

**CORPORATION OF THE CITY OF COURTENAY
COMMITTEE OF THE WHOLE MEETING AGENDA**

Date: November 30, 2020
Time: 4:00 p.m.
Location: City Hall Council Chambers

AMENDED AGENDA

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

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

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

K'OMOKS FIRST NATION ACKNOWLEDGEMENT

Pages

1. STAFF REPORTS/PRESENTATIONS

1.1. Financial Services

1.1.1. 2021–2025 Water Fund Financial Plan

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1.1.2. 2021–2025 Sewer Fund Financial Plan

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2. EXTERNAL REPORTS AND CORRESPONDENCE FOR INFORMATION

- 2.1. Advocacy Letter - Comox Valley Coalition to End Homelessness (CVCEH) - Housing Proposal for Comox Valley to BC Housing

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Request for Council to support the housing proposal letter prepared by CVCEH asking BC Housing to collaborate with area local governments and the CVCEH to create permanent housing for vulnerable populations in the Comox Valley:

Immediate Temporary Request 2020/21: appropriately funded (supports included) temporary emergency shelter spaces for an additional 50 individuals for Fall 2020/Winter 2021; and,

Permanent Request 2021/22: 100 permanent supportive housing units in two buildings of 50 units each. There is a need for a continuum of supportive housing options for a wide demographic including Indigenous people, women, couples, seniors and for those who would prefer a facility where residents refrain from using substances.

3. INTERNAL REPORTS AND CORRESPONDENCE FOR INFORMATION

- 3.1. Briefing Note - 5th Street Bridge Rehabilitation Project Update

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4. RESOLUTIONS OF COUNCIL

- 4.1. In Camera Meeting

That a Special In-Camera meeting closed to the public will be held November 30th, 2020 at the conclusion of the Committee of the Whole meeting pursuant to the following sub-section(s) of the *Community Charter*:

- 90 (a) personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality;
- 90 (1) (c) labour relations or other employee relations;
- 90 (1) (e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality;
- 90 (1) (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.

5. ADJOURNMENT



STAFF REPORT

To: Council
From: Interim Chief Administrative Officer
Subject: 2021 - 2025 Water Fund Financial Plan

File No.: 1705-20/1715-20
Date: November 30, 2020

PURPOSE:

The purpose of this report is for Council to consider the 2021–2025 Water Fund Financial Plan, and maintain the 2020 water user fee with no increase for 2021.

POLICY ANALYSIS:

Section 165 of the *Community Charter* requires a municipality to have a five year financial plan adopted annually and Section 194 permits the levying of a fee to recover the cost for the delivery of a service.

The 2021–2025 Water budget is a component of the annual City of Courtenay five year financial plan. It is proposed to maintain the 2020 water user fee for 2021 in the 2021 – 2025 Water Fund Financial Plan.

EXECUTIVE SUMMARY:

The five year water fund financial plan is prepared annually and user fees are established to cover the projected cost of service delivery for the upcoming year. Funded entirely from water user fees and frontage fees, the water service is not funded from general property taxation.

The water utility has a regional and a municipal component and each plays a vital role in providing water services to the residents of Courtenay. The Comox Valley Regional District (CVRD) has planned capital upgrades and expansion of their water infrastructure. This includes a new water treatment facility, which will provide a continuous supply of high quality potable water to the growing Comox Valley population. To fund these major capital improvements, the CVRD through the Water Committee has been increasing the bulk water rate for a few years and plans to increase the rate for another couple years, according to its last year financial plan. The CVRD bulk water rate is expected to increase from \$0.83 to \$0.85 per cubic meter in 2021. This has a significant impact as bulk water purchase from the CVRD is the largest expense in the water fund, currently representing 60% of the total operating costs. Any further changes to the CVRD bulk water rate through their financial planning process will be reflected in future City of Courtenay financial plans.

Similar to the CVRD, the City is required to generate revenues sufficient to fulfil its commitment to operate a Class 3 water distribution system that provides safe drinking water to the residents. Water service expenses in this proposed financial plan also incorporate higher CVRD bulk water rates and sufficient staffing to complete the various maintenance programs required to comply with statutory water permit

requirements set by the Province of BC through the Island Health Authority, formerly called the Vancouver Island Health Authority (VIHA).

After careful review of the water fund and accounting for impacts related to the COVID-19 pandemic, staff are recommending no increase to the water user fee for 2021.

CAO RECOMMENDATIONS:

That based on the November 30th, 2020 staff report “2021 - 2025 Water Fund Financial Plan”, Council approve OPTION 1, and proceed with the proposed 2021 - 2025 Water Fund Financial Plan; and, that water user fee revenue remains unchanged for 2021.

Respectfully submitted,



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

BACKGROUND:

Consideration and approval of a five year financial plan is an annual requirement under the *Community Charter*. The recommended financial plan for the water fund provides detail for 2021, as well as projections for the four following years.

The water utility service is self-funding and receives no funding from the City’s general property taxation levy.

DISCUSSION:

The supply of water to Courtenay consumers is a combined effort involving the CVRD who supplies and transmits treated source water from Comox Lake to the City’s boundary where it is then distributed to property owners through the City’s water distribution system. The City purchases bulk water from the CVRD and operates and maintains a Class 3 water distribution system. The City must comply with Island Health permit requirements and standards set out in the Drinking Water Protection Act. To provide this service to the public, the City annually prepares a five year financial plan to meet the legislative requirements of Section 165 of the *Community Charter*. This financial plan covers the period of 2021 - 2025.

The impact of the ongoing pandemic was considered while preparing the Water Fund Financial Plan and is expected to be minimal on the water operating activities. Only a decrease in revenue from small businesses is incorporated in the 2021 proposed budget to account for the risk of small businesses reduced activity.

The 2021-2025 Water Fund Financial Plan is a collaborative corporate effort following the City's Asset Management Bylaw 2981.

City of Courtenay 2021 – 2025 Water Fund Financial Plan

The proposed 2021-2025 Water Fund Financial Plan is detailed in the following attachments:

Attachment # 1 – Water Operating Fund Budget Overview

Attachment # 2 – Water Capital Fund and Debt Budget Overview

Attachment # 3 – Water Surplus, Reserves and DCC Projections

The water fund financial plan includes for 2021 projected revenues of \$9,260,400 and \$7,426,100 of operating expenses, \$500,000 of amortization, \$30,600 of debt payment, a \$657,800 transfer to the capital fund, \$394,300 transfer to various reserves and a surplus of \$251,600.

Water Operating Fund

Water Operating Expenses

In 2020, the Public Works Utilities Group along with Business Performance Group completed a thorough review of the water operating budget and updated the activities used to plan and track expenses to reflect current operating procedures and better manage service levels and preventative vs reactive work. As such, the "Water Transmission and Distribution" activity was broken out and other existing activities were combined where applicable. Each of the activities is also subdivided in multiple sub-activities. The 2021 budget is built around the updated operational activities, which are:

- Water Main
- Water Service
- Water Distribution Valve
- Water Hydrant/Blow Off
- Water Meter
- Water Pump Stations
- Water Quality & Cross Connection Control
- Water Conservation Programs

The water operating expense budget is presented by activity in Table 1. The operating costs decrease by \$198,600 or 2.6% between 2020 and 2021 budget.

Table 1: Water Operating Expenses 2020 - 2021 Budget

Activity2	Activity	2020 BUDGET	2021 BUDGET	Variance 2021 Budget 2020 Budget
CVRD Water Purchase		4,436,400	4,433,500	(2,900)
Water Admin - Salaries/Wages		372,300	301,300	(71,000)
Water Admin - Training		36,900	37,100	200
Water Administration		13,600	17,200	3,600
Water Engineering Services		78,000	78,000	-
Water Admin - BC One Call		3,800	5,000	1,200
Water Operations	Water Main		200,000	
	Water Service		395,700	
	Water Distribution Valve		50,000	
	Water Hydrant/Blowoff	191,900	194,000	
	Water Meter	103,900	138,300	
	Water Pump Stations	68,300	77,500	
	Water Quality & Cross Connection Control		80,000	
	Water Conservation Programs	260,000	167,000	
	Water Transmission and Distribution - OLI	841,800		
	Water Meter Reading - OLD	11,000		
	Water Water Enforcement - OLD	26,600	-	
Water Operations Total		1,503,500	1,302,500	(201,000)
Water Vehicle Charges		79,800	66,500	(13,300)
Water Fleet		(52,700)	(9,900)	42,800
Water Work in Progress		100,000	100,000	-
Interfund Allocation		1,053,100	1,094,900	41,800
Grand Total		7,624,700	7,426,100	(198,600)

Comox Valley Bulk Water Purchase

The purchase of potable water from the CVRD is the largest cost driver in the water operating fund, which represents 60% of the total operating expenses. The City reviews and adjusts the estimated consumption every year. The 2021 estimate is based on prior year actual consumption and includes a general increase of 1% for annual population growth. The year 2020 was excluded from the calculation as the water consumption is unusually low so far this year.

CVRD has increased the water bulk rate in 2020 and plans to increase the rate again on January 1, 2021, per last year approved CVRD Financial Plan. The rate is expected to raise from \$0.83 per cubic meter to \$0.85 for 2021. The impact of the rate increase is offset by a reduction in estimated water consumption in the 2021 budget.

Table 2 shows the combined financial impact of a greater consumption and higher rates on actual and estimated water consumption since 2017.

Table 2: Courtenay Water Bulk Purchase 2017-2025

Courtenay Bulk Water Purchase	Consumption m3	Consumption % increase	CVRD rate \$ / m3	rate % increase	Courtenay Annual Cost	cost % increase
2017 Actual	5,113,154		\$0.71		\$3,630,339	
2018 Actual	4,947,081	-3.2%	\$0.75	5.6%	\$3,710,311	2.2%
2019 Actual	4,989,913	0.9%	\$0.80	6.7%	\$3,991,931	7.6%
2020 Budget	5,345,000	7.1%	\$0.83	3.7%	\$4,436,350	
2020 Estimation	4,860,810	-2.6%	\$0.83	3.7%	\$4,034,472	1.1%
2021 Budget	5,215,900	7.3%	\$0.85	2.4%	\$4,433,515	9.9%
2022 Estimation	5,268,100	1.0%	\$0.85	0.0%	\$4,477,885	1.0%
2023 Estimation	5,320,800	1.0%	\$0.96	12.9%	\$5,107,968	14.1%
2024 Estimation	5,374,000	1.0%	\$0.96	0.0%	\$5,159,040	1.0%
2025 Estimation	5,427,700	1.0%	\$0.96	0.0%	\$5,210,592	1.0%

Water Administration

Water Administration includes a portion of the salaries, wages and benefits of exempt staff. The decrease is related to the Foreman wages and benefits now all budgeted in operations.

Water Engineering Services

This section includes \$30,000 carried forward from 2020 to complete the water rates review as recommended in the Water Smart Action Plan presented to Council on October 28, 2019. This review is conducted simultaneously with the sewer rates review. Also included is \$20,000 for the completion of the water master plan.

Water Operations

Following the update of the Water Operations activities, the budget has been reallocated to the new activities. It includes the crew wages and benefits as well as the material and services needed to perform regular operations, preventative and reactive work on the various water infrastructure.

The overall decrease in the Water Conservation Programs is mostly due to the delay in the Leak Detection and Repair Program: \$200,000 was previously allocated in 2020 for this project, \$75,000 is carried-forward to 2021 and the balance to 2022. An amount of \$50,000 is also carried forward to conduct a study to prioritize the location of the zone meters to isolate the City's distribution system from the Regional transmission system. This is a requirement of the City's Cross Connection Control program as per Island Health operating permit conditions.

Another reduction is found in the Booster / Pump Stations budget due to the one-time \$50,000 included in 2020 for minor upgrades to SCADA and operating maintenance required at the Dingwall well, maintained by the City since 2020 as a result of the completion of the Sandwick Water System changeover.

Water Vehicle Charges and Fleet

The Water Vehicle Charges and Fleet budgets are adjusted in 2021 based on actual and anticipated equipment and vehicle usage.

Internal Allocations

Internal Allocations is a percentage of the General Fund and Public Works expenses transferred to the Water Fund. The intent is to transfer a reasonable amount for General Government Services and Public

Works expenditures (personnel, utilities, materials, insurance, contracted services and fleet costs) as recognition of the administrative costs necessary to provide the service.

