

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

**DATE:** August 5, 2014  
**PLACE:** City Hall Council Chambers  
**TIME:** 4:00 p.m.

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**1.00 ADOPTION OF MINUTES**

1. Adopt July 21, 2014 Regular Council meeting minutes

**2.00 INTRODUCTION OF LATE ITEMS**

**3.00 DELEGATIONS**

**4.00 STAFF REPORTS**

Pg #

**(a) Community Services**

**(b) CAO and Legislative Services**

1. CAO to present Workplan Software

**(c) Development Services**

- 1 2. Downtown Land Use Review

- 7 3. G.P. Vanier Park Dedication Bylaw No. 2797

**(d) Financial Services**

- 11 4. 2015 Permissive Property Tax Exemption – C.V. Regional District

**(e) Engineering and Operations**

- 15 5. Multi-Modal Transportation Strategy (Final Report)  
Morrison Hershfield consultants to make presentation

**5.00 EXTERNAL REPORTS AND CORRESPONDENCE FOR INFORMATION**

**6.00 INTERNAL REPORTS AND CORRESPONDENCE FOR INFORMATION**

**7.00 REPORTS/UPDATES FROM COUNCIL MEMBERS INCLUDING REPORTS  
FROM COMMITTEES**

## **8.00 RESOLUTIONS OF COUNCIL**

### **93 1. Councillor Hillian Proposed Resolution re: Crude Oil Tanker Traffic**

*“WHEREAS proposed bitumen export pipelines present unacceptable risk to this region’s maritime based economy, its unique ecosystems, and the sustainable jobs in aquaculture, fisheries, tourism and recreation; and*

*WHEREAS the inevitable spill from the dramatic increase in tanker traffic resulting from these proposed pipelines threatens our social and cultural identification as a coastal community; and*

*WHEREAS exporting raw natural resources reduces the total number of jobs available to citizens in this community who choose to work in the oilfields;*

*THEREFORE BE IT RESOLVED that the City of Courtenay express its opposition to the Bitumen Export Pipeline proposals that would lead to the expansion of oil tanker traffic through B.C.’s coastal waters;*

*AND BE IT FURTHER RESOLVED that the City of Courtenay supports its citizens who are oilfield workers and acknowledges that it is unwise to export an unrefined product at an unsustainable rate thereby reducing the future job opportunities for these workers, and future generations of our residents who may wish to seek employment in the oil fields;*

*AND BE IT FURTHER RESOLVED that the City of Courtenay urge the Provincial and Federal governments to use whatever means are available to stop the expansion of crude oil tanker traffic on our coast, encourage them to develop the oil sands for domestic benefit, encourage them to refine this natural resource in Canada to enhance job creation and tax revenue, and to notify Provincial and Federal government representatives and officials of this resolution.*

### **2. In Camera Meeting**

Notice is hereby given that a Special In-Camera meeting closed to the public will be held at the conclusion of the August 5, 2014 regular Council meeting pursuant to the following sub-section of the *Community Charter*:

- 90 (1) (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.

## **9.00 UNFINISHED BUSINESS**

## **10.00 NOTICE OF MOTION**

## **11.00 NEW BUSINESS**

## **12.00 BYLAWS**

### **For First, Second and Third Reading**

- 95     1. “Park Dedication Bylaw No. 2797, 2014”  
          (Vanier Park Dedication)

### **For Third Reading and Final Adoption**

- 97     1. “Zoning Amendment Bylaw No. 2792, 2014”  
          (to rezone 531 12<sup>th</sup> Street from R-2 to R-2B)
- 99     2. Official Community Plan Amendment Bylaw No. 2794, 2014  
          (To change land use designation at 907 5<sup>th</sup> Street)
- 101    3. Zoning Amendment Bylaw No. 2795, 2014  
          (To rezone the property located at 907 5<sup>th</sup> Street from R-2 to R-4B)

## **13.00 ADJOURNMENT**

<p>Note: there is a public hearing at 5:00 p.m. in relation to “Zoning Amendment Bylaw No. 2796”</p>
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THE CORPORATION OF THE CITY OF COURTENAY

## STAFF REPORT

**To:** Council  
**From:** Chief Administrative Officer  
**Subject:** Downtown Land Use Review

**File No.:** 3360-20-1409  
**Date:** August 5th, 2014

### PURPOSE:

The purpose of this report is for Council to consider amendments to the City of Courtenay Zoning Bylaw No. 2500, 2007 pertaining to the provisions in the Commercial One zone (C-1) and downtown land use regulations in general.

### POLICY ANALYSIS:

Downtown Viability: Civic Options is Council's number 5 strategic priority for 2014.

### CAO RECOMMENDATIONS:

That based on the August 5th 2014 staff report "Downtown Land Use Review," Council approve Option 1 and direct staff to prepare the applicable amendments to the City of Courtenay Zoning Bylaw.

Respectfully submitted,

David Allen, BES, CLGEM, SCLGM  
Chief Administrative Officer

### BACKGROUND:

Land Use planning for the Downtown has been primarily guided by the policies contained within the Official Community Plan. It has followed the strategy of "preserve and protect Downtown Courtenay, as an integral part of the community's social, cultural life, its identity and its economy."

A review of the Downtown land uses was identified in the Council Strategic Priorities Chart adopted in September 2013. Following this direction, staff has reviewed the provisions of the Commercial One Zone (C-1).

The changes that are proposed are a result of staff working with this bylaw on a daily basis, identifying suggestions received from the public and through research of zoning approaches used in other municipalities for the downtown. The proposed amendments follow on the March 2013 development permit fee reduction for façade improvements in the DCBIA.

In February 2012, the City co-ordinated an event with the Council, DCBIA, owners, cultural groups, and organizations interested in the downtown to brainstorm on ideas to assist in the revitalization of the downtown.

With respect to land use/zoning changes, there were a number of suggestions including:

- allow more residential development
- reduce parking ratios
- increase density
- allow work/live
- re-write signage bylaw specifically for the downtown (completed October 2013)

The suggested changes to the zoning bylaw have taken into account the ideas presented at this meeting.

#### **DISCUSSION:**

The table below summarizes the proposed changes which will work towards the desired outcome of encouraging and strengthening the role of the Downtown as the primary business district and the centre for culture, entertainment, government and tourism. The proposed changes will not remove any existing uses so no business will be made non-conforming as a result of the bylaw. With the existing broad range of land uses in the downtown, the amendments are somewhat minor in nature. Two of the more significant ones are removing commercial parking requirements and allowing stand-alone residential uses.

Removing parking requirements for commercial uses within the C-1 zone will provide assistance to existing businesses looking to expand or new businesses considering lease space in the downtown. Where parking needs can't be met, these businesses are required to either contribute to the Special Reserve Fund for the purpose of purchasing public parking or seek a variance. Both of these options come with added costs. With approximately 1600 public or free parking spaces downtown, staff do not believe this change will result in a shortage of parking in the area.

A key to the success of any downtown is encouraging people to go there for their shopping, social and cultural needs. One way City's can assist with this is through strategic investment in public realm improvements and creating a sense of place. From the perspective of land use and zoning the introduction of stand-alone residential uses in the C-1 zone will provide the opportunity for developers to consider the downtown for infill housing projects. Downtown residents will provide a convenient market for retailers and service providers and can assist in adding vitality after regular business hours. Additionally, as highlighted by the Heritage Commission, retaining single family homes for residential use will assist in protecting heritage character that may otherwise be lost through conversion to commercial uses.

Recognizing the limited supply of land available for infill residential downtown and the proximity to existing recreational infrastructure (e.g. Lewis Park, Riverway Trail), staff are also proposing to remove the requirement for useable open space for new residential construction. This is not uncommon for urban residential infill development.

As a small community, the market will ultimately dictate the viability of downtown residential development. The proposed residential land use changes are only the first step in creating the opportunity. Other options that will make both residential and commercial development downtown more attractive for developers include revitalisation tax exemptions, reduced development cost charges, and strategic City investment in downtown infrastructure including streetscape improvements, recreation/park connections and upgraded utility services.

Staff recommend preparing a complete downtown plan that examines and prioritises public realm improvements aimed at supporting revitalisation. This plan will provide guidance on strengthening connections to the surrounding neighbourhoods and outline the character elements that make the City's downtown a unique place. Given the scope of work involved, and limited staff resources, a consultant working with a staff team from Planning, Parks and Engineering may be required.

Bylaw Section	Proposed	Existing
Definitions and C-1 zone	Add a definition for Farmer's Market and permitted use in the C-1 zone.  <i>Means the temporary use of buildings, structures or land for the purpose of selling agricultural products, crafts and liquor and ancillary food concessions and entertainment.</i>	Not currently in bylaw.
C-1 zone	Allow liquor store throughout C-1	Site specific use.
C-1 zone	Add residential as a stand-alone use and add setbacks and lot coverage section for residential uses.	Residential uses are currently only permitted in a mixed use building above a commercial use.
C-1 zone	Re-word item 32 to allow commercial/residential building without restrictions.	Residential uses are currently only permitted in a mixed use building above a commercial use. <b>(8.18.1(32))</b>
C-1 zone	Remove the requirement for useable outdoor space.	Currently 10m <sup>2</sup> per unit for apartments and 15m <sup>2</sup> for townhouse and multi residential units. <b>(8.18.8)</b>
C-1 zone	Remove Taxi Stand from item 31 Transportation Depot. Update definition.  <i>means premises used for the pick-up and discharge of fare paying, intercity and intracity bus, train and taxi passengers and may include vehicle bays and shelters and convenience retail stores.</i>	Currently worded as Transportation Depot and Taxi Stand. <b>(8.18.1(31))</b>  Current definition is outdated.
C-1 zone	Add care facility as a use.	Not currently permitted.
C-1 zone and definitions	Add a definition for <i>cultural facility</i> and replace museum use with cultural facility.  <i>Means a museum, art gallery, library or theatre for the performing arts</i>	Museum is listed as a use but not art gallery or library. <b>(8.18.1(20))</b>
Multiple zones and definitions	Group micro brewing, micro distilling and wine making in a single definition and permitted as a use.  <i>Micro brewing, distilling and UBrew/UVin</i>	Currently only micro brewing limited to 400m <sup>2</sup> and accessory retail sales is permitted. <b>(8.18.1(19))</b>

C-1 zone	Add studio as a permitted.	Currently not permitted.
Parking regulations	Remove requirement for off-street parking for commercial uses in the C-1 zone. 1 space per unit for residential.	Current requirement is to provide parking for commercial uses or pay into a parking reserve fund. <b>(7.1.7(2))</b>
Figure #6	Expand area that 0m setbacks apply	See <b>(8.18.6)</b> and attached map

**FINANCIAL IMPLICATIONS:**

There are no direct financial implications with preparation of the proposed bylaw changes. However, should Council wish to pursue a detailed downtown plan a consultant will likely be required, and budget prepared for approval.

**ADMINISTRATIVE IMPLICATIONS:**

The objective of the proposed amendments is to assist in the redevelopment of the downtown. Additional staff time (approximately 10 hours) will be required to prepare the bylaw and respond to questions from the public and BIA membership.

**STRATEGIC PLAN REFERENCE:**

In the Council Strategic Priorities Chart, the review of Downtown Land Uses is listed as the number five 2014 Council priority, and the number two priority for the Development Services Department.

**OFFICIAL COMMUNITY PLAN REFERENCE:**

Vision:

- a strong downtown
- a role to be the centre of commerce for the Comox Valley

Goals:

Preserve and protect downtown Courtenay as an integrated part of the community's social and cultural life, its identity, and economy.

- encouraging residential development downtown
- encourage higher density development and housing in the downtown
- promote a mix of multi-residential and commercial uses
- add the following uses:
  - craft and industry with wholesale and retail uses
  - beer/wine making facility
  - studios (artists, performing arts)
  - small scale manufacturing

**REGIONAL GROWTH STRATEGY REFERENCE:**

- support for intensification and compact growth
- supports Town Centres for regional employment centre
- recognises Courtenay as the largest urban centre and should support the highest densities in the Comox Valley

**CITIZEN/PUBLIC ENGAGEMENT:**

Any changes endorsed by Council will be available on the City website for public review and the bylaw amendment will be advertised in a local newspaper prior to the public hearing. Additionally, staff will forward a copy of the bylaw directly to the DCBIA for comment prior to consideration of 1<sup>st</sup> and 2<sup>nd</sup> readings.

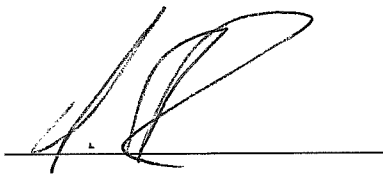
**OPTIONS:**

**OPTION 1:** Direct staff to prepare amendments to the City of Courtenay Zoning Bylaw No. 2500, 2007 as outlined in this report; **(Recommended)**

**OPTION 2:** Direct staff to implement some of the recommendations or provide further information;

**OPTION 3:** Direct staff to not proceed.

Prepared by:

A handwritten signature in black ink, appearing to be 'I. Buck', written over a horizontal line.

Ian Buck, MCIP, RPP  
Manager of Planning

A handwritten signature in black ink, appearing to be 'P. Crawford', written over a horizontal line.

Peter Crawford, MCIP, RPP  
Director of Development Services







THE CORPORATION OF THE CITY OF COURTENAY

## STAFF REPORT

To: Council

File No.: 0910-20

From: Chief Administrative Officer

Date: August 5, 2014

Subject: G.P. Vanier Secondary School Land – Park Dedication Bylaw No. 2797, 2014

### PURPOSE:

The purpose of this report is for Council to consider the approval of a bylaw for the dedication of a 5.29 hectare parcel of land as 'Park' being a part of the G.P. Vanier Secondary School property located on Vanier Drive.

### CAO RECOMMENDATIONS:

That based on the August 5, 2014 Staff Report "G.P. Vanier Secondary School Land – Park Dedication Bylaw No. 2797, 2014", Council consider proceeding to first, second and third reading.

Respectfully submitted,

David Allen, BES, CLGEM, SCLGM  
Chief Administrative Officer

### BACKGROUND:

On March 3, 2014, Council received and approved the 'Park Dedication Agreement' with the School District to transfer part of the G. P. Vanier Secondary School property located on Vanier Drive to the City as Park.

To complete the transaction for this 5.29 hectare parcel the City is required to pass a bylaw dedicating this property as 'Park'.

The park parcel has been surveyed, and following adoption of a park dedication bylaw for the subject lands, a plan of subdivision can be deposited with Land Titles for registration.

### DISCUSSION:

Approval of the 'Park Dedication Agreement' requires the City to pass a bylaw to dedicate Lot 1, Sections 18 & 45, Comox District, Plan EPP38543 as 'Park'.

This will allow the completion of the terms of the agreement and the City will hold title to the land as Park pursuant to *Section 30* of the *Community Charter*.

The effect of passing the Parks Dedication Bylaw is to further protect the lands as a Park pursuant to *Section 107* of the *Land District Title Act*. The park dedication could then only be removed with the approval of the electors.

**FINANCIAL IMPLICATIONS:**

The City will acquire very significant lands for only the cost of land conveyance. Further management and monitoring will be addressed in the preparation and adoption of a Management Plan by Council.

**ADMINISTRATIVE IMPLICATIONS:**

Lands would become part of overall parks program and included in the City's public land inventory. The preparation of the bylaw has taken approximately 3 hours of staff time.

**STRATEGIC PLAN REFERENCE:**

Not referenced.

**OFFICIAL COMMUNITY PLAN REFERENCE:**

The vision for the City of Courtenay is for a City that is unique and different from other communities. It is to become the most liveable community in the province. It can be expressed as having:

- an expanding parks, natural areas and greenways system
- a strategy to lead in environmental protection

**REGIONAL GROWTH STRATEGY REFERENCE:**

No references.

**CITIZEN/PUBLIC ENGAGEMENT:**

During the rezoning application in 2006/2007 there was significant public engagement regarding future land use of this property. Development was strongly opposed. There will be a public process developed for the preparation of the Management Plan.

A joint announcement from the School District and the City was released in March to transfer the subject lands and to create a park.

**OPTIONS:**

OPTION 1: That Council approve the Park Dedication Bylaw (recommended).

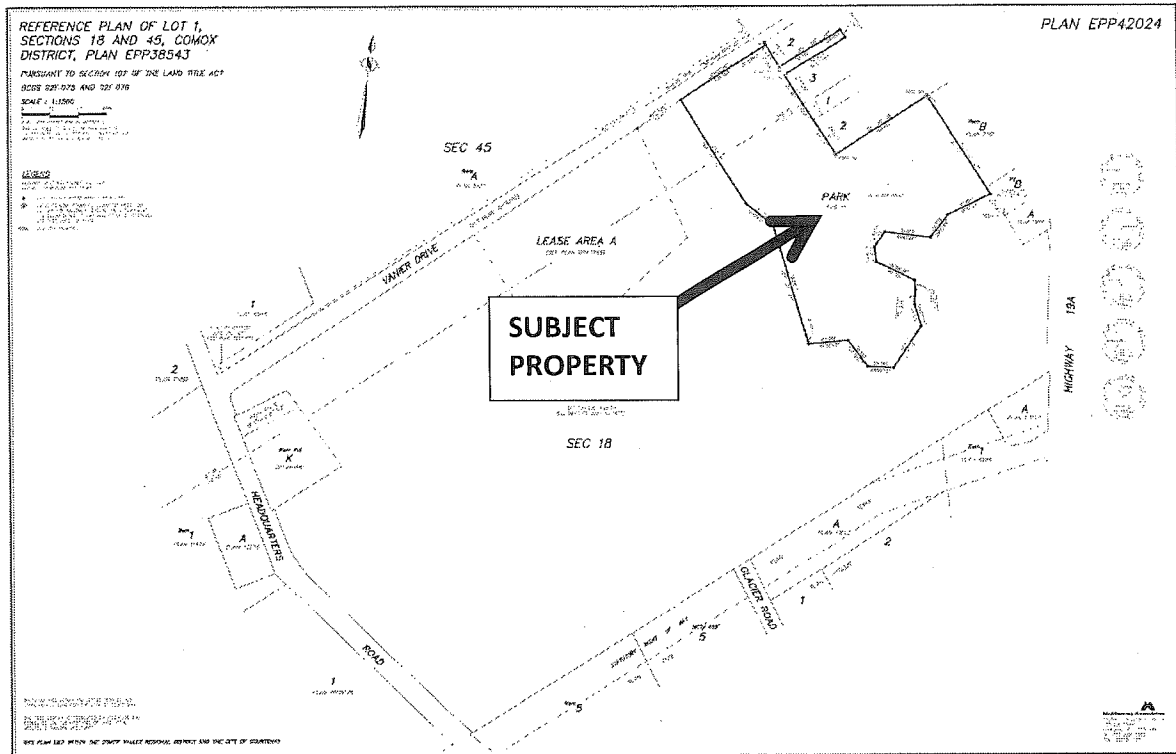
OPTION 2: That Council does not accept the terms of the agreement from the School District to dedicate a 5.29 hectare parcel as park.

OPTION 3: That Council direct Staff to research this topic further and report back to Council.

Prepared by:

  
\_\_\_\_\_  
Peter Crawford, MCIP, RPP  
Director of Development Services

Attachment "A"







THE CORPORATION OF THE CITY OF COURTENAY

## STAFF REPORT

**To:** Mayor and Council

**File No.:** 1960-20 [2015]

**From:** Chief Administrative Officer

**Date:** August 5, 2014

**Subject:** 2015 Permissive Property Tax Exemption-Comox Valley Regional District

### PURPOSE:

To provide Council with further information on 2015 permissive property tax exemption requests for properties leased by the Comox Valley Regional District.

### POLICY ANALYSIS:

Section 224 of the *Community Charter* provides Council with the authority to exempt certain properties from property taxation. Policy 1960.01 (Rev #1) – Permissive Property Tax Exemption was prepared in accordance with Section 224 of the *Community Charter* and approved by Council in May 2013.

### EXECUTIVE SUMMARY:

The permissive tax exemption bylaws are considered by Council on an annual basis and must be finally adopted before October 31<sup>st</sup> each year in order to take effect for the following taxation year. Following Council consideration at their meeting of July 21, 2014 in regards to the recommended exemptions for 2015, further information specific to the impact of exemptions for properties leased by the Comox Valley Regional District was requested and is provided in this report.

### C.A.O. RECOMMENDATIONS:

That based on the August 5, 2014 staff report "2015 Permissive Property Tax Exemption – Comox Valley Regional District", Council receive the staff report for information and further discussion, and DECIDE on one of the following options:

- OPTION 1: That permissive exemption from property taxation of 40% for properties leased by the Comox Valley Regional District be included in the 2015 permissive exemption annual bylaw.
- OPTION 2: That permissive exemption from property taxation for properties leased by the Comox Valley Regional District be denied.
- OPTION 3: That Council decide on alternate permissive exemption value for properties leased by the Comox Valley Regional District.

Respectfully submitted,

David Allen, BES, CLGEM, SCLGM  
Chief Administrative Officer

## BACKGROUND:

The Comox Valley Regional District currently leases premises on Comox Road in Courtenay. As the property is not directly owned by the CVRD, it does not receive a statutory exemption from property taxes. Instead, the mechanism available for tax exemption of these properties is vested with Council via approval of a permissive exemption from taxation.

In the previous two years, the CVRD has received a 40% tax exemption on two properties leased as office and meeting space on Comox Road. For 2015, The CVRD has applied to receive an exemption on a third property located at 656 Comox Road which is leased for additional parking for their office and meeting space. Section 224 (2)(b) of the *Community Charter* allows Council to grant a property tax exemption for properties, "owned or held by a .... regional district..."

On July 21, 2014, Council reviewed the recommended property tax exemptions for 2015, and directed staff to provide further information on the cost impact to Courtenay taxpayers in regards to permissive tax exemptions for properties leased by the CVRD.

## DISCUSSION:

In the July 21, 2014 report to Council, staff had recommended a permissive exemption of 40% of the value of the property taxes for lands leased by the Comox Valley Regional District. Given that the City also must pay its percentage share of CVRD expenses, which would include the remaining net property taxes payable of 60%, Council requested further information in regards to the net financial impact to the Courtenay taxpayers.

The estimate of the net tax load to the Courtenay taxpayer is summarized in the following table, and substantiates that the tax load for Courtenay taxpayers increases when a permissive exemption from taxation is applied to properties leased by the CVRD. While there is an argument that one level of government should not tax another, the increased tax load for taxpayers to the benefit of other local governments and electoral areas within the City must also be given due consideration.

Both the *Local Government Act* and the *Community Charter* provide language which prevents the application of a "Statutory Exemption" for tax exemption where a Regional District leases land within a municipality, and leave the decision on exemption of these lands to the municipal Council.

TABLE 1: Estimated Property Tax Impact on the Courtenay Taxpayer, where a 40% Permissive Tax Exemption for properties leased by the Comox Valley Regional District is given:

<b>Tax Load Impact - Courtenay</b>	<b><u>At No</u> <u>Exemption</u></b>	<b><u>At 40%</u> <u>Exemption</u></b>
(1) Exemption tax value shifted to remaining taxable properties	\$ -	\$ 22,797
(2) Share of CVRD Requisition	\$ 21,658	\$ 12,995
<b>Net Estimated Tax Load</b>	<b>\$ 21,658</b>	<b>\$ 35,792</b>
<b>Tax Load Increase with the Provision of an Exemption</b>		<b>\$ 14,134</b>

**FINANCIAL IMPLICATIONS:**

A provision of a tax exemption for properties leased by the CVRD generally increases the tax load for the property taxpayer within the City boundaries, and decreases the tax load for Areas A, B, C, Comox and Cumberland.

**ADMINISTRATIVE IMPLICATIONS:**

Preparation of the annual tax exemption bylaws for consideration by Council is an annual work task undertaken by staff in the Financial Services Department.

Subsequent to Council approval of the above recommended property tax exemptions, next steps include preparation of the required bylaws and providing them to Council for passage of three readings, arranging for the statutory advertising of the proposed bylaws, returning the bylaws to Council for final adoption, preparation of letters of notification to the applicants, and finally, forwarding the bylaws to the BC Assessment Authority no later than October 31, 2014.

**STRATEGIC PLAN REFERENCE:**

Not applicable

**OFFICIAL COMMUNITY PLAN REFERENCE:**

Not applicable

**REGIONAL GROWTH STRATEGY REFERENCE:**

Not applicable

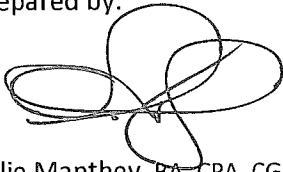
**CITIZEN/PUBLIC ENGAGEMENT:**

Pursuant to Section 227 of the *Community Charter*, statutory notice of the proposed permissive exemption bylaws must be published for two consecutive weeks prior to final adoption.

**OPTIONS:**

- OPTION 1: That permissive exemption from property taxation at a level of 40%, for properties leased by the Comox Valley Regional District, be included in the 2015 permissive exemption annual bylaw.
- OPTION 2: That permissive exemption from property taxation for properties leased by the Comox Valley Regional District be denied.
- OPTION 3: That Council decide on alternate permissive exemption value for properties leased by the Comox Valley Regional District.

Prepared by:



Tillie Manthey, BA, CPA, CGA

Director, Financial Services/Deputy CAO

Attachment: 2015 Estimated Property Taxes – CVRD Leased Premises, Calculation worksheet



# City of Courtenay

## 2014 Tax Rates

### 2015 - Estimated Property Taxes - CVRD Leased Properties

Calculation of Amounts based on 2014 Assessments and 2014 Rates

Class 6

City	Other Auth.	Total
10.7201	10.9203	21.6404

							Estimated 2015 Taxes		
Roll #	Registered Owner	Civic Address	Use of Property	2014 Assessed Value	Excluded - not used for CVRD purposes	Net Assessment eligible for Exemption	City	Other Authorities	2015 Est Tax Levy
1464.100	Mutsy Holdings Ltd	550 Comox Rd	Meeting Space Occupy: 4617 sq ft of 8306 sq ft bldg (56%)	1,424,400	626,736	797,664	8,551	8,711	17,262
1465.000	Mutsy Holdings Ltd	600 Comox Rd	Office Space: Occupy 100%	1,836,000	0	1,836,000	19,682	20,050	39,732
1467.000	George's Food Bar Ltd	656 Comox Rd	Parking: Occupy 100%	360,000	0	360,000	3,859	3,931	7,791
<b>Total</b>				3,260,400	626,736	2,633,664	<b>\$ 28,233</b>	<b>\$ 28,760</b>	<b>\$ 56,994</b>

### Value of Recommended 2015 Tax Exemption

Exempt %	City Taxes	Other Taxes	Total
40%	\$ 11,293	\$ 11,504	\$ 22,797

### City- Requisition Share of CVRD Property Taxes

Courtenay share of each service varies, but is generally 38% to 40%

		Value of 40 % Exemption	Share of CVRD Requisition		Total Taxes
			City (38%)	Other RD Members (62%)	
Share of the CVRD Property taxes:	no exemption	\$ -	\$ 21,658	\$ 35,336	\$ 56,994
	40% exempt	\$ 22,797	\$ 12,995	\$ 21,202	\$ 56,994

### Tax Load Impact - Courtenay

(1) Exemption tax value shifted to remaining taxable properties

(2) Share of CVRD Requisition

Net Estimated Tax Load

Increase

No Exemption	40% Exemption
\$ -	\$ 22,797
\$ 21,658	\$ 12,995
<b>\$ 21,658</b>	<b>\$ 35,792</b>
	<b><u>\$ 14,134</u></b>



THE CORPORATION OF THE CITY OF COURTENAY

## STAFF REPORT

**To:** Council

**File No.:** 8620-01

**From:** Chief Administrative Officer

**Date:** August 5, 2014

**Subject:** Presentation of the City of Courtenay Multi-Modal Transportation Strategy (Final Report) and Complete Streets Pilot Project Evaluation (Technical Memo)

### PURPOSE:

The purpose of this staff report is to present to Council the final version of "The City of Courtenay's 25 Year Vision for Multi-Modal Transportation" (report). An outcome, and Council strategic priority, relating to this document is a Complete Streets Pilot Project. Staff will also present the list of projects considered for this pilot and the evaluation process undertaken to narrow down potential options for Council's consideration.

### POLICY ANALYSIS:

The Complete Street Pilot Project is Council's number 4 strategic priority for 2014, and is intended to be informed by the City's 25 Year Vision for Multi-Modal Transportation which focuses on the opportunity to use other modes of travel such as walking, cycling and riding transit.

Key stakeholder and public engagement have been undertaken, resulting in three key areas for improvement:

- Complete Streets
- Capacity Improvements (on the road network)
- Active Public Realms

### CAO RECOMMENDATIONS:

That based on the August 5<sup>th</sup> 2014 staff report on the City of Courtenay Multi-Modal Transportation Study and Complete Streets Pilot Project, Council approves OPTION 1 to adopt the report entitled: "City of Courtenay 25 Year Vision for Multi-Modal Transportation"; and

That Council direct staff to provide a further report examining the financial implications and estimated schedule to deliver a Complete Streets pilot project for review and Council approval.

Respectfully submitted,

David Allen, BES, CLGEM, SCLGM  
Chief Administrative Officer

## **BACKGROUND:**

In July of 2012, the City retained Morrison Hershfield to prepare the Transportation and Land Use Planning Master Plan, now entitled "City of Courtenay - 25 Year Vision for Multi-Modal Transportation". The plan was initiated to provide the City with a framework for the transportation network and to develop a blueprint informing the City on how to meet multi-modal transportation needs over the next twenty-five years.

