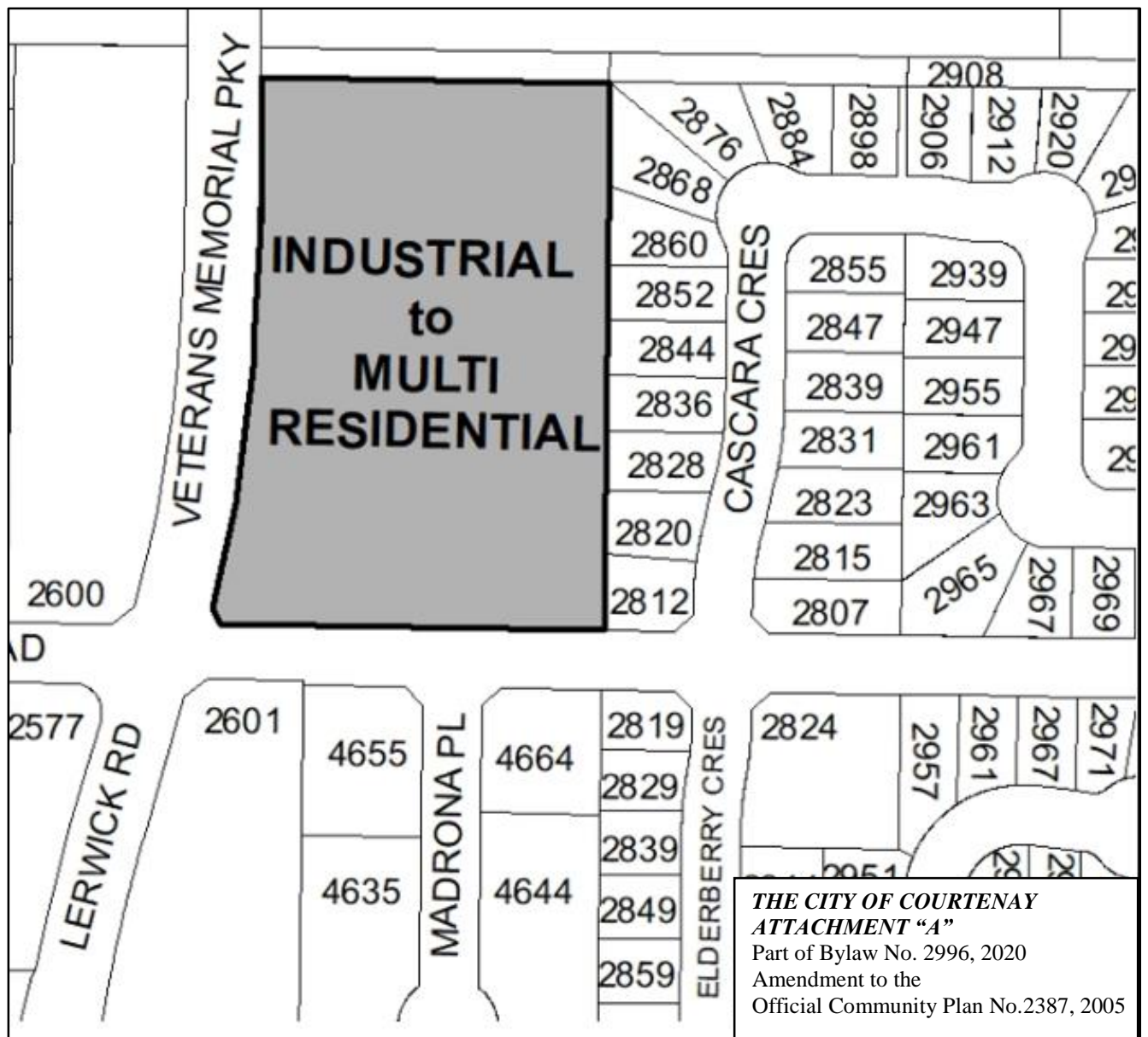
Considered at a Public Hearing this day of , 2020

Read a third time this _____ day of _____, 2020

Finally passed and adopted this day of , 2020

Mayor

Corporate Officer



THE CITY OF COURTENAY
ATTACHMENT "A"
 Part of Bylaw No. 2996, 2020
 Amendment to the
 Official Community Plan No.2387, 2005

THE CORPORATION OF THE CITY OF COURTENAY

BYLAW NO. 2997

A bylaw to amend Zoning Bylaw No. 2500, 2007

The Council of the Corporation of the City of Courtenay in open meeting assembled enacts as follows:

1. This bylaw may be cited for all purposes as “**Zoning Amendment Bylaw No. 2997, 2020**”.
2. That “Zoning Bylaw No. 2500, 2007” be hereby amended as follows:
 - a. by rezoning a portion of Lot A, District Lot 236, Comox District, Plan 43411 (2700 Mission Road) as shown in bold outline on **Attachment A** which is attached hereto and forms part of this bylaw, from Industrial Two Zone (I-2) to Residential Four Zone (R-4);
 - b. by rezoning a portion of Lot A, District Lot 236, Comox District, Plan 43411 (2700 Mission) as shown in bold outline on **Attachment A** which is attached hereto and forms part of this bylaw, from Residential One B Zone (R-1B) to Residential Four Zone (R-4); and
 - c. That Schedule No. 8, Zoning Map be amended accordingly.
3. This bylaw shall come into effect upon final adoption hereof.

Read a first time this _____ day of _____, 2020

Read a second time this _____ day of _____, 2020

Considered at a Public Hearing this day of , 2020

Read a third time this _____ day of _____, 2020

Finally passed and adopted this day of , 2020

Mayor

Corporate Officer

Approved under S.52 (3)(a) of the *Transportation Act*

Tallina McRae, Development Services Officer
Ministry of Transportation and Infrastructure
Vancouver Island District