The water allocation is set at 14.5% of the General Government Services and 19% of the Public Works Administrative expenses based on prior year estimate. The allocation percentage is reviewed periodically and will be analyzed before the 2022 budget. The variance represents the general increase in the General Government Services and Public Works expenses.

Water Revenues

Revenues collected through water user and frontage fees are used to cover the costs of the operating and capital expenditures. Staff recommend maintaining the current frontage rate at \$5.84 per meter, which is expected to generate \$1,205,800 for 2021. Staff propose to also maintain the 2020 water user fee for 2021 with subsequent increases of 2.0% for the following four years. An annual 1% increase is factored in the revenue calculations for population growth. The water revenues are also adjusted to account for potential reduced consumption in small businesses as a result of the ongoing pandemic. Thus, a 10% reduction in revenue from small businesses is included and represents a reduction in revenue of \$33,800 for 2021. The water user fees are expected to generate \$6,809,100 for 2021.

Once the water master plan is finalized in 2021, it will result in a draft 20 year capital plan. This information along with the water rates review planned for 2021 will be the basis for a detailed analysis of the frontage and water user fees. Recommendations will then be presented to adjust the water revenue requirements in future year financial plans to create a sustainable utility.

The change in the user fees since 2017 is detailed in Table 3.

Table 3: Water user fees and frontage rate 2017-2021

Annual	Water User Fee			Water Frontage Rate		
	One-time	Change	Change %	per meter	Change	Change %
2017	\$425.03	\$55.44	15.00%	\$4.68	\$0.94	25.1%
2018	\$467.53	\$42.50	10.00%	\$5.84	\$1.16	24.8%
2019	\$497.92	\$30.39	6.50%	\$5.84	\$0.00	0.0%
2020	\$506.05	\$8.13	1.63%	\$5.84	\$0.00	0.0%
2021	\$506.05	\$0.00	0.00%	\$5.84	\$0.00	0.0%

The water utility financial plan also includes miscellaneous revenues such as meter and hydrant rentals and park water usage for a total of \$402,300 for 2021.

Water Capital Fund

The projects included in the 2021 Water Capital Budget are presented in Table 4 below. All projects are being carried forward from 2020. The source of funding and the projects scheduled for the four following years are detailed in Attachment 2.

Table 4: Water Capital Projects – 2021 budget

2021 Proposed Budget	
Project description	Total
Sandpiper / Millard Water Main Upgrade (CF)	650,000
Water - Highway 19A Loop - Christie Parkway (CF)	100,000
Water - South Courtenay Secondary Transmission (CF)	81,500
Water Smart Initiatives - Transmission/Distribution Metering (CF)	75,000
City Watermain on private property (CF)	70,000
Braidwood Road - Road & Utility - Water Component (CF)	31,300
Water - Sandwich Area Fireflow Upgrade (CF)	25,000
Grand Total	1,032,800

Debt Servicing Costs

The Water Capital Fund also includes debt servicing costs. The 2021 budget includes \$10,500 of interest payment and \$20,100 of principal payment for a total debt servicing cost of \$30,600. The projected debt servicing costs for 2021 to 2025 are included in the Attachment 2.

Water Surplus and Reserves

The estimated closing balances for water surplus, reserves and Development Cost Charges (DCC) are presented in Table 5 below. The five year schedule is presented in Attachment 3.

Table 5: Estimated water surplus and reserves balance

WATER	Estimated	Budget
Surplus, Reserves and DCC Summary	Actual	
Estimated Closing Balances	2020	2021
Water Fund Surplus		
Prior Year Surplus (unallocated)	2,424,000	2,675,600
Surplus Reserve for Future Expenditures		
(Unspent Capital 2020)	307,800	-
	2,731,800	2,675,600
Water Capital Reserves		
Water Reserve	1,676,700	1,601,700
Asset Management Reserve	658,100	658,100
Water Machinery and Equipment	280,200	310,200
	2,615,000	2,570,000
Total Water Surplus and Reserves	5,346,800	5,245,600
Total Water DCC Bylaw #2426/2755	376,400	376,400

Operating Surplus

The 2021 budget includes an estimated surplus of \$251,600, which is then used in the proposed 2022 to 2025 budget. A significant portion of the prior year surplus is also used in the following years.

The reserve for future expenditures of \$307,800 represents unspent monies collected in 2020 to fund 2020 capital projects carried forward and to be used in 2021.

Capital Reserves

The Water Utility Reserve is to be used only to fund water efficiency programs and initiatives. In 2021, \$75,000 will fund the installation of distribution system zone meters at the CVRD connection points.

The Asset Management reserve will provide \$300,000 in 2021 to fund the Sandpiper / Millard Water Main Upgrade project.

For 2021, a recommended contribution of \$300,000 to the Asset Management reserve and a contribution of \$30,000 to the Water Machinery and Equipment reserve is included and is consistent with previous financial plans.

Development Cost Charges (DCC)

DCC are presented as deferred revenues in the financial statements and are not included with the reserves.

FINANCIAL IMPLICATIONS:

No increase is recommended for 2021 as Staff recommend maintaining the 2020 approved water user fees, which is set at \$506.05 for a single family.

ADMINISTRATIVE IMPLICATIONS:

By maintaining the current bylaw rate, an amendment to the user fee bylaw is not required for 2020.

Subsequent to Council endorsing the 2021-2025 Water Fund Financial Plan, the water budget will be incorporated as part of the statutory component of the five year financial plan. Compilation of this financial plan will take a minimum of 60 hours of staff time.

ASSET MANAGEMENT IMPLICATIONS:

The Asset Management Working Group collects and analyses information provided by condition and risk assessments of the City's water infrastructure, water model calibration, and life-cycle analysis to determine the useful life of water assets. Preventative maintenance programs such as uni-directional flushing have extended the useful life of the infrastructure and future years capital costs have been deferred. The financial plan includes the renewal projects prioritized by the Asset Management Working Group.

STRATEGIC PRIORITIES REFERENCE:**We focus on organizational and governance excellence**

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

We proactively plan and invest in our natural and built environment

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

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

OFFICIAL COMMUNITY PLAN REFERENCE:

Section 6.2 Water Supply

6.2.1 to ensure a high level of water quality is maintained,

6.2.2 to protect the watershed of the Comox Lake and thereby protect the City's source of water.

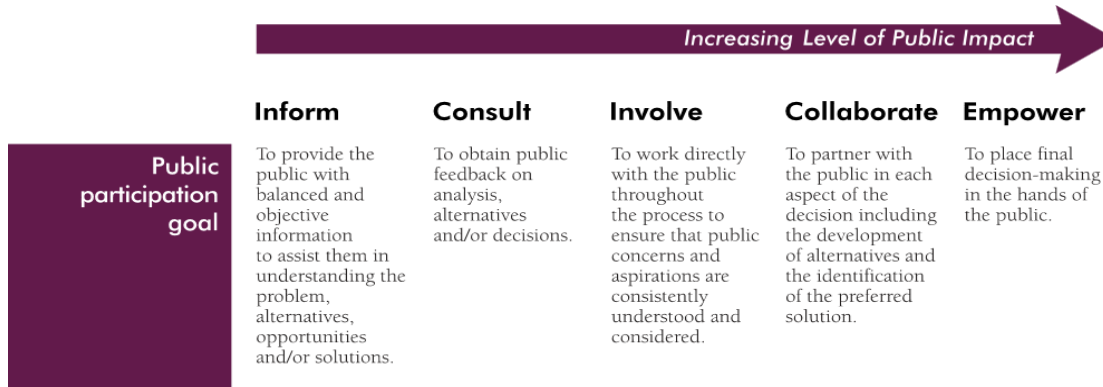
REGIONAL GROWTH STRATEGY REFERENCE:

This budget is presented with the intent of encouraging water management approaches and the use of processes and technologies that provide the public with infrastructure that addresses public health needs and concerns, and provides equal service to all residents within the municipality and region. It is presented with the intent to protect the quality of water sources (5-B) as well as to promote water conservation and efficiency throughout the Comox Valley (5-A).

CITIZEN/PUBLIC ENGAGEMENT:

The *Community Charter* (sec. 166) requires that a council must undertake a process of public consultation regarding the proposed financial plan before it is adopted. The City will “**inform**” the public about the 2021-2025 Water Fund Financial Plan through special council meetings, media webcasts, and information posted on the City's website. In addition, the City will “**consult**” the public prior to final adoption of the 2021-2025 Financial Plan Bylaw.

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



OPTIONS:

Option 1:

That Council approve the proposed 2021 - 2025 Water Fund Financial Plan; and, that water user fee revenue remains unchanged for 2021. (Recommended)

Option 2:

That Council defer approval of the proposed 2021 -2025 Water Fund Financial Plan for further discussion at a later Council meeting.

Prepared by:

Annie Bérard, CPA, CMA, MBA
Manager of Financial Planning, Payroll
and Business Performance

Reviewed by:

Jennifer Nelson, CPA, CGA
Director of Financial Services

Concurrence by:

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

Attachments:

- Attachment # 1 - Water Operating Fund Budget Overview
- Attachment # 2 - Water Capital Fund and Debt Budget Overview
- Attachment # 3 - Water Surplus, Reserves and DCC Projections

Water Operating Fund Budget 2021-2025

	2020	2021	2022	2023	2024	2025
Frontage Rate \$/m	\$ 5.84	\$ 5.84	\$ 5.84	\$ 5.84	\$ 5.84	\$ 5.84
Water Utility Rate	\$ 506.05	\$ 506.05	\$ 516.17	\$ 526.49	\$ 537.02	\$ 547.76
Water Utility Rate Annual Increase		0.0%	2.0%	2.0%	2.0%	2.0%

Expense Type	Activity2	Activity	DESC	Sum of 2020 BUDGET	Sum of 2021 BUDGET	Sum of 2022 BUDGET	Sum of 2023 BUDGET	Sum of 2024 BUDGET	Sum of 2025 BUDGET	
Revenue	Water Frontage	Water Frontage	WATER FRONTAGE TAX	(1,178,100)	(1,205,800)	(1,217,900)	(1,230,100)	(1,242,400)	(1,254,800)	
			WATER PARCEL TAX	(8,400)	(8,400)	(8,400)	(8,400)	(8,400)	(8,400)	
	Water Frontage Total			(1,186,500)	(1,214,200)	(1,226,300)	(1,238,500)	(1,250,800)	(1,263,200)	
	Water Utility Fees	Water Utility Fees	FLAT RATE WATER	(4,548,200)	(4,552,700)	(4,670,000)	(4,790,300)	(4,913,400)	(5,039,600)	
			METERED WATER	(2,266,700)	(2,256,400)	(2,303,300)	(2,351,100)	(2,400,000)	(2,449,800)	
	Water Utility Fees Total			(6,814,900)	(6,809,100)	(6,973,300)	(7,141,400)	(7,313,400)	(7,489,400)	
	Water Other Revenues			(119,500)	(121,300)	(123,600)	(125,800)	(128,100)	(130,700)	
	Transfer from Prior Year Surplus			-	-	(157,700)	(420,200)	(424,500)	(315,800)	
	Transfer from Reserve			(141,200)	(334,800)	(27,600)	(28,100)	(28,100)	(28,100)	
	Equity in Capital Assets			(400,000)	(500,000)	(500,000)	(500,000)	(500,000)	(500,000)	
Interfund Allocation			(177,600)	(181,000)	(184,600)	(188,400)	(193,200)	(193,200)		
Water Work in Progress			(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)		
Revenue Total			(8,939,700)	(9,260,400)	(9,293,100)	(9,742,400)	(9,938,100)	(10,020,400)		
Expense	CVRD Water Purchase			4,436,400	4,433,500	4,477,900	5,108,000	5,159,000	5,210,600	
	Water Engineering Services			78,000	78,000	34,000	33,000	38,800	33,000	
	Water Admin - Salaries/Wages			372,300	301,300	308,000	314,200	320,600	327,000	
	Water Admin - Training			36,900	37,100	37,400	37,700	37,700	37,700	
	Water Administration			13,600	17,200	17,800	18,400	19,100	19,800	
	Water Admin - BC One Call			3,800	5,000	5,100	5,100	5,200	5,200	
	Water Operations	Water Conservation Programs			260,000	167,000	167,700	168,800	68,900	69,000
		Water Service				395,700	400,000	404,300	408,800	413,300
		Water Distribution Valve				50,000	50,400	51,000	51,600	52,200
		Water Quality & Cross Connection Control				80,000	81,200	82,400	83,600	84,800
		Water Main				200,000	202,400	204,900	207,500	210,100
		Water Hydrant/Blowoff			191,900	194,000	196,500	199,100	201,800	204,500
		Water Meter			103,900	138,300	139,200	140,200	141,200	142,200
		Water Pump Stations			68,300	77,500	86,200	87,300	88,400	89,600
		Water Transmission and Distribution - OLD			841,800					
		Water Meter Reading - OLD			11,000					
		Water Water Enforcement - OLD			26,600					
		Water Operations Total			1,503,500	1,302,500	1,323,600	1,338,000	1,251,800	1,265,700
	Water Vehicle Charges			79,800	66,500	66,500	66,500	66,500	66,500	
	Water Fleet			(52,700)	(9,900)	(9,500)	(9,100)	(8,700)	(8,300)	
	Transfer to Reserve	Transfer to Reserve			181,700	251,600				
				CONTINGENCY RESERVE						
				TRANS TO WATER CAPITAL FUND	195,000	350,000	890,000	640,000	640,000	640,000
				TRANS TO WATER UTILITY RESERVE	57,500	58,700	59,800	61,100	62,200	62,200
				TRANS TO WATER ASSET MGMT RESERVE	300,000	300,000	300,000	300,000	300,000	300,000
				TRANS TO WATER M&E RESERVE	30,000	30,000	30,000	30,000	30,000	30,000
				TRANS TO WATER MFA RESERVE	100	100	100	100	100	100
			TRANS TO WATER RESERVE FOR FUTURE EXP	114,600	307,800					
Transfer to Reserve Total			884,400	1,303,700	1,285,400	1,036,700	1,037,800	1,037,800		
Interfund Allocation			1,053,100	1,094,900	1,116,300	1,123,900	1,153,200	1,168,300		
Water Work in Progress			100,000	100,000	100,000	100,000	100,000	100,000		
Debt			30,600	30,600	30,600	70,000	257,100	257,100		
Amortization			400,000	500,000	500,000	500,000	500,000	500,000		
Expense Total			8,939,700	9,260,400	9,293,100	9,742,400	9,938,100	10,020,400		
Grand Total			-	-	-	-	-	-		