Existing City policies, studies and the Council's strategic plan have formed the foundation for the vision upon which the document is built. Numerous City documents have been previously completed providing support and guidance with respect to the future of transportation in the City of Courtenay. This vision reflects upon and harmonizes with the previous documents to provide clear direction moving forward. The key documents referenced in this study are: *City of Courtenay OCP*, *Regional Growth Strategy, 2005*, *Courtenay Transportation Study*, *Courtenay River - Third Bridge Crossing Conceptual Options Study*, *City of Courtenay Council Strategic Plan*, *The Comox Valley Sustainability Strategy*, *Comox Valley Cycling Plan* and *Road Assessment Study*.

The report illustrates a vision developed through key stakeholder and public engagement for meeting multi-modal transportation needs over the next twenty-five years and is supported by strategic policy documents. City policy supports a departure from past transportation planning that traditionally provided for vehicle-centric environments, to multi-modal and community inclusive solutions. Survey results from the engagement process showed that the public is generally satisfied with personal vehicle travel but there is a level of dissatisfaction with the opportunity to use other modes of travel such as walking, cycling and riding transit.

Key stakeholder and public engagement has included two open houses which presented the draft vision and solicited input through surveys, two stakeholder workshops were undertaken to present the draft vision and solicit input, as well as two online public surveys that in total received more than eight hundred responses.

The three "Big Moves" for the City's future transportation network were concluded from this report:

- Complete Streets
- Capacity Improvements (on the road network)
- Active Public Realms

In understanding the implications of this paradigm shift, Council has identified a strategic priority for undertaking a Complete Streets pilot project. In order for staff to support this goal, staff engaged Morrison Hershfield's expertise in March of this year to develop an evaluation framework and to complete an analysis of several options to support Council in the determination of a project. Included in Schedule A of this report is a technical memorandum and associated appendices for Council's consideration.

An initial list of fifteen projects was developed in consultation with City departments (all senior management and other staff members in Engineering, Planning, and Public Works) and an invitation to interest groups including the Accessibility Committee, School District 71 and the Cycling Coalition to provide any streets of priority based on their respective focus.

## **DISCUSSION:**

Since the last staff report presented in May of 2013, staff has been working with Morrison Hershfield on documenting the network modelling results, finalizing the toolkits presented in the appendices of the report and minor text edits.

The goal of Morrison Hershfield's report is to provide the City with a new Transportation Strategy that will inform the City's road and underground linear assets in the future. It supports how the road network can be designed to accommodate all users through more sidewalk connections, integration of bike lanes, opportunities to expand greenways and support transit and vehicle links. This surface layout influences the location of the storm network, sewer and water pipes, as well as gas, hydro and telecommunication utilities below the road. The completion of this strategy is timely, as staff is undertaking a review of the City's engineering standards and specifications with the outcome of updating our typical road cross-sections. There is currently an opportunity to integrate a multi-modal road cross-section based on this strategy and Council's direction as part of this review.

This Strategy can also influence future planning decisions with respect to creation of "nodes" (i.e. commercial, activity, residential or other) that consider transportation connectivity as a priority early in the process in a form that extends beyond the typical capacity for vehicle flow, or in how the character of a new neighbourhood is developed to prioritize other non-vehicle modes of transportation. Some of this work is already happening today with the infill development in the Old Orchard area and the links these new residents will have to Downtown and recreational destinations without the need for a car.

The key element to this strategy is that it provides staff with the foundation from which to work in addressing long term goals up to 2020 within the Official Community Plan for greenhouse gas emission reduction and modal split for walking, cycling and transit. It provides staff with concepts of how our road networks can change through the implementation of "Complete Streets" that include consideration for these alternate modes.

Subsequent to completing the Transportation Strategy, Morrison Hershfield put the ideas therein to the test and developed a complete streets analysis framework for evaluating projects for a pilot. An initial screening matrix of criteria filtered the list of suggested projects from fifteen to something more manageable for a subsequent detailed review. With six projects ranking at the top, a second matrix of questions have been drilled down into more detail on the benefits these potential sites would have in being selected for this pilot project. Ranking at the top of the list (from 1 to 3) are:

1. Fitzgerald Avenue (5<sup>th</sup> Street to Cumberland Road/8<sup>th</sup> Street)
2. 5<sup>th</sup> Street (Fitzgerald Avenue to Menzies Avenue)
3. Old Island Highway, (5<sup>th</sup> Street Bridge to Headquarters Road)

At the August 5<sup>th</sup> 2014 Council meeting Jennifer Armstrong and Bruce Beames of Morrison Hershfield are presenting the final Transportation Strategy report, and reviewing their work on the Complete Streets analysis and respond to any of Council's questions.

Staff is seeking further direction from Council on how to proceed with the Complete Streets Pilot project and are recommending that Council adopt the report entitled: *"City of Courtenay, 25 Year Vision for Multi-Modal transportation."*

## **FINANCIAL IMPLICATIONS:**

The Complete Streets Evaluation Memorandum identifies order of magnitude cost estimates associated with undertaking each of the top six project streets. Based on Council decision to further pursue a project, staff will review the impacts the project has on the City's current budget.

Funds may need to be reallocated to accommodate the design of this pilot project in 2014 as none have been set aside in the current budget. It is recommended that construction of the pilot project be deferred to 2015 for the appropriate funds to be allocated in that budget process and to take advantage of the best potential pricing early in the new year and favourable weather in the next construction season.

## **ADMINISTRATIVE IMPLICATIONS: (*work plan, etc.*)**

The Engineering staff work plan includes time assigned to undertake the Complete Streets Pilot Project to this point. Once Council has determined a project is to proceed to design, staff time will have to be allocated to support this project. A project of this magnitude will require approximately 2 to 8 hours per week until completion. Another project may need to be deferred to 2015 accommodate this staff time allocation.

## **STRATEGIC PLAN REFERENCE:**

2013/2014 Council Strategic Priority # 4: Complete Streets Pilot

2012-2014 Council Strategic Plan

Vision 2: A progressive, diverse and sustainable city.

Goal 1: Ensure infrastructure is sustainable.

Objective c) Complete an inventory and assessment of City roads, buildings, and utilities, and report on works required.

Goal 2: Provide proactive leadership for growth management.

Objective c) Ensure all infrastructure planning studies are current.

Vision 4: An active community with cultural and recreational opportunities

Goal 3: Promote healthy lifestyles.

Objective a) Develop a robust cycling infrastructure with a skeleton network to access all City within 3 years.

Objective b) Reduce traffic congestion and delays and support traffic calming.

Objective c) Develop plans to become one of Canada's "most bikeable cities".

## **OFFICIAL COMMUNITY PLAN REFERENCE: (*may include sustainability*)**

There are several references in the OCP relevant to the Transportation Strategy and Complete Streets Pilot project undertaking including those for Climate Action (i.e. greenhouse gas reduction) and modal split targets for transportation (section 5.2).

## **REGIONAL GROWTH STRATEGY REFERENCE:**

The City's Transportation Strategy reflects goal four in the RGS: "*Develop an accessible, efficient, multi-modal transportation network that connects Core settlement Areas to designated Town Centres and links the Comox Valley to neighbouring communities and agencies.*"

### **CITIZEN/PUBLIC ENGAGEMENT:**

As described above, two public information sessions were undertaken for this strategy (October 2012 and May 2013) as well as two key stakeholder workshops with special interest groups, the CVRD and the Town of Comox as well as two online surveys.

The Complete Streets Pilot project solicited input from Council, various departmental staff, the Accessibility Committee, the Cycling Coalition and School District 71 in developing the initial list of 15 streets to be evaluated.

### **OPTIONS:**

**OPTION 1:** That Council adopt the report entitled: "City of Courtenay 25 Year Vision for Multi-Modal Transportation"; and

That Council direct staff to provide a further report examining the financial implications and estimated schedule to deliver a Complete Streets pilot project for review and Council approval.

**OPTION 2:** That Council adopt the report entitled: "City of Courtenay 25 Year Vision for Multi-Modal Transportation"; and

That Council direct staff to conduct further public engagement in the form of an online survey to obtain feedback on the top six complete streets pilot projects and return this information for Council's consideration by the end of September.

**OPTION 3:** That Council adopt the report entitled: "City of Courtenay 25 Year Vision for Multi-Modal Transportation" and no further action is required by staff on the Complete Streets pilot project.

Prepared by:



Lesley Hatch, P.Eng.  
Senior Manager of Engineering

# MEMORANDUM



MORRISON HERSHFIELD

TO:	Lesley Hatch, P.Eng., City of Courtenay	ACTION BY:	
FROM:	Morrison Hershfield Ltd.	FOR INFO OF:	
PLEASE RESPOND BY:		PROJECT No.:	5124118.01
RE:	Complete Streets Pilot Project Evaluation	DATE:	July 29, 2014

## Introduction

The City of Courtenay Multi-Modal Transportation Strategy provides a 25-year vision for developing a more balanced transportation system. Modes such as walking, cycling, and transit are recognized in the Strategy not only for their environmental benefits, but also health, equity, and social outcomes. In support of these modes, the Strategy recommends adopting a Complete Streets policy for Courtenay. Such a policy will confirm the City's commitment to designing roads for all users in an efficient, safe, and accessible way.

In 2013, City senior staff and Council completed a Strategic Planning exercise to identify priority actions moving forward. As part of this exercise, the implementation of a Complete Streets pilot project was identified as a Council strategic priority for 2014. To determine the most appropriate location for such a pilot project, Morrison Hershfield (MH) was asked to assess and compare various corridors, prepare opinions of probable cost, and present the information to City Council. This memo summarizes the approach taken by MH in completing the analysis, and sets out recommendations for pilot project implementation.

## Setting the Scene – Why carry out a pilot project? What makes a good pilot project?

The Complete Streets movement is in its infancy in Courtenay. At present, there is mixed support for the concept, which is not unexpected given the unknowns involved in such an undertaking. It is understood that moving forward with any process that deviates from current standards produces some risk, and therefore it is desirable to provide demonstrable success before Complete Streets are adopted on a larger scale.

In cases where there are still questions to be answered, pilot projects can help facilitate success and provide a number of benefits, allowing a municipality to:

- Assess before and after impacts to confirm merit
- Compare predicted costs with actual costs (capital and operating)
- Build consensus and broaden support
- Support strategic goals or policies
- Raise the profile of a particular issue and attract community partners or support

However, not just any project makes an appropriate pilot project. A pilot project must strike an important balance between being not too large, and not too small, not too onerous, and not too easy, in order to provide results that are meaningful, impactful, and replicable. Therefore, our review process was intended to select the most appropriate corridor for a Complete Streets *pilot project*, rather than simply the most appropriate corridor for Complete Streets.

In developing the evaluation framework, it was recognized that an effective pilot project should achieve the following:



- Provide significant improvement over status quo for active transportation users
- Serve a significant number of beneficiaries
- Support other City initiatives such as downtown revitalization
- Consider both current and future (planned) development patterns
- Minimize the number of contentious elements required for implementation (i.e. removal of on-street parking, property acquisition)
- Raise the profile of Complete Streets within the community

These 'guiding principles' are reflected in the evaluation process, as well as the development of potential cross-sections for the candidate corridors.

### Identification of Candidate Corridors

Fifteen candidate projects were identified by the City, drawing on feedback from a number of sources, including the recently completed Transportation Strategy, City staff, the Accessibility Committee, the Cycling Coalition, council members, and the school board's HASTE program. In addition, road corridors that were included in the 2014 capital budget were considered, since roadwork will be imminently underway on these corridors. A map illustrating the candidate corridors is shown in Figure 1 below.

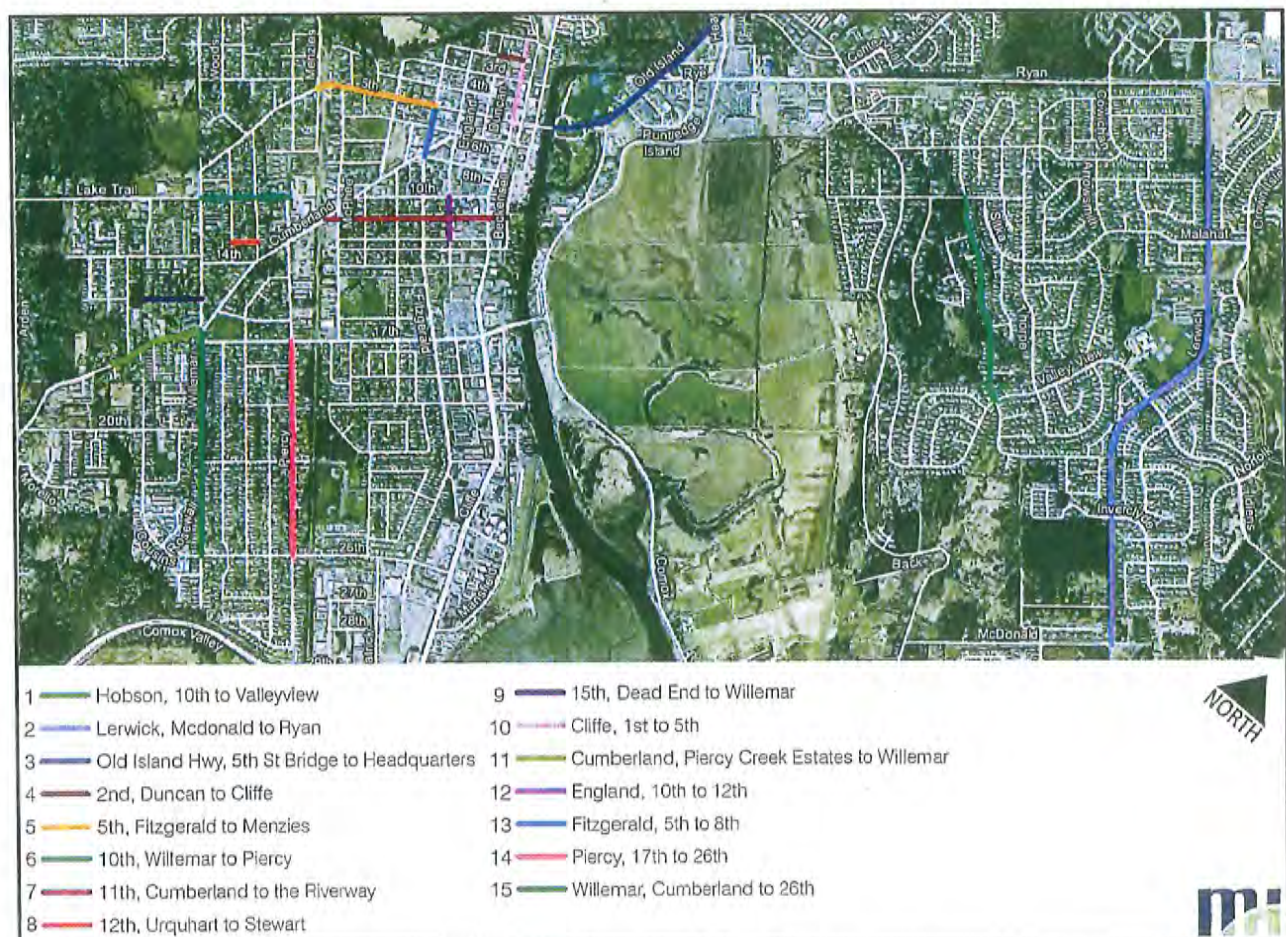


Figure 1 – Candidate Corridors Assessed as part of the Prioritization Process



A number of the corridors included in Figure 1 are identified as priority Complete Streets projects in the Transportation Strategy. These include Fitzgerald Avenue, Willemar Avenue, Lerwick Road, and the Old Island Highway commercial area near Ryan Road. Although 5<sup>th</sup> Street (east of Fitzgerald Avenue), Cliffe Avenue (south of 5<sup>th</sup> Street) and Ryan Road are also identified as priority Complete Streets projects in the Transportation Strategy, they were not considered strong candidates for an initial pilot project, and were therefore not evaluated as part of the current assignment.

### Ranking of Candidate Corridors

Once candidate projects were identified, a two-step approach was employed to rank and prioritize projects. Since the projects varied widely in terms of suitability, an initial screening was carried out to eliminate options which failed to meet the guiding principles discussed above. A more detailed assessment was then conducted for the remaining short-listed alternatives, including the preparation of high-level opinions of probable cost. From this assessment, project rankings were determined for presentation to City Council.

### Phase I – Initial Project Screening

A literature review was carried out to examine how other municipalities have approached project prioritization. While there were few examples specifically for complete streets projects, many mode-specific plans (i.e. Cycling / Pedestrian Master Plans) provide information on route selection and comparison of alternatives. In addition, some Complete Streets Design Guidelines include implementation sections which speak to the project initiation process, providing additional examples of how priorities can be determined.

Based on the key principles emerging from the literature review, as well as the principles articulated in the City of Courtenay Transportation Strategy, an evaluation framework was created to score the projects based on a number of criteria. These criteria were selected to capture the potential *benefits* of the proposed projects, as well as key *success factors*. At this stage of evaluation, project cost and feasibility were not considered, as all of the projects were felt to be viable, with options to address any challenges that may exist.

Given the scope of the assignment, the initial project screening relied primarily on information available from City reports (such as the Official Community Plan), on-line transit maps, Google Streetview, and similar sources. Some of the criteria rely on qualitative measures or require a subjective determination of the score assigned to each corridor (for example, the importance of the corridor from an active transportation perspective or its potential to act as a showcase project). While every effort was made to assign appropriate project scores based on professional judgment, it is recognized that different opinions may exist. For this reason, wherever possible, evaluation criteria were structured to be measurable and fact-based (i.e. number of transit routes using the corridor, presence of sidewalks). In all cases, the scoring is transparent and traceable.

In developing the framework, the weighting (or importance) of the various evaluation criteria was established by varying the maximum number of points awarded for each criterion. In total, the maximum possible score is 37.5 points; the higher the score, the greater the potential benefit of retrofitting the corridor as a complete street. The weighting and individual scores were reviewed by the City's engineering department prior to further site-based investigations taking place.

To structure the evaluation, the evaluation criteria were grouped into a number of categories, as described below:



- **Demand** – The first set of criteria attempts to provide some sense of how many people will benefit from the complete streets project, including both existing and future users of the corridor, as well as business/property owners who may benefit from road improvements. The **road classification** is used as proxy measure of the project influence area, with improvements to higher-order facilities serving both adjacent residents, as well as the larger community. **Proximity to major traffic generators** (institutional sites, recreational facilities, etc.) is also considered, given the level of travel activity associated with such sites (which would benefit from complete streets improvements) and potential to encourage modal shift.

Complete Streets also support downtown revitalization and redevelopment initiatives by creating attractive public spaces that promote street-level activity. To capture these benefits, the framework also considers the **ability of the project to attract residents and visitors downtown**, and the **potential for (re)development** activity along the corridor.

To be successful, it is important to select a pilot project site which will achieve a high level of walking and cycling demand, benefiting existing users and attracting new users to the corridor. The importance of demand is reflected in the weighting of this category, which accounts for up to 17 of the 37.5 maximum available points (or about 45% of the total evaluation score).

- **Transit** – While any street can be a Complete Street, corridors with transit service are particularly well-suited to complete streets improvements. Transit service tends to generate increased pedestrian traffic as people walk to and from transit stops, increasing the number of people who will benefit from investment in pedestrian infrastructure. In turn, improvements to the walking environment and the provision of high-quality, accessible transit stops with amenities such as benches and shelters help to increase transit activity. To account for such benefits, the evaluation framework assigns points to each corridor based on the **number of transit routes** running along it.
- **Walking** – One of the primary objectives of Complete Streets is to improve and enhance the pedestrian environment. Towards this end, corridors were reviewed for sidewalks and pedestrians amenities, and scored based on the **potential to improve pedestrian facilities** as appropriate for the particular road class / roadside environment.
- **Cycling** – From a cycling perspective, **network connectivity** is critically important. As a result, the framework considers to what extent the corridor connects with other cycling facilities. The **quality of the cycling facilities along the corridor**, and the potential for improvement, is another key evaluation criterion. Finally, points are assigned for **routes that were identified in the 2010 Comox Valley Cycling Plan**. Since development of the Cycling Plan included public and stakeholder consultation, the identified routes provide a good indication of cycling desire lines and areas with high cycling demand.
- **Success Factors** – In addition to selecting a corridor that is likely to be well-used and offers opportunity for improvement, other factors will also contribute to the overall success of the project. The framework considers **whether the project is identified in the 2014 Capital Plan** (which provides an opportunity to 'piggy-back' on planned road work), **whether the project was identified in the new Transportation Strategy document** (providing an additional layer of support for the project), and the **potential for the corridor to act as a showcase** within the community, based on the visibility of the corridor within the City. A final measure was used to account for the **importance of the project in creating a noticeable improvement** in travel conditions for walking and cycling modes by considering the length of the segment in relation to its relative importance to the active transportation network.



Using the evaluation framework described above, projects were scored against each of the criteria. The final project rankings are shown in Table 1. The full evaluation matrix and associated project scores are provided in Appendix A.

Table 1 – Ranking of Corridors based on Phase I Evaluation

Rank	Project	Score (out of 37.5)
1	Lerwick Road, McDonald Road to Ryan Road	28
2	Old Island Highway, 5 <sup>th</sup> Street Bridge to Headquarters Road	27
3	Fitzgerald Avenue, 5 <sup>th</sup> Street to Cumberland Road	22
4	Cliffe Avenue, 1 <sup>st</sup> Street to 5 <sup>th</sup> Street	21
5	Willemar Avenue, Cumberland Road to 26 <sup>th</sup> Street	20.4
6	5 <sup>th</sup> Street, Menzies Avenue to Fitzgerald Avenue	19.5
7	11 <sup>th</sup> Street, Cumberland Road to the Riverway	18.5
8	Cumberland Road, Piercy Creek Estates to Willemar Avenue	17.6
9	10 <sup>th</sup> Street, Willemar Avenue to Piercy Avenue	16
10	Piercy Avenue, 17 <sup>th</sup> Street to 26 <sup>th</sup> Street	11.4
11	2 <sup>nd</sup> Street, Duncan Avenue to Cliffe Avenue	9
12	England Avenue, 10 <sup>th</sup> Street to 12 <sup>th</sup> Street	6.5
13	Hobson Avenue, 10 <sup>th</sup> Street to Valleyview Road	5.8
14	15 <sup>th</sup> Street, Dead end to Willemar Avenue	5.0
15	12 <sup>th</sup> Street, Urquhart Avenue to Stewart Avenue	2.5

While the original intention was to select the top 6 corridors to carry forward to the more detailed evaluation stage, it was difficult to decisively rule out the 11<sup>th</sup> Street project given the close points distribution and potential merit of the project. Therefore, the threshold was set at 18 points, and 7 projects were carried forward for more detailed evaluation.

Prior to commencing the next stage of analysis, the results of the initial evaluation were reviewed by the Morrison Hershfield project team. Based on this review, it was agreed that although Lerwick was the highest scoring project at the screening stage, it would not be an appropriate pilot project due to a number of feasibility concerns:

- **Corridor length** – Unlike the other candidate projects, the Lerwick corridor is extremely long, and conditions vary along its length (i.e. some sections have sidewalks and paved shoulders, and some have no pedestrian or cycling treatments). The considerable length of the corridor creates challenges in terms of project planning, and may also be an issue from an affordability perspective (given that the project cost is directly related to the project length).
- **Design continuity** – If a section of Lerwick was chosen as the pilot project, it could set in place a precedent for development of the remainder of the corridor to a similar style or standard. Without a consistent vision for the corridor, any changes to adjacent sections will appear to



have been constructed piecemeal. As a result, it is important to analyze the corridor as a whole to ensure a cohesive travel experience; breaking the corridor into sections for the purpose of this pilot project is not recommended.

- **Potential for 'throw-away' costs** – The northern section of Lerwick (from Malahat to Ryan) is identified for road widening in the Transportation Strategy within the short-term horizon. If road widening is implemented after the construction of the pilot project, many of the Complete Streets improvements may need to be reconstructed.
- **Need for additional study** – Some of the Complete Streets treatments that may be appropriate for Lerwick include constructing a multi-use path adjacent to the road, or converting a traffic lane to cycling facilities. Such treatments will require detailed feasibility assessments which are beyond the scope of the current assignment, and may delay implementation of the pilot project.
- **Public acceptance** – As noted above, one of the options for implementing Complete Streets on Lerwick is to convert a traffic lane to cycling facilities. Since such a change is likely to be controversial, it is best considered outside the scope of a pilot project.

Although Lerwick is considered to be an excellent candidate for Complete Streets given the current condition of the corridor, proximity of major traffic generators, and opportunity to provide improved pedestrian and cycling facilities (which connect with facilities in Comox), it is not considered to be an ideal pilot project at this time. Accordingly, Lerwick was excluded from the Phase II evaluation process. However, as resurfacing or widening projects are initiated on Lerwick, opportunities to improve the walking and cycling environment should be carefully considered with a view to providing a continuous, high quality multi-modal corridor along its entire length.

### Phase II – Detailed Evaluation Framework

Having established a set of 6 candidate projects as strong contenders for the Complete Streets pilot project, a second stage of evaluation was undertaken to provide a more fine-grained analysis of project benefits and costs, with an emphasis on feasibility and success factors. In general, this stage of the evaluation focused on:

- Selecting a win-win project (maximizing benefits, minimizing costs)
- Selecting a project with minimal technical challenges and high feasibility
- Selecting a project where the new cross-section would provide a documented improvement over the status quo
- Preference for quantitative over qualitative evaluation measures

Before the detailed evaluation framework was applied, several additional steps were carried out to provide important information for the assessment process:

- **Site Visit** – A site visit was carried out on June 25, 2014 by Bruce Beames (Morrison Hershfield) to review on-site conditions along each of the six short-listed corridors and meet with Lesley Hatch (City of Courtenay). It was a cloudless day that provided a good opportunity to observe road and sidewalk conditions, public transit infrastructure, landscape features, pedestrian activity, and general traffic operations. Pedestrian and cyclist movements were observed during the visit including the potential for modal conflicts within the existing road and sidewalk network. Some of the specific issues noted on site included the lack of sidewalks (Old Island Highway north of Ryan Road), integration of cyclists and vehicular traffic (5th Street



Bridge crossing), road crossing challenges (length of pedestrian crosswalk across Fitzgerald Street) and the presence of mixed land uses (11th Street with both residential and commercial land uses along its length).

- **Development of Future Cross Sections** – Designing Complete Streets requires re-thinking the various elements that are included in the road cross-section. A cross-section determines how a road looks (road form) based on a specific arrangement of core elements. How these elements are combined together significantly impact how a road works (road function). In order to provide some means of evaluating future conditions, a first cut was taken at developing potential future cross-sections for each of the short-listed corridors. Typical cross sections were developed specifically to be used in evaluating future conditions within the evaluation framework. The sections are considered to give a reasonable balance between a) the varying road corridor and pavement widths and location of private fencing and b) requirements for typical bike lanes, parking lanes, travelled lanes, bus stops and landscape features. Given the importance of parking within the community, an effort was made to retain as much existing parking as possible; however, should parking not be required (based on the results of a parking study), the space could be re-allocated to allow for more generous landscaping, sidewalk widths, etc.

The cross sections have endeavored to follow the typical sections contained in the City of Courtenay Multi-Modal Transportation Strategy, but due to variations in road corridor widths, it was not always possible to match all lane and sidewalk dimensions. It is important to note that these cross-sections are only provided as samples of how the street may be retrofitted. For the purposes of such a high level review process, it is impossible to consider all of the possible different conditions which occur along the length of the route, so the most representative (or constrained) section was typically selected. A conceptual design would be needed to provide a more accurate assessment of future conditions, particularly for costing purposes. Refer to Appendix B for more details on cross-section development, and the sample cross-sections.

- **Opinions of Probable Cost** – High level Opinions of Probable Cost were prepared to support the analysis of each project. These Opinions relied on a number of assumptions which are provided in more detail in Appendix C, along with the cost sheets for each project.

The detailed evaluation framework builds on the Phase I evaluation, and was informed by an understanding of local conditions derived from the site visit and staff feedback. Additional data was also provided to Morrison Hershfield to support the analysis, including GIS data, collision records, and unit construction rates.

As with the Phase I evaluation, evaluation criteria were divided into several categories, as described below:

- **Demand** – For this second stage, demand continues to be an important project selection criterion. The **estimated daily traffic volume using the corridor** is used as a proxy measure of the importance of the corridor from a mobility perspective. The higher the daily traffic, the greater the visibility of the project and the greater the potential demand for alternative travel modes. The second demand measure identifies **whether the project is located within or close to the downtown**. This measure was retained from the Phase I evaluation given the value placed on supporting downtown revitalization within the community. The third measure evaluated explores the **presence of major generators**, drawing on the inputs from the Phase I



evaluation. For this stage, a smaller number of generators was considered, focusing on major employment, recreational, and institutional uses.<sup>1</sup>

Finally, two new demand measures were developed to quantify the impacts of adjacent land use. First, a **residential property score** is used as a proxy for the number of residents living within walking distance of the corridor, as measured by a 300m buffer around the project limits.<sup>2</sup> The score is calculated as the number of residential land parcels (as defined in the OCP) falling within or partially within the 300m buffer, with multi-residential parcels weighted by 3. The second measure provides an indication of the **mix of land uses** within 300m of the corridor, based on the land use diversity 'entropy score' for the corridor<sup>3</sup>. The entropy score ranges from 0 to a maximum of 1, with 1 representing an area with an equal mix of residential, commercial, and institutional/industrial land use types.