Sub-Department Responsible	New, Renewal, or Project description	2021 Proposed Budget	2021 General Revenues	2021 Reserves	2021 Reserve for Future Expenditures	2022 Proposed Budget	2022 General Revenues	2022 Reserves	2023 Proposed Budget	2023 General Revenues	2023 Debt	2024 Proposed Budget	2024 General Revenues	2024 Reserves	2025 Proposed Budget	2025 General Revenues	2025 Reserves	
Engineering (Water)	Renewal	Sandpiper / Millard Water Main Upgrade	650,000	350,000	300,000													
		Water Smart Initiatives - Transmission/Distribution Metering	75,000		75,000		350,000	350,000										
		Braidwood Road - Road & Utility - Water Component	31,300			31,300			500,000	500,000								
		Water - Sandwick Area Fireflow Upgrade	25,000			25,000	500,000	500,000										
	Renewal Total	781,300	350,000	375,000	56,300	850,000	500,000	350,000	500,000	500,000								
Engineering (Water) Total		781,300	350,000	375,000	56,300	850,000	500,000	350,000	500,000	500,000								
Public Works (Water)	New	Water - South Courtenay Secondary Transmission	81,500			81,500	250,000	250,000	3,500,000		3,500,000							
		City Watermain on private property	70,000			70,000	140,000	140,000	140,000	140,000		140,000	140,000	140,000	140,000	140,000	140,000	
	New Total	151,500			151,500	390,000	390,000	3,640,000	140,000	3,500,000		140,000	140,000	140,000	140,000	140,000		
	Renewal	Water - Highway 19A Loop - Christie Parkway	100,000			100,000												
Renewal Total	100,000			100,000														
Public Works (Water) Total		251,500			251,500	390,000	390,000	3,640,000	140,000	3,500,000		140,000	140,000	140,000	140,000	140,000		
Public Works - Asset Management (Water)	Renewal	Water - Projects identified through Master Plan										1,000,000	500,000	500,000	1,000,000	500,000	500,000	
Renewal Total												1,000,000	500,000	500,000	1,000,000	500,000	500,000	
Public Works - Asset Management (Water) Total												1,000,000	500,000	500,000	1,000,000	500,000	500,000	
Grand Total		1,032,800	350,000	375,000	307,800	1,240,000	890,000	350,000	4,140,000	640,000	3,500,000	1,140,000	640,000	500,000	1,140,000	640,000	500,000	

Debt Servicing Costs

New, Renewal, or Project description	2021 Proposed Budget	2022 Proposed Budget	2023 Proposed Budget	2024 Proposed Budget	2025 Proposed Budget
Debt Interest	Existing Debt Interest	10,500	10,500	10,500	10,500
	New Debt Interest South Courtenay			39,400	78,800
Debt Interest Total		10,500	10,500	49,900	89,300
Debt Principal	Existing Debt Principal	20,100	20,100	20,100	20,100
	New Debt Principal South Courtenay				147,700
Debt Principal Total		20,100	20,100	20,100	167,800
Grand Total		30,600	30,600	70,000	257,100

WATER Surplus, Reserves and DCC Summary	Estimated	Budget	Proposed Budget			
	Actual					
Estimated Closing Balances	2020	2021	2022	2023	2024	2025
Water Fund Surplus						
Prior Year Surplus (unallocated)	2,424,000	2,675,600	2,517,900	2,097,700	1,673,200	1,357,400
Surplus Reserve for Future Expenditures (Unspent Capital 2020)	307,800	-	-	-	-	-
	2,731,800	2,675,600	2,517,900	2,097,700	1,673,200	1,357,400
Water Capital Reserves						
Water Reserve	1,676,700	1,601,700	1,251,700	1,251,700	1,251,700	1,251,700
Asset Management Reserve	658,100	658,100	958,100	1,258,100	1,058,100	858,100
Water Machinery and Equipment	280,200	310,200	340,200	370,200	400,200	430,200
	2,615,000	2,570,000	2,550,000	2,880,000	2,710,000	2,540,000
Total Water Surplus and Reserves	5,346,800	5,245,600	5,067,900	4,977,700	4,383,200	3,897,400
Total Water DCC Bylaw #2426/2755	376,400	376,400	376,400	376,400	376,400	376,400

Purpose of Water Reserves

Prior Year Surplus : accumulated excess of revenues over expenses from prior years which has not been set aside
Reserve for Future Expenditure : revenues collected for 2020 capital projects unfinished and carried forward to
Water Utility Reserve , Bylaw #2885: established to promote operational improvements to the City's water distribution system and / or promote and implement programs that encourage residents to use water more
Asset Management Reserve , Bylaw #2818: established to acquire tangible capital assets relating to the water fund or for refurbishing, renewing or replacing existing tangible capital assets for those assets within the water fund
Water Machinery and Equipment , Bylaw #2269: established to fund replacement of depreciated or obsolete machinery and equipment in the water fund
Water DCC , Bylaw #2426/2755: to be used for approved water projects



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council
From: Interim Chief Administrative Officer
Subject: 2021-2025 Sewer Fund Financial Plan

File No.: 1705-20/1715-20
Date: November 30, 2020

PURPOSE:

The purpose of this report is for Council to consider the 2021–2025 Sewer Fund Financial Plan and the proposed sewer user fee increase for 2021.

POLICY ANALYSIS:

Section 165 of the *Community Charter* requires a municipality to have a five year financial plan adopted annually and Section 194 permits the levying of a fee to recover the cost for the delivery of a service.

The 2021–2025 Sewer budget is a component of the annual City of Courtenay five year financial plan. A proposed increase of 2.0% for the 2021 user fee has been incorporated into the 2021 – 2025 Sewer Fund Financial Plan with no change to the frontage rate.

EXECUTIVE SUMMARY:

The five year sewer fund financial plan is prepared annually and user fees are established to cover the projected cost of service delivery for the upcoming year. Funded entirely from sewer user fees and frontage fees, the sewer service receives no funding from general property taxation.

The City of Courtenay owns and operates a Class 3 Sewer collection system that collects and conveys effluent within the City to the Regional Courtenay Lift Station and from there it is pumped via force-mains to the sewage treatment plant. The Courtenay Lift Station and the Sewage Treatment Plant are part of the Comox Valley Regional Sewer Service, which is administered by the Comox Valley Regional District (CVRD).

Each component plays a vital role in providing sewer services to the residents of Courtenay and its regional partners. The CVRD, through the Sewage Commission, has planned capital conveyance upgrades and treatment plant expansion in order to ensure the sustainability, capacity and integrity of their portion of the system infrastructure. The CVRD annually requisitions the City for the cost of the City's share of the regional sewer service.

The City must also provide funding for its own sewer collection service capital and operational needs. The cost of sewer service delivery is funded through a combination of user fees and frontage and parcel taxes. A 2.0% increase for the user fee is recommended for 2021, increasing the rate from \$344.71 to

\$351.60 and frontage rate remaining constant at \$10.24 per meter. The annual increase to a single family residence is \$6.89.

CAO RECOMMENDATIONS:

That based on the November 30, 2020 staff report “2021–2025 Sewer Fund Financial Plan”, Council approve OPTION 1, and proceed with the proposed 2021-2025 Sewer Fund Financial Plan; and, that sewer user fee revenue be increased by 2.0% for 2021.

Respectfully submitted,



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

BACKGROUND:

Consideration and approval of a five year financial plan is an annual requirement under the *Community Charter*. The recommended financial plan for the sewer fund provides detail for 2021, as well as projections for the four years following.

The sewer utility service is self-funding and receives no funding from the general property taxation levy.

DISCUSSION:

The sanitary sewer utility service provided to City property owners is a combination of the City and Comox Valley Regional Sewer Service infrastructure. Administered by the CVRD, the regional sewer service infrastructure includes sewer pumping stations, sewer force mains (including the force main on Comox Road) and a wastewater treatment plant with an outfall for treated effluent. It was constructed in the early 1980's and designed with a 25 year life-cycle. As a result of the 2011 CVRD sanitary sewer master plan, a 10-year capital plan was developed and approved by members of the CVRD Sewer commission in 2012. However, at the Service Participants request in 2018, the CVRD has embarked on a Liquid Waste Management Plan (LWMP). This statutory plan will outline future capital expenditures necessary for the sustainability of the service. This plan is expected to be completed in the summer of 2021.

City infrastructure includes lift stations, sewer trunk mains, a collection system and sewer connections within the boundaries of the municipality. This infrastructure varies in age depending on its location within the City. Infrastructure on the west side of the City varies from relatively new to over 60 years, whereas infrastructure on the east side of the river is generally newer and less than 25 years old.

The largest cost component of this financial plan is the cost of the regional sewer service shared proportionately between the service participants, the City of Courtenay, the Town of Comox and HMCS Quadra based on their respective sewer flows.

The impact of the ongoing pandemic was considered while preparing the Sewer Fund Financial Plan and is expected to be minimal on the sewer operating activities. Only a decrease in revenue from small businesses is incorporated in the 2021 proposed budget to account for potential reduced activity of small businesses.

The 2021-2025 Sewer Fund Financial Plan is a collaborative effort of all the departments following the City's Asset Management Bylaw 2981.

City of Courtenay 2021 – 2025 Sewer Fund Financial Plan

The proposed 2021-2025 Sewer Fund Financial Plan is detailed in the following attachments:

Attachment # 1 – Sewer Operating Fund Budget Overview

Attachment # 2 – Sewer Capital Fund and Debt Budget Overview

Attachment # 3 – Sewer Surplus, Reserves and DCC Projections

The sewer fund financial plan includes for 2021 \$8,851,500 in projected sewer revenues and the following expenditures: \$6,716,800 of operating expenses, \$350,000 of amortization, \$258,500 for debt payments, \$1,057,400 for transfer to the capital fund, \$381,000 for transfer to reserves and a surplus of \$87,800.

Sewer Operating Fund

Sewer Operating Expenses

In 2020, the Public Works Utilities Group along with Business Performance Group completed a thorough review of the sewer operating budget and updated the activities used to plan and track expenses to reflect current operating procedures and better manage service levels and preventative vs reactive work. As such, the "Sewer Operations" activity was broken out and other existing activities were combined where applicable. Each of the activities is also subdivided in multiple sub-activities. The 2021 budget is built around the updated operational activities, which are:

- Sewer Gravity Main
- Sewer Service
- Sewer Manhole/Chamber
- Sewer Valve
- Sewer Forcemain
- Sewer Lift Station
- Sewer Inflow & Infiltration

The sewer operating expense budget is presented by activity in Table 1. The overall increase in operating costs between 2020 and 2021 budget is \$269,400 or 4.2%, of which 3.5% is directly related to the projected increase in the CVRD requisition.

Table 1: Sewer Operating Expenses 2020 – 2021 budget

Activity2	Activity	2020 BUDGET	2021 BUDGET	Variance 2021 Budget 2020 Budget
CVRD Sewer Requisition		4,494,200	4,717,200	223,000
Sewer ADMIN - Salaries/Wages		304,000	251,000	(53,000)
Sewer Administration		11,500	20,000	8,500
Sewer ADMIN - Training		11,000	11,000	-
Sewer Engineering Services		73,000	86,500	13,500
Sewer Operations	Sewer Main		183,800	
	Sewer Service		94,100	
	Sewer Manhole/Chamber		6,300	
	Sewer Valve		13,100	
	Sewer Forcemain		13,200	
	Sewer Lift Station	217,200	253,200	
	Sewer Inflow & Infiltration		81,000	
	Sewer Operations - OLD	352,100		
	Sewer Inflow & Infiltration - OLD	46,500		
Sewer Operations Total		615,800	644,700	28,900
Sewer Vehicle Charges		30,600	29,500	(1,100)
Sewer Fleet		11,100	23,700	12,600
Sewer Work in Progress		40,000	40,000	-
Interfund Allocation		856,200	893,200	37,000
Grand Total		6,447,400	6,716,800	269,400

Comox Valley Sewer Service

The Comox Valley Regional District 2020-2024 Financial Plan includes a 6.3% increase for the 2021 Regional Sewer Service Requisition, which accounts for most of the 2021 sewer budget increase.

The sewer service requisition is the largest expense in the Sewer Operating Fund and represents 70% of the total operating expenses. Table 2 presents the increase in Courtenay's share of the sewer service requisition since 2018 to the proposed budget for 2025, based on the CVRD 2020-2024 Financial Plan.

Table 2: Comox Valley Sewer Service Requisition, Courtenay's Share 2018 – 2025

Comox Valley Sewer Service Requisition per 2020-2024 approved Financial Plan		
	\$	% increase
Courtenay share		
2018 Actual	3,890,928	6.0%
2019 Actual	4,145,491	6.5%
2020 Actual	4,439,680	7.1%
2021 Proposed budget	4,717,160	6.3%
2022 Proposed budget	4,994,640	5.9%
2023 Proposed budget	5,272,120	5.6%
2024 Proposed budget	5,757,710	9.2%
2025 Proposed budget	5,757,710	-

Sewer Administration

Sewer Administration costs include a portion of the salaries, wages and benefits of Public Works management staff and Engineering team. The decrease is related to the Foreman wages and benefits now all budgeted in operations.

Sewer Engineering Services

This section includes \$30,000 carried forward from 2020 to complete the sewer rates review as recommended in the Water Smart Action Plan presented to Council on October 28, 2019. This review is conducted simultaneously with the water rates review. Also included is \$20,000 for the completion of the sewer master plan and \$16,500 for the warranty work estimated to address the last deficiencies of the Greenwood Trunk once the project is completed.

Sewer Operations

The budget for sewer operations is expected to remain stable for 2021 and is distributed amongst the new activities. It includes the crew wages and benefits as well as the material and services needed to perform regular operations, preventative and reactive work on the sewer infrastructure.

Sewer Vehicle Charges and Fleet

The Sewer Vehicle Charges and Fleet budgets are adjusted in 2021 based on actual and anticipated equipment and vehicle usage.

Internal Allocations

Internal Allocations is a percentage of the General Fund and Public Works expenses transferred to the Sewer Fund. The intent is to transfer a reasonable amount for General Government Services and Public Works expenditures (personnel, utilities, materials, insurance, contracted services and fleet costs) as recognition of the administrative costs necessary to provide the service.

The sewer allocation is set to 11.5% of the General Government Services and to 17% of the Public Works Administrative expenses based on prior year estimate. The allocation percentage is reviewed periodically and will be analyzed before the 2022 budget. The variance represents the general increase in the General Government Services and Public Works expense budget.

Sewer Revenues

Revenues collected through sewer user and frontage fees are used to cover the costs of the operating and capital expenditures. Staff recommend maintaining the current frontage rate at \$10.24 per meter, which is expected to generate \$2,071,600 for 2021. An increase of 2.0% of the sewer user fee is proposed for 2021 and 5.5% for the next four years to fund the significant increase anticipated for the CVRD sewer requisition. An annual 1% increase is also factored in the revenue calculations for population growth. In addition the sewer revenues are adjusted to account for potential activity reduction of small businesses as a result of the ongoing pandemic. Thus, a 10% reduction in revenue from small businesses is included and represents a reduction in revenue of \$41,300 for 2021. The sewer user fees are expected to generate \$5,490,100 for 2021.

Once the sewer master plan is finalized in 2021, it will result in a draft 10 year capital plan, which will also support the sewer rates review planned for 2021. Once these two pieces of information are available, frontage and sewer user fees will be further analyzed and recommendations will be presented to adjust the sewer revenue requirements in future year financial plans.

The changes in user fee and frontage rate since 2017 are detailed in Table 3.

Table 3: Sewer user fee and frontage rate 2017-2021

Annual	Sewer User Fee			Sewer Frontage Rate	
	One-time	Change	Change %	per meter	Change
2017	\$294.70	\$26.79	10.00%	\$10.24	\$ -
2018	\$324.17	\$29.47	10.00%	\$10.24	\$ -
2019	\$340.38	\$16.21	5.00%	\$10.24	\$ -
2020	\$344.71	\$4.33	1.27%	\$10.24	\$ -
2021	\$351.60	\$6.89	2.00%	\$10.24	\$ -

Sewer Capital Fund

The projects included in the 2021 Sewer Capital Budget are presented in Table 4 below. Most projects are carried forward from 2020. The only new project is Cascara and Klanawa Sewer Connection to Greenwood. The source of funding and the projects scheduled for the four following years are detailed in Attachment 2.

Table 4: Sewer Capital Projects - 2021 budget

2021 Proposed Budget	
Project description	Total
Sewer - Greenwood Trunk Construction (CF)	1,000,000
Sewer - 1st Street Lift Station Replacement (CF)	341,100
Puntledge Sanitary Catchment Replacement (CF)	255,000
South Courtenay Sewer System (CF)	200,000
Sewer Cascara and Klanawa Connection to Greenwood (New)	100,000
Sewer - Mansfield Drive Forcemain (CF)	50,000
Braidwood Road - Road & Utility - Sewer Component (CF)	31,300
Grand Total	1,977,400

Debt Servicing Costs

The Sewer Operating Fund also includes the debt servicing costs. For 2021, the interest payment is expected to be \$73,100, of which \$27,300 relates to the borrowing secured in 2020 for the Greenwood Trunk Connection project. A principal payment of \$185,400 on existing debt is also included in 2021, of which \$97,700 is for the Greenwood Trunk, for a total debt servicing costs of \$258,500. The projected debt servicing costs for 2021 to 2025 are detailed in Attachment 2.

Sewer Surplus and Reserves

Table 5 shows the sewer surplus, reserves and Development Cost Charges (DCC) estimated closing balances for 2020 and 2021. The five year schedule is presented in Attachment 3.

Table 5: Estimated sewer surplus and surplus balance

SEWER	Estimated	Budget
Surplus, Reserves and DCC Summary	Actual	
Estimated Closing Balance	2020	2021
Sewer Fund Surplus		
Prior Year Surplus (unallocated)	2,008,600	2,096,400
Surplus Reserve For Future Expenditure (Unspent Capital 2020)	867,300	-
	<u>2,875,900</u>	<u>2,096,400</u>
Sewer Capital Reserves		
Sewer Reserve	539,100	539,100
Asset Management Reserve	2,387,700	2,087,700
Sewer Machinery and Equipment	643,400	718,400
	<u>3,570,200</u>	<u>3,345,200</u>
Total Sewer Surplus and Reserves	<u>6,446,100</u>	<u>5,441,600</u>
Sewer Development Cost Charges (DCC)		
Sewer DCC Bylaw #1638/2755	34,800	34,800
Sewer DCC Bylaw #2426/2755	748,400	428,400
Total Sewer DCC	<u>783,200</u>	<u>463,200</u>

Operating Surplus

The 2021 sewer budget is expected to generate a surplus of \$87,800, which is then used in the proposed 2022 budget. A large portion of the prior year surplus is also used in the following years.

The estimated reserve for future expenditures of \$867,300 represents unspent monies collected in 2020 to fund 2020 capital projects carried forward and to be used in 2021.

Capital Reserves

The Asset Management reserve will provide \$600,000 in 2021 to fund a portion of the Greenwood Trunk Connection project.

A contribution of \$300,000 to the Asset Management Reserve and \$75,000 to the Machinery and Equipment Reserve has been included for 2021 and is consistent with previous financial plans.

Development Cost Charges (DCC)

DCC monies will be used towards the Greenwood Trunk Connection project in 2021 in the amount of \$320,000.

DCC are presented as deferred revenues in the financial statements and are not included with the reserves.

FINANCIAL IMPLICATIONS:

To cover the overall cost to deliver the sewer utility operating and capital activities, an increase of 2.0% is recommended for 2021. This will result in an annual increase of \$6.89 in the single family user rate.

Debt

Three major projects are identified in the 2021 and 2022 proposed budget:

- Completion of the Greenwood Trunk Connection at an estimate of \$1.0M (2021);
- 1st Street Lift Station Replacement at an estimate of \$2.64M (2021-2022);
- Puntledge Sanitary Catchment Replacement at an estimate of \$1.755M (2021-2022).

Since anticipated revenues, existing reserves, and prior year surplus are not sufficient to cover the anticipated design and construction costs of these three major projects, long term borrowing has been considered as the primary source of funding for the Greenwood Trunk Connection project in 2020 and 2021 and 1st Street Lift Station replacement project in 2022. In order to obtain long term financing, the City must follow a lengthy statutory process that includes adoption of a municipal loan authorization bylaw, approval by the Ministry of Community Services, elector approval, and inclusion in our regional district security issuing bylaw. The entire process can take up to 8 months.

The borrowing process has been successfully completed in October 2020 to secure \$3.0 M required for the Greenwood Trunk Connection project. Staff anticipate starting the borrowing process for the 1st Street Lift Station project in the summer of 2021 to secure funding for 2022.

ADMINISTRATIVE IMPLICATIONS:

Subsequent to Council endorsing the recommended increase for the 2021-2025 Sewer Fund Financial Plan and user fees, staff will prepare the user fees amendment bylaw, and return to Council for adoption.

After the user fee amendment bylaw is adopted, staff will update the financial system with the new rates, prior to the 2021 utility billing.

Once finalized, the sewer budget will be incorporated as part of the statutory component of the five year financial plan. Compilation of this financial plan will take a minimum of 60 hours of staff time.

ASSET MANAGEMENT IMPLICATIONS:

Much of the sewer network in west Courtenay was built during a three-year period in the early 1960s and is projected to reach its end-of-life in the early 2020s. Detailed Condition Assessment (CCTV inspections) work was completed in 2018-2019. This information has allowed the City's Asset Management Plan to identify priority Projects that align with Council's Strategic Plan and future development and growth. Additionally, the Sewer Master Plan will be finalized early 2021. Together, these will result in a draft 20-year capital sewer plan.

STRATEGIC PRIORITIES REFERENCE:**We focus on organizational and governance excellence**

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

We proactively plan and invest in our natural and built environment

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

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

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

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

OFFICIAL COMMUNITY PLAN REFERENCE:

Section 6.3 Sanitary Sewer Treatment to follow policies to reduce infiltration, consider downstream capacity of existing sewer mains, and to provide an effluent network that is limited to areas within the City's municipal boundaries.