- **Safety** – The potential for Complete Streets to improve safety is often a key driving factor behind many projects. To assess the *need* for safety improvements along each corridor, 5 years of ICBC collision data was obtained from the City of Courtenay and analyzed by summing the number of collisions along each corridor by collision type. Based on the results of this analysis, two evaluation measures were developed: **the total vehicle collision rate per million vehicle kilometers travelled**<sup>4</sup>, and **the proportion of total collisions involving pedestrians and cyclists**<sup>5</sup>. To calculate the collision rate, daily traffic volumes were estimated using the traffic model developed for the Transportation Strategy (and assuming 10% of daily traffic occurs during the afternoon peak hour). The use of a collision rate normalizes the number of collisions accounting for exposure and corridor length. To calculate the proportion of collisions involving pedestrians and cyclists, collisions were reviewed to assess not only whether a pedestrian or cyclist was hit/injured in the collision, but also whether they were indirectly involved in the collision (for example, cases where a car stopped or slowed for a pedestrian in a crosswalk and was subsequently rear-ended). These latter collisions are important to consider, since they have the potential to result in pedestrian or cyclist injuries. They also provide important information about how well midblock or intersection crosswalks are working, the visibility of active transportation users, and opportunities for improvement.

Since one of the primary objectives of Complete Streets is to improve safety for the most vulnerable road users (including children and the elderly), **additional points were allocated to roads that are used by children on the way to school, or that are expected to be heavily used by seniors** (based on the presence of retirement homes or seniors centres adjacent to the corridor).

The final evaluation measure under safety examines **the potential for the project to calm traffic, reduce pedestrian crossing distances, and improve visibility**. While narrower travel lanes may also help to control vehicle speeds, lane width was not considered in the evaluation framework since all projects involve at least some degree of lane narrowing.

<sup>1</sup> Other major generators such as schools and retirement homes are considered elsewhere in the evaluation framework.

<sup>2</sup> Most people are willing to walk 5 minutes to access daily destinations, which corresponds to a walking distance of approximately 400m. A slightly smaller buffer of 300m was selected for calculation purposes, recognizing that residents will travel some distance along the corridor itself to reach their destination.

<sup>3</sup> Represented by  $(\sum_k P_k \ln(P_k)) / (-\ln(N))$  where  $k$  is the category of land use,  $P$  is the proportion of land area devoted to a specific land use, and  $N$  is the number of land use categories (in this case 3).

<sup>4</sup> Calculated as: 
$$\frac{\text{Total number of collisions over 5 years} \times 10^6}{\text{Annual Average Daily Traffic} \times \text{Section Length (km)} \times 365 \text{ days per year} \times 5 \text{ years}}$$

<sup>5</sup> Calculated as: 
$$\frac{\text{Number of collisions involving pedestrians and cyclists}}{\text{Total number of collisions}} \times 100\%$$



- **Transit** – As with the Phase I evaluation, points were awarded for the **number of bus routes operating along the corridor**, reflecting the potential number of people benefiting from the improvements. In addition, points were assigned based on **the quality of the existing transit stops along the corridor and the opportunity to incorporate improvements** into the proposed design. Many of the existing transit stops lack amenities such as benches or shelters, while some lack basic infrastructure such as sidewalks and curb cuts. A Complete Streets retrofit would provide the opportunity to add such amenities.
- **Walking** – The assessment of improvements to the pedestrian environment focused primarily on infrastructure components. It is important to note that many other factors influence the attractiveness of walking along a given corridor. Some of these factors (such as the type of land use and the presence of major destinations) are at least partially addressed in the demand category, however for the sake of simplicity, others (such as perceptions of personal security or urban design considerations) are not.

Three criteria are evaluated under the walking category. The first provides an indication of the potential **opportunity to provide missing sidewalk segments** where there is currently a gap in the sidewalk network which can be rectified through the Complete Streets pilot project. The second measure considers **the degree of sidewalk improvement**, assigning points for sidewalk widening and the provision of new sidewalks based on the extent of the improvement for the most critical segment of the corridor. The final measure focuses on the quality of the walking environment and degree of separation from traffic. Points are awarded to projects which involve **new landscaped boulevards, or boulevards that have been widened significantly** compared to existing conditions.

- **Cycling** – To evaluate the potential benefit of the proposed cycling improvements, a standardized approach was adopted for measuring the quality of the cycling environment – the **Cycling Level of Traffic Stress (LTS)**.<sup>6</sup> The concept is based on the premise that a true cycling network consists of a “set of streets and paths that do not exceed people’s tolerance for traffic stress” (MTI, p. 1). Since the majority of people are willing to tolerate only a small degree of traffic stress, the report concludes that cycling network planners should be focused on improving facilities to make them more comfortable, particularly for those who are not necessarily confident cyclists. The approach assumes that the stress of a route is determined by its most stressful link. For simplicity’s sake, and because the intersection treatments may be highly variable for the selected project, only a midblock analysis was carried out. To assign points to the corridors, the change in comfort level (LTS) was evaluated based on before and after conditions. Extra points were assigned to corridors that resulted in an LTS score of 2, the threshold at which all types of adult cyclists are expected to be comfortable using the route. Copies of the LTS evaluations are provided in Appendix D.

In addition to the level of cycling traffic stress, two further measures were included in the evaluation framework which are not accounted for by the LTS methodology, but that were felt to be relevant to the attractiveness / comfort of the cycling route – **pavement condition** and the **presence of steep hills**. In addition, points were awarded for **connectivity to adjacent cycling facilities**, given the importance of creating a continuous network for cycling activity.

<sup>6</sup> The four categories are: LTS 1 – the level most children can tolerate, LTS 2 – the level tolerated by the mainstream adult population, LTS 3 – the level tolerated by the ‘enthused and confident’ cyclist group, LTS 4 – the level tolerated by the ‘strong and fearless’ cyclist group. For more details on the methodology, see the Mineta Transportation Institute report, ‘Low Stress Bicycling and Network Connectivity’ (MTI Report 11-19).



- **Green Infrastructure** – While much of the discussion on Complete Streets focuses on the users of the corridor, the inclusion of green infrastructure is also an important element of a Complete Street with the potential to reduce stormwater infrastructure requirements and improve the aesthetic quality of the street. Accordingly, the evaluation framework includes two criteria related to green infrastructure. The first criterion considers whether **the project requires the removal of mature trees or green space**, which addresses any loss in existing greenery as a result of Complete Streets implementation. The second criterion considers the **addition of new green infrastructure elements** such as rain gardens or bioswales. These features have capital cost implications, but may also provide some opportunity to reduce ongoing maintenance costs depending on the specific planting and design choices. A related criterion is provided under the walking category to address boulevard width and landscaping treatments and their influence on the pedestrian environment.
- **Feasibility Factors** – The feasibility of a project depends on a number of factors, including cost and the level of public support for the undertaking. To account for these various factors, a number of criteria were included in the evaluation framework. Measures brought forward from the Phase I evaluation include the **potential for the project to act as a “showcase”** and improve the visibility of alternative modes, and **inclusion of the project in the 2014 Capital Plan**. In addition, the estimated project cost was considered, including both the **cost per km**, as well as the **total project cost** as a measure of affordability (the latter being weighted more heavily). Potentially contentious project impacts were also examined, including **impacts to parking and landscaping features** maintained by adjacent residents.

To account for the relative importance of the above factors, weights were assigned to each evaluation category. By modifying these weights, the sensitivity of the highest ranking alternative can be assessed. For example, should the City be particularly concerned with cost and feasibility issues, this category can be weighted more heavily. For the purposes of the Phase II evaluation, the following weighting scheme was applied:

- Demand – 15%
- Safety – 15%
- Transit – 5%
- Walking – 20%
- Cycling – 20%
- Green Infrastructure – 5%
- Feasibility – 20%

Within each category, the importance of the various evaluation criteria are reflected in the maximum number of points that can be achieved relative to the other criteria in the category. To assign category weights, the category scores are first converted to a score out of 100%, and then multiplied by the appropriate weight. The total project score is then calculated as the sum of the weighted category scores.

Using the evaluation framework described above, each project was scored against the various evaluation criteria and an overall weighted aggregate score was calculated. From the results of this process, the highest scoring project was Fitzgerald Avenue, with a score of 58%, followed closely by 5<sup>th</sup> Street, with a score of 55%. The final scores for each of the short-listed projects are summarized in Table 2, with full evaluation results included in Appendix E.



Table 2 – Ranking of Corridors based on Phase II Detailed Evaluation

Rank	Project	Score (out of 100%)
1	<b>Fitzgerald Avenue, 5<sup>th</sup> Street to Cumberland Road</b>	<b>58%</b>
2	5 <sup>th</sup> Street, Menzies Avenue to Fitzgerald Avenue	55%
3	Old Island Highway, 5 <sup>th</sup> Street Bridge to Headquarters Road	48%
4	11 <sup>th</sup> Street, Cumberland Road to the Riverway	47%
5	Willemar Avenue, Cumberland Road to 26 <sup>th</sup> Street	41%
6	Cliffe Avenue, 1 <sup>st</sup> Street to 5 <sup>th</sup> Street	29%

The results provided above are based on a specific weighting scheme which reflects the importance of the various evaluation categories as determined by the project team. To assess the sensitivity of the results, other weighting schemes were tested. From these tests, it was found that Fitzgerald and 5th Street consistently rank as the top two candidates for a Complete Streets pilot project based on the range of scenarios tested (with one or two exceptions).

### Overview of Top-Ranked Corridors

Based on the results of the evaluation framework, both 5<sup>th</sup> Street and Fitzgerald Avenue are considered top candidates for the Complete Streets pilot project. The relatively similar scores for the two projects suggests that they are both good choices, and worth considering for Complete Streets improvements.

A high level cost estimate for the two projects is provided in Table 3. The cost estimates include a 50% contingency and 18% allowance for engineering fees. In the case of Fitzgerald, a nominal allowance has also been made for landscaped boulevards (as shown in the typical sections), which would be dependent on the level of landscaping improvements envisaged by the City. Additional cost details are provided in Appendix C.

Table 3 – Cost Estimate for Top-Ranked Projects

Road	Fitzgerald Avenue	5th Street
Length (m)	225	530
<b>Total Construction Cost</b>	<b>\$510,000</b>	<b>\$980,000</b>
Cost per km	\$2,267,000	\$1,850,000

A brief description of the assumed cross-sections for the two projects (as used for costing and evaluation purposes) is provided below.

#### Fitzgerald Avenue

The Complete Streets retrofit envisioned for Fitzgerald would include the addition of cycling lanes, wider sidewalks and a landscaped boulevard. While the existing traffic lanes would be narrowed, no loss of traffic or parking lanes is required, which results in a high feasibility score for the project. The assumed cross-sections are shown in the before and after configuration in Figure 2. At intersections, it is envisioned that intersection bulb-outs would be provided to reduce the crossing distance for pedestrians and improve sight lines.



While the corridor length is short (225m), the conversion is expected to provide a relatively important connection from an active transportation perspective, connecting to newly installed cycling lanes south of the project limits on Fitzgerald (from 8th Street to 21<sup>st</sup> Street) to create a continuous north-south route leading to the downtown. The project scored particularly well in the transit and cycling categories because of the opportunity to significantly improve the quality / type of facilities and amenities.

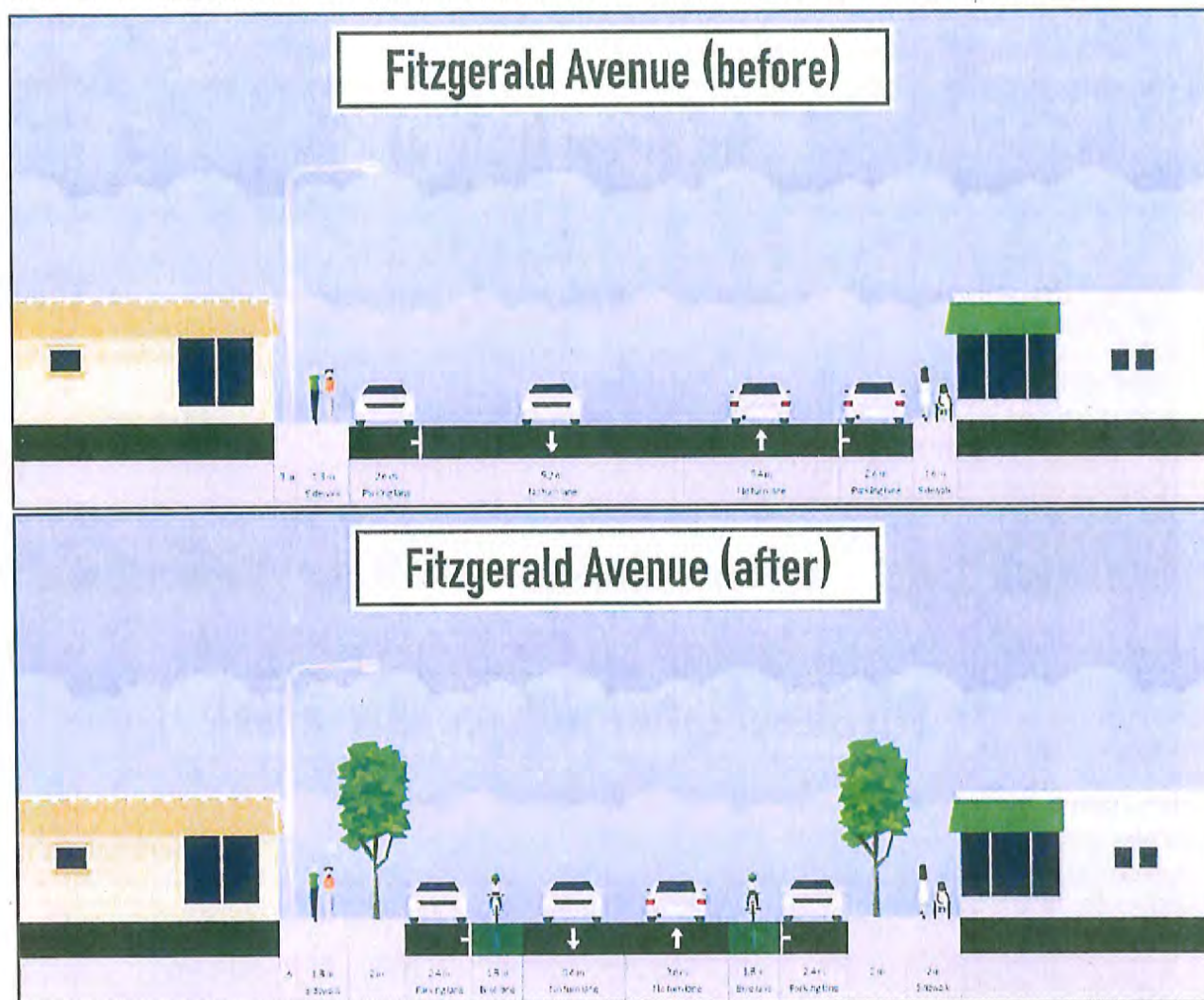


Figure 2 – Existing & Proposed Cross-sections for Fitzgerald Avenue

### 5th Street

It is anticipated that the conversion of 5<sup>th</sup> Street would include the addition of cycling lanes, wider sidewalks, and bulb-outs at midblock crossings. 5<sup>th</sup> Street, similar to Fitzgerald, has very wide existing lanes, with enough pavement width to accommodate cycling lanes simply by narrowing the existing travel lanes (refer to Figure 3). At hydro poles, it is envisioned that rain garden bulb-outs could be provided (refer to Figure 4). In these locations, it would be difficult to maintain the desired sidewalk width without burying the hydro poles. Given the cost of such utility work, the proposed cross-section shows bulb-outs at these locations adjacent to a narrower than desirable (but still acceptable) 1.5m



sidewalk. The bulb-outs will provide a buffer from traffic and support attractive landscaping features, but will require the removal of on-street parking (approximately 16 locations along the corridor). Similar to Fitzgerald, it has also been assumed that bulb-outs would be provided at intersection and midblock crossings to reduce the crossing distance for pedestrians and improve sight lines.

5<sup>th</sup> Street scored well in the green infrastructure category since it provides so many rain gardens along the corridor. It also scored relatively high in the safety category, since, relative to the other projects, a higher percentage of collisions along the corridor involve pedestrians or cyclists.

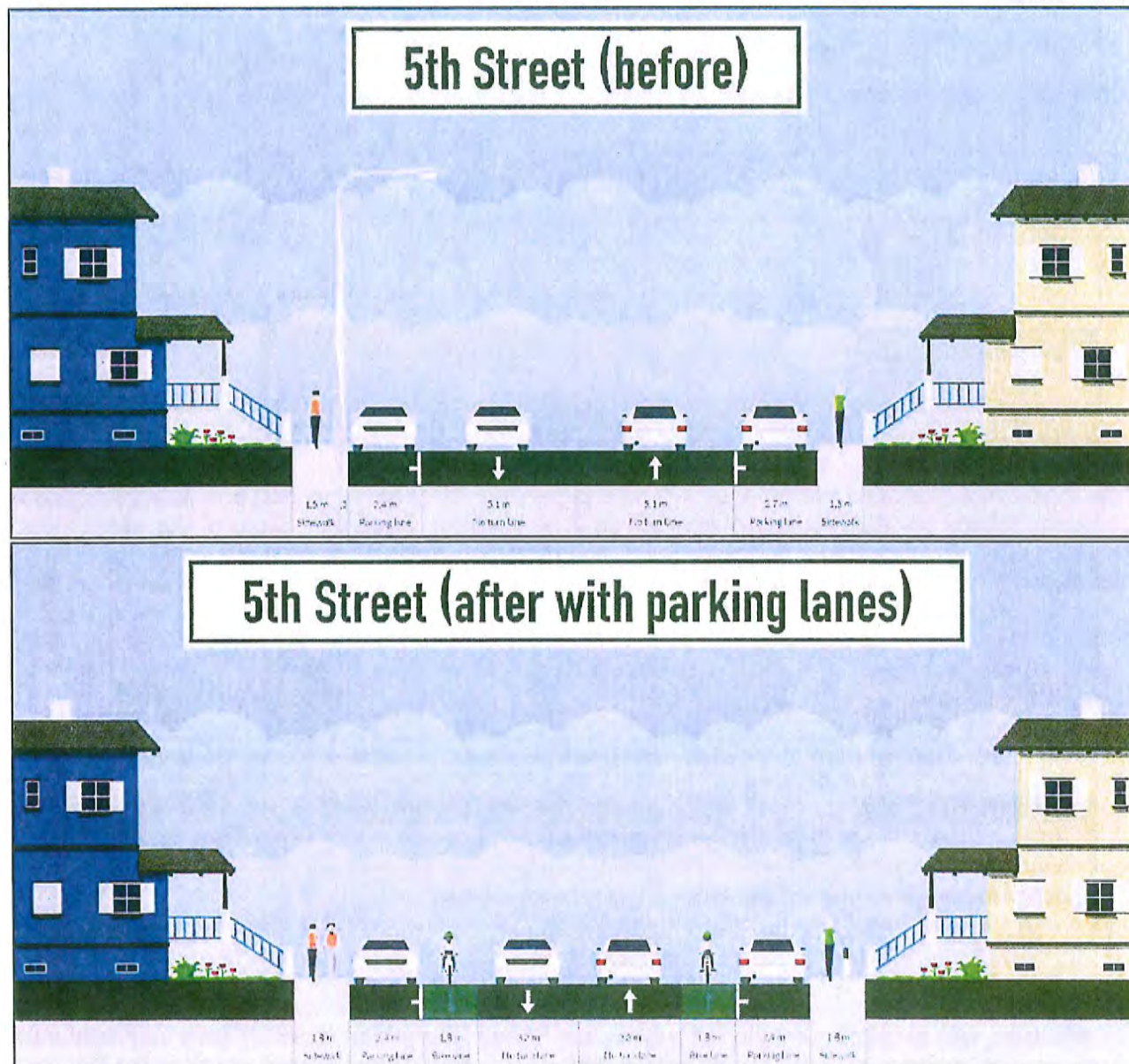


Figure 3 – Existing & Proposed Cross-sections for 5<sup>th</sup> Street

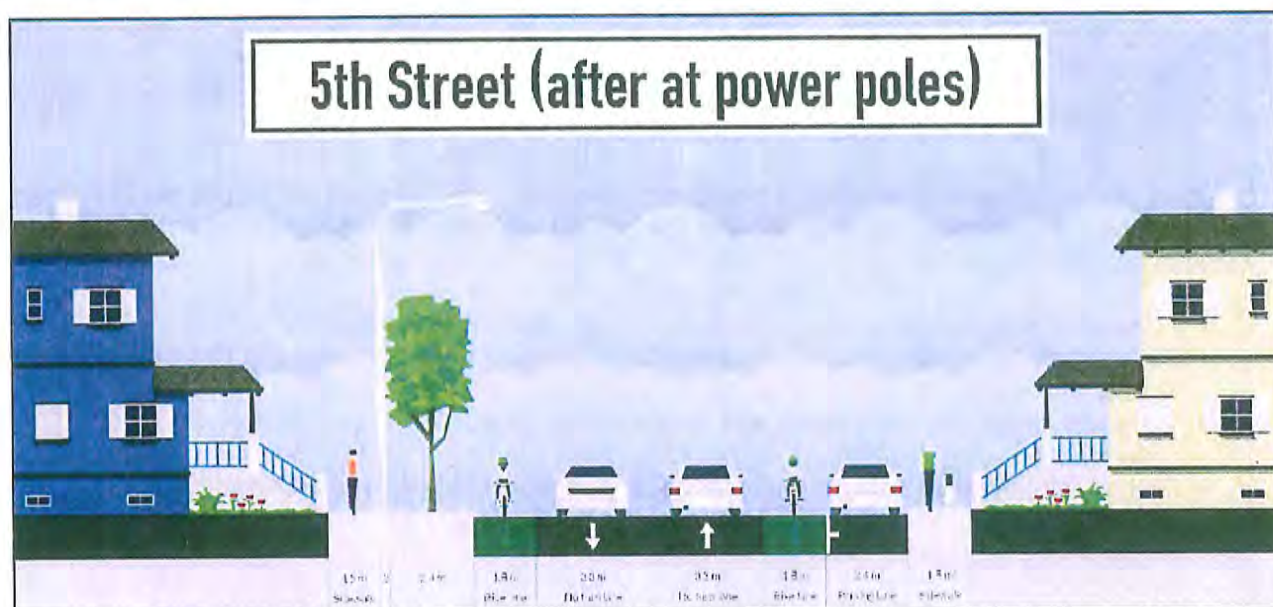


Figure 4 – Proposed Cross-section for 5<sup>th</sup> Street at Hydro Poles

## Next Steps

### Project Implementation

This memo has described the process that was undertaken for evaluating and prioritizing candidate Complete Streets corridors for implementation as a pilot project. Given the nature of the assignment, the review was conducted at a fairly high level, and more work remains to be done in moving forward with project implementation. In particular, it is important to note that no attempt has been made as part of the current study to determine the *optimal* cross-section for a given corridor. While a Complete Streets cross-section was developed for each of the short-listed projects for the purposes of evaluating project benefits and costs, other cross-section options may be possible, and should be explored prior to finalizing the design.

Once the preferred pilot project corridor has been confirmed, the following tasks will be required:

- Assess the need for additional infrastructure improvements within the road corridor (i.e. intersection improvements, underground utilities, etc.)
- Prepare a conceptual design
- Prepare construction cost estimates
- Explore opportunities for funding partners via gas tax rebates, Building Canada Funds, etc.

### Monitoring

In conjunction with the implementation of a Complete Streets pilot project, the City should endeavor to closely monitor the results of the project with a 'Before and After' study. Such a study would typically include the following:

- Collecting and interpreting data as it relates to vehicular speed, collision frequency and severity, and traffic demand for all travel modes



- Assessing community opinions through public surveys
- Identifying and investigating site-specific issues as they relate to the accommodation of utilities and infrastructure maintenance
- Evaluating any increased costs associated with maintenance / operations for the renewed corridor

Carrying out meaningful monitoring is particularly integral to the success of a pilot project since it provides the opportunity to carefully assess the project outcome. In this particular case, monitoring would enable the City to:

- Confirm the merit and value of pursuing Complete Streets in the future
- Improve the ability to prioritize future candidate projects based on observed benefits for incurred costs
- Improve upon City operations and maintenance practices to support the Complete Streets movement
- Adjust future capital work programs and future operational funding requirements

#### Development of a Complete Streets Network

The evaluation exercise has confirmed that many of the corridors evaluated as part of this assignment would be good candidates for Complete Streets. Since the evaluation was limited to 15 corridors, it is anticipated that other streets in Courtenay may also be suitable candidates for Complete Streets.

While the current assignment focused on the identification of an appropriate Complete Streets pilot project, the overall success of Complete Streets requires an integrated network of corridors which allow for seamless multi-modal travel within the city. Moving forward, a strategy is needed to guide the achievement of Complete Streets. Such a strategy would identify a process for identifying and evaluating candidate Complete Streets projects, and would set out policies for implementation. In developing this strategy, the evaluation framework described in this memo may provide an appropriate tool for ranking and prioritizing Complete Street projects.

## **Appendix A: Initial Project Screening Evaluation Framework**

City of Courtenay Complete Streets Pilot Project - Screening Assessment  
Updated July 29, 2014

[illegible]

## **Appendix B: Existing & Future Cross-Sections**



## Cross Section Development

A selection of typical cross sections have been developed as part of this study. The sections are considered to give a reasonable balance between a) the varying existing road corridor and pavement widths and location of private fencing and power poles and b) typical proposed bike lanes, parking lanes, travelled lanes, bus stops and landscape features. The cross sections have endeavored to follow the typical sections contained in the City of Courtenay Multi-Modal Transportation Strategy, but due to variations in road corridor widths it was not always possible to match all lane and sidewalk dimensions. The existing above-ground infrastructure has not been detailed to be undergrounded, but instead to stay in place with other solutions to address vehicle buffers to this infrastructure as noted below. Bike lanes are shown in green only to enhance the graphics; it is not an indication that the lanes are to be painted green although that may be a subsequent design consideration. The cost estimate includes allowance for "Rain Garden Bulb Outs" which are shown graphically as a treed corridor width behind the curb lines.

A general comment applying to all cross sections is that there is a nominal (but varying) 50 mm difference in elevation between the top of sidewalk and adjacent road asphalt surface. The current MMCD detail shows a 155 mm curb height; if the road is not to be lowered then the sidewalk would need to be raised by a nominal 105 mm. This may result in an equivalent height difference at the lot boundaries at the back of sidewalks which would need to be considered during subsequent design stages.

"Intersection Curb Return Bulb Outs" have been included at all cross road intersections, which would remove parking for the first approximate 5 m from the existing intersections.

The particular factors that contributed to the development of typical road cross section are highlighted below:

### 5th Street:

1. The existing back of sidewalks appear to be at the edges of the road ROW, so sidewalk widening would have to extend in towards the existing road centerline.
2. Parking has been maintained for the full length, except at existing power poles that are currently within the road asphalt. At these locations a "Rain Garden Bulb Out" is proposed to not only provide protection to the poles but to allow an opportunity to introduce soft landscape features to the road corridor.

### 11th Street:

1. There is insufficient width to accommodate two lanes of parking and bike lanes, without removing what is currently green space behind sidewalks. It is considered that the benefits of removing green space to either put green space back in or to replace it with more asphalt be carefully considered. Until the benefits of such a design can be approved we suggest parking be reduced to one side of the road only.
2. If parking is not limited to one side of the road only then sharrows would likely be required or existing landscaped areas removed.
3. It appears that fencing has been constructed along the back of the sidewalk in some areas. The ROW boundary would need to be established to confirm there are no

easement or other land use agreements in place and addressed with property owners prior to assuming the full ROW is available for road improvements (with fencing then being removed/relocated at those locations).

#### **Cliffe Avenue:**

1. The existing roadway between 4th Street and 5th Street appears to limit the opportunity for any roadway width increases due to developments on both sides of the roadway. An improved sidewalk only is allowed for the west side of the road between 4th Street and 5th Street.
2. Existing curb and gutter and sidewalk, parking bays and landscape features on the east side of the road from 2nd Street to 5th Street are considered to be in acceptable condition and are therefore proposed to remain in place with road improvements on the remaining ROW only.
3. The bus exchange on the west side of the road will prohibit introduction of a bike lane in this area. Development of a suitable cross section will have to be considered in consultation with the appropriate transit agency.