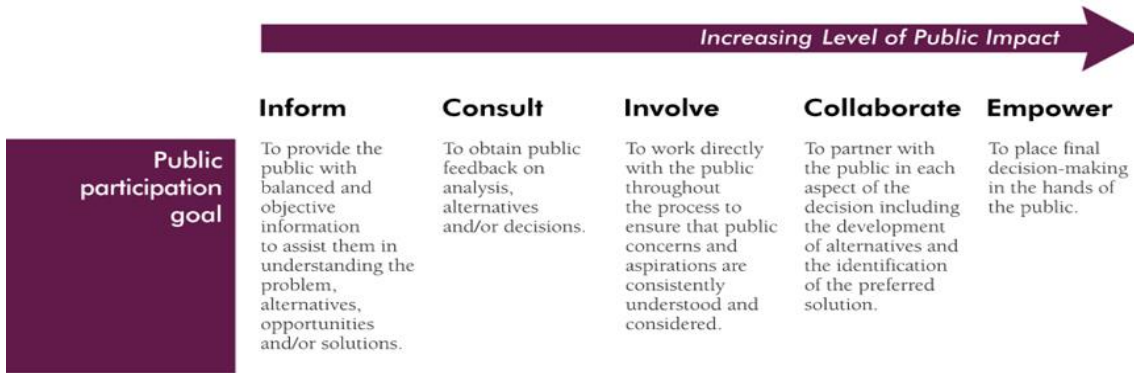
REGIONAL GROWTH STRATEGY REFERENCE:

This budget is presented with the intent of encouraging sewer management approaches and the use of processes and technologies that provide the public with infrastructure that addresses public health needs and concerns and provides equal service to all residents within the municipality and region (per Comox Valley Regional Growth Strategy Bylaw No. 120, 2010, Part 3.2.5, Objective 5-D Page 56).

PUBLIC ENGAGEMENT:

The *Community Charter* (sec. 166) requires that a council must undertake a process of public consultation regarding the proposed financial plan before it is adopted. The City will “**inform**” the public about the 2021-2025 Sewer Fund Financial Plan through special council meetings, media webcasts, and information posted on the City's website. In addition, the City will “**consult**” the public prior to final adoption of the 2021-2025 Financial Plan Bylaw.

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



OPTIONS:

Option 1:

That Council approve the 2021-2025 Sewer Fund Financial Plan; and, that sewer user fee revenue be increased by 2.0% for 2021. **(Recommended)**

Option 2:

That Council defer approval of the proposed 2021–2025 Sewer Fund Financial Plan for further discussion at a later Council meeting.

Prepared by:

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Reviewed by:

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Concurrence by:

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Attachments:

- Attachment # 1 – Sewer Operating Fund Budget Overview
- Attachment # 2 – Sewer Capital Fund and Debt Budget Overview
- Attachment # 3 – Sewer Surplus, Reserves and DCC Projections

Sewer Operating Fund Budget 2021-2025

	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Frontage Rate \$/m	\$ 10.24	\$ 10.24	\$ 10.24	\$ 10.24	\$ 10.24	\$ 10.24
Sewer Utility Rate	\$ 344.71	\$ 351.60	\$ 370.94	\$ 391.34	\$ 412.86	\$ 435.57
Sewer Utility Rate Annual Increase		2.0%	5.5%	5.5%	5.5%	5.5%

Expense Type	Activity2	Activity	DESC	Sum of 2020 BUDGET	Sum of 2021 BUDGET	Sum of 2022 BUDGET	Sum of 2023 BUDGET	Sum of 2024 BUDGET	Sum of 2025 BUDGET
Revenue	Sewer Frontage	Sewer Frontage	SEWER FRONTAGE TAX	(2,224,800)	(2,071,600)	(2,092,300)	(2,113,200)	(2,134,300)	(2,155,700)
			SEWER CONNECTION PARCEL TAX	(15,800)	(12,000)	(12,000)	(12,000)	(12,000)	(12,000)
	Sewer Frontage Total			(2,240,600)	(2,083,600)	(2,104,300)	(2,125,200)	(2,146,300)	(2,167,700)
	Sewer Utility Fees	Sewer Utility Fees	SEWER USER CHARGES - COMMERCIAL	(623,200)	(597,000)	(630,300)	(665,400)	(702,400)	(741,500)
			SEWER USER CHARGES - INSTITUTIONAL (CVRD)	(300,500)	(306,500)	(323,300)	(341,100)	(359,900)	(379,700)
			SEWER USER CHARGES - RESIDENTIAL	(4,337,100)	(4,586,600)	(4,866,700)	(5,163,700)	(5,478,700)	(5,812,700)
	Sewer Utility Fees Total			(5,260,800)	(5,490,100)	(5,820,300)	(6,170,200)	(6,541,000)	(6,933,900)
	Sewer Other Revenues			(20,500)	(20,500)	(20,500)	(20,500)	(20,500)	(20,500)
	Transfer from Prior Year Surplus			-	-	(393,300)	(425,400)	(57,600)	(258,000)
	Transfer from Reserve			(567,500)	(867,300)				
	Equity in Capital Assets			(250,000)	(350,000)	(350,000)	(350,000)	(350,000)	(350,000)
	Sewer Work in Progress			(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)
Revenue Total				(8,379,400)	(8,851,500)	(8,728,400)	(9,131,300)	(9,155,400)	(9,770,100)
Expense	CVRD Sewer Requisition			4,494,200	4,717,200	4,994,700	5,272,200	5,757,800	5,757,800
	Sewer Engineering Services			73,000	86,500	28,000	37,000	32,300	28,000
	Sewer ADMIN - Salaries/Wages			304,000	251,000	256,000	261,100	266,200	271,300
	Sewer Administration			11,500	20,000	20,600	21,200	21,800	22,500
	Sewer ADMIN - Training			11,000	11,000	11,000	11,000	11,000	11,000
	Sewer Operations	Sewer Main			183,800	185,800	187,900	190,100	192,300
		Sewer Service			94,100	95,200	96,300	97,400	98,500
		Sewer Manhole/Chamber			6,300	6,400	6,500	6,600	6,700
		Sewer Valve			13,100	13,200	13,300	13,400	13,500
		Sewer Forcemain			13,200	13,300	13,400	13,500	13,600
		Sewer Inflow & Infiltration			81,000	81,400	81,800	82,200	82,600
		Sewer Lift Station		217,200	253,200	256,800	260,700	263,700	266,800
		Sewer Operations - OLD		352,100					
		Sewer Inflow & Infiltration - OLD		46,500					
	Sewer Operations Total			615,800	644,700	652,100	659,900	666,900	674,000
	Sewer Vehicle Charges			30,600	29,500	29,500	29,500	29,500	29,500
	Sewer Fleet			11,100	23,700	24,000	24,300	24,600	24,900
	Transfer to Reserve	Transfer to Reserve	CARBON OFFSETS	5,500	5,500	5,500	5,500	5,500	5,500
			CONTINGENCY RESERVE	206,900	87,800	-	-	-	-
			TRANS TO M&E SEWER RESERVE	75,000	75,000	75,000	75,000	75,000	75,000
			TRANS TO M.F.A.RESERVE	500	500	500	500	500	500
			TRANS TO RES. FOR FUTURE EXP	567,500	867,300	-	-	-	-
			TRANSFER TO ASSET MGMT RESERVE	300,000	300,000	300,000	300,000	300,000	300,000
			TRSF TO SEWER CAPITAL FUND	350,000	190,100	750,000	700,000	-	500,000
	Transfer to Reserve Total			1,505,400	1,526,200	1,131,000	1,081,000	381,000	881,000
	Interfund Allocation			856,200	893,200	910,500	916,800	940,200	952,500
	Sewer Work in Progress			40,000	40,000	40,000	40,000	40,000	40,000
	Debt			176,600	258,500	281,000	427,300	634,100	727,600
	Amortization			250,000	350,000	350,000	350,000	350,000	350,000
Expense Total				8,379,400	8,851,500	8,728,400	9,131,300	9,155,400	9,770,100
Grand Total				-	-	-	-	-	-

Sub-Department Responsible	New, Renewal, or Project description	2021 Proposed Budget	2021 General Revenues	2021 Reserves	2021 Reserve for Future Expenditures	2021 DCC Reserve	2022 Proposed Budget	2022 General Revenues	2022 Reserves	2022 Debt	
Engineering (Sewer)	New	Sewer - Greenwood Trunk Construction	1,000,000	30,000	600,000	50,000	320,000				
		South Courtenay Sewer System	200,000			200,000					
		Sewer Cascara and Klanawa connection to Greenwood	100,000		100,000			300,000	300,000		
	New Total	1,300,000	130,000	600,000	250,000	320,000	300,000	300,000			
	Renewal	Sewer - 1st Street Lift Station Replacement	341,100			341,100		2,300,000		300,000	2,000,000
		Puntledge Sanitary Catchment Replacement	255,000	60,100		194,900		1,500,000	200,000	1,300,000	
		Sewer - Mansfield Drive Forcemain	50,000			50,000		250,000	250,000		
		Braidwood Road - Road & Utility - Sewer Component	31,300			31,300					
		Sewer - Arden Central Trunk Main									
	Renewal Total	677,400	60,100		617,300		4,050,000	450,000	1,600,000	2,000,000	
Engineering (Sewer) Total	1,977,400	190,100	600,000	867,300	320,000	4,350,000	750,000	1,600,000	2,000,000		
Public Works - Asset Manag											
Grand Total	1,977,400	190,100	600,000	867,300	320,000	4,350,000	750,000	1,600,000	2,000,000		

Sub-Department Responsible	New, Renewal, or Project description	2023 Proposed Budget	2023 General Revenues	2023 Reserves	2023 Debt	2024 Proposed Budget	2024 Reserves	2024 Debt	2025 Proposed Budget	2025 General Revenues	2025 Reserves	
Engineering (Sewer)	New	South Courtenay Sewer System										
		Sewer Cascara and Klanawa connection to Greenwood	1,000,000			1,000,000						
	New Total	1,000,000			1,000,000							
	Renewal	Braidwood Road - Road & Utility - Sewer Component	500,000	500,000								
		Sewer - Arden Central Trunk Main	200,000	200,000			2,000,000	250,000	1,750,000			
Sewer - Mansfield Drive Forcemain		3,000,000		500,000	2,500,000							
Renewal Total	3,700,000	700,000	500,000	2,500,000	2,000,000	250,000	1,750,000					
Engineering (Sewer) Total	4,700,000	700,000	500,000	3,500,000	2,000,000	250,000	1,750,000					
Public Works - Asset Manag	Renewal	Sewer - Projects identified through Master Plan							1,000,000	500,000	500,000	
Renewal Total									1,000,000	500,000	500,000	
Public Works - Asset Management (Sewer) Total									1,000,000	500,000	500,000	
Grand Total		4,700,000	700,000	500,000	3,500,000	2,000,000	250,000	1,750,000	1,000,000	500,000	500,000	

Debt Servicing Costs

New, Renewal, or Project description	2021 Proposed Budget	2022 Proposed Budget	2023 Proposed Budget	2024 Proposed Budget	2025 Proposed Budget
Debt Interest	Existing Debt Interest	73,100	73,100	73,100	73,100
	New Debt Interest 1 St Lift Station		22,500	45,000	45,000
	New Debt Interest Arden				19,700
	New Debt Interest Mansfield			28,100	56,300
	New Debt Interest Cascara and Klanawa			11,300	22,500
Debt Interest Total	73,100	95,600	157,500	216,600	236,300
Debt Principal	Existing Debt Principal	185,400	185,400	185,400	185,400
	New Debt Principal 1 St Lift Station			84,400	84,400
	New Debt Principal Arden				73,800
	New Debt Principal Mansfield				105,500
	New Debt Principal Cascara and Klanawa				42,200
Debt Principal Total	185,400	185,400	269,800	417,500	491,300
Grand Total	258,500	281,000	427,300	634,100	727,600

SEWER Surplus, Reserves and DCC Summary	Estimated	Budget	Proposed Budget			
	Actual 2020	2021	2022	2023	2024	2025
Estimated Closing Balance						
Sewer Fund Surplus						
Prior Year Surplus (unallocated)	2,008,600	2,096,400	1,703,100	1,277,700	1,220,100	962,100
Surplus Reserve For Future Expenditure	867,300	-	-	-	-	-
	<u>2,875,900</u>	<u>2,096,400</u>	<u>1,703,100</u>	<u>1,277,700</u>	<u>1,220,100</u>	<u>962,100</u>
Sewer Capital Reserves						
Sewer Reserve	539,100	539,100	539,100	539,100	539,100	539,100
Asset Management Reserve	2,387,700	2,087,700	787,700	587,700	637,700	437,700
Sewer Machinery and Equipment	643,400	718,400	793,400	868,400	943,400	1,018,400
	<u>3,570,200</u>	<u>3,345,200</u>	<u>2,120,200</u>	<u>1,995,200</u>	<u>2,120,200</u>	<u>1,995,200</u>
Total Sewer Surplus and Reserves	<u>6,446,100</u>	<u>5,441,600</u>	<u>3,823,300</u>	<u>3,272,900</u>	<u>3,340,300</u>	<u>2,957,300</u>
Sewer Development Cost Charges (DCC)						
Sewer DCC Bylaw #1638/2755	34,800	34,800	34,800	34,800	34,800	34,800
Sewer DCC Bylaw #2426/2755	748,400	428,400	428,400	428,400	428,400	428,400
Total Sewer DCC	<u>783,200</u>	<u>463,200</u>	<u>463,200</u>	<u>463,200</u>	<u>463,200</u>	<u>463,200</u>

Purpose of Sewer Reserves

Prior Year Surplus : accumulated excess of revenues over expenses from prior years which has not been set aside for specific purposes

Reserve for Future Expenditure : revenues collected for 2020 capital projects unfinished and

Sewer Reserve , Bylaw #1382: established for funding capital expenditures or debt related to

Asset Management Reserve , Bylaw #2819: established to acquire tangible capital assets

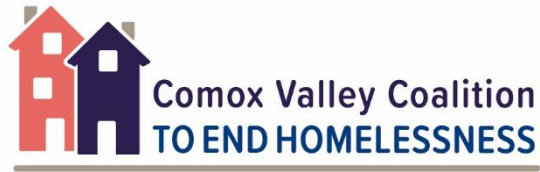
relating to the sewer fund or for refurbishing, renewing or replacing existing tangible capital

Sewer Machinery and Equipment , Bylaw #1976: established to fund replacement of

depreciated or obsolete machinery and equipment in the sewer fund

Sewer DCC 'North East Zone' , Bylaw #1638/2755: to be used for approved sewer projects

Sewer DCC, Bylaw #2426/2755: to be used for approved sewer projects



November 13, 2020

BC Housing, Ministry of Municipal Affairs & Housing,
MLA Ronna Rae Leonard
MLA Josie Osbourne

Re: Housing Proposal to create permanent housing for vulnerable populations in the Comox Valley

The Coalition consists of 29 member agencies who work as a collective to plan, coordinate, recommend, advocate for, and implement responses to homelessness and increasing affordable housing in the Comox Valley. Our Comox Valley local governments have taken an important leadership role in our community to help in creating effective solutions to local homelessness and affordable housing issues. We are at a critical point in time in the pandemic, where emergency shelter units are still needed as the weather gets cold and COVID-19 cases ramp up and there is greater need for permanent housing. The attached proposal is endorsed by local governments for temporary and permanent housing in the Comox Valley in the immediate future.

We are requesting that BC Housing collaborate with our local governments and the Coalition to provide the following housing for the Comox Valley as soon as possible.

1. **Immediate Temporary Request 2020/21:** appropriately funded (supports included) temporary emergency shelter spaces for an additional 50 individuals for Fall 2020/Winter 2021.
2. **Permanent Request 2021/22:** 100 permanent supportive housing units in two buildings of 50 units each. There is a need for a continuum of supportive housing options for a wide demographic including Indigenous people, women, couples, seniors and for those who would prefer a facility where residents refrain from using substances.

It is imperative that the housing above includes funding for on-site supports, not only from staff, but from outside agencies who can bring their services to residents to help meet their specific goals. Many of the Coalition's member agencies have the capability to manage any of these options given the appropriate funding resources.

We look forward to further action to ensure an immediate and long-term response to housing our community's most vulnerable members. The time is now.

Sincerely;

A handwritten signature in dark ink, appearing to read "Andrea Cupelli", is written over a faint, circular stamp or watermark.

Andrea Cupelli
Coordinator, Comox Valley Coalition to End Homelessness

This letter and request is endorsed by:

Mayor Bob Wells
City of Courtenay

Mayor Russ Arnott
Town of Comox

Mayor Leslie Board
Village of Cumberland

Chair Jesse Ketler
Comox Valley Regional District

PROPOSAL FOR IMMEDIATE AND PERMANENT HOUSING AND SUPPORT SERVICES IN COMOX VALLEY

BACKGROUND

As soon as COVID-19 was declared a global pandemic the Coalition and its member agencies worked round the clock to respond to the new needs of our community's most vulnerable – many who felt isolated, fearful, uncertain, and unable to follow the advice to stay home, self-isolate, wash hands and practice physical distancing. Many social services shut down, hours were reduced, or services were moved online creating barriers to accessing support. Emergency shelter spaces were reduced to adhere to pandemic safety regulations. The Coalition and its member agencies advocated for public washrooms to be re-opened, transitioned food programs from inside to outside, built hand washing stations, increased hours at Connect with COVID safety protocols in place and worked with the City of Courtenay to have showers opened at Lewis Centre.

Coalition agencies worked with BC Housing to provide 42 motel rooms for those experiencing homelessness. These motel rooms include 2 meals a day, daily support visits from outreach, onsite security, and weekly visits from physicians. There is a waitlist for people to get into these motel rooms, and funding is not long-term and thus far only available until December 31. There is sense of uncertainty and being able to plan becomes challenging when funding agreements are made in short intervals.

URGENT HOUSING NEEDS GOING FORWARD

According to the March 11th, 2020 Homeless Count, the minimum number of people experiencing homelessness in the Comox Valley was 132 (44% sheltered; 56% unsheltered), meaning 74 individuals were unsheltered.

At present, within Courtenay city limits, there remain anywhere between 10-15 active encampments with 1-6 tents at each site, and there are other small encampments located within the regional district. We anticipate as the pandemic goes on we will begin to see an increase in homelessness due to factors such as the end of CERB, evictions for nonpayment of rent, continually increasing housing costs, a low vacancy rate, job loss, the opioid crisis, and an uncertain future for some of our service providers.

At present, BC Housing is funding 42 units of motel rooms leaving at *minimum* 32 individuals without much-needed shelter during this second wave of the pandemic.

Local outreach workers are reporting their clients feeling a heightened sense of fear over what will happen if motel rooms are no longer available and are working hard to find housing for their clients, but the options are extremely limited. The Junction supportive housing has a waitlist and Washington Park is full. The BC Housing waitlist for such subsidized units had 270 applications as of January 2020. It has become increasingly impossible to find landlords who will rent to this

population, or units that are within their financial means – even with subsidies provided through BC Housing, and other forms of income assistance. The [2020 Comox Valley Regional Housing Needs Assessment Report](#) indicated there is a great need for nonmarket housing both with and without supports across the region.

Despite the Coalition’s best efforts, the Comox Valley still lacks a concrete response plan to keep those who are currently unhoused safe from COVID-19 and other respiratory infection outbreaks during this second wave of the pandemic.

We are at a critical point in time in the pandemic, where emergency shelter units are still needed as the weather gets cold and COVID-19 cases ramp up. The Coalition is proposing the following.

Immediate Request 2020/21: appropriately funded (supports included) temporary emergency shelter spaces for an additional 50 individuals for Fall 2020/Winter 2021.

Permanent Request 2021/22: 100 permanent supportive housing units and subsequent subsidized housing based on the Coalition’s 5 Year Plan

a. Phase 1 2021 (Permanent Supportive Housing)

- i. Two buildings of 50 units totalling 100 units of supportive housing

There is a need for a continuum of supportive housing options for a wide demographic including Indigenous people, women, couples, seniors and for those who would prefer a facility that provides a space where residents refrain from using substances.

It is imperative that in all these scenarios, funding includes on-site supports, not only from staff, but from outside agencies who can bring their services to residents to help meet their specific goals. Many of the Coalition’s member agencies would have the capability to manage any of these options given the appropriate funding resources.

b. Phase 2 – 2022 (Subsidized Housing Based on Coalition’s 5 Year Plan):

Work with BC Housing to provide additional subsidized housing units for Indigenous people, seniors, families and single people who do not need on-site supports through programs such as the Community Housing Fund and according to the Coalition’s 5 Year Plan to End Homelessness

We must consider that Indigenous people are overrepresented in homelessness populations in communities across Canada, including the Comox Valley. According to the 2018 Homeless Count 32% of the homeless population in the Comox Valley identified as Indigenous, compared to 5% of our overall population (as per 2016 census data). Homelessness amongst Indigenous people can be traced back to historical trauma, oppression, racism, and discrimination. Housing for Indigenous people in our community is desperately needed.

The Coalition also recognizes there are many Community Housing proposals being put forward to BC Housing from the Comox Valley, but while these housing projects are much needed, they do not address the urgent needs of those who are sleeping on the streets.

CONCLUSION

The COVID-19 pandemic has shone a spotlight on the housing and support service deficiencies for so many of our vulnerable populations. While we have collectively (Coalition's member agencies with municipal support, and the province) done a lot in the past 5 years, there is clearly much more to do as the demand for safe, affordable, housing continues to grow during these unstable times. As a Coalition we see a very real need to provide more support throughout the pandemic and beyond. We are encouraged to see what is being accomplished in other communities across BC and we believe that the Comox Valley must take immediate action to address the continuing and growing impacts the pandemic is having on our vulnerable populations.

CONTACT:

Andrea Cupelli, Coordinator – Comox Valley Coalition to End Homelessness
comoxvalleyhousing@gmail.com



THE CORPORATION OF THE CITY OF COURTENAY
BRIEFING NOTE TO COUNCIL

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

File No.: 5335-20 / 5400-02
Date: November 30, 2020

PURPOSE:

The purpose of this briefing note is to update Council on the current status of the project as well as to provide an update on the informal results of the Alternative Approval Process and present the next steps in the project.

BACKGROUND:

The 5th Street Bridge plays an important role in the entire Comox Valley transportation network serving 20,000 vehicles, 650 pedestrians and 500 cyclists each day. Completed in 1960, the 72-metre steel truss bridge has two vehicle lanes and 1.5 metre sidewalks on both sides of the bridge.

The following Council resolutions regarding the 5th Street Bridge Project have provided direction to staff.

June 24th, 2019

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

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

Following a period of extensive community and stakeholder engagement and the refinement of project options, Council passed the following subsequent motion.

February 3rd, 2020

That Council direct staff not to include cantilevers in the final design of the 5th Street Bridge Rehabilitation Project; and,

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

UPDATE AND NEXT STEPS:

Results of the AAP

At its regular meeting held September 21st, 2020 Council passed the following resolution:

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

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

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

That Council establish the deadline for receiving responses for this Alternative Approval Process as November 16th, 2020 at 4:30 p.m.”

There were 52 elector response forms received by the November 16th, 2020 deadline; as fewer than 10 percent or 2,017 of eligible electors registered their opposition, Council may proceed with final adoption of Loan Authorization Bylaw No. 2978, 2020 without obtaining assent of the electors (referendum).

A staff report summarizing the results of the Alternative Approval Process is anticipated to come forward at the December 7th, 2020 Regular Council meeting along with final adoption of Bylaw 2978, 2020 to approve borrowing of \$3.4 million to rehabilitate the 5th Street Bridge. Following final adoption of the bylaw there is a one month quashing period before the bylaw may be sent back to the Inspector of Municipalities for the final certificate of approval.

Construction Procurement

The detailed design for the bridge was finalized on November 13, 2020. A Request for Proposals (RFP) was released on November 18, 2020. The purpose of the RFP is to invite proposals from prospective contractors to undertake the planned upgrades to the bridge. The RFP will be open for approximately four weeks and will close on December 15, 2020. All proposals received will be evaluated by an evaluation team and the successful proponent will be selected in early 2021.

Traffic Management Strategy

The Traffic Management Strategy (TMS) for the 5th Street Bridge Rehabilitation project was prepared to identify and evaluate various traffic management scenarios and develop a recommended strategy. The goal of the strategy is to provide a safe environment for all road users during the construction phase while minimizing impacts to the public, businesses, and priority vehicles (transit, emergency services, etc.).