#### **Fitzgerald Avenue:**

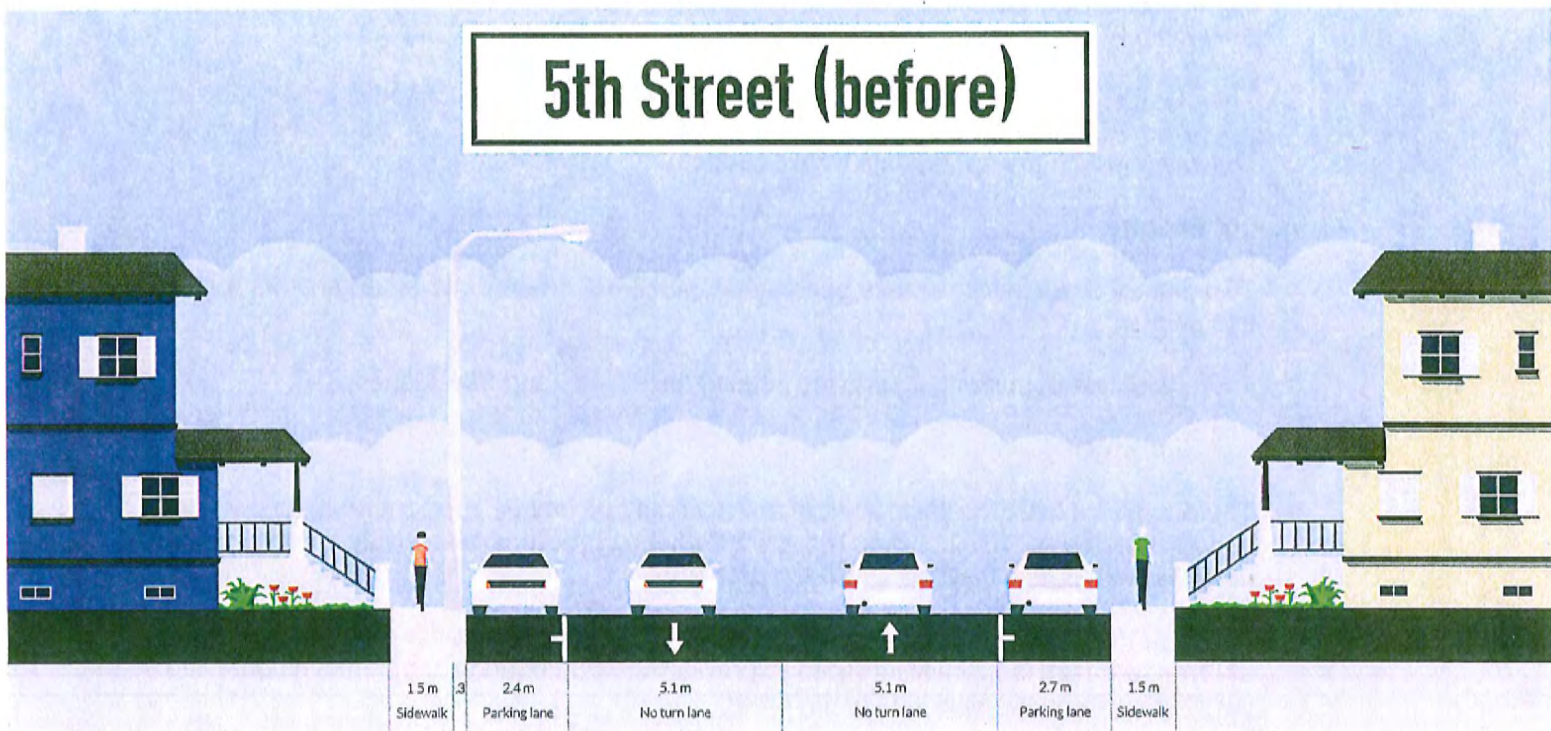
1. Two sets of cross sections have been developed here: one for mid-block; another for an intersection.
2. There is ample opportunity to provide parking, bike lanes and travel lanes.

#### **Old Island Highway:**

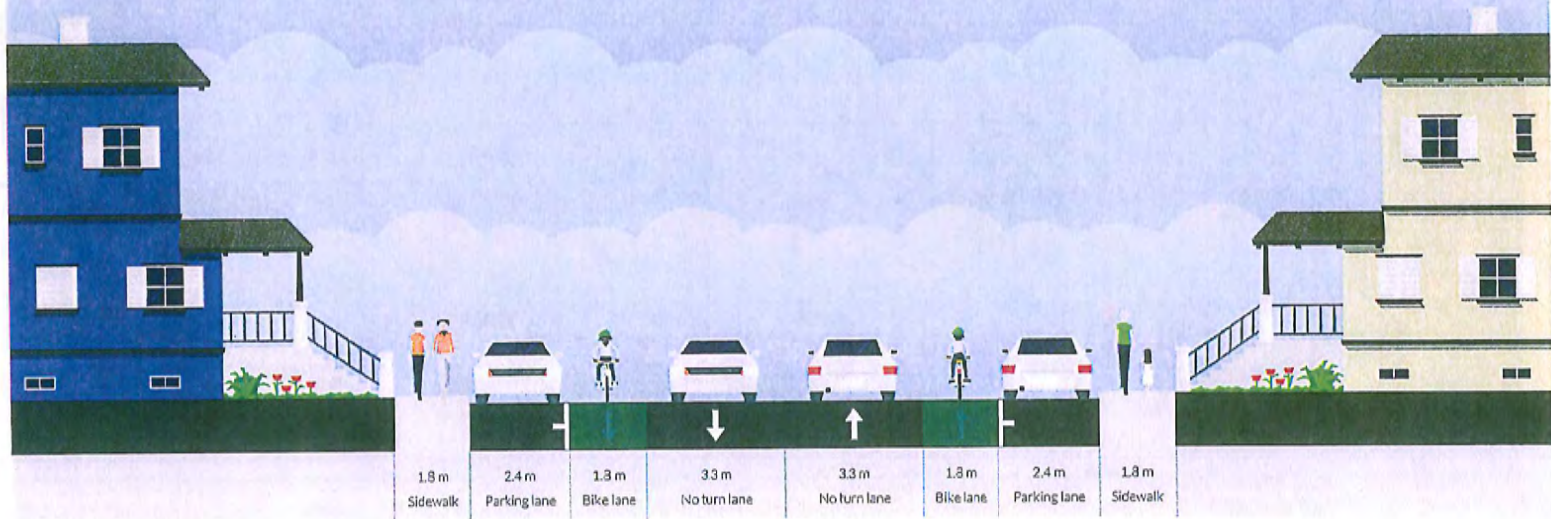
1. There appears to be significant use of the road right of way by adjacent property owners, in particular the car dealerships. There will likely be objections to roadway improvements here that will reduce their access to the property.
2. Although the centre lane is depicted as a two-way left turn lane in the cross-section north of Ryan, the lane is actually intended to provide for southbound left turn movements into developments on the east side of the road.



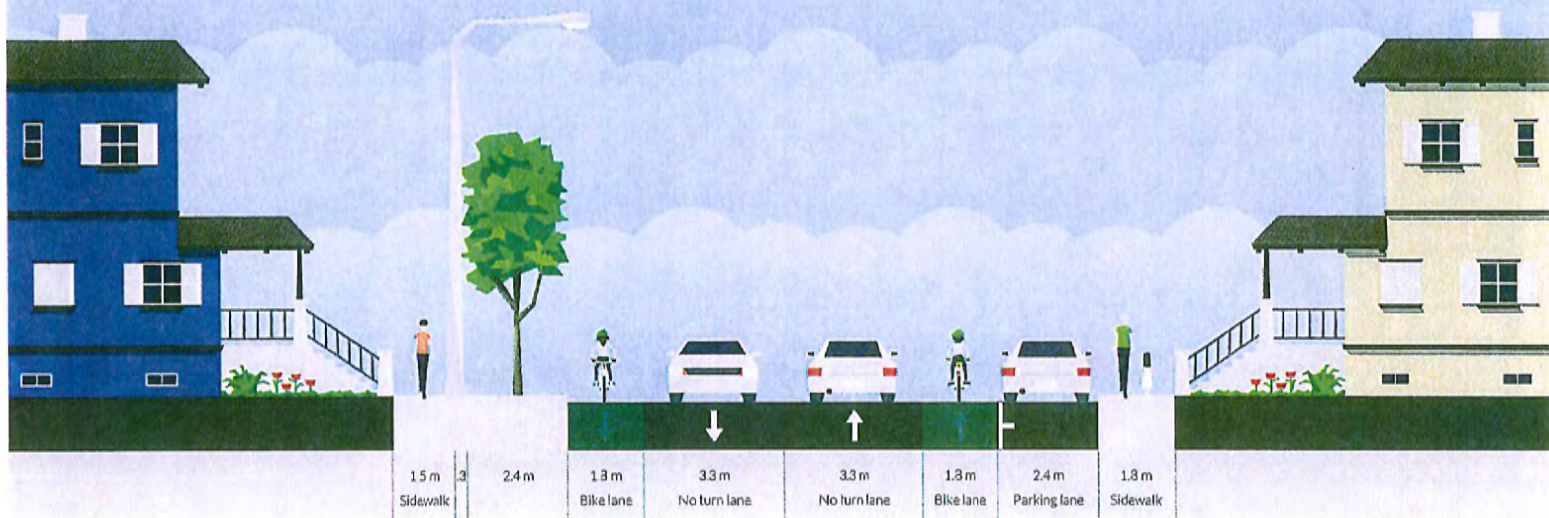
## 5th Street (before)



## 5th Street (after with parking lanes)

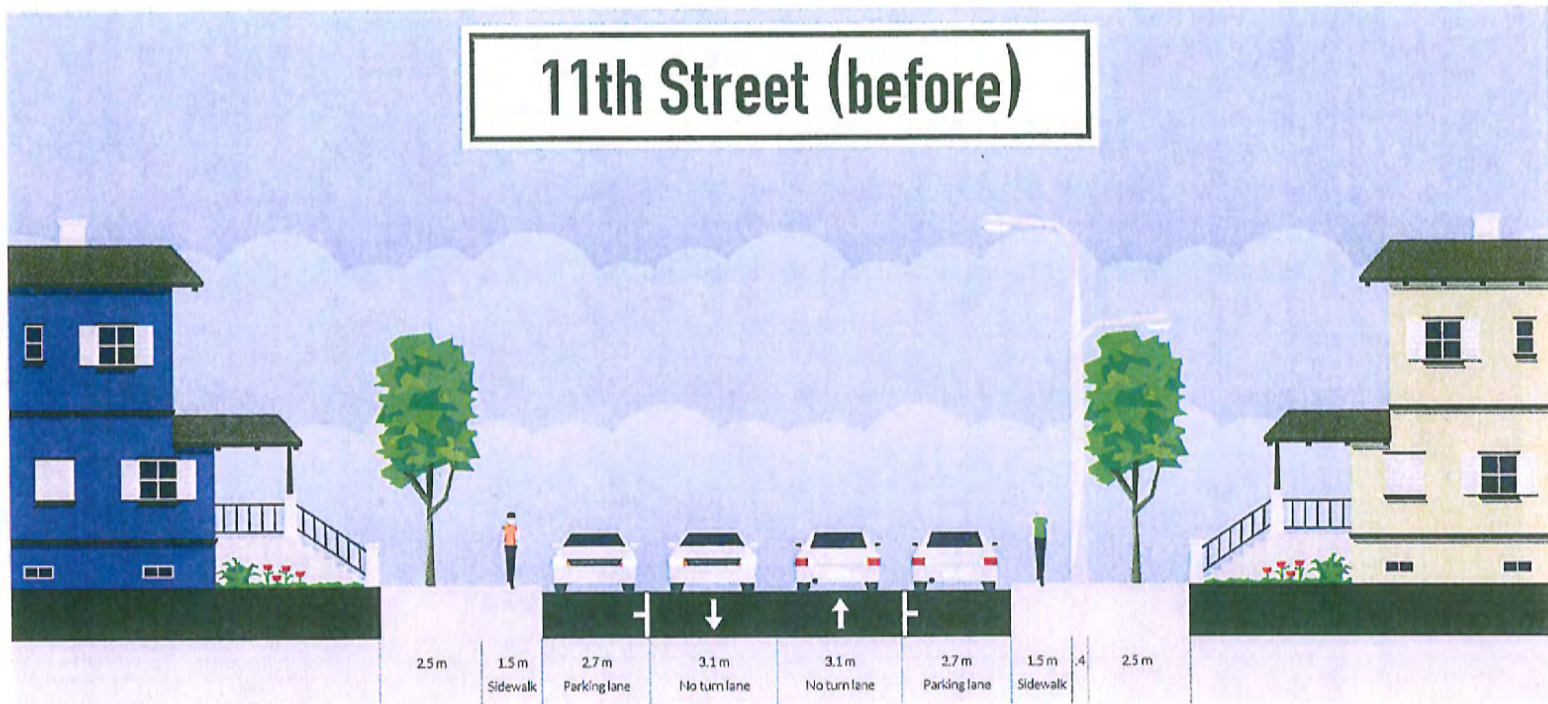


# 5th Street (after at power poles)

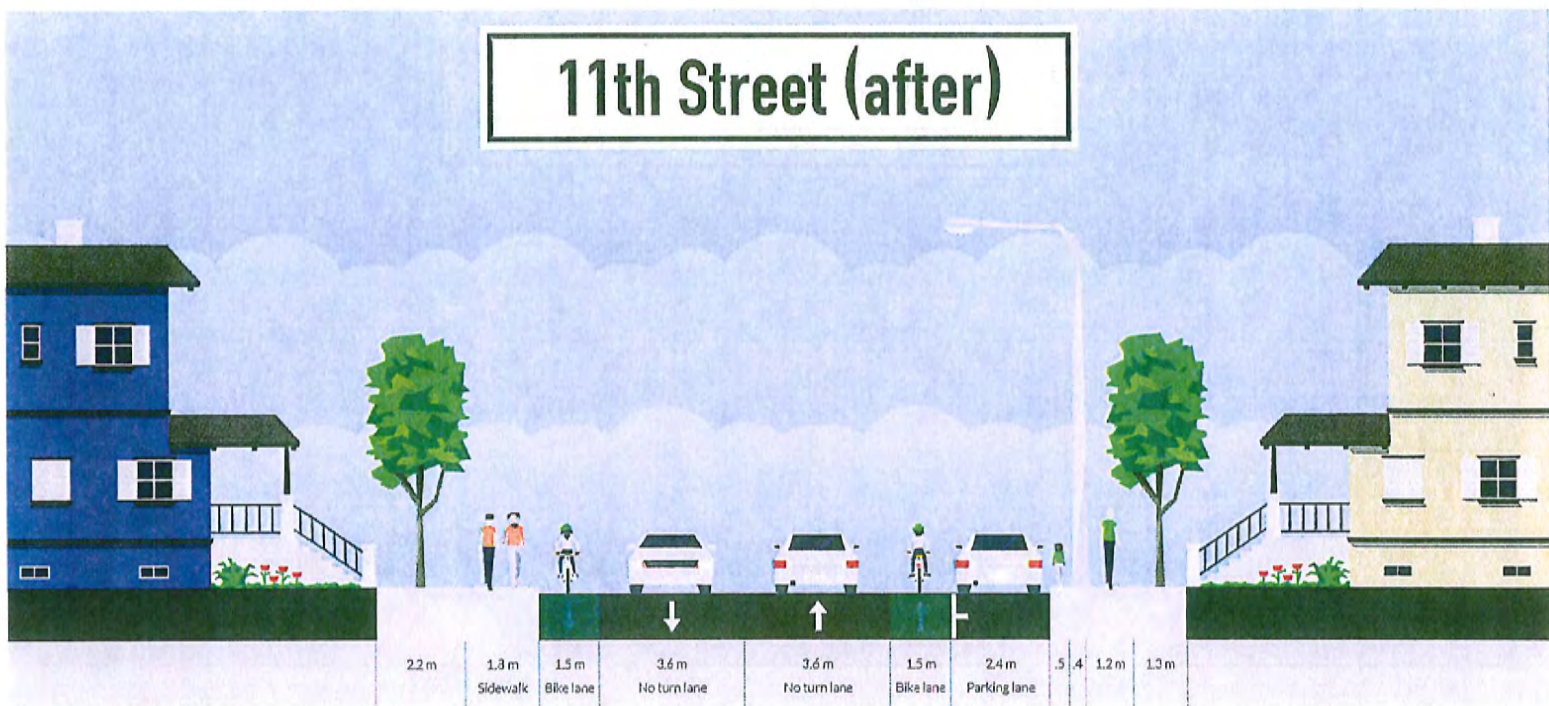




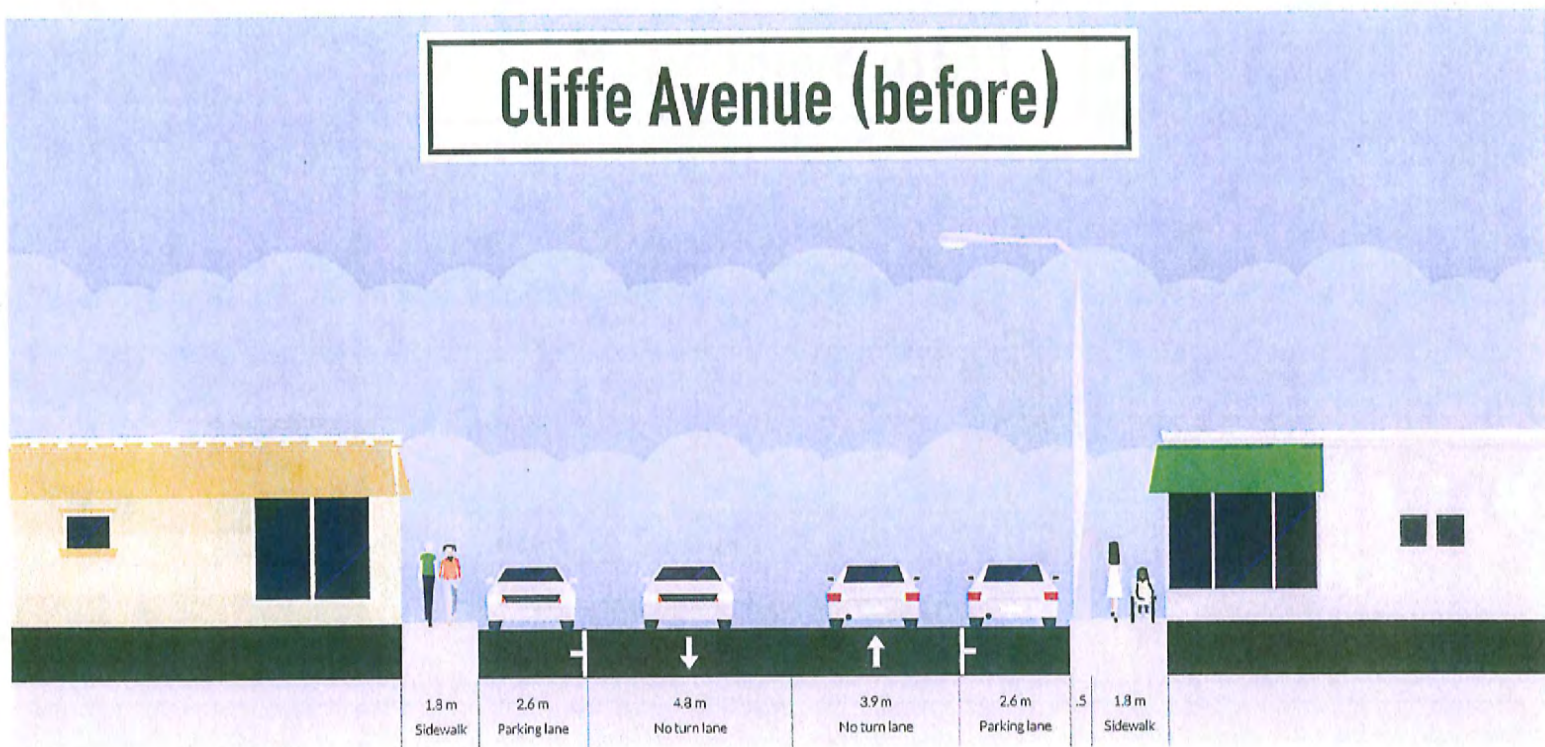
# 11th Street (before)



# 11th Street (after)

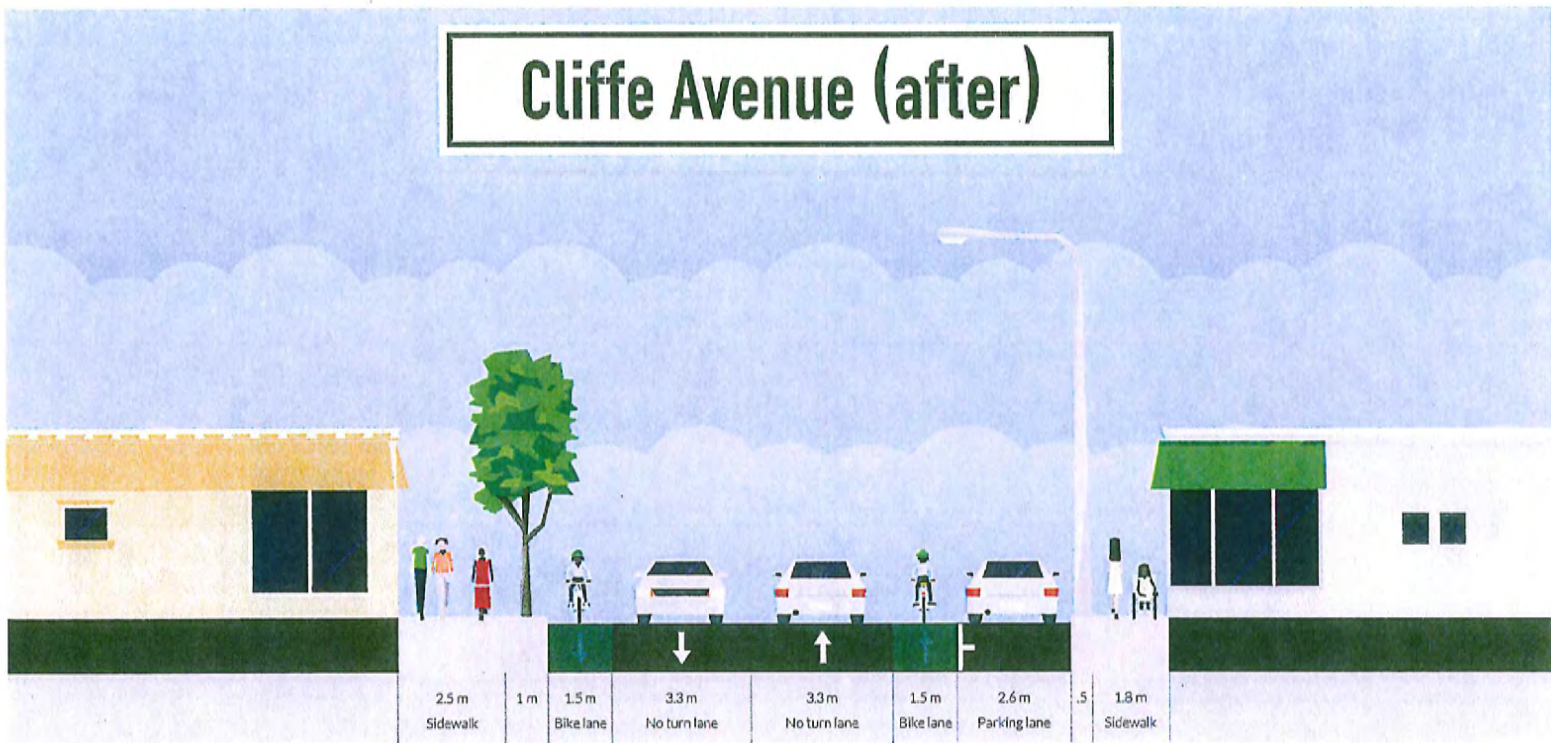


## Cliffe Avenue (before)

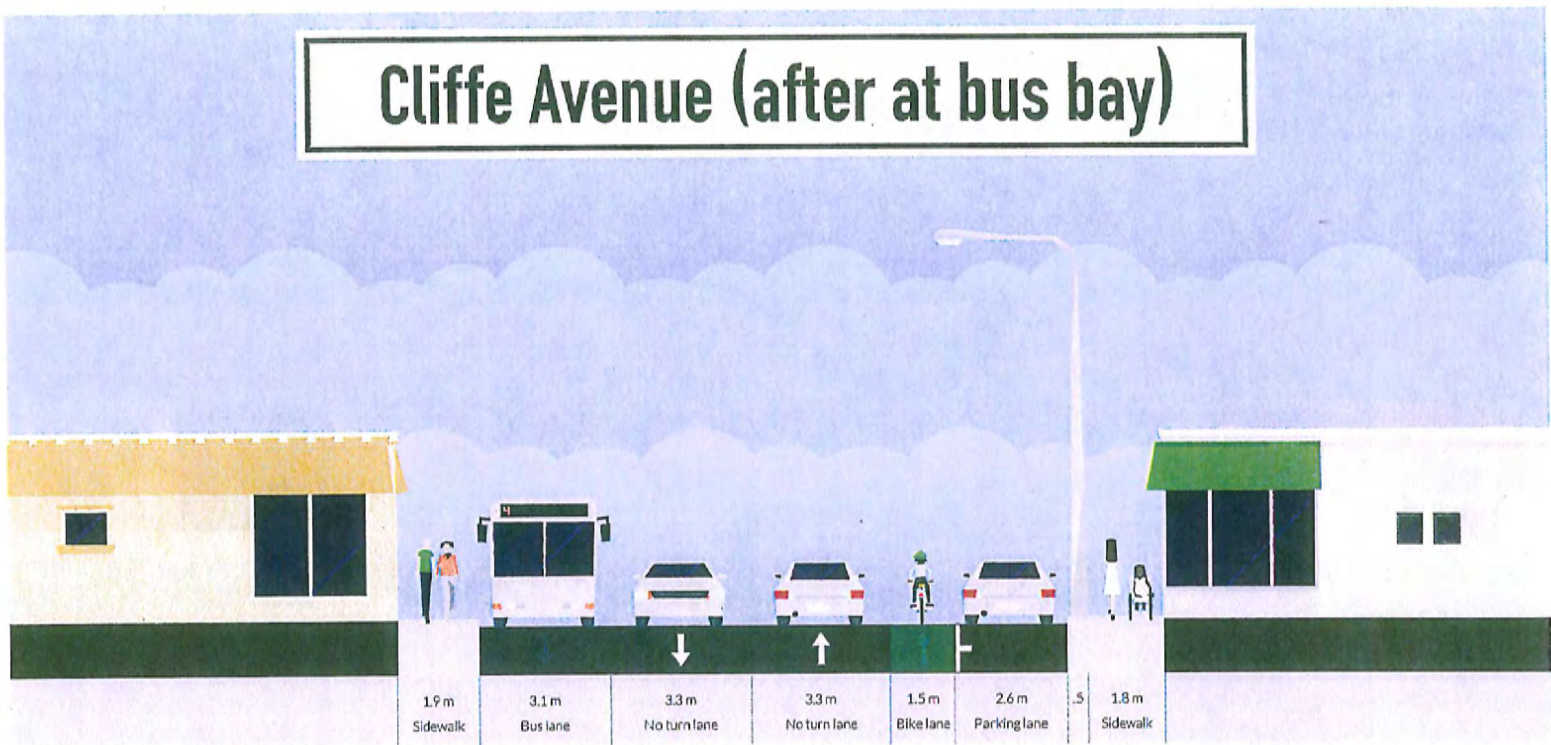




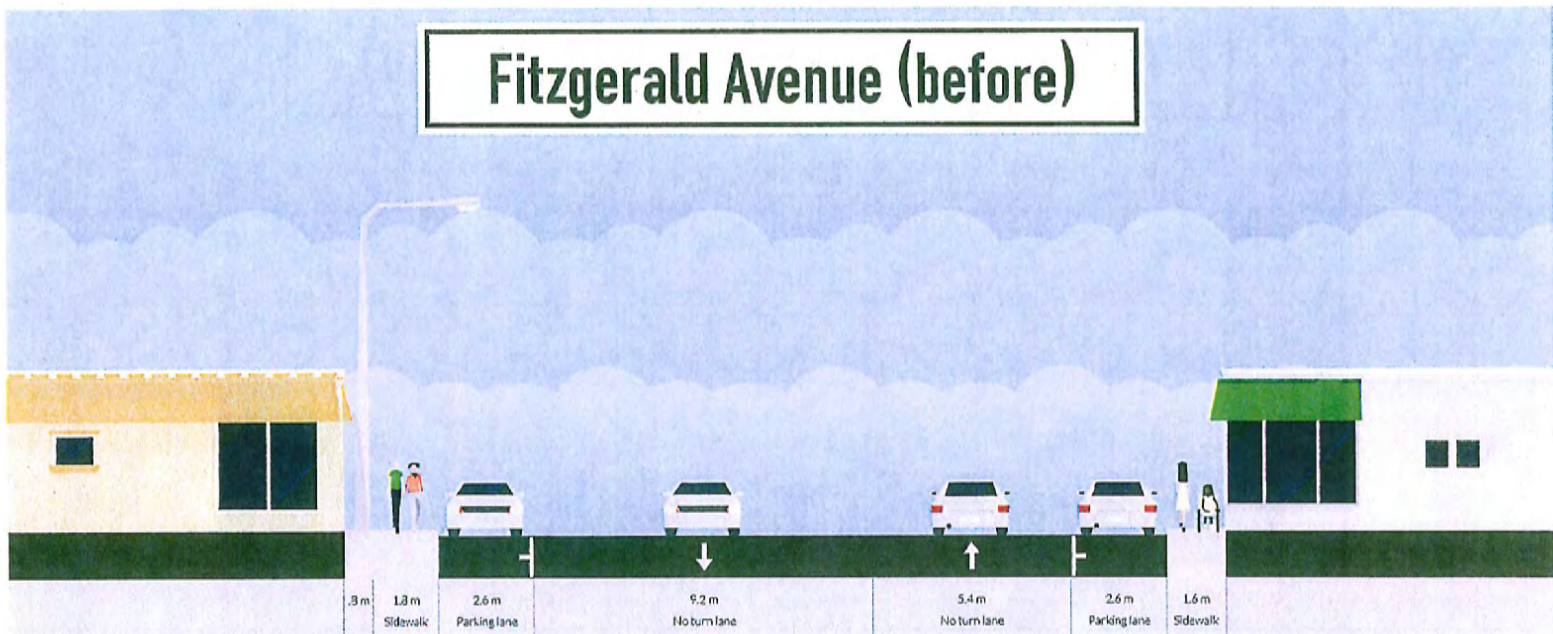
# Cliffe Avenue (after)



# Cliffe Avenue (after at bus bay)

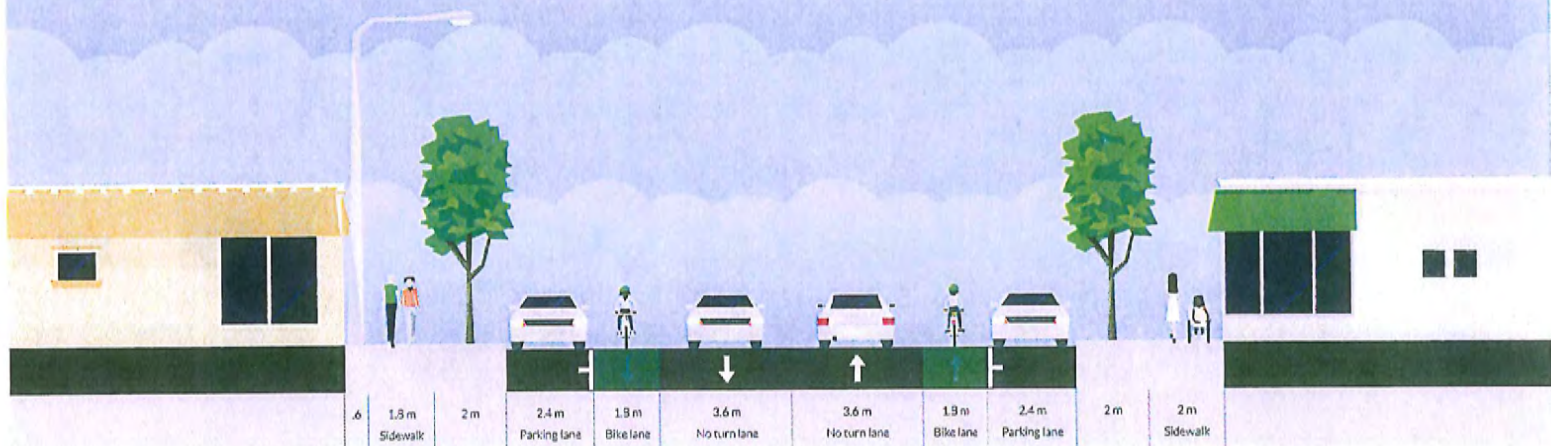


## Fitzgerald Avenue (before)

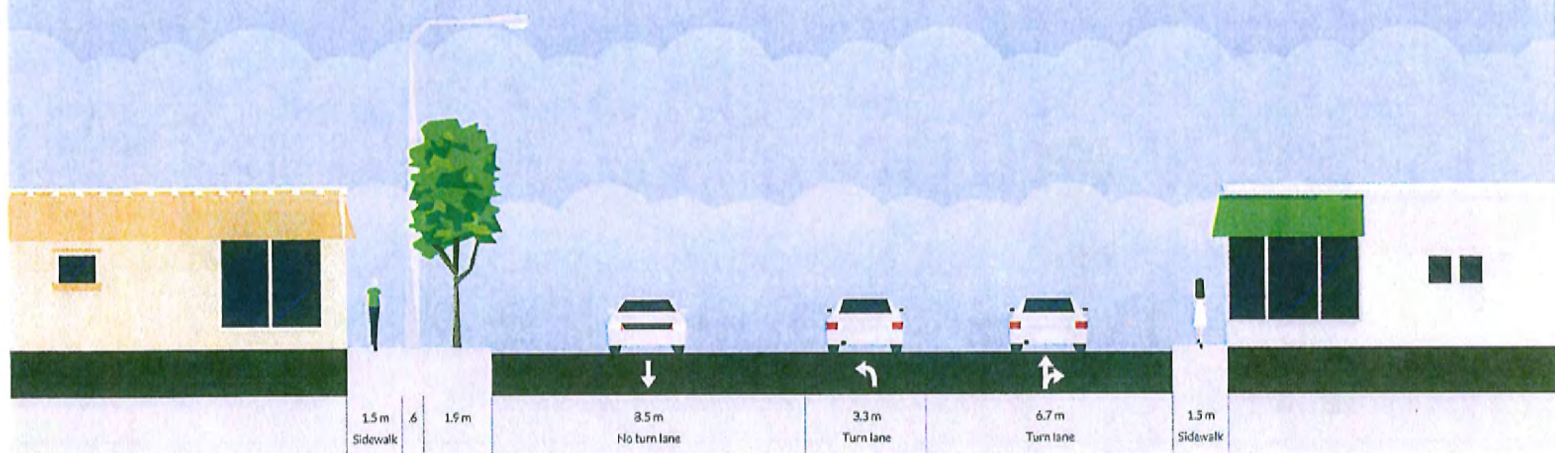




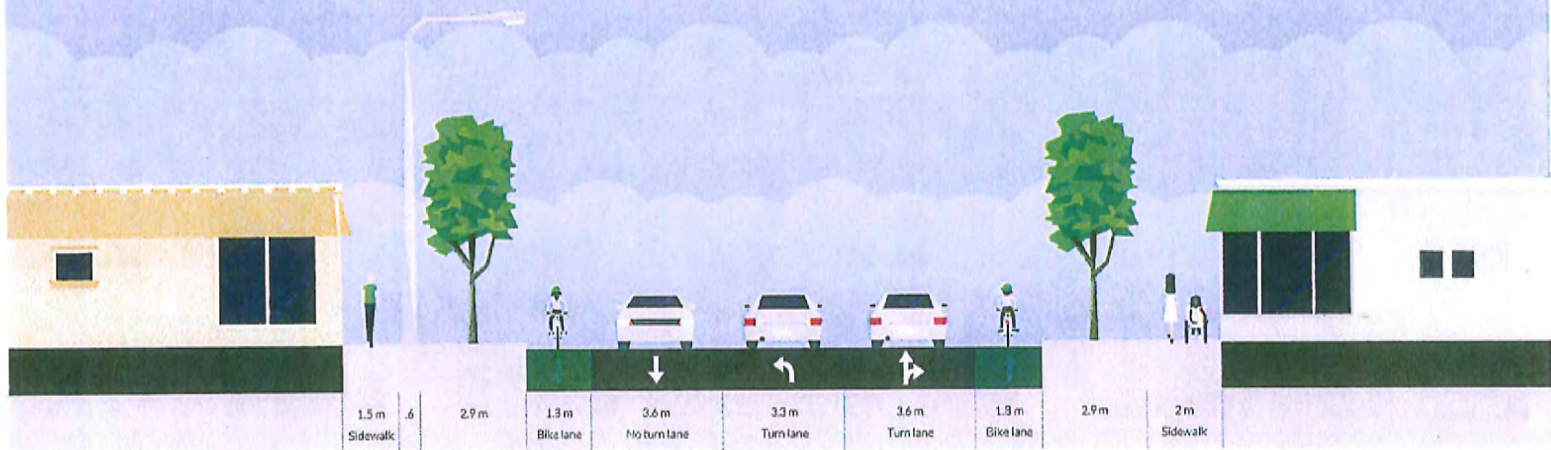
## Fitzgerald Avenue (after)



## Fitzgerald Avenue Intersection (before)

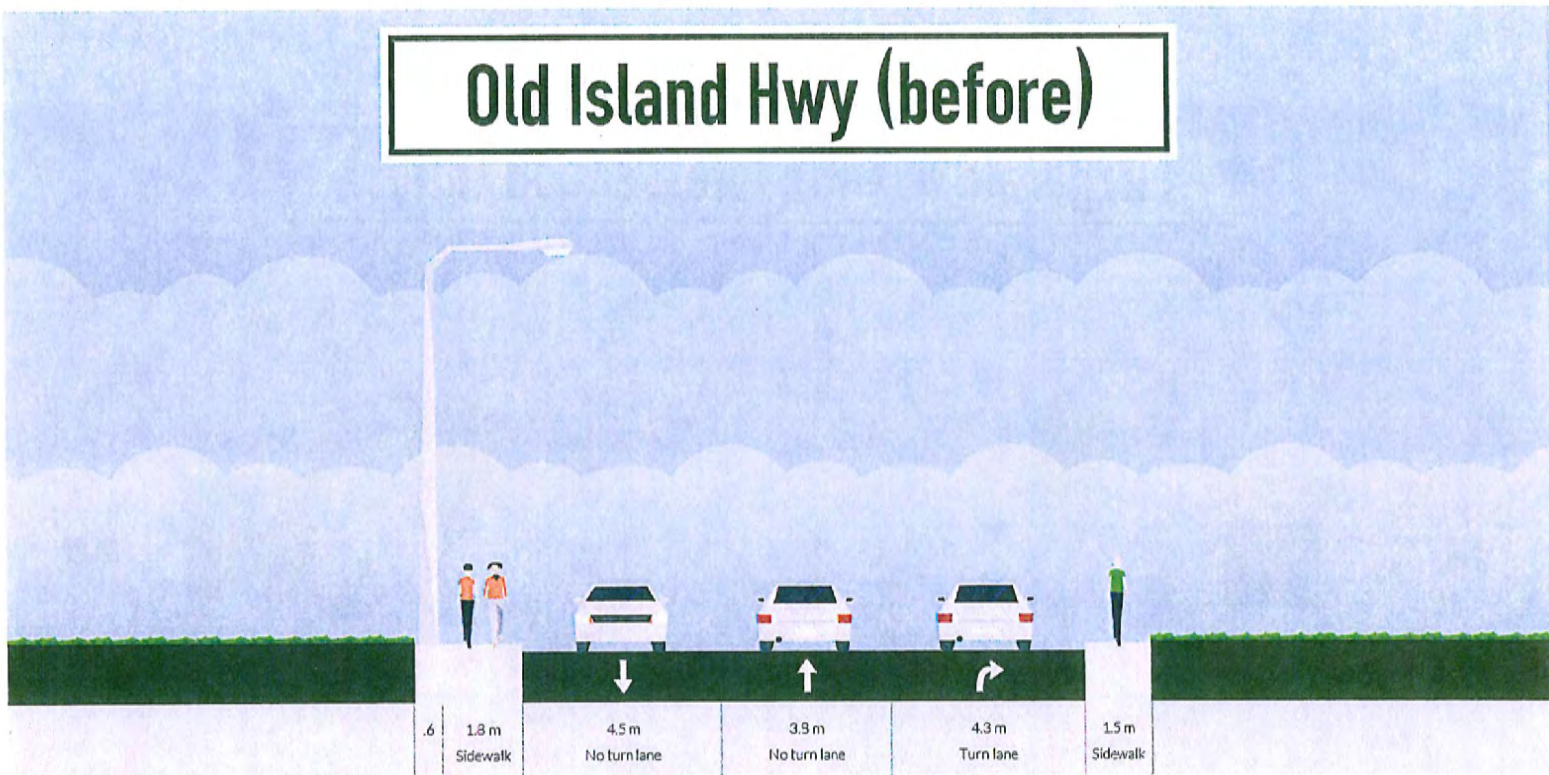


## Fitzgerald Avenue Intersection (after)

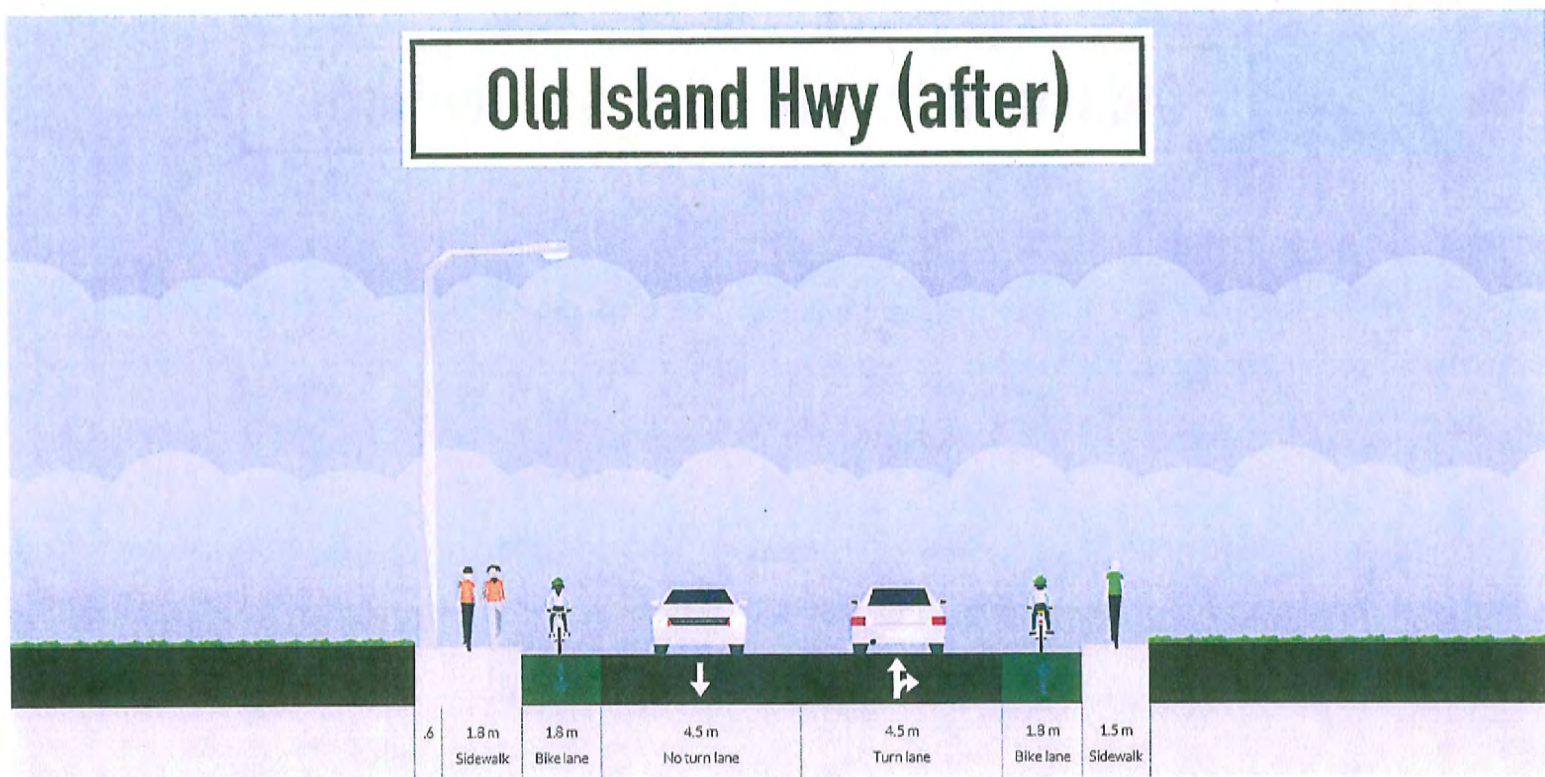




## Old Island Hwy (before)

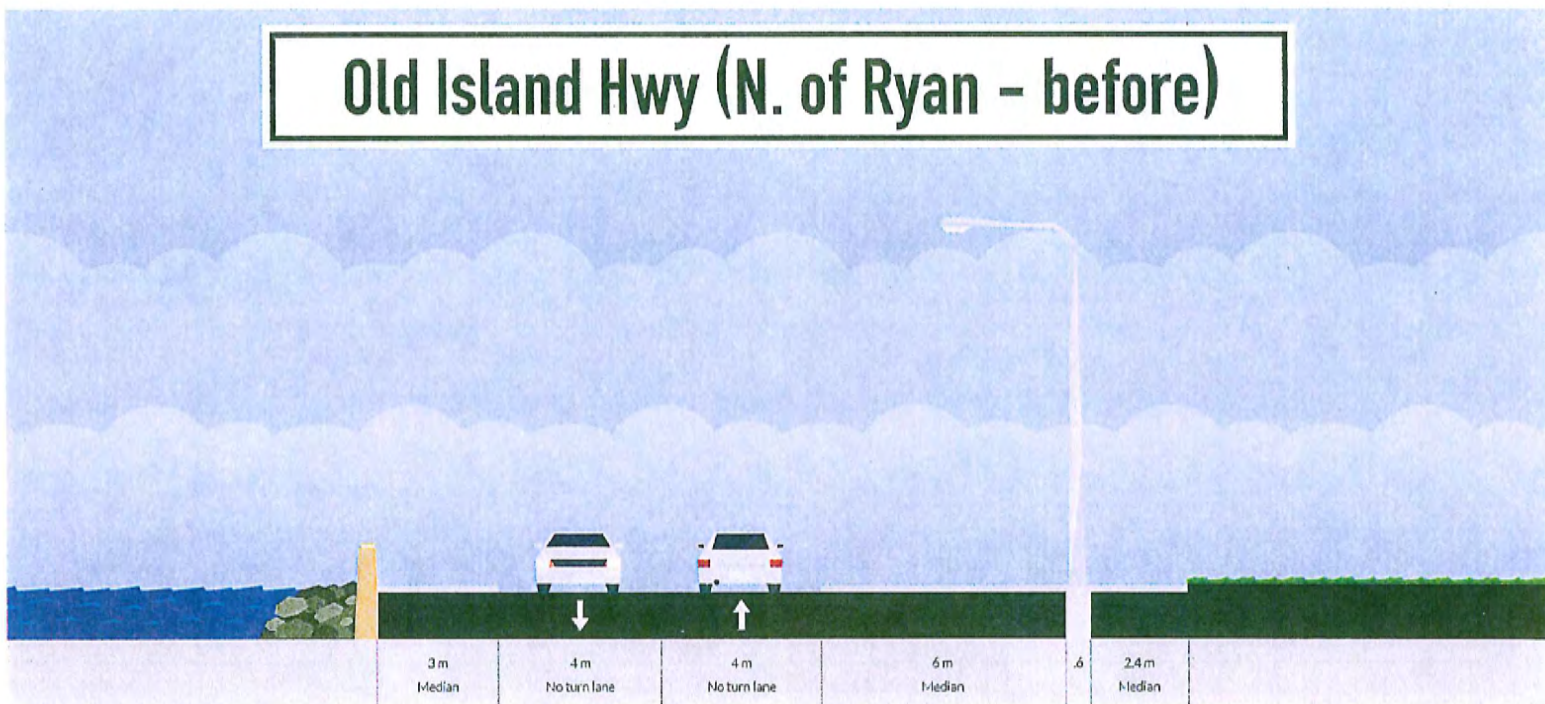


## Old Island Hwy (after)

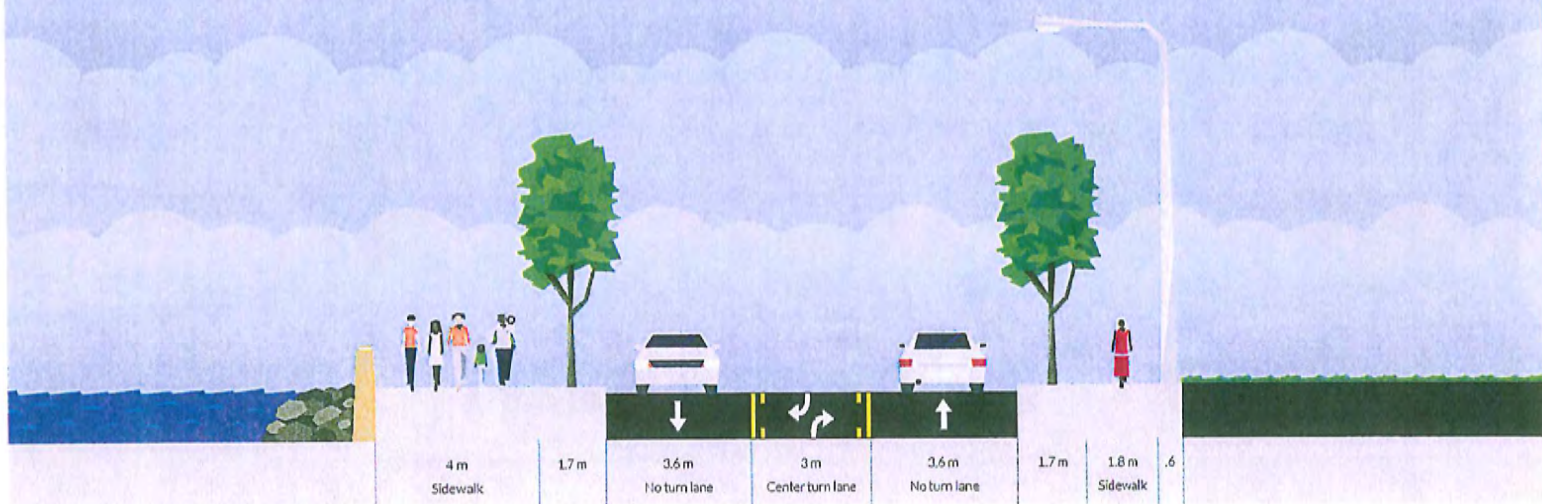




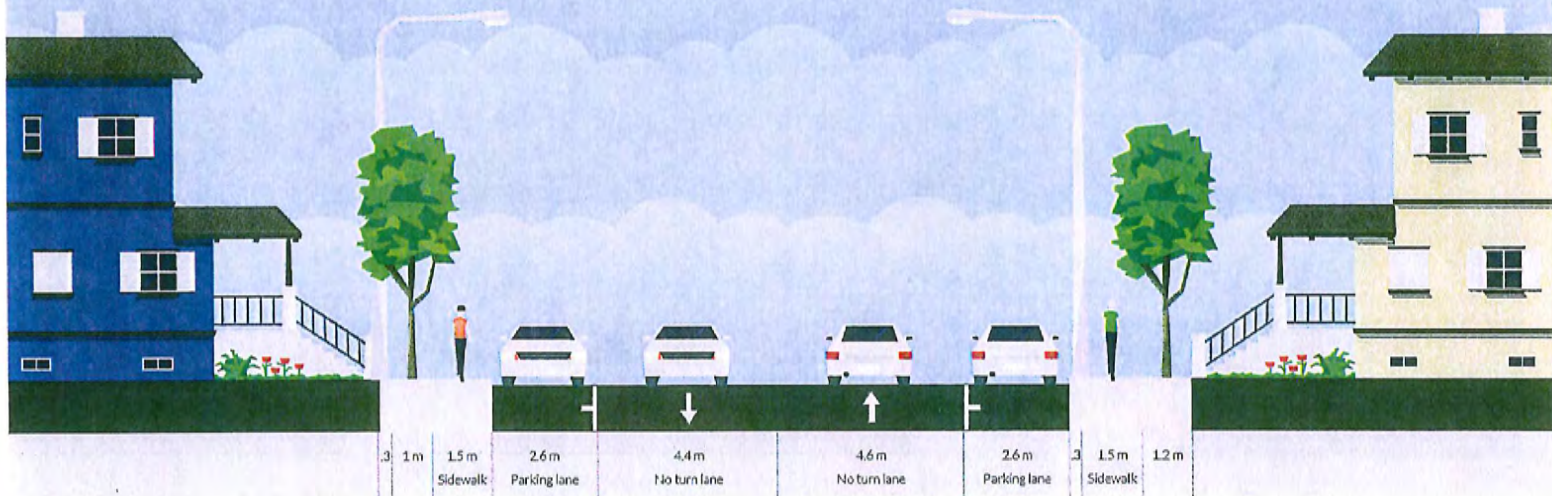
## Old Island Hwy (N. of Ryan - before)



# Old Island Hwy (N. of Ryan with MUP - after)

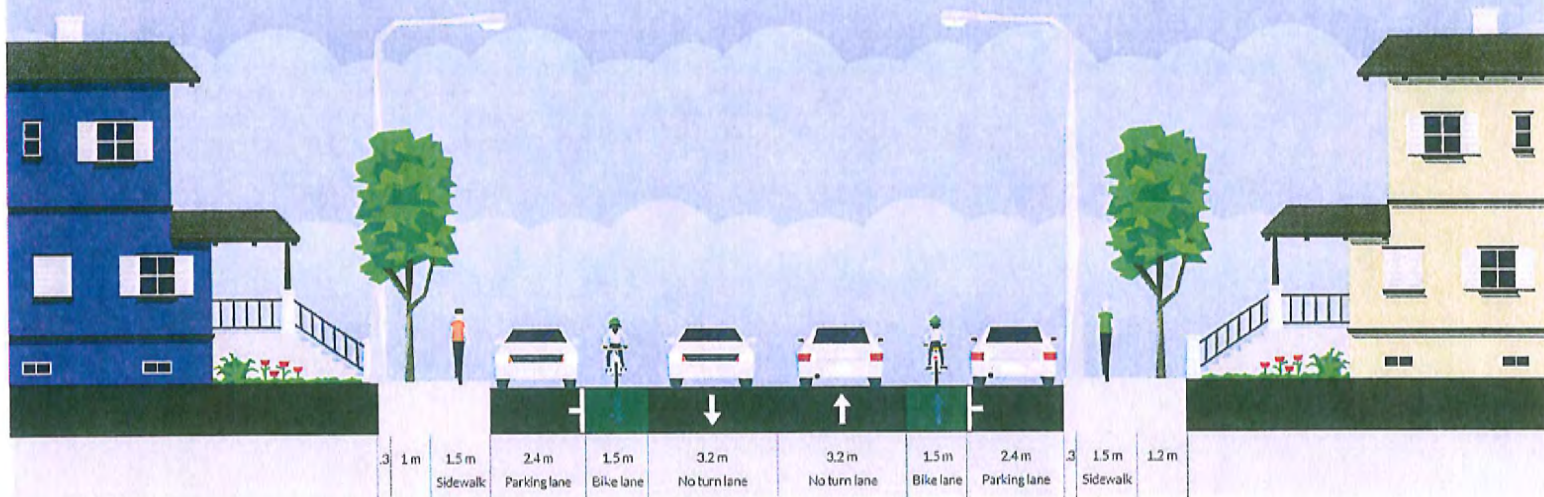


## Willemar Avenue (before)





## Willemar Avenue (after)





## **Appendix C: Opinions of Probable Cost**

## Cost Estimate Development

### General

The following general items apply to development of the cost estimates.

1. Items particular to each road section are noted at the top of each cost estimate sheet.
2. Unit rates have been obtained from a variety of sources, including recent tendered prices provided by the City. In the absence of suitably relevant information being provided additional reference was made to other unit rates for projects in Nanaimo, Saanich and Victoria.
3. It is understood that the City is currently having their typical drawings and engineering details upgraded towards the MMCD standards, which include curb and gutter. We have allowed all new sidewalks to have an adjacent curb and gutter constructed to meet this anticipated standard requirement.
4. All existing sidewalks, regardless of material or condition, have been allowed for removal and replaced with a minimum 1.8 m concrete sidewalk.
5. It is assumed that "Intersection Curb Return Bulb Outs" will consist of a 5 m radius curb return complete with 1.8 m sidewalks leading to wheelchair ramps, with interstitial spaces having topsoil and hydromulch.
6. No allowance has been made for irrigation.
7. No allowance has been made for storm sewer, sanitary sewer, water main or other infrastructure upgrades.

Additional particulars relevant to specific road sections are outlined below.

### Old Island Highway:

1. The right curb lane north of the 5th Street bridge can be sacrificed to gain bike lanes between the bridge and Comox Road, but there is a pinch point at Ryan Road intersection which would require it to be widened on the north side (toward the park) and thereby impacting the existing signals and hydro poles. It is suggested under this project that new signals would be required along with new splitter islands etc. to improve the overall intersection and through carriageway geometry
2. We understand that there are flooding issues with the section of roadway between Ryan Road and Headquarters Road, so an allowance has been made to raise the road by a nominal 0.5 m. This should be determined as a separate study if the road needs to be raised and if so by how much.
3. Due to anticipated road lane reconfigurations it is assumed that new traffic signals would be required at both Ryan Road and Comox Road intersections.
4. No allowance has been made for sidewalk or curb and gutter on the east side of the road north of Ryan Road, as this may be recoverable as a future development charge cost when the adjacent properties are developed.

5. A 4 m Multi Use Path is allowed on the west side of the road north of Ryan Road, which would provide a connection to what appears to be a heavily trafficked trail on Headquarters Road.
6. A 2 way left turn lane is provided in the middle of the corridor to allow unrestricted future access to the lots on the east side of the road. Due to there being no development on the opposite side of the road this would in effect become a one way left turn lane, but it would provide an opportunity for traffic to stop in the roadway to make a turning movement without blocking through traffic heading towards the 5th Street Bridge.

**Fitzgerald Avenue:**

1. A nominal allowance has been made for landscaped boulevards as shown in the typical sections, which would be dependent on the level of landscape improvements envisaged by the City.

**Willemar Avenue:**

1. Rain Garden Bulb Outs have been allowed at a nominal 100 m spacing, to be confirmed if that criteria should be adopted or to be placed at each power pole that is currently located within the road pavement.