The recommendations included in the TMS are intended to be used to communicate both internally and externally as well as forming the basis of the contractor’s detailed Traffic Management Plan. Although some items may be refined/revised, depending on contractor workplan, and available project budget, the intent is to include the identified accommodations.

A draft TMS was released to stakeholders in August 2020. Feedback received from stakeholders was positive for the core concepts of the Traffic Management Strategy. All feedback was reviewed, and where possible, included in the updated report. The updated Traffic Management Strategy has been appended to this briefing note.

Communications

Throughout the project, proactive, accurate and effective communication efforts will be undertaken to keep the public informed, and to allow them to appropriately anticipate and respond to construction updates. As the project progresses into construction, communications will be centered on some of following topics:

1. **Construction Traffic Control** - Establish single lane alternating traffic control practices to maximize available capacity.
2. **Short-Term Bridge Closures** - Ensure short-term full bridge closures are scheduled to occur during periods when travel demand is lowest to minimize impact.
3. **Intersection Traffic Control** – As noted above, nearby intersection signal timings will be optimized to reflect altered traffic conditions and minimize delay.
4. **Traffic Detour Routes** - Publicize detour routes that minimize negative impacts elsewhere in the network and offer comfort/certainty to motorists seeking alternatives to the 5th Street Bridge.
5. **Time-of-day Travel** - Promote/encourage off-peak travel to reduce congestion during peak periods.
6. **Alternative Travel Modes** - work with regional partners to establish park and ride locations as well as cycling store locations. This will be dependent on resource requirements, and available budget.

Additionally, the project team is developing new project branding with new graphics which will be used to support the communications program for the project in both newspaper and digital formats.

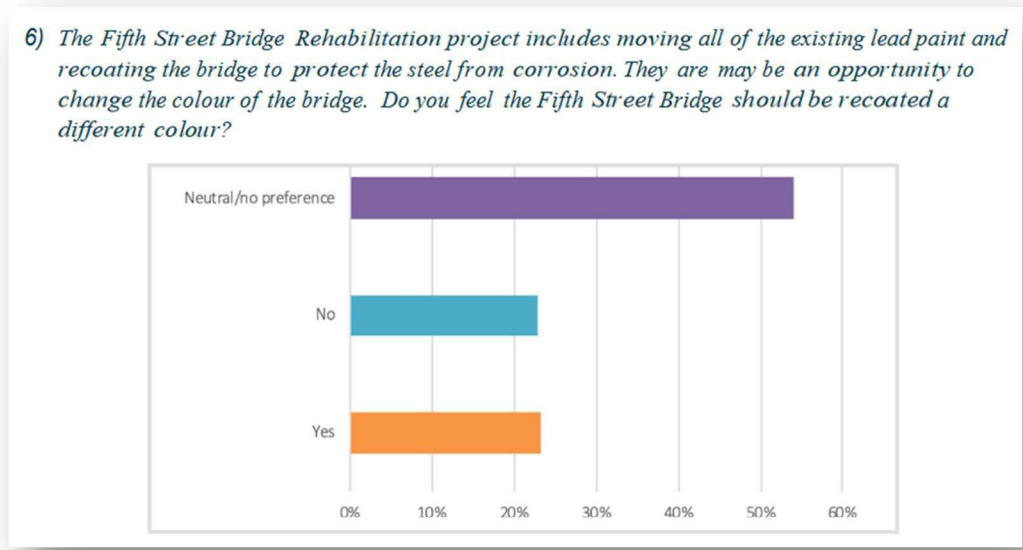
Bridge Color

The existing, lead based coating on the 5th Street Bridge has reached the end of its service life and is beginning to fail. With the old coating removed, an opportunity exists to choose a new coating color for the bridge. In general, dark colors will fade faster than lighter colors. Lighter colors will tend to show more dirt.

Although many colors are possible, the project team has recommended three options:

1. Green – to match the existing color
2. Silver – this is a standard bridge color used by MoTI for this style of bridge
3. Black – this matches the downtown core signs and poles program

Engagement with Courtenay residents and various stakeholders and organizations has been a priority for the project team and has taken place since the early stages of the project. An open house was held in November of 2019 where attendees were asked if they felt the bridge should be recoated a different color. This same question was asked during a public survey that was made available in November and December of 2019. More than 600 responses were received with the majority of responses indicating no preference. An equal amount of responses were received for both keeping the same color and changing the color. A graphical representation of the data is shown below:



Listed below are the planned next steps will to engage the community to determine if there is a preference for the colors listed above.

1. Engage directly with the Downtown Courtenay Business Improvement Association, and Comox Valley Chamber of Commerce, proposing the three color options listed above, and confirming their color preference.
2. Release a simple online survey to the public, to gauge the community’s preference for the 3 options.
3. Report back to Council on findings, and seek a motion to confirm color choice in early 2021.

It is important that this decision is made by the time the contractor is chosen for the project which is expected to be in early 2021. The coating materials will require a long lead time for delivery, and will need to be ordered as soon as possible to ensure there are no delays to the project. Not having a confirmed color beyond this time frame presents a risk to the project schedule.

PROJECT SCHEDULE

The project is progressing as per the below schedule. While the on-going COVID pandemic has delayed some items by a few months, overall the project is still on track to meet the original schedule for construction.

5 th Street Bridge											
	2020			2021							
	Nov-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec						
Communications											
Update Traffic Management Strategy											
Complete Design											
Borrowing Process											
Contractor Procurement											
Contractor Submittals											
Construction											
Project Close-out											

PROJECT BUDGET

Project budget is still estimated to be as per the below.

Project Element	Estimated Cost
Outcome	Rehabilitated crossing with 20-year updated useful service life with full utilization of the grant and cathodic protection versus deck replacement.
Bridge Recoating & Deck Renewal	\$4.1 million
Structural and Traffic	\$2.2 million
Total	\$6.3 million
Fed/Provincial Grant	\$1.96 million
Reserves	\$0.94 million
City Borrowing Amount	\$3.4 million
Tax Implications (based on 2019 assessments and tax rates)	Average residential property \$13 per year Average commercial property \$82 per year

Prepared by:



Chris Davidson, P.Eng.
 Interim Director of Engineering Services

Concurrence by:



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

Attachment(s) (1):

1. *5th Street Bridge Rehabilitation Traffic Management Strategy*

FIFTH STREET BRIDGE REHABILITATION
Traffic Management Strategy



Prepared for
The City of Courtenay

November 2020

File no.
3222.0045.02

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Executive Summary

The City of Courtenay is currently preparing for the proposed upgrades to the Fifth Street Bridge which is planned for the Spring and Summer of 2021. The Fifth Street Bridge rehabilitation works require reducing the bridge to a single travel lane for vehicles plus a sidewalk/pathway for pedestrians and cyclists. The work timeline is anticipated to take up to six months.

The Traffic Management Strategy for the Fifth Street Bridge Rehabilitation has been prepared to identify and evaluate various traffic management scenarios and develop a recommended strategy. The goal of this strategy is to provide a safe environment for all road users during the construction phase while minimizing impacts to the public, businesses, and priority vehicles (transit, emergency services, etc.). The recommendations are intended to be used by the City to communicate both internally and externally as well as forming the basis of the contractor's Traffic Management Plan.

The recommendations in this report are based on the anticipated construction approach and resulting traffic management requirements. However, the recommendations in this Traffic Management Strategy will likely be refined in conjunction with the successful contractor and implementation will be subject to the contractor's work plan and the available budget.

Courtenay residents and various stakeholders and organizations were engaged early in the development of this traffic management strategy. Extensive feedback was considered to understand the community's needs and identify potential mitigation options. The most important considerations identified through stakeholder consultations were:

- ▶ Reducing congestion and maintaining access for all modes is the highest priority.
- ▶ Adjustments in travel behaviors are expected and are most likely to include taking an alternate route, planning for additional travel time, and travelling outside peak periods (limited support was shown for taking the bus and carpooling).
- ▶ Maintaining access for emergency services and public transit are important considerations.

Technical analysis of single lane traffic during pre-construction conditions and during construction conditions was completed, and four options were developed: eastbound traffic only, westbound traffic only, single lane alternating traffic, and mid-day direction change. The analysis concluded that single lane alternating is the preferred method for managing traffic during the construction phase. In comparison to the other three options, single lane

alternating allows residents and commuters similar access to what they currently enjoy, albeit maybe more slowly. It also provides continued access to and from the downtown. Additionally, single lane will provide more balanced network performance at bridges as well as highways and municipal roads and is most responsive to the concerns identified by the public and stakeholders.

The recommended traffic management strategy is illustrated in **Figure E-1** and described as follows.

General Purpose Traffic

Leaving Downtown

- ▶ General purpose traffic will be directed to access the bridge via a detour route involving travelling northbound on Cliffe Avenue, right on 3rd Street, left into the laneway between Cliffe Avenue and Anderton Avenue, right on 1st Street and finally right onto Anderton Avenue.
- ▶ This detour will minimize impacts to business and provide storage for most of the traffic queues on Anderton Avenue instead of 5th Street.
- ▶ Use of the laneway between Cliffe Avenue and Anderton Avenue for bridge traffic is recommended since the laneway has minimal direct accesses and its use would minimize the impact of queues on the residents on Cliffe Avenue between 3rd Street and 1st Street¹.
- ▶ On Anderton Avenue, parking will need to be re-allocated for queue storage. This would enable 2-way free flow traffic to be maintained for access to destinations on Anderton Avenue, such as the Filberg Centre. This lane would also act as a priority lane for transit leaving downtown.
- ▶ On 1st Street, there appears to be sufficient room to accommodate a queue lane on the right side while maintaining two-way traffic. This will enable access to the Condensory Bridge and destinations on Anderton Avenue to be maintained.
- ▶ Traffic control personnel may be required to help manage the queue, especially during the initial phase of the construction.
- ▶ To facilitate general traffic detour 5th Street eastbound (towards the bridge) will be closed at Cliffe Avenue except for local traffic and Anderton Avenue will be closed at 6th Street except for local traffic and large trucks.

¹ As an alternative to using the laneway, traffic could be directed to continue on Cliffe Avenue to 1st Street. This can be considered further at future stages of the Traffic Management Plan Development with consideration of the trade-offs of potential impacts to residents versus a higher volume of traffic utilizing the laneway.

Entering Downtown

- ▶ No significant changes to current traffic patterns for general purpose traffic have been identified. There are changes required for access to the park that are discussed below.

Priority Vehicles

Priority vehicles include transit, emergency services, school buses, and potentially car-pool or high occupancy vehicles.

Entering Downtown

- ▶ Create a dedicated priority vehicle lane on Ryan Road between the Old Island Highway and Highway 19A to enable BC Transit and emergency services to bypass the general traffic queues. This will require the use of the existing center lane for general purpose traffic.
- ▶ Adjust the intersection of Ryan Road and the Old Island Highway to include a second left hand turn lane; one for general traffic and another for priority vehicles. Both lanes will be controlled via the existing traffic light.
- ▶ Create a dedicated priority vehicle lane on Old Island Highway from Ryan Road to the bridge to enable BC Transit and emergency services to bypass the general traffic queues.
- ▶ Old Island Highway provides sufficient space to accommodate a temporary priority lane (queue jumper) lane, assuming 3.3m for a general-purpose travel lane, 3.5m for a left turn lane and 3.5m for a queue jumper lane (13.6m in total).
- ▶ Locating the priority vehicle lane in the curb (right lane) is recommended to enable vehicles destined to Lewis Park can also utilize the priority vehicle lane.
- ▶ Once on the downtown side of the bridge, transit will need to be re-routed since the current right-in only from the Fifth Street Bridge to Anderton Avenue will be changed to left-out only to facilitate the general traffic routing.
- ▶ It is proposed that transit entering downtown will proceed straight on 5th Street, turn right onto Cliffe Avenue, right onto 1st Street, and finally right to Anderton Avenue. This is the same route used now, just in the opposite direction.

Leaving Downtown

- ▶ As noted above, transit will need to be re-routed to be leaving downtown via 1st Street and Anderton Ave.

- ▶ As two-way traffic is being maintained on Anderton Avenue in addition to the bridge queue, buses can use the travel lane to by-pass the queue and get to the front of the line for the bridge.
- ▶ Temporary relocation of bus stops to the opposite side of the road will need to be coordinated with BC Transit.
- ▶ As general-purpose traffic will be detoured and not able to access the bridge from 5th Street, emergency services may find it more efficient to use 5th Street rather than Anderton Avenue or the bus routing when leaving downtown.
- ▶ Communications with traffic control personnel will be explored in order to ensure access to the bridge by emergency services can happen as easily as possible.