**Construction Opinions of Probable Cost Summary**

No.	Road	Length (m)	Construction Estimate	Rate/km
1	5th Street	530	\$980,000.00	\$1,850,000.00
2	11th Street	815	\$840,000.00	\$1,031,000.00
3	Cliffe Avenue	350	\$1,250,000.00	\$3,572,000.00
4	Fitzgerald Avenue	225	\$510,000.00	\$2,267,000.00
5	Old Island Highway	915	\$2,840,000.00	\$3,104,000.00
6	Willemar Avenue	975	\$1,250,000.00	\$1,283,000.00



Construction Options of Probable Cost Summary

Road	Length (m)	Construction Estimate	Rate/km	Cost Estimate Sections	GENERAL ITEMS	REMOVALS / RELOCATIONS	EARTHWORKS	ROADWORKS	UNDERGROUND (STORMWATER) WORK	STRUCTURES	LANDSCAPING / IRRIGATION	ELECTRICAL	Major Cost Components	Intersection Curb Return Bulb Out	Rain Garden Bulb Out	Concrete Sidewalk (1.8 m)
5th Street	530	\$980,000.00	\$1,850,000.00	\$1,031,000.00	\$30,000.00	\$29,540.00	\$0.00	\$388,420.00	\$24,000.00	\$0.00	\$0.00	\$0.00	\$163,200.00	14	0	\$158,480.00
11th Street	815	\$840,000.00	\$1,031,000.00	\$3,572,000.00	\$30,000.00	\$69,100.00	\$71,000.00	\$517,455.00	\$20,100.00	\$0.00	\$0.00	\$0.00	\$32,830.00	8	0	\$32,830.00
Cliffe Avenue	350	\$1,250,000.00	\$3,572,000.00	\$2,267,000.00	\$18,000.00	\$16,000.00	\$0.00	\$124,973.10	\$23,100.00	\$0.00	\$0.00	\$0.00	\$46,620.00	6	0	\$46,620.00
Fitzgerald Avenue	225	\$510,000.00	\$2,267,000.00	\$3,104,000.00	\$55,000.00	\$47,600.00	\$84,000.00	\$798,950.00	\$185,300.00	\$0.00	\$24,875.00	\$410,000.00	\$144,900.00	0	0	\$144,900.00
Old Island Highway	915	\$2,840,000.00	\$3,104,000.00	\$1,283,000.00	\$30,000.00	\$43,260.00	\$0.00	\$537,222.00	\$35,900.00	\$0.00	\$0.00	\$0.00	\$215,810.00	6	12	\$215,810.00
Willemar Avenue	975															

## 5th Street

A	COMPLETE STREETS IMPROVEMENT DESCRIPTION				
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.8m bike lanes				
A.4	Install 2.4m x 5m landscape islands adjacent power poles currently in roadway, and same on opposite side of road for symmetry				
A.5	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations				
A.6	Install new curb returns bulb outs at intersecting roadways to line up with edges of bike lanes				
A.7	Retain existing pavement				
A.8	New pavement markings including ped crosswalks				
A.9					
A.10					
A.11					
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
<b>1</b>	<b>GENERAL ITEMS</b>				
1.01	Mobilization	LS		1	\$0.00
1.02	Quality Management	LS	\$5,000.00	1	\$5,000.00
1.03	Traffic Management	LS	\$3,000.00	1	\$3,000.00
1.04	Construction survey Layout	LS	\$10,000.00	1	\$10,000.00
1.05	Existing services survey	LS	\$2,000.00	1	\$2,000.00
1.06	Erosion and Sediment Control	LS	\$10,000.00	1	\$10,000.00
1.07					
	Subtotal				\$30,000.00
<b>2</b>	<b>REMOVALS / RELOCATIONS</b>				
2.01	Remove sidewalk or pavements and dispose off site	m2	\$12.00	1500.0	\$18,000.00
2.02	Remove misc. trees (>.25m dia.)	LS		1	\$0.00
2.03	Remove pavement markings	LS	\$1,500.00	1	\$1,500.00
2.04	Relocate Fire Hydrant	ea	\$7,500.00		\$0.00
2.05	Relocate signs	LS		1	\$0.00
2.06	Relocate power pole	ea	\$4,000.00		
2.07					
	Subtotal				\$19,500.00
<b>3</b>	<b>EARTHWORKS</b>				
3.01	Topsoil Stripping	LS			\$0.00
3.02	Common Excavation (granular)	m3	\$15.00		\$0.00
3.03	Embankment fill	m3	\$30.00		\$0.00
3.04	Subgrade preparation	m2	\$10.00		\$0.00
3.05					
	Subtotal				\$0.00
<b>4</b>	<b>ROADWORKS</b>				
4.01	Saw cut and grind existing asphalt at tie-ins	m	\$17.00	940	\$15,980.00
4.02	Granular Sub-Base (230 mm)	m2	\$15.00		\$0.00
4.03	Granular Base (130 mm)	m2	\$20.00		\$0.00
4.04	Hot Mix Asphalt Concrete (100 mm)	m2	\$75.00		\$0.00
4.05	Pavement markings (longitudinal)	m	\$0.50	2750	\$1,375.00
4.06	Pavement markings (thermoplastic) - crosswalks zebra	m2	\$35.00	30	\$1,050.00
4.07	Pavement markings (thermoplastic) - crosswalks parallel lines	m2	\$35.00		\$0.00
4.08	Pavement markings (thermoplastic) - arrows	ea	\$70.00		\$0.00
4.09	Traffic Signs (inc. single post)	ea	\$500.00	8	\$4,000.00
4.10	Concrete Driveway (4 m)	ea	\$650.00	15	\$9,750.00
4.11	Concrete Driveway (11 m)	ea	\$1,800.00		\$0.00
4.12	Concrete curb and gutter (barrier)	m	\$70.00	940	\$65,800.00
4.13	Concrete Sidewalk (1.8 m)	m2	\$100.00	1632	\$163,200.00
4.14	Concrete Multi Use Path (4.0 m)	m2	\$160.00		
4.15	Extend driveways and footpaths beyond road corridor into p. property	LS	\$10,000.00	1	\$10,000.00
4.16	Intersection curb return bulb outs	ea	\$6,600.00	14	\$92,400.00
4.17					
	Subtotal				\$363,555.00

## 5th Street

<b>A COMPLETE STREETS IMPROVEMENT DESCRIPTION</b>					
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.8m bike lanes				
A.4	Install 2.4m x 5m landscape islands adjacent power poles currently in roadway, and same on opposite side of road for symmetry				
A.5	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations				
A.6	Install new curb returns bulb outs at intersecting roadways to line up with edges of bike lanes				
A.7	Retain existing pavement				
A.8	New pavement markings including ped crosswalks				
A.9					
A.10					
A.11					
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
<b>5 UNDERGROUND (STORMWATER) WORK</b>					
5.01	Catch Basins - New	ea	\$1,500.00	20	\$30,000.00
5.02	Manholes - Adjust Existing	ea	\$2,000.00	6	\$12,000.00
5.03	Catch Basin Leads (assume 200mm)	m	\$170.00	90	\$15,300.00
5.04	Storm Pipe (assume 375mm)	m	\$400.00		\$0.00
5.05					
	Subtotal				\$57,300.00
<b>6 STRUCTURES</b>					
6.01					\$0.00
6.02					
	Subtotal				\$0.00
<b>7 LANDSCAPING / IRRIGATION</b>					
7.01	Soft Landscape	LS			\$0.00
7.02	Rain garden bulb outs	ea	\$5,300.00	16	\$84,800.00
7.03	Topsoil and hydromulch	m2	\$25.00		
7.04					
	Subtotal				\$84,800.00
<b>8 ELECTRICAL</b>					
8.01	Traffic Signal	LS			\$0.00
8.02					
8.03					
8.04					
	Subtotal				\$0.00
	Total for all above				\$555,155.00
	Construction Contingency at 50%				\$277,577.50
	Total (rounded)				\$830,000.00
<b>B PROVISIONAL/OPTIONAL ITEMS</b>					
B.1	Remove Unsuitable Sub-Grade	LS			\$0.00
B.2					\$0.00
B.3					\$0.00
B.4					\$0.00
	Subtotal				\$0.00
	Total Including Provisional Items (ex. tax) [Rounded]				\$830,000.00
<b>C OTHER ITEMS</b>					
C.1	Engineering	%		18.0%	\$149,400.00
C.2	Materials supplied by Owner	LS			\$0.00
C.3	Utility relocation	LS			\$0.00
C.4	Property purchase	LS			\$0.00
C.5	Legal fees	LS			\$0.00
C.6					
	Subtotal				\$149,400.00
	Total Including Provisional and Other Items (exc. Tax, rounded)				\$980,000.00

## 11th Street

A COMPLETE STREETS IMPROVEMENT DESCRIPTION					
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.5m bike lanes				
A.4	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations				
A.5	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.6	Retain existing pavement				
A.7	Parking on one side of road only				
A.8					
A.9					
A.10					
A.11					
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
1	GENERAL ITEMS				
1.01	Mobilization	LS		1	\$0.00
1.02	Quality Management	LS	\$5,000.00	1	\$5,000.00
1.03	Traffic Management	LS	\$3,000.00	1	\$3,000.00
1.04	Construction survey Layout	LS	\$10,000.00	1	\$10,000.00
1.05	Existing services survey	LS	\$2,000.00	1	\$2,000.00
1.06	Erosion and Sediment Control	LS	\$10,000.00	1	\$10,000.00
1.07					
	Subtotal				\$30,000.00
2	REMOVALS / RELOCATIONS				
2.01	Remove sidewalk or pavements and dispose off site	m2	\$12.00	2295.0	\$27,540.00
2.02	Remove misc. trees (>.25m dia.)	LS		1	\$0.00
2.03	Remove pavement markings	LS	\$2,000.00	1	\$2,000.00
2.04	Relocate Fire Hydrant	ea	\$7,500.00		\$0.00
2.05	Relocate signs	LS		1	\$0.00
2.06	Relocate power pole	ea	\$4,000.00		
2.07					
	Subtotal				\$29,540.00
3	EARTHWORKS				
3.01	Topsoil Stripping	LS			\$0.00
3.02	Common Excavation (granular)	m3	\$15.00		\$0.00
3.03	Embankment fill	m3	\$30.00		\$0.00
3.04	Subgrade preparation	m2	\$10.00		\$0.00
3.05					
	Subtotal				\$0.00
4	ROADWORKS				
4.01	Saw cut and grind existing asphalt at tie-ins	m	\$17.00	1430	\$24,310.00
4.02	Granular Sub-Base (230 mm)	m2	\$15.00		\$0.00
4.03	Granular Base (130 mm)	m2	\$20.00		\$0.00
4.04	Hot Mix Asphalt Concrete (100 mm)	m2	\$75.00		\$0.00
4.05	Pavement markings (longitudinal)	m	\$0.50	3260	\$1,630.00
4.06	Pavement markings (thermoplastic) - crosswalks zebra	m2	\$35.00		\$0.00
4.07	Pavement markings (thermoplastic) - crosswalks parallel lines	m2	\$35.00		\$0.00
4.08	Pavement markings (thermoplastic) - arrows	ea	\$70.00		\$0.00
4.09	Traffic Signs (inc. single post)	ea	\$500.00	14	\$7,000.00
4.10	Concrete Driveway (4 m)	ea	\$650.00	50	\$32,500.00
4.11	Concrete Driveway (11 m)	ea	\$1,800.00	10	\$18,000.00
4.12	Concrete curb and gutter (barrier)	m	\$70.00	1430	\$100,100.00
4.13	Concrete Sidewalk (1.8 m)	m2	\$70.00	2264	\$158,480.00
4.14	Concrete Multi Use Path (4.0 m)	m2	\$160.00		
4.15	Extend driveways and footpaths beyond road corridor into p. property	LS	\$0.00	1	\$0.00
4.16	Intersection curb return bulb outs	ea	\$5,800.00	8	\$46,400.00
4.17					
	Subtotal				\$388,420.00



## 11th Street

A	COMPLETE STREETS IMPROVEMENT DESCRIPTION				
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.5m bike lanes				
A.4	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations				
A.5	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.6	Retain existing pavement				
A.7	Parking on one side of road only				
A.8					
A.9					
A.10					
A.11					
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
5	UNDERGROUND (STORMWATER) WORK				
5.01	Catch Basins - New	ea	\$1,500.00	16	\$24,000.00
5.02	Manholes - Adjust Existing	ea	\$2,000.00		\$0.00
5.03	Catch Basin Leads (assume 200mm)	m	\$170.00		\$0.00
5.04	Storm Pipe (assume 375mm)	m	\$400.00		\$0.00
5.05					
	Subtotal				\$24,000.00
6	STRUCTURES				
6.01					\$0.00
6.02					
	Subtotal				\$0.00
7	LANDSCAPING / IRRIGATION				
7.01	Soft Landscape	LS			\$0.00
7.02	Rain garden bulb outs	ea	\$5,300.00		\$0.00
7.03	Topsoil and hydromulch	m2	\$25.00		
7.04					
	Subtotal				\$0.00
8	ELECTRICAL				
8.01	Traffic Signal	LS			\$0.00
8.02					
8.03					
8.04					
	Subtotal				\$0.00
	Total for all above				\$471,960.00
	Construction Contingency at 50%				\$235,980.00
	Total (rounded)				\$710,000.00
B	PROVISIONAL/OPTIONAL ITEMS				
B.1	Remove Unsuitable Sub-Grade	LS			\$0.00
B.2					\$0.00
B.3					\$0.00
B.4					\$0.00
	Subtotal				\$0.00
	Total Including Provisional Items (ex. tax) [Rounded]				\$710,000.00
C	OTHER ITEMS				
C.1	Engineering	%		18.0%	\$127,800.00
C.2	Materials supplied by Owner	LS			\$0.00
C.3	Utility relocation	LS			\$0.00
C.4	Property purchase	LS			\$0.00
C.5	Legal fees	LS			\$0.00
C.6					
	Subtotal				\$127,800.00
	Total Including Provisional and Other Items (exc. Tax, rounded)				\$840,000.00

## Cliffe Avenue

A COMPLETE STREETS IMPROVEMENT DESCRIPTION					
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.5m bike lanes				
A.4	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.5	Install new pavement 1st Street to 4th Street				
A.6	Retain existing pavement				
A.7	No new work 4th Street to 5th Street				
A.8	Realign 4th Street pavement markings to suit curb return bulb outs				
A.9	Existing sidewalk, curb and gutter to remain east side 2nd Street to 4th Street				
A.10	Bus exchange parking area affects potential to fully implement bike lanes				
A.11	May be objection to removing established trees north of 3rd Street west side				
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
<b>1</b>	<b>GENERAL ITEMS</b>				
1.01	Mobilization	LS		1	\$0.00
1.02	Quality Management	LS	\$5,000.00	1	\$5,000.00
1.03	Traffic Management	LS	\$3,000.00	1	\$3,000.00
1.04	Construction survey layout	LS	\$10,000.00	1	\$10,000.00
1.05	Existing services survey	LS	\$2,000.00	1	\$2,000.00
1.06	Erosion and Sediment Control	LS	\$10,000.00	1	\$10,000.00
1.07					
	<b>Subtotal</b>				<b>\$30,000.00</b>
<b>2</b>	<b>REMOVALS / RELOCATIONS</b>				
2.01	Remove sidewalk or pavements and dispose off site	m2	\$12.00	4050.0	\$48,600.00
2.02	Remove misc. trees (>.25m dia.)	LS	\$5,000.00	1	\$5,000.00
2.03	Remove pavement markings	LS	\$500.00	1	\$500.00
2.04	Relocate Fire Hydrant	ea	\$7,500.00	2	\$15,000.00
2.05	Relocate signs	LS		1	\$0.00
2.06	Relocate power pole	ea	\$4,000.00		
2.07					
	<b>Subtotal</b>				<b>\$69,100.00</b>
<b>3</b>	<b>EARTHWORKS</b>				
3.01	Topsoil Stripping	LS	\$1,000.00	1	\$1,000.00
3.02	Common Excavation (granular)	m3	\$15.00	2000	\$30,000.00
3.03	Embankment fill	m3	\$30.00		\$0.00
3.04	Subgrade preparation	m2	\$10.00	4000	\$40,000.00
3.05					
	<b>Subtotal</b>				<b>\$71,000.00</b>
<b>4</b>	<b>ROADWORKS</b>				
4.01	Saw cut and grind existing asphalt at tie-ins	m	\$17.00	280	\$4,760.00
4.02	Granular Sub-Base (230 mm)	m2	\$15.00	3800	\$57,000.00
4.03	Granular Base (130 mm)	m2	\$20.00	3800	\$76,000.00
4.04	Hot Mix Asphalt Concrete (100 mm)	m2	\$75.00	3600	\$270,000.00
4.05	Pavement markings (longitudinal)	m	\$0.50	1280	\$640.00
4.06	Pavement markings (thermoplastic) - crosswalks zebra	m2	\$35.00	15	\$525.00
4.07	Pavement markings (thermoplastic) - crosswalks parallel lines	m2	\$35.00		\$0.00
4.08	Pavement markings (thermoplastic) - arrows	ea	\$70.00		\$0.00
4.09	Traffic Signs (inc. single post)	ea	\$500.00	8	\$4,000.00
4.10	Concrete Driveway (4 m)	ea	\$650.00	6	\$3,900.00
4.11	Concrete Driveway (11 m)	ea	\$1,800.00	1	\$1,800.00
4.12	Concrete curb and gutter (barrier)	m	\$70.00	280	\$19,600.00
4.13	Concrete Sidewalk (1.8 m)	m2	\$70.00	469	\$32,830.00
4.14	Concrete Multi Use Path (4.0 m)	m2	\$160.00		
4.15	Extend driveways and footpaths beyond road corridor into p. property	LS		1	\$0.00
4.16	Intersection curb return bulb outs	ea	\$5,800.00	8	\$46,400.00
4.17					
	<b>Subtotal</b>				<b>\$517,455.00</b>

## Cliffe Avenue

A	COMPLETE STREETS IMPROVEMENT DESCRIPTION				
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.5m bike lanes				
A.4	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.5	Install new pavement 1st Street to 4th Street				
A.6	Retain existing pavement				
A.7	No new work 4th Street to 5th Street				
A.8	Realign 4th Street pavement markings to suit curb return bulb outs				
A.9	Existing sidewalk, curb and gutter to remain east side 2nd Street to 4th Street				
A.10	Bus exchange parking area affects potential to fully implement bike lanes				
A.11	May be objection to removing established trees north of 3rd Street west side				
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
5	UNDERGROUND (STORMWATER) WORK				
5.01	Catch Basins - New	ea	\$1,500.00	10	\$15,000.00
5.02	Manholes - Adjust Existing	ea	\$2,000.00		\$0.00
5.03	Catch Basin Leads (assume 200mm)	m	\$170.00	30	\$5,100.00
5.04	Storm Pipe (assume 375mm)	m	\$400.00		\$0.00
5.05					
	Subtotal				\$20,100.00
6	STRUCTURES				
6.01					\$0.00
6.02					
	Subtotal				\$0.00
7	LANDSCAPING / IRRIGATION				
7.01	Soft Landscape	LS			\$0.00
7.02	Rain garden bulb outs	ea	\$5,300.00		\$0.00
7.03	Topsoil and hydromulch	m2	\$25.00		
7.04					
	Subtotal				\$0.00
8	ELECTRICAL				
8.01	Traffic Signal	LS			\$0.00
8.02					
8.03					
8.04					
	Subtotal				\$0.00
	Total for all above				\$707,655.00
	Construction Contingency at 50%				\$353,827.50
	Total (rounded)				\$1,060,000.00
B	PROVISIONAL/OPTIONAL ITEMS				
B.1	Remove Unsuitable Sub-Grade	LS			\$0.00
B.2					\$0.00
B.3					\$0.00
B.4					\$0.00
	Subtotal				\$0.00
	Total Including Provisional Items (ex. tax) [Rounded]				\$1,060,000.00
C	OTHER ITEMS				
C.1	Engineering	%		18.0%	\$190,800.00
C.2	Materials supplied by Owner	LS			\$0.00
C.3	Utility relocation	LS			\$0.00
C.4	Property purchase	LS			\$0.00
C.5	Legal fees	LS			\$0.00
C.6					
	Subtotal				\$190,800.00
	Total Including Provisional and Other Items (exc. Tax, rounded)				\$1,250,000.00

## Fitzgerald Avenue

A COMPLETE STREETS IMPROVEMENT DESCRIPTION					
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.8m bike lanes				
A.4	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations (via curb return bulb outs)				
A.5	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.6	Retain existing pavement				
A.7	Retain existing trees				
A.8					
A.9					
A.10					
A.11					
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
<b>1</b>	<b>GENERAL ITEMS</b>				
1.01	Mobilization	LS		1	\$0.00
1.02	Quality Management	LS	\$3,000.00	1	\$3,000.00
1.03	Traffic Management	LS	\$3,000.00	1	\$3,000.00
1.04	Construction survey Layout	LS	\$5,000.00	1	\$5,000.00
1.05	Existing services survey	LS	\$2,000.00	1	\$2,000.00
1.06	Erosion and Sediment Control	LS	\$5,000.00	1	\$5,000.00
1.07					
	<b>Subtotal</b>				<b>\$18,000.00</b>
<b>2</b>	<b>REMOVALS / RELOCATIONS</b>				
2.01	Remove sidewalk or pavements and dispose off site	m2	\$20.00	600.0	\$12,000.00
2.02	Remove misc. trees (>.25m dia.)	LS		1	\$0.00
2.03	Remove pavement markings	LS	\$1,000.00	1	\$1,000.00
2.04	Relocate Fire Hydrant	ea	\$7,500.00		\$0.00
2.05	Relocate signs	LS	\$3,000.00	1	\$3,000.00
2.06	Relocate power pole	ea	\$4,000.00		
2.07					
	<b>Subtotal</b>				<b>\$16,000.00</b>
<b>3</b>	<b>EARTHWORKS</b>				
3.01	Topsoil Stripping	LS			\$0.00
3.02	Common Excavation (granular)	m3	\$15.00		\$0.00
3.03	Embankment fill	m3	\$30.00		\$0.00
3.04	Subgrade preparation	m2	\$10.00		\$0.00
3.05					
	<b>Subtotal</b>				<b>\$0.00</b>
<b>4</b>	<b>ROADWORKS</b>				
4.01	Saw cut and grind existing asphalt at tie-ins	m	\$17.00	370	\$6,290.00
4.02	Granular Sub-Base (230 mm)	m2	\$15.00		\$0.00
4.03	Granular Base (130 mm)	m2	\$20.00		\$0.00
4.04	Hot Mix Asphalt Concrete (100 mm)	m2	\$75.00		\$0.00
4.05	Pavement markings (longitudinal)	m	\$0.50	1000	\$500.00
4.06	Pavement markings (thermoplastic) - crosswalks zebra	m2	\$35.00	16.2	\$567.00
4.07	Pavement markings (thermoplastic) - crosswalks parallel lines	m2	\$35.00	8.5	\$296.10
4.08	Pavement markings (thermoplastic) - arrows	ea	\$70.00		\$0.00
4.09	Traffic Signs (inc. single post)	ea	\$500.00		\$0.00
4.10	Concrete Driveway (4 m)	ea	\$650.00		\$0.00
4.11	Concrete Driveway (11 m)	ea	\$1,800.00		\$0.00
4.12	Concrete curb and gutter (barrier)	m	\$70.00	370	\$25,900.00
4.13	Concrete Sidewalk (1.8 m)	m2	\$70.00	666	\$46,620.00
4.14	Concrete Multi Use Path (4.0 m)	m2	\$160.00		
4.15	Extend driveways and footpaths beyond road corridor into p. property	LS	\$10,000.00	1	\$10,000.00
4.16	Intersection curb return bulb outs	ea	\$5,800.00	6	\$34,800.00
4.17					
	<b>Subtotal</b>				<b>\$124,973.10</b>



## Fitzgerald Avenue

A	COMPLETE STREETS IMPROVEMENT DESCRIPTION				
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.8m bike lanes				
A.4	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations (via curb return bulb outs)				
A.5	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.6	Retain existing pavement				
A.7	Retain existing trees				
A.8					
A.9					
A.10					
A.11					
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
5	UNDERGROUND (STORMWATER) WORK				
5.01	Catch Basins - New	ea	\$1,500.00	12	\$18,000.00
5.02	Manholes - Adjust Existing	ea	\$2,000.00		\$0.00
5.03	Catch Basin Leads (assume 200mm)	m	\$170.00	30	\$5,100.00
5.04	Storm Pipe (assume 375mm)	m	\$400.00		\$0.00
5.05					
	Subtotal				\$23,100.00
6	STRUCTURES				
6.01					\$0.00
6.02					
	Subtotal				\$0.00
7	LANDSCAPING / IRRIGATION				
7.01	Soft Landscape	LS	\$100,000.00	1	\$100,000.00
7.02	Rain garden bulb outs	ea	\$5,500.00		\$0.00
7.03	Topsoil and hydromulch	m2	\$25.00		
7.04					
	Subtotal				\$100,000.00
8	ELECTRICAL				
8.01	Traffic Signal	LS			\$0.00
8.02					
8.03					
8.04					
	Subtotal				\$0.00
	Total for all above				\$282,073.10
	Construction Contingency at 50%				\$141,036.55
	Total (rounded)				\$420,000.00
B	PROVISIONAL/OPTIONAL ITEMS				
B.1	Remove Unsuitable Sub-Grade	LS			\$0.00
B.2	New Bus Stop adjacent hydro kiosk	LS	\$10,000.00	1	\$10,000.00
B.3					\$0.00
B.4					\$0.00
	Subtotal				\$10,000.00
	Total Including Provisional Items (ex. tax) [Rounded]				\$430,000.00
C	OTHER ITEMS				
C.1	Engineering	%		18.0%	\$77,400.00
C.2	Materials supplied by Owner	LS			\$0.00
C.3	Utility relocation	LS			\$0.00
C.4	Property purchase	LS			\$0.00
C.5	Legal fees	LS			\$0.00
C.6					
	Subtotal				\$77,400.00
	Total Including Provisional and Other Items (exc. Tax, rounded)				\$510,000.00

## Old Island Highway

A	COMPLETE STREETS IMPROVEMENT DESCRIPTION				
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.8m bike lanes				
A.4	Retain existing pavement 5th Street Bridge to Ryan Road				
A.5	Construct new pavement and raise road 0.5m Ryan Road to Headquarters Road to address road flooding issue				
A.6	Realign north side of road starting 60 m west of Comox Road				
A.7	New Signals at Comox Road and intersection with splitter Islands and straightened crosswalk alignments				
A.8	New Signals at Ryan Road and intersection with splitter Islands to suit new road alignment to north				
A.9	Relocate rain garden and bus stop in front of Value Village to allow for road widening				
A.10	Widen Comox Road to Ryan Road by 2 m to accommodate bike lanes				
A.11	No curb, gutter, sidewalk or planting on south side of road Ryan Road to Headquarters Road; to be installed by future developer.				
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
1 GENERAL ITEMS					
1.01	Mobilization	LS	\$5,000.00	1	\$5,000.00
1.02	Quality Management	LS	\$10,000.00	1	\$10,000.00
1.03	Traffic Management	LS	\$15,000.00	1	\$15,000.00
1.04	Construction survey Layout	LS	\$10,000.00	1	\$10,000.00
1.05	Existing services survey	LS	\$5,000.00	1	\$5,000.00
1.06	Erosion and Sediment Control	LS	\$10,000.00	1	\$10,000.00
1.07					
	Subtotal				\$55,000.00
2 REMOVALS / RELOCATIONS					
2.01	Remove sidewalk or pavements and dispose off site	m2	\$12.00	1050.0	\$12,600.00
2.02	Remove misc. trees (>.25m dia.)	LS		1	\$0.00
2.03	Remove pavement markings	LS	\$10,000.00	1	\$10,000.00
2.04	Relocate Fire Hydrant	ea	\$7,500.00		\$0.00
2.05	Relocate signs	LS	\$5,000.00	1	\$5,000.00
2.06	Power pole relocation	ea	\$4,000.00	5	\$20,000.00
2.07					
	Subtotal				\$47,600.00
3 EARTHWORKS					
3.01	Topsoil Stripping	LS			\$0.00
3.02	Common Excavation (granular)	m3	\$15.00	600.0	\$9,000.00
3.03	Embankment fill	m3	\$30.00	1500.0	\$45,000.00
3.04	Subgrade preparation	m2	\$10.00	3000.0	\$30,000.00
3.05					
	Subtotal				\$84,000.00
4 ROADWORKS					
4.01	Saw cut and grind existing asphalt at tie-ins	m	\$17.00	1150	\$19,550.00
4.02	Granular Sub-Base (230 mm)	m2	\$15.00	3000	\$45,000.00
4.03	Granular Base (130 mm)	m2	\$20.00	2850	\$57,000.00
4.04	Hot Mix Asphalt Concrete (100 mm)	m2	\$75.00	2700	\$202,500.00
4.05	Pavement markings (longitudinal)	m	\$0.50	4000	\$2,000.00
4.06	Pavement markings (thermoplastic) - crosswalks zebra	m2	\$35.00		\$0.00
4.07	Pavement markings (thermoplastic) - crosswalks parallel lines	m2	\$35.00		\$0.00
4.08	Pavement markings (thermoplastic) - arrows	ea	\$70.00	10	\$700.00
4.09	Traffic Signs (inc. single post)	ea	\$500.00	20	\$10,000.00
4.10	Concrete Driveway (4 m)	ea	\$650.00		\$0.00
4.11	Concrete Driveway (11 m)	ea	\$1,800.00		\$0.00
4.12	Concrete curb and gutter (barrier)	m	\$70.00	1150	\$80,500.00
4.13	Concrete Sidewalk (1.8 m)	m2	\$70.00	2070	\$144,900.00
4.14	Concrete Multi Use Path (4.0 m)	m2	\$160.00	1480.0	\$236,800.00
4.15	Extend driveways and footpaths beyond road corridor into p. property	LS		1	\$0.00
4.16	Intersection curb return bulb outs	ea	\$5,800.00		\$0.00
4.17					
	Subtotal				\$798,950.00

## Old Island Highway

<b>A COMPLETE STREETS IMPROVEMENT DESCRIPTION</b>					
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.8m bike lanes				
A.4	Retain existing pavement 5th Street Bridge to Ryan Road				
A.5	Construct new pavement and raise road 0.5m Ryan Road to Headquarters Road to address road flooding issue				
A.6	Realign north side of road starting 60 m west of Comox Road				
A.7	New Signals at Comox Road and intersection with splitter islands and straightened crosswalk alignments				
A.8	New Signals at Ryan Road and intersection with splitter islands to suit new road alignment to north				
A.9	Relocate rain garden and bus stop in front of Value Village to allow for road widening				
A.10	Widen Comox Road to Ryan Road by 2 m to accommodate bike lanes				
A.11	No curb, gutter, sidewalk or planting on south side of road Ryan Road to Headquarters Road; to be installed by future developer.				
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
<b>5 UNDERGROUND (STORMWATER) WORK</b>					
5.01	Catch Basins - New	ea	\$1,500.00	20	\$30,000.00
5.02	Manholes - Adjust Existing	ea	\$2,000.00		\$0.00
5.03	Catch Basin Leads (assume 200mm)	m	\$170.00	90	\$15,300.00
5.04	Storm Pipe (assume 375mm)	m	\$400.00	350	\$140,000.00
5.05					
	<b>Subtotal</b>				<b>\$185,300.00</b>
<b>6 STRUCTURES</b>					
6.01					\$0.00
6.02					
	<b>Subtotal</b>				<b>\$0.00</b>
<b>7 LANDSCAPING / IRRIGATION</b>					
7.01	Soft Landscape	LS			\$0.00
7.02	Rain garden bulb outs	ea	\$5,300.00		\$0.00
7.03	Topsoil and hydromulch	m2	\$25.00	595.0	\$14,875.00
7.04	Replace rain garden in front of Value Village	LS	\$10,000.00	1	\$10,000.00
	<b>Subtotal</b>				<b>\$24,875.00</b>
<b>8 ELECTRICAL</b>					
8.01	Traffic Signal - Comox Road	LS	\$200,000.00	1	\$200,000.00
8.02	Traffic Signal - Ryan Road	LS	\$200,000.00	1	\$200,000.00
8.03	Special Crosswalk adjustment to suit road widening	LS	\$10,000.00	1	\$10,000.00
8.04					
	<b>Subtotal</b>				<b>\$410,000.00</b>
	Total for all above				\$1,605,725.00
	Construction Contingency at 50%				\$802,862.50
	<b>Total (rounded)</b>				<b>\$2,410,000.00</b>
<b>B PROVISIONAL/OPTIONAL ITEMS</b>					
B.1	Remove Unsuitable Sub-Grade	LS			\$0.00
B.2	Irrigation to landscaped bulge outs	ea			\$0.00
B.3					\$0.00
B.4					\$0.00
	<b>Subtotal</b>				<b>\$0.00</b>
	<b>Total Including Provisional Items (ex. tax) [Rounded]</b>				<b>\$2,410,000.00</b>
<b>C OTHER ITEMS</b>					
C.1	Engineering	%		18.0%	\$433,800.00
C.2	Materials supplied by Owner	LS			\$0.00
C.3	Utility relocation	LS			\$0.00
C.4	Property purchase	LS			\$0.00
C.5	Legal fees	LS			\$0.00
C.6					
	<b>Subtotal</b>				<b>\$433,800.00</b>
	<b>Total Including Provisional and Other Items (exc. Tax, rounded)</b>				<b>\$2,840,000.00</b>

Willemar Avenue
-----------------

A COMPLETE STREETS IMPROVEMENT DESCRIPTION					
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.5m bike lanes				
A.4	Install 2.4m x 5m landscape islands adjacent power poles currently in roadway, and same on opposite side of road for symmetry				
A.5	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations				
A.6	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.7	Retain existing pavement				
A.8					
A.9					
A.10					
A.11					
A.12					
No.	Description	Unit	Unit Rate	Qty	Amount
<b>1 GENERAL ITEMS</b>					
1.01	Mobilization	LS		1	\$0.00
1.02	Quality Management	LS	\$5,000.00	1	\$5,000.00
1.03	Traffic Management	LS	\$3,000.00	1	\$3,000.00
1.04	Construction survey Layout	LS	\$10,000.00	1	\$10,000.00
1.05	Existing services survey	LS	\$2,000.00	1	\$2,000.00
1.06	Erosion and Sediment Control	LS	\$10,000.00	1	\$10,000.00
1.07					
	<b>Subtotal</b>				<b>\$30,000.00</b>
<b>2 REMOVALS / RELOCATIONS</b>					
2.01	Remove sidewalk or pavements and dispose off site	m2	\$12.00	2355.0	\$28,260.00
2.02	Remove misc. trees (>.25m dia.)	LS		1	\$0.00
2.03	Remove pavement markings	LS		1	\$0.00
2.04	Relocate Fire Hydrant	ea	\$7,500.00	2	\$15,000.00
2.05	Relocate signs	LS		1	\$0.00
2.06	Relocate power pole	ea	\$4,000.00		
2.07					
	<b>Subtotal</b>				<b>\$43,260.00</b>
<b>3 EARTHWORKS</b>					
3.01	Topsoil Stripping	LS			\$0.00
3.02	Common Excavation (granular)	m3	\$15.00		\$0.00
3.03	Embankment fill	m3	\$30.00		\$0.00
3.04	Subgrade preparation	m2	\$10.00		\$0.00
3.05					
	<b>Subtotal</b>				<b>\$0.00</b>
<b>4 ROADWORKS</b>					
4.01	Saw cut and grind existing asphalt at tie-ins	m	\$17.00	1910	\$32,470.00
4.02	Granular Sub-Base (230 mm)	m2	\$15.00		\$0.00
4.03	Granular Base (130 mm)	m2	\$20.00		\$0.00
4.04	Hot Mix Asphalt Concrete (100 mm)	m2	\$75.00		\$0.00
4.05	Pavement markings (longitudinal)	m	\$0.50	4250	\$2,125.00
4.06	Pavement markings (thermoplastic) - crosswalks zebra	m2	\$35.00	16.2	\$567.00
4.07	Pavement markings (thermoplastic) - crosswalks parallel lines	m2	\$35.00		\$0.00
4.08	Pavement markings (thermoplastic) - arrows	ea	\$70.00		\$0.00
4.09	Traffic Signs (Inc. single post)	ea	\$500.00		\$0.00
4.10	Concrete Driveway (4 m)	ea	\$650.00	75	\$48,750.00
4.11	Concrete Driveway (11 m)	ea	\$1,800.00	5	\$9,000.00
4.12	Concrete curb and gutter (barrier)	m	\$70.00	1910	\$133,700.00
4.13	Concrete Sidewalk (1.8 m)	m2	\$70.00	3083	\$215,810.00
4.14	Concrete Multi Use Path (4.0 m)	m2	\$160.00		
4.15	Extend driveways and footpaths beyond road corridor into p. property	LS	\$60,000.00	1	\$60,000.00
4.16	Intersection curb return bulb outs	ea	\$5,800.00	6	\$34,800.00
4.17					
	<b>Subtotal</b>				<b>\$537,222.00</b>



Willemar Avenue
-----------------

<b>A</b>	<b>COMPLETE STREETS IMPROVEMENT DESCRIPTION</b>				
A.1	Replace all existing 1.5m sidewalks with new 1.8m sidewalks				
A.2	Install new curb and gutter adjacent new sidewalks				
A.3	Install 1.5m bike lanes				
A.4	Install 2.4m x 5m landscape islands adjacent power poles currently in roadway, and same on opposite side of road for symmetry				
A.5	Reduce roadway width to edge of bike lanes at pedestrian crosswalk locations				
A.6	Install new curb returns at intersecting roadways to line up with edges of bike lanes				
A.7	Retain existing pavement				
A.8					
A.9					
A.10					
A.11					
A.12					
<b>No.</b>	<b>Description</b>	<b>Unit</b>	<b>Unit Rate</b>	<b>Qty</b>	<b>Amount</b>
<b>5</b>	<b>UNDERGROUND (STORMWATER) WORK</b>				
5.01	Catch Basins - New	ea	\$1,500.00	16	\$24,000.00
5.02	Manholes - Adjust Existing	ea	\$2,000.00		\$0.00
5.03	Catch Basin Leads (assume 200mm)	m	\$170.00	70	\$11,900.00
5.04	Storm Pipe (assume 375mm)	m	\$400.00		\$0.00
5.05					
	<b>Subtotal</b>				<b>\$35,900.00</b>
<b>6</b>	<b>STRUCTURES</b>				
6.01					\$0.00
6.02					
	<b>Subtotal</b>				<b>\$0.00</b>
<b>7</b>	<b>LANDSCAPING / IRRIGATION</b>				
7.01	Soft Landscape	LS			\$0.00
7.02	Rain garden bulb outs	ea	\$5,300.00	12	\$63,600.00
7.03	Topsoil and hydromulch	m2	\$25.00		\$0.00
7.04					
	<b>Subtotal</b>				<b>\$63,600.00</b>
<b>8</b>	<b>ELECTRICAL</b>				
8.01	Traffic Signal	LS			\$0.00
8.02					
8.03					
8.04					
	<b>Subtotal</b>				<b>\$0.00</b>
	<b>Total for all above</b>				<b>\$709,982.00</b>
	<b>Construction Contingency at 50%</b>				<b>\$354,991.00</b>
	<b>Total (rounded)</b>				<b>\$1,060,000.00</b>
<b>B</b>	<b>PROVISIONAL/OPTIONAL ITEMS</b>				
B.1	Remove Unsuitable Sub-Grade	LS			\$0.00
B.2	Irrigation to landscaped bulge outs	ea			\$0.00
B.3					\$0.00
B.4					\$0.00
	<b>Subtotal</b>				<b>\$0.00</b>
	<b>Total Including Provisional Items (ex. tax) [Rounded]</b>				<b>\$1,060,000.00</b>
<b>C</b>	<b>OTHER ITEMS</b>				
C.1	Engineering	%		18.0%	\$190,800.00
C.2	Materials supplied by Owner	LS			\$0.00
C.3	Utility relocation	LS			\$0.00
C.4	Property purchase	LS			\$0.00
C.5	Legal fees	LS			\$0.00
C.6					
	<b>Subtotal</b>				<b>\$190,800.00</b>
	<b>Total Including Provisional and Other Items (exc. Tax, rounded)</b>				<b>\$1,250,000.00</b>

## **Appendix D: Cycling Level of Traffic Stress Evaluations**

## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/10/2014  
 Analyst ZP  
 Corridor 5th Street  
 From Menzies Avenue  
 To Fitzgerald Avenue  
 @ mid-block  
 Horizon 2014 (Existing Conditions)  
 Direction EB/WB

Level of Traffic Stress =

3

1) Please select the type of cycling facility  
Mixed Traffic

*Please Complete Question 5 below (skip Questions 2-4)*

2) Is the bike lane located alongside a parking lane?

3) Bike Lane (not alongside parking lane)

Street Width	<u>                    </u>	<i>Please enter the number of through lanes per direction</i>
Raised Median?	<u>                    </u>	<i>Does the street have a raised median at this mid-block location?</i>
Bike Lane Width (m)	<u>                    </u>	<i>Width from the curb to the outside travel lane</i>
Operating Speed (km/hr)	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Bike Lane Blockage	<u>                    </u>	<i>Applicable primarily in commercial areas</i>

4) Bike Lane (alongside parking lane)

Street Width	<u>                    </u>	<i>Please enter the number of through lanes per direction</i>
Parking + Bike Lane Width	<u>                    </u>	<i>Sum includes paved gutter and any marked buffers</i>
Operating Speed (km/hr)	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Bike Lane Blockage	<u>                    </u>	<i>Applicable primarily in commercial areas</i>
Residential Street?	<u>                    </u>	<i>Primarily residential land abuts the corridor</i>

5) Mixed Traffic Variables

Street Width	<u>2-3 lanes</u>	<i>Number of lanes (two-way)</i>
Operating Speed	<u>50 km/hr</u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>50 km/hr</u>	
Centreline?	<u>Yes</u>	
Residential Street?	<u>No</u>	<i>Primarily residential land abuts the corridor</i>

*Analysis Complete!*

Notes

## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/11/2014  
 Analyst ZP  
 Corridor 5th Street  
 From Menzies Avenue  
 To Fitzgerald Avenue  
 @ mid-block  
 Horizon Future Conditions  
 Direction E/W

Level of Traffic Stress =

2

1) Please select the type of cycling facility

Bike Lane

*Please complete Question 2 below*

2) Is the bike lane located alongside a parking lane?

Yes

*Please complete Question 4 below (skip Question 3)*

3) Bike Lane (not alongside parking lane)

Street Width                     

*Please enter the number of through lanes per direction*

Raised Median?                     

*Does the street have a raised median at this mid-block location?*

Bike Lane Width (m)                     

*Width from the curb to the outside travel lane*

Operating Speed (km/hr)                     

*If unknown, can be assumed equal to posted speed*

Posted Speed Limit                     

Bike Lane Blockage                     

*Applicable primarily in commercial areas*

4) Bike Lane (alongside parking lane)

Street Width 1

*Please enter the number of through lanes per direction*

Parking + Bike Lane Width 4.25m

*Sum includes paved gutter and any marked buffers*

Operating Speed (km/hr) 50 km/hr

*If unknown, can be assumed equal to posted speed*

Posted Speed Limit 50 km/hr

Bike Lane Blockage Rare

*Applicable primarily in commercial areas*

Residential Street? No

*Primarily residential land abuts the corridor*

*Analysis Complete!*

5) Mixed Traffic Variables

Street Width                     

*Number of lanes (two-way)*

Operating Speed                     

*If unknown, can be assumed equal to posted speed*

Posted Speed Limit                     

Centreline?                     

Residential Street?                     

*Primarily residential land abuts the corridor*

### Notes

Bus lane blockage assumed to be infrequent because of presence of on-street parking



## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/10/2014  
 Analyst ZP  
 Corridor 11th Street  
 From Cumberland Road  
 To Riverway  
 @ mid-block  
 Horizon 2014 (Existing Conditions)  
 Direction EB/WB

Level of Traffic Stress =

2

1) Please select the type of cycling facility  
Mixed Traffic

*Please Complete Question 5 below (skip Questions 2-4)*

2) Is the bike lane located alongside a parking lane?

\_\_\_\_\_

3) Bike Lane (not alongside parking lane)

Street Width	_____	<i>Please enter the number of through lanes per direction</i>
Raised Median?	_____	<i>Does the street have a raised median at this mid-block location?</i>
Bike Lane Width (m)	_____	<i>Width from the curb to the outside travel lane</i>
Operating Speed (km/hr)	_____	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	_____	
Bike Lane Blockage	_____	<i>Applicable primarily in commercial areas</i>

4) Bike Lane (alongside parking lane)

Street Width	_____	<i>Please enter the number of through lanes per direction</i>
Parking + Bike Lane Width	_____	<i>Sum includes paved gutter and any marked buffers</i>
Operating Speed (km/hr)	_____	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	_____	
Bike Lane Blockage	_____	<i>Applicable primarily in commercial areas</i>
Residential Street?	_____	<i>Primarily residential land abuts the corridor</i>

5) Mixed Traffic Variables

Street Width	<u>2-3 lanes</u>	<i>Number of lanes (two-way)</i>
Operating Speed	<u>50 km/hr</u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>50 km/hr</u>	
Centreline?	<u>No</u>	
Residential Street?	<u>Yes</u>	<i>Primarily residential land abuts the corridor</i>

*Analysis Complete!*

Notes

## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/17/2014  
 Analyst ZP  
 Corridor 11th Street  
 From Cumberland Road  
 To Riverway  
 @ mid-block  
 Horizon Future Conditions  
 Direction EB/WB

Level of Traffic Stress =

2

1) Please select the type of cycling facility

Bike Lane

*Please complete Question 2 below*

2) Is the bike lane located alongside a parking lane?

Yes

*Please complete Question 4 below (skip Question 3)*

3) Bike Lane (not alongside parking lane)

Street Width \_\_\_\_\_  
 Raised Median? \_\_\_\_\_  
 Bike Lane Width (m) \_\_\_\_\_  
 Operating Speed (km/hr) \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Bike Lane Blockage \_\_\_\_\_

*Please enter the number of through lanes per direction*

*Does the street have a raised median at this mid-block location?*

*Width from the curb to the outside travel lane*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

4) Bike Lane (alongside parking lane)

Street Width 1  
 Parking + Bike Lane Width 4.25m  
 Operating Speed (km/hr) 50 km/hr  
 Posted Speed Limit 50 km/hr  
 Bike Lane Blockage Rare  
 Residential Street? Yes

*Please enter the number of through lanes per direction*

*Sum includes paved gutter and any marked buffers*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Primarily residential land abuts the corridor*

*Analysis Complete!*

5) Mixed Traffic Variables

Street Width \_\_\_\_\_  
 Operating Speed \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Centreline? \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Number of lanes (two-way)*

*If unknown, can be assumed equal to posted speed*

*Primarily residential land abuts the corridor*

Notes

## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/10/2014  
 Analyst ZP  
 Corridor Cliffe Avenue  
 From 1st Street  
 To 5th Street  
 @ mid-block  
 Horizon 2014 (Existing Conditions)  
 Direction N/S

Level of Traffic Stress =

3

1) Please select the type of cycling facility

Mixed Traffic

*Please Complete Question 5 below (skip Questions 2-4)*

2) Is the bike lane located alongside a parking lane?

3) Bike Lane (not alongside parking lane)

Street Width	<u>                    </u>	<i>Please enter the number of through lanes per direction</i>
Raised Median?	<u>                    </u>	<i>Does the street have a raised median at this mid-block location?</i>
Bike Lane Width (m)	<u>                    </u>	<i>Width from the curb to the outside travel lane</i>
Operating Speed (km/hr)	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Bike Lane Blockage	<u>                    </u>	<i>Applicable primarily in commercial areas</i>

4) Bike Lane (alongside parking lane)

Street Width	<u>                    </u>	<i>Please enter the number of through lanes per direction</i>
Parking + Bike Lane Width	<u>                    </u>	<i>Sum includes paved gutter and any marked buffers</i>
Operating Speed (km/hr)	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Bike Lane Blockage	<u>                    </u>	<i>Applicable primarily in commercial areas</i>
Residential Street?	<u>                    </u>	<i>Primarily residential land abuts the corridor</i>

5) Mixed Traffic Variables

Street Width	<u>2-3 lanes</u>	<i>Number of lanes (two-way)</i>
Operating Speed	<u>50 km/hr</u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>50 km/hr</u>	
Centreline?	<u>Yes</u>	
Residential Street?	<u>No</u>	<i>Primarily residential land abuts the corridor</i>

*Analysis Complete!*

Notes



## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/17/2014  
 Analyst ZP  
 Corridor Cliffe Avenue  
 From 1st Street  
 To 5th Street  
 @ mid-block  
 Horizon Future Conditions - NB  
 Direction N/S

Level of Traffic Stress =

2

1) Please select the type of cycling facility

Bike Lane

*Please complete Question 2 below*

2) Is the bike lane located alongside a parking lane?

Yes

*Please complete Question 4 below (skip Question 3)*

3) Bike Lane (not alongside parking lane)

Street Width \_\_\_\_\_  
 Raised Median? \_\_\_\_\_  
 Bike Lane Width (m) \_\_\_\_\_  
 Operating Speed (km/hr) \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Bike Lane Blockage \_\_\_\_\_

*Please enter the number of through lanes per direction*

*Does the street have a raised median at this mid-block location?*

*Width from the curb to the outside travel lane*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

4) Bike Lane (alongside parking lane)

Street Width 1  
 Parking + Bike Lane Width 4.25m  
 Operating Speed (km/hr) 50 km/hr  
 Posted Speed Limit 50 km/hr  
 Bike Lane Blockage Rare  
 Residential Street? No

*Please enter the number of through lanes per direction*

*Sum includes paved gutter and any marked buffers*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Primarily residential land abuts the corridor*

***Analysis Complete!***

5) Mixed Traffic Variables

Street Width \_\_\_\_\_  
 Operating Speed \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Centreline? \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Number of lanes (two-way)*

*If unknown, can be assumed equal to posted speed*

*Primarily residential land abuts the corridor*

### Notes

Bike lane = 1.5m + Parking lane = 2.4m for a total of 4.1m, plus curb and gutter (60 cm), so halfway between 4m and 4.25m. Current calculation uses 4.25m, but with 4m LTS increases to 3.



## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/13/2014  
 Analyst ZP  
 Corridor Cliffe Avenue  
 From 1st Street  
 To 5th Street  
 @ mid-block  
 Horizon Future Conditions - SB  
 Direction N/S

Level of Traffic Stress =

3

1) Please select the type of cycling facility  
Bike Lane

*Please complete Question 2 below*

2) Is the bike lane located alongside a parking lane?  
No

*Please complete Question 3 below*

3) Bike Lane (not alongside parking lane)

Street Width 1  
 Raised Median? No  
 Bike Lane Width (m) 1.7m or less  
 Operating Speed (km/hr) 50 km/hr  
 Posted Speed Limit 50 km/hr  
 Bike Lane Blockage Frequent

*Please enter the number of through lanes per direction*

*Does the street have a raised median at this mid-block location?*

*Width from the curb to the outside travel lane*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Analysis Complete!*

4) Bike Lane (alongside parking lane)

Street Width \_\_\_\_\_  
 Parking + Bike Lane Width \_\_\_\_\_  
 Operating Speed (km/hr) \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Bike Lane Blockage \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Please enter the number of through lanes per direction*

*Sum includes paved gutter and any marked buffers*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Primarily residential land abuts the corridor*

5) Mixed Traffic Variables

Street Width \_\_\_\_\_  
 Operating Speed \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Centreline? \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Number of lanes (two-way)*

*If unknown, can be assumed equal to posted speed*

*Primarily residential land abuts the corridor*

### Notes

In this case, assuming frequent bike lane blockages is probably appropriate given that there is no parking lane SB and given the number of bus routes converging on this corridor, therefore there is still a high level of stress = 3.0. If we assume parking is 'rarely' blocked, then the LTS improves to 2.

## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/10/2014  
 Analyst ZP  
 Corridor Fitzgerald Avenue  
 From 5th Street  
 To Cumberland Road  
 @ mid-block  
 Horizon 2014 (Existing Conditions)  
 Direction N/S

Level of Traffic Stress =

3

1) Please select the type of cycling facility  
Mixed Traffic

*Please Complete Question 5 below (skip Questions 2-4)*

2) Is the bike lane located alongside a parking lane?

\_\_\_\_\_

3) Bike Lane (not alongside parking lane)

Street Width	_____	<i>Please enter the number of through lanes per direction</i>
Raised Median?	_____	<i>Does the street have a raised median at this mid-block location?</i>
Bike Lane Width (m)	_____	<i>Width from the curb to the outside travel lane</i>
Operating Speed (km/hr)	_____	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	_____	
Bike Lane Blockage	_____	<i>Applicable primarily in commercial areas</i>

4) Bike Lane (alongside parking lane)

Street Width	_____	<i>Please enter the number of through lanes per direction</i>
Parking + Bike Lane Width	_____	<i>Sum includes paved gutter and any marked buffers</i>
Operating Speed (km/hr)	_____	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	_____	
Bike Lane Blockage	_____	<i>Applicable primarily in commercial areas</i>
Residential Street?	_____	<i>Primarily residential land abuts the corridor</i>

5) Mixed Traffic Variables

Street Width	<u>2-3 lanes</u>	<i>Number of lanes (two-way)</i>
Operating Speed	<u>50 km/hr</u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>50 km/hr</u>	
Centreline?	<u>Yes</u>	
Residential Street?	<u>No</u>	<i>Primarily residential land abuts the corridor</i>

*Analysis Complete!*

Notes

## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/11/2014  
 Analyst ZP  
 Corridor Fitzgerald Avenue  
 From 5th Street  
 To Cumberland Road  
 @ mid-block  
 Horizon Future Conditions  
 Direction N/S

Level of Traffic Stress =

2

1) Please select the type of cycling facility

Bike Lane

*Please complete Question 2 below*

2) Is the bike lane located alongside a parking lane?

Yes

*Please complete Question 4 below (skip Question 3)*

3) Bike Lane (not alongside parking lane)

Street Width	<u>                    </u>	<i>Please enter the number of through lanes per direction</i>
Raised Median?	<u>                    </u>	<i>Does the street have a raised median at this mid-block location?</i>
Bike Lane Width (m)	<u>                    </u>	<i>Width from the curb to the outside travel lane</i>
Operating Speed (km/hr)	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Bike Lane Blockage	<u>                    </u>	<i>Applicable primarily in commercial areas</i>

4) Bike Lane (alongside parking lane)

Street Width	<u>1</u>	<i>Please enter the number of through lanes per direction</i>
Parking + Bike Lane Width	<u>4.25m</u>	<i>Sum includes paved gutter and any marked buffers</i>
Operating Speed (km/hr)	<u>50 km/hr</u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>50 km/hr</u>	
Bike Lane Blockage	<u>Rare</u>	<i>Applicable primarily in commercial areas</i>
Residential Street?	<u>No</u>	<i>Primarily residential land abuts the corridor</i>

*Analysis Complete!*

5) Mixed Traffic Variables

Street Width	<u>                    </u>	<i>Number of lanes (two-way)</i>
Operating Speed	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Centreline?	<u>                    </u>	
Residential Street?	<u>                    </u>	<i>Primarily residential land abuts the corridor</i>

Notes



## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/10/2014  
 Analyst ZP  
 Corridor Old Island Highway  
 From 5th Street Bridge  
 To Headquarters Road  
 @ mid-block  
 Horizon 2014 (Existing Conditions)  
 Direction N/S

Level of Traffic Stress =

4

1) Please select the type of cycling facility

Mixed Traffic

*Please Complete Question 5 below (skip Questions 2-4)*

2) Is the bike lane located alongside a parking lane?

3) Bike Lane (not alongside parking lane)

Street Width \_\_\_\_\_  
 Raised Median? \_\_\_\_\_  
 Bike Lane Width (m) \_\_\_\_\_  
 Operating Speed (km/hr) \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Bike Lane Blockage \_\_\_\_\_

*Please enter the number of through lanes per direction*

*Does the street have a raised median at this mid-block location?*

*Width from the curb to the outside travel lane*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

4) Bike Lane (alongside parking lane)

Street Width \_\_\_\_\_  
 Parking + Bike Lane Width \_\_\_\_\_  
 Operating Speed (km/hr) \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Bike Lane Blockage \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Please enter the number of through lanes per direction*

*Sum includes paved gutter and any marked buffers*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Primarily residential land abuts the corridor*

5) Mixed Traffic Variables

Street Width 2-3 lanes  
 Operating Speed 50 km/hr  
 Posted Speed Limit 60 km/hr or more  
 Centreline? Yes  
 Residential Street? No

*Number of lanes (two-way)*

*If unknown, can be assumed equal to posted speed*

*Primarily residential land abuts the corridor*

*Analysis Complete!*

### Notes

Considers the worst section along corridor so although there are sections with a paved shoulder, this analysis is carried out where there are no cycling provisions. Old Island Hwy is signed at 60 km/hr south of Veterans Memorial Parkway, which is assumed to continue through this section (unsigned).



## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/15/2014  
 Analyst ZP  
 Corridor Old Island Highway  
 From 5th Street Bridge  
 To Ryan Road  
 @ mid-block  
 Horizon Future Conditions  
 Direction N/S

Level of Traffic Stress =

3

1) Please select the type of cycling facility

Bike Lane

*Please complete Question 2 below*

2) Is the bike lane located alongside a parking lane?

No

*Please complete Question 3 below*

3) Bike Lane (not alongside parking lane)

Street Width 1  
 Raised Median? No  
 Bike Lane Width (m) 1.8m or more  
 Operating Speed (km/hr) 60 km/hr  
 Posted Speed Limit 60 km/hr  
 Bike Lane Blockage Rare

*Please enter the number of through lanes per direction*

*Does the street have a raised median at this mid-block location?*

*Width from the curb to the outside travel lane*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Analysis Complete!*

4) Bike Lane (alongside parking lane)

Street Width \_\_\_\_\_  
 Parking + Bike Lane Width \_\_\_\_\_  
 Operating Speed (km/hr) \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Bike Lane Blockage \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Please enter the number of through lanes per direction*

*Sum includes paved gutter and any marked buffers*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Primarily residential land abuts the corridor*

5) Mixed Traffic Variables

Street Width \_\_\_\_\_  
 Operating Speed \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Centreline? \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Number of lanes (two-way)*

*If unknown, can be assumed equal to posted speed*

*Primarily residential land abuts the corridor*

Notes



## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/10/2014  
 Analyst ZP  
 Corridor Willemar  
 From Cumberland Road  
 To 26th Street  
 @ mid-block  
 Horizon 2014 (Existing Conditions)  
 Direction N/S

Level of Traffic Stress =

1

1) Please select the type of cycling facility  
Mixed Traffic

*Please Complete Question 5 below (skip Questions 2-4)*

2) Is the bike lane located alongside a parking lane?

3) Bike Lane (not alongside parking lane)

Street Width	<u>                    </u>	<i>Please enter the number of through lanes per direction</i>
Raised Median?	<u>                    </u>	<i>Does the street have a raised median at this mid-block location?</i>
Bike Lane Width (m)	<u>                    </u>	<i>Width from the curb to the outside travel lane</i>
Operating Speed (km/hr)	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Bike Lane Blockage	<u>                    </u>	<i>Applicable primarily in commercial areas</i>

4) Bike Lane (alongside parking lane)

Street Width	<u>                    </u>	<i>Please enter the number of through lanes per direction</i>
Parking + Bike Lane Width	<u>                    </u>	<i>Sum includes paved gutter and any marked buffers</i>
Operating Speed (km/hr)	<u>                    </u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>                    </u>	
Bike Lane Blockage	<u>                    </u>	<i>Applicable primarily in commercial areas</i>
Residential Street?	<u>                    </u>	<i>Primarily residential land abuts the corridor</i>

5) Mixed Traffic Variables

Street Width	<u>2-3 lanes</u>	<i>Number of lanes (two-way)</i>
Operating Speed	<u>Up to 40 km/hr</u>	<i>If unknown, can be assumed equal to posted speed</i>
Posted Speed Limit	<u>Up to 40 km/hr</u>	
Centreline?	<u>Yes</u>	
Residential Street?	<u>Yes</u>	<i>Primarily residential land abuts the corridor</i>

*Analysis Complete!*

Notes



## Cycling Level of Traffic Stress Evaluation Form - Midblock Segment

Date 7/17/2014  
 Analyst ZP  
 Corridor Willemar  
 From Cumberland Road  
 To 26th Street  
 @ mid-block  
 Horizon Future Conditions  
 Direction N/S

Level of Traffic Stress =

2

1) Please select the type of cycling facility  
Bike Lane

*Please complete Question 2 below*

2) Is the bike lane located alongside a parking lane?  
Yes

*Please complete Question 4 below (skip Question 3)*

3) Bike Lane (not alongside parking lane)

Street Width \_\_\_\_\_  
 Raised Median? \_\_\_\_\_  
 Bike Lane Width (m) \_\_\_\_\_  
 Operating Speed (km/hr) \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Bike Lane Blockage \_\_\_\_\_

*Please enter the number of through lanes per direction*

*Does the street have a raised median at this mid-block location?*

*Width from the curb to the outside travel lane*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

4) Bike Lane (alongside parking lane)

Street Width 1  
 Parking + Bike Lane Width 4.25m  
 Operating Speed (km/hr) 50 km/hr  
 Posted Speed Limit 50 km/hr  
 Bike Lane Blockage N/A  
 Residential Street? Yes

*Please enter the number of through lanes per direction*

*Sum includes paved gutter and any marked buffers*

*If unknown, can be assumed equal to posted speed*

*Applicable primarily in commercial areas*

*Primarily residential land abuts the corridor*

*Analysis Complete!*

5) Mixed Traffic Variables

Street Width \_\_\_\_\_  
 Operating Speed \_\_\_\_\_  
 Posted Speed Limit \_\_\_\_\_  
 Centreline? \_\_\_\_\_  
 Residential Street? \_\_\_\_\_

*Number of lanes (two-way)*

*If unknown, can be assumed equal to posted speed*

*Primarily residential land abuts the corridor*

Notes



## **Appendix E: Detailed Evaluation Framework**



# City of Courtenay Complete Streets Pilot Project Detailed Corridor Evaluation July 29, 2014

			EVALUATION CRITERIA						Old Island Hwy	5th	11th	Cille	Fitzgerald	Williamar
			Description	Scoring Scheme	Points	3	5	7	10	13	15			
DEMAND	1. What is the daily volume of vehicular traffic using the roadway? <i>(provides a measure of the importance of the roadway from a mobility perspective; the more people using the corridor, the more visible the project)</i>	Daily Traffic < 3000	0											
		Daily Traffic 3000-8000	1	2	1	0	2	1	0					
		Daily Traffic > 8000	2											
	2. Will the project attract visitors and residents downtown?	No – project is not located near the downtown	0	1	2	1	2	2	0					
		Yes – project is located within the downtown	2											
	3. Is the project located within close proximity to any major institutional, commercial, or recreational traffic generators? <i>(reflects number of potential beneficiaries &amp; opportunity to encourage modal shift)</i>	No - There are no major traffic generators within close proximity to the corridor	0	2	0	0	2	0	1					
		Yes - There are major traffic generators nearby (other than the downtown)	2											
	4. Is the project length long enough to generate a noticeable improvement? <i>(provides a proxy measure of the number of residents who will benefit from the project)</i>	Yes - moderate improvement anticipated (length <500m)	0	2	2	2	0	0	2					
		Yes - significant improvement anticipated (length >500m)	2											
	5. What is the residential property score for the corridor? <i>(provides a proxy measure of the number of residents who will benefit from the project)</i>	0-250	0											
250-500		1	0	1	2	0	1	2						
500+		2												
6. What is the mix of land use types within 300m of the corridor? <i>(measured using an entropy score from 0-1; a maximum score of 1 would represent an area with an equal mix of the following land use categories: residential, commercial, and employment (institution + industrial))</i>	<.5	0												
	.5-.85	1	0	1	2	1	1	0						
	>0.85	2												
Demand Sub-Total					/12 Max	7	7	7	7	5	5			
Demand Percentage						58%	58%	58%	58%	42%	42%			
SAFETY	7. What is the collision rate of the roadway?	0-10 collisions / million vehicle-kilometers	0											
		10-20 collisions / million vehicle-kilometers	2	0	0	4	2	2	0					
		>20 collisions / million vehicle-kilometers	4											
	8. What percentage of collisions involved pedestrians or cyclists (either directly or indirectly)?	0-10%	0											
		10-20%	2	0	4	4	0	2	0					
		Greater than 20%	4											
	9. Does the corridor serve vulnerable users, including children and the elderly?	No	0											
		Yes - there is a retirement home / senior's centre on the corridor	2	1	2	2	0	0	2					
		Yes - the corridor is located on a recommended walking / biking route to school	2											
	10. Does the proposed cross-section improve the visibility of active transportation users, reduce pedestrian crossing distances, or discourage speeding? <i>(note that this measure focuses on traffic calming elements; the safety benefits of sidewalks/cycling facilities are captured separately below)</i>	No - While the cross-section improves the separation between modes, it does not directly improve sight lines or calm traffic.	0											
Yes - shrubbery / landscaping / parking is being removed that will improve visibility		1	0	2	0	0	2	2						
Yes - bulb-outs are provided to reduce crossing distances, slow traffic, and improve visibility		2												
Safety Sub-total		/12 Max	1	8	10	2	6	4						
Safety Percentage						8%	67%	83%	17%	50%	33%			
TRANSIT	11. Is the corridor part of a transit route? <i>(transit routes generate pedestrian activity, and provide an indication of the need for transit-stop amenities)</i>	No	0											
		Yes – used by 1-2 transit routes	1	2	1	0	2	2	1					
		Yes – used by more than 2 transit routes	2											
	12. Is there opportunity to improve the quality of the transit stop(s)?	No - transit stops already provide good accommodation, or there are no stops	0											
		Yes - minor improvements could be incorporated into the re-design	1	0	2	0	1	2	2					
		Yes - major improvements could be incorporated into the re-design	2											
Transit Sub-total					/4 Max	2	3	0	3	4	3			
Transit Percentage						50%	75%	0%	75%	100%	75%			
WALKING	13. Does the proposed cross-section address gaps in the sidewalk network?	No – the corridor already has sidewalks on both sides of the street	0											
		Yes – sidewalks are currently missing from ONE side of the street, and will be provided	2	2	0	0	0	0	1					
		Yes – sidewalks are currently missing from BOTH sides of the street, and will be provided	4											
	14. What is the increase in the width of sidewalk facilities (for the section with the worst existing conditions)?	No change	0											
		Existing sidewalk widened	1	4	1	1	1	1	2					
		New sidewalk added with width between 1.5m and 1.7m	2											
	15. Has a new boulevard or other landscaping element been provided to enhance the pedestrian environment?	New sidewalk added with width ≥1.8m	4											
		No – none has been provided, or the corridor already had one of these elements	0	1	1	0	1	2	1					
		Yes - a new boulevard has been provided or an existing boulevard has been significantly widened	2											
		Walking Sub-total	/10 Max	7	2	1	2	3	4					
Walking Percentage						70%	20%	10%	20%	30%	40%			



CYCLING	16. What is the change in the 'Bicycling Level of Traffic Stress' between the Existing and Proposed configuration? <i>(the Level of Traffic Stress (LTS) varies from 1 to 4, with 4 representing the most stressful condition for cyclists - refer to evaluation sheets and summary table)</i>	No improvement in LTS	0	1	2	0	0	2	0
		Improvement of 1, except for the case where the LTS goes from 3 to 2	1						
		Improvement of 1, for the case where the LTS goes from 3 to 2 (i.e. the level of traffic stress which is considered to be comfortable for all skills / classes of adult riders)	2						
		Improvement of 2	2						
	17. If new cycling facilities are proposed, does the corridor provide a connection with other existing or planned cycling facilities?	No	0	2	1	2	0	2	0.5
		Yes – will connect with a proposed dedicated cycling facility or an existing unpaved path	1						
		Yes – will connect with an existing bike lane or paved path (such as the Courtenay Riverway, Idiens Greenway, or Hawk Greenway)	2						
	18. Would the complete streets improvement provide an opportunity to improve the pavement condition?	No - the existing pavement condition is good, or the pavement will not be replaced as part of the project	0	0.5	0	0	0.5	0	0
		Yes - the existing pavement is 'fair'	0.5						
		Yes - the existing pavement is 'poor'	1						
19. Will the topography of the street deter potential cyclists?	Yes - There are steep sections (> 6%) over a distance > 75m	0	1	1	1	1	1	1	
	Potentially - There are sections with slope between 3-6% over a distance > 100m	0.5							
	No - the route is relatively flat (slopes < 3%)	1							
Cycling Sub-total			/6 Max	4.5	4	3	1.5	5	1.5
Cycling Percentage				75%	67%	50%	25%	63%	25%
GREEN INFRASTRUCTURE	20. Does the project require the removal of mature trees or green space?	Yes - they will have to be removed in order to complete the project, or there are no existing street trees / boulevards	0	0	4	4	2	2	4
		No - trees / boulevard will be retained	4						
	21. Do the proposed corridor improvements include new green infrastructure elements such as rain gardens / bioswales?	No	0	2	4	0	0	4	4
		Yes	4						
Green Infrastructure Sub-total			/8 Max	2	8	4	2	6	8
Green Infrastructure Percentage				25%	100%	50%	25%	75%	100%
FEASIBILITY	22. Potential for project to act as a "showcase" project & improve the visibility of alternative modes	Limited potential – project length / location are such that the project is unlikely to be noticed by the larger community	0	2	1	1	2	2	0.5
		Moderate potential – project is somewhat visible within the community	1						
		High potential – project is well-situated to attract attention	2						
	23. Is the corridor included in the 2014 Capital Program, providing an opportunity to "piggy-back" on other planned work?	No	0	0	0	0	0	0	2
		Yes	2						
	24. What is the estimated cost per kilometre for the project? <i>(provides a measure of relative cost, independent of project length)</i>	>\$2M / KM	0	0	2	4	0	2	2
		\$1M-\$2M / KM	2						
		<\$1M / KM	4						
	25. What is the estimated total project cost? <i>(provides a measure of affordability)</i>	>\$1M	0	0	4	4	0	8	0
		\$0.5M-\$1M	4						
		<\$0.5M	8						
	26. Does the project require the removal of any on-street parking?	Yes => 50%	0	1	1	0	2	1	1
		Yes < 50%	1						
		No	2						
	27. Does the project require the removal of any existing landscaping elements as provided by adjacent property owners?	Yes	0	2	2	2	0	0	2
		No impacts anticipated	2						
Feasibility Sub-total			/20 Max	5	10	11	4	13	7.5
Feasibility Percentage				25%	50%	55%	20%	65%	39%
TOTAL PROJECT SCORES	FACTORS & WEIGHTING			Old Island Highway	5th Street	11th Street	Cille Avenue	Fitzgerald Avenue	Willemar Avenue
	Demand	15%							
	Safety	15%							
	Transit	5%							
	Walking	20%							
	Cycling	20%							
	Green Infrastructure	5%							
	Feasibility	20%							
	Weighted Project Totals		100%						

WHEREAS proposed bitumen export pipelines present unacceptable risk to this region's maritime based economy, its unique ecosystems, and the sustainable jobs in aquaculture, fisheries, tourism and recreation; and

WHEREAS the inevitable spill from the dramatic increase in tanker traffic resulting from these proposed pipelines threatens our social and cultural identification as a coastal community; and

WHEREAS exporting raw natural resources reduces the total number of jobs available to citizens in this community who choose to work in the oilfields;

THEREFORE BE IT RESOLVED that the City of Courtenay express its opposition to the Bitumen Export Pipeline proposals that would lead to the expansion of oil tanker traffic through B.C.'s coastal waters;

AND BE IT FURTHER RESOLVED that the City of Courtenay supports its citizens who are oilfield workers and acknowledges that it is unwise to export an unrefined product at an unsustainable rate thereby reducing the future job opportunities for these workers, and future generations of our residents who may wish to seek employment in the oil fields;

AND BE IT FURTHER RESOLVED that the City of Courtenay urge the Provincial and Federal governments to use whatever means are available to stop the expansion of crude oil tanker traffic on our coast, encourage them to develop the oil sands for domestic benefit, encourage them to refine this natural resource in Canada to enhance job creation and tax revenue, and to notify Provincial and Federal government representatives and officials of this resolution.





**THE CORPORATION OF THE CITY OF COURTENAY**

**BYLAW NO. 2797**

**A bylaw to dedicate land for park purposes**

Whereas Council may under *Section 30* of the *Community Charter*, by a bylaw adopted with an affirmative vote of at least 2/3 of all the members of Council, dedicate land for the public purpose of a park;

Therefore the Council of the Corporation of the City of Courtenay in open meeting assembled hereby enacts as follows:

1. This bylaw may be cited for all purposes as **"Park Dedication Bylaw No. 2797, 2014"**.
2. That the lands 5.29 hectares in size identified as Park as shown on **"Schedule A"** attached hereto and forming part of this bylaw are hereby dedicated as park.
3. This bylaw shall come into effect upon final adoption hereof.

Read a first time this 5<sup>th</sup> day of August, 2014.

Read a second time this 5<sup>th</sup> day of August, 2014.

Read a third time this 5<sup>th</sup> day of August, 2014.

Finally passed and adopted with an affirmative vote of at least 2/3 of all the members of Council this     day of     , 2014.

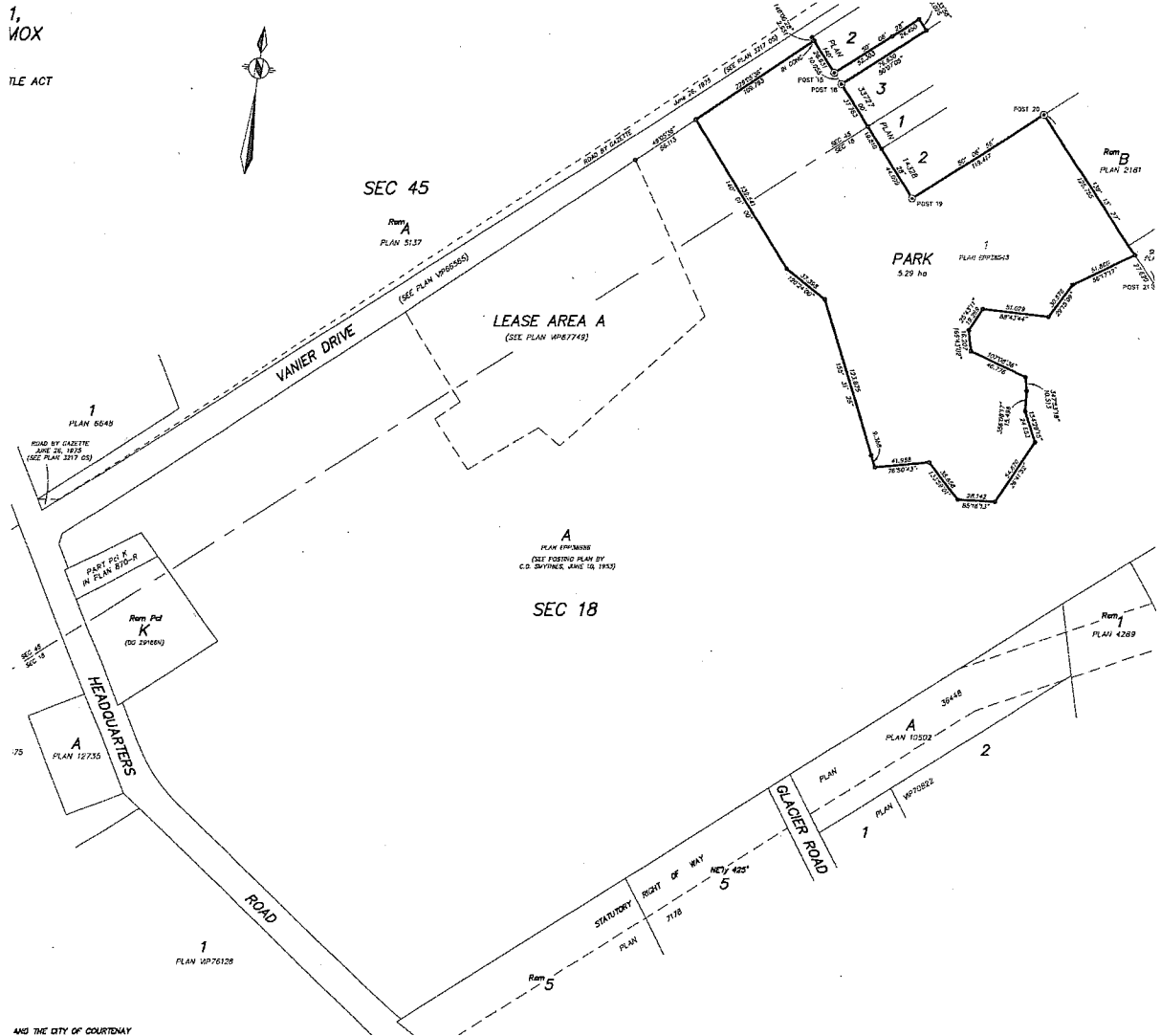
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Mayor

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Director of Legislative Services

1,  
MOX  
TLE ACT



AND THE CITY OF COURTENAY

**THE CITY OF COURTENAY**  
**Schedule "A"**  
 Part of  
 Park Dedication Bylaw No. 2797, 2014

**THE CORPORATION OF THE CITY OF COURTENAY**

**BYLAW NO. 2792**

**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. 2792, 2014**”.
2. That “Zoning Bylaw No. 2500, 2007” be hereby amended as follows:
  - (a) by rezoning Amended Lot 4, (DD 78131N), Block 8, Section 69, Comox District, Plan 480, as shown in bold outline on **Attachment A** which is attached hereto and forms part of this bylaw, from Residential Two Zone (R-2) to Residential Two B Zone (R-2B);
  - (b) That Zoning Bylaw No. 2500, 2007, Schedule No. 8 be amended accordingly.
3. This bylaw shall come into effect upon final adoption hereof.

Read a first time this 21<sup>st</sup> day of July, 2014

Read a second time this 21<sup>st</sup> day of July, 2014

Considered at a Public Hearing this 21<sup>st</sup> day of July, 2014

Read a third time this    day of August, 2014

Finally passed and adopted this    day of August, 2014

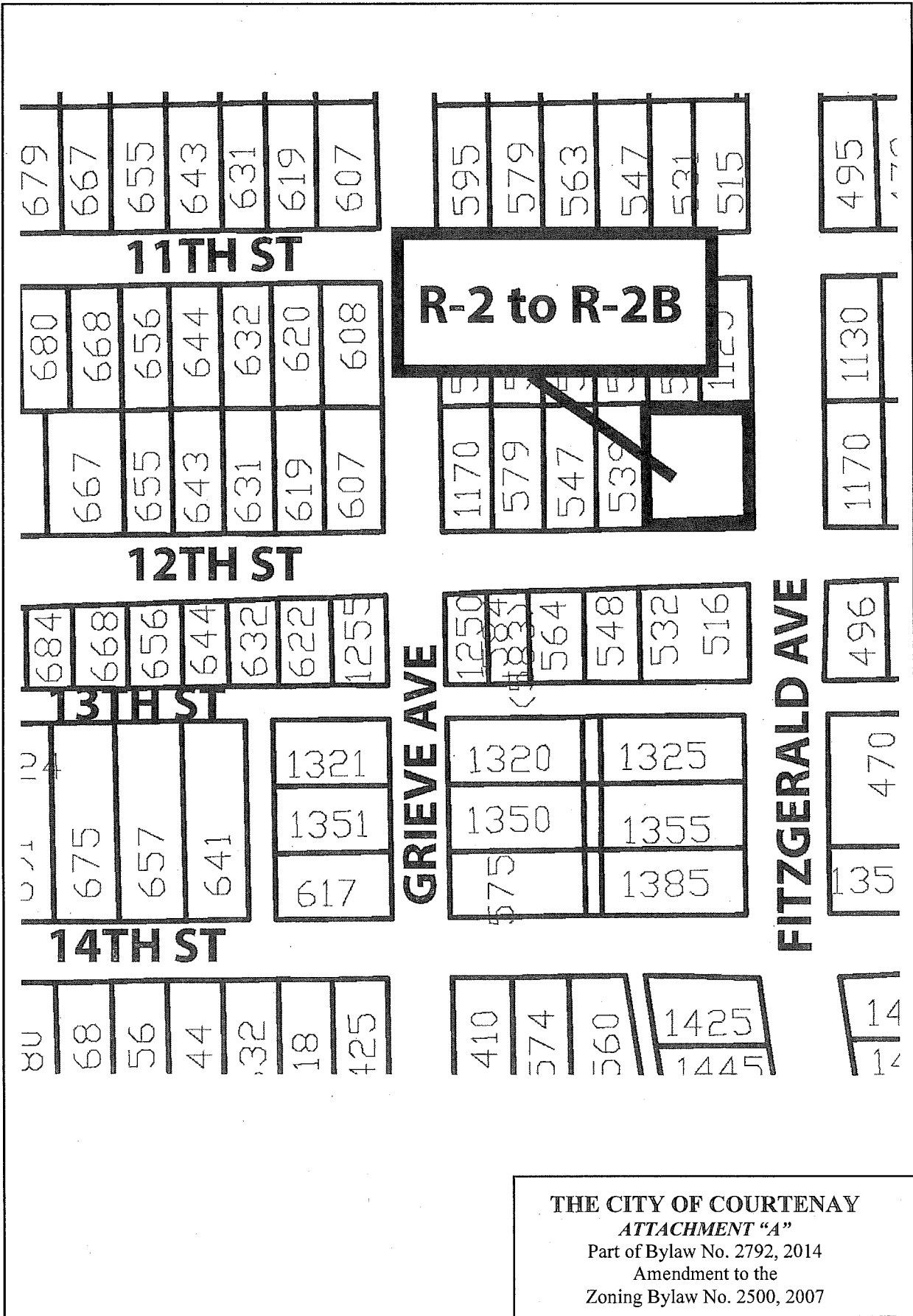
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Mayor

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Director of Legislative Services





THE CORPORATION OF THE CITY OF COURTENAY

BYLAW NO. 2794

A bylaw to amend Official Community Plan Bylaw No. 2387, 2005

WHEREAS the Council has adopted an Official Community Plan and a Zoning Bylaw;

AND WHEREAS, pursuant to Section 895 of the *Local Government Act*, the Council shall, by bylaw, establish procedures to amend a plan or bylaw or issue a permit;

NOW THEREFORE 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. 2794, 2014**”.
2. That Official Community Plan Bylaw No. 2387, 2005 be amended as follows:
  - a) By changing the land use designation of part of Lot 1, Block A, District Lot 127, Comox District, Plan 1447 from Urban Residential to Multi Residential as shown on Attachment A; and
  - 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 7<sup>th</sup> day of July , 2014

Read a second time this 7<sup>th</sup> day of July, 2014

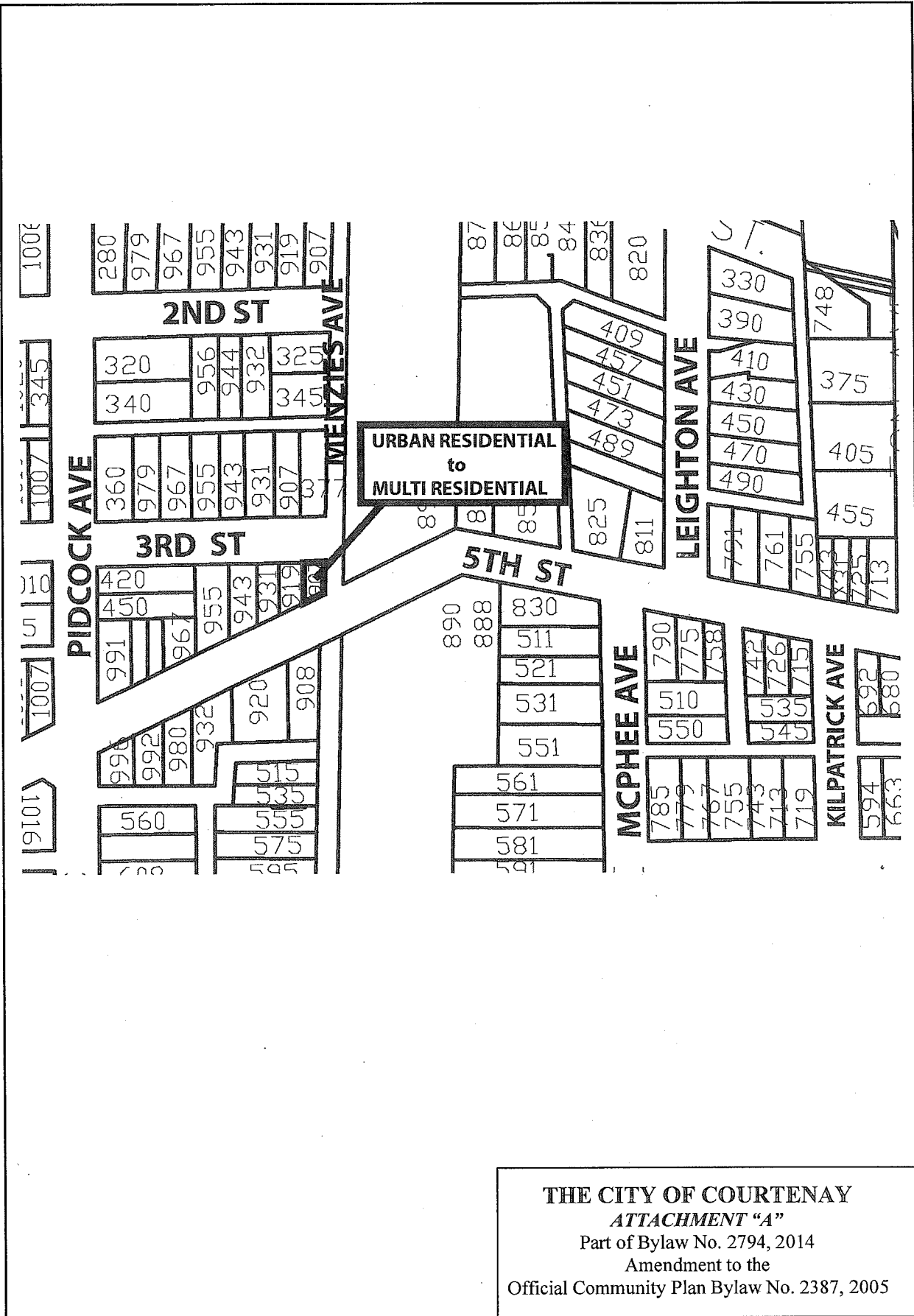
Considered at a Public Hearing this 21<sup>st</sup> day of July, 2014

Read a third time this            day of            , 2014

Finally passed and adopted this            day of            , 2014

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Mayor

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Director of Legislative Services



THE CORPORATION OF THE CITY OF COURTENAY

BYLAW NO. 2795

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. 2795, 2014**”.
2. That “Zoning Bylaw No. 2500, 2007” be hereby amended as follows:
  - (a) by rezoning Lot 1, Block A, District Lot 127, Comox District, Plan 1447, as shown in bold outline on **Attachment A** which is attached hereto and forming part of this bylaw, from Residential Two Zone (R-2) to Residential Four B Zone (R-4B);
  - (b) That Schedule No. 8 be amended accordingly.
3. This bylaw shall come into effect upon final adoption hereof.

Read a first time this 7<sup>th</sup> day of July, 2014

Read a second time this 7<sup>th</sup> day of July, 2014

Considered at a Public Hearing this 21<sup>st</sup> day of July, 2014

Read a third time this    day of    , 2014

Finally passed and adopted this    day of    , 2014

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Mayor

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Director of Legislative Services