Commercial Vehicles/Oversize Vehicles

- ▶ As the bridge will have a maximum height of 3.6m, some large vehicles will not be able to use the Fifth Street Bridge. Instead these vehicles will need to use the 17th Street Bridge. The signage and communication regarding this will need to be developed as part of the communications strategy.

Pedestrians and Cyclists

- ▶ It is preferable to keep the underpass open to pedestrians and cyclists on both sides of the bridge, but the park side is higher priority. Use of shipping containers or another measure can be considered to separate pedestrians and cyclists from construction activities and protect them from any potential overhead hazards. Shipping containers are frequently used to protect pedestrians from overhead hazards when there is construction adjacent to the sidewalk. However, the bridge has very low clearance and there may not be sufficient space for a shipping container.
- ▶ On the Lewis Park side, if the underpass is closed to pedestrians and cyclists, flaggers should be used to direct the pedestrian and cyclist movements and facilitate crossing of 5th Street. However, each crossing of 5th Street on the Lewis Park side will impact the single lane alternating operation and reduce the vehicle capacity.
- ▶ On the downtown side, pedestrians and cyclists will be able to cross Anderton Avenue without any conflicts while traffic is entering downtown and then cross 5th Street without any conflicts while traffic is leaving downtown.

Park Access

- ▶ Access to the Lewis Park and/or Millennium Simms Park parking lots should be maintained for park users and as a potential park-and-ride or park-and-walk/bike location.
- ▶ Traffic accessing the parking lots could be permitted to utilize the priority vehicle lane which would provide a time savings and incentive to bike/walk across the bridge.
- ▶ The right-out access from Lewis Park to the bridge is proposed to be closed to prevent short-cutting traffic from using the park to bypass the traffic queues on 5th Street/Old Island Highway.
- ▶ If it is not practical to maintain vehicle access under the bridge between Lewis Park and Millennium Simms Park, the splitter islands at the parking lot accesses will need to be modified to enable left-out from Lewis Park and left-in to Millennium Simms Park. Alternatively, a traffic control person could be used to facilitate these movements.
- ▶ During any periods where vehicle access under the bridge between the parks cannot be maintained, closure of the Simms Millennium Parking lot should be considered to minimize the disruption to traffic crossing the bridge caused by vehicles attempting to make a left-turn into the parking lot.

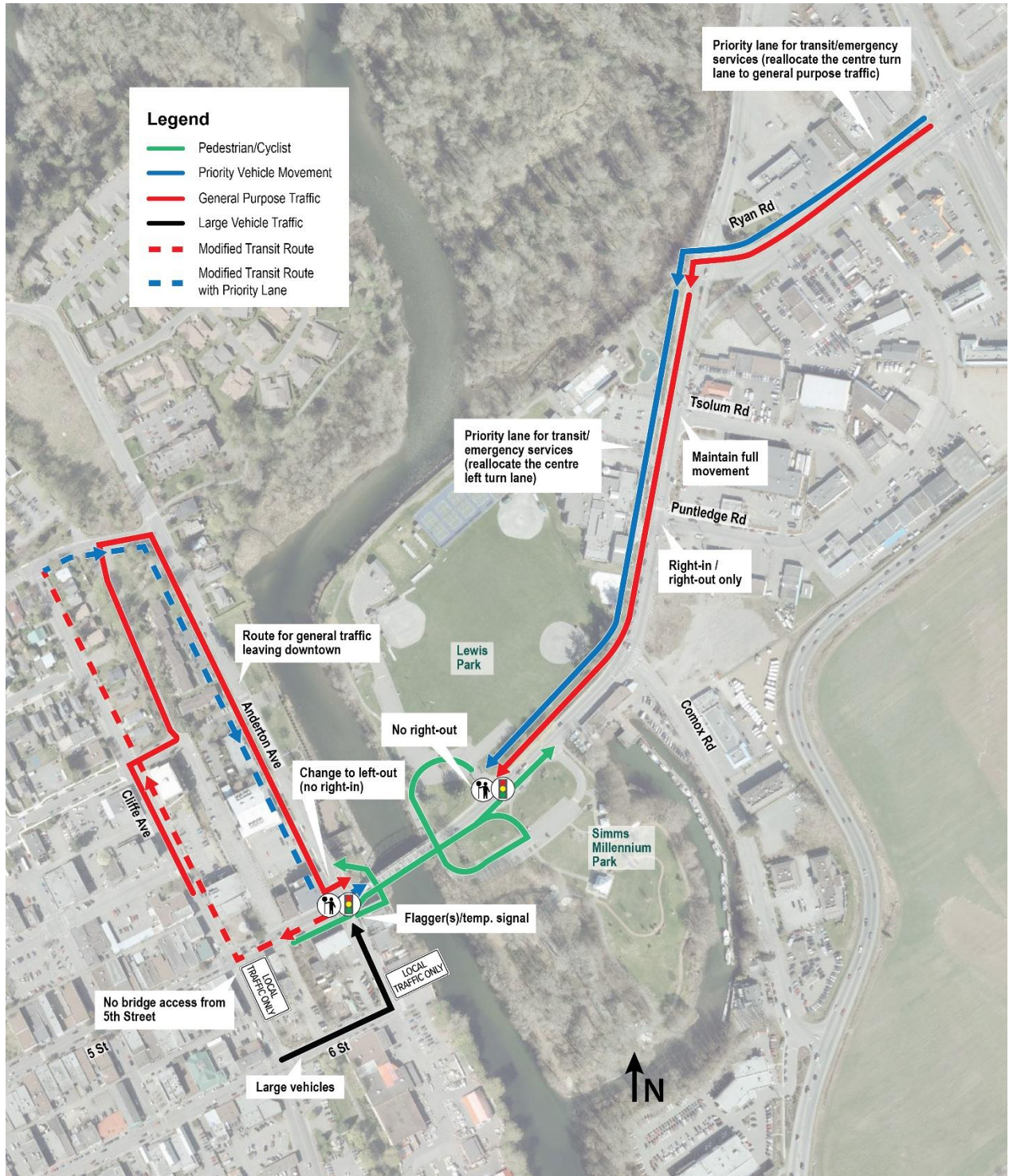


Figure E-0-1: Recommended Traffic Management Strategy

Transportation Demand Management

While the measures outlined above are intended to minimize the construction impacts on road users, reducing the travel demand during peak periods is also an important strategy and can provide significant benefits. Potential opportunities to encourage people to switch from driving to walking, cycling or taking transit have been identified, including:

- ▶ Park-and-ride (transit subsidy, rideshare, and shuttle)
- ▶ Park-and-walk/bike

The proposed traffic management approach must be supported by a detailed communications plan to ensure timely and broad awareness raising efforts across the Comox Valley prior to and during construction.

1.0 Overview

The Fifth Street Bridge plays an important role in the entire Comox Valley transportation network. Completed in 1960, the 72-metre steel truss bridge has two vehicle lanes and 1.5-metre sidewalks on both sides. Four important utilities run underneath the bridge - two water mains, a Fortis gas line and Telus telecommunications line.

The bridge requires rehabilitation of various elements to maximize its service life to the City of Courtenay (City). The City was successful in receiving \$1.96-million in funding from the New Building Canada- Small Communities fund, which requires rehabilitation of the bridge to occur by March 31, 2022. Construction is planned for 2021.

To address the structural condition and safety of the current bridge, the scope of the Fifth Street Rehabilitation Project includes:

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

1.1 Purpose

The purpose of the traffic management strategy is to understand the impact that the bridge rehabilitation will have on all modes of travel and to identify a pro-active strategy for mitigating community impacts to the greatest extent possible. Mitigation strategies range from traffic management, to travel demand management and strategic communications. The strategy is intended to address concerns identified by the public and stakeholders, and to be refined through on-going discussions.

The details of construction parameters and the impact on pedestrian, cycling and vehicle traffic is identified in *Section 2.0*.

1.2 Key Characteristics

The following are key characteristics of the Fifth Street Bridge:

- ▶ It is a 72-metre steel truss bridge that was constructed in 1960.
- ▶ Two travel lanes (one in each direction) are provided, each is approximately 3.5m wide. 1.5m sidewalks are provided on both sides.
- ▶ Dedicated cycling facilities are not currently provided on the bridge. Cyclists either ride in line with vehicles or dismount and use the sidewalks.
- ▶ Underpasses are provided on both the west and east sides of the bridge that allow people who walk and cycle to pass from one side to the other.
- ▶ Four utilities run underneath the bridge - two watermains, a Fortis gas line, and Telus telecommunications line.
- ▶ Approximately 20,000 vehicles, 160 buses, 650 pedestrians and 500 cyclists cross the bridge each day².

² Vehicle volumes based on figures from the Transportation Master Plan (2019), pedestrian and cyclist data based on summertime counts completed by the Comox Valley Cycling Coalition, and bus data provided by BC Transit.

2.0 Construction Parameters

The rehabilitation work is anticipated to take approximately six months. Timing will ultimately depend on the final extent of the rehabilitation works and the approach to construction phasing. The traffic management strategy plans for one travel lane to remain open and access for pedestrians and cyclists will be maintained through the duration of construction. The recommendations in this report are based this construction approach and resulting traffic management requirements. However, the recommendations in this Traffic Management Strategy will likely be refined in conjunction with the successful contractor and implementation will be subject to the contractor's work plan and the available budget.

The rehabilitation includes two primary elements that would impact all modes of traffic:

- ▶ The existing concrete bridge deck will be removed and replaced; and
- ▶ Structural repairs to the underside of the bridge and a complete re-coating of the steel structure, which includes a scaffolding and wrap structure that reduces the vertical and horizontal clearances for travel on the bridge

To safely complete the rehabilitation work, multi-modal travel will be impacted by the following conditions:

- ▶ The scaffolding required to allow the recoating work may reduce the height clearance to 3.6m (reduced from the current 4.6m);
- ▶ The travel lane width may be reduced to 3.0m during construction (reduced from the current approximately 3.5m width);
- ▶ The free space within the wrapping will be approximately 6.0m with half of the space being allocated to pedestrians and cyclists;
- ▶ The scaffolding is expected to encapsulate the existing bridge sidewalks, requiring that people who walk and cycle are accommodated in a dedicated space on the bridge roadway.

3.0 Community Input

Courtenay residents and representatives from local stakeholder organizations were engaged in the process of developing this traffic management strategy for rehabilitation of the Fifth Street Bridge. The intent was to ensure that concerns related to traffic interruptions during the rehabilitation works were understood and could be considered fully when planning the traffic management strategy.

The following sections provide a summary of key feedback from the public and stakeholders.

3.1 Methods

Public and stakeholder feedback has been primarily received via three methods:

1. A survey was made available to the public from Tuesday, November 12 to December 06, 2019 seeking feedback on the bridge rehabilitation project. A total of 643 survey responses were received online and in print.
2. An open house was hosted on Thursday, November 21st from 5:00 to 7:00pm at the Florence Filberg Centre. A total of 98 people attended.
3. Letters were sent out to over 20 stakeholder organizations in the Comox Valley inviting them to a one-on-one meeting with City staff and project consultants. Meetings have been held with many of the invited groups.

3.2 Feedback Received

The feedback received has helped inform the traffic management strategy, including developing a full understanding of public and stakeholder concerns as well as helping to identify management approaches. The following are some of the key feedback that was received:

- ▶ Reducing congestion and maintaining access for all modes is of highest priority.
- ▶ Adjustments in travel behavior are most likely to include taking an alternate route, planning for additional travel time, and travelling outside peak periods (limited support was shown for taking the bus and carpooling).
- ▶ Maintaining access for emergency services and public transit is an important consideration.

A full summary of public and stakeholder feedback is provided in the *What We Heard: Fifth Street Bridge Rehabilitation Project, Phase 1 Engagement Summary* document, which was presented to council on January 27th, 2020.

4.0 Traffic Conditions - No Construction

The current traffic conditions and travel patterns in Courtenay, including daily traffic profiles, typical congestion and travel times near the bridges and the origins and destinations of traffic using the Fifth Street Bridge have been reviewed and are summarized in the sections below.

4.1 Daily Traffic Profile at the Bridges

24-hour traffic counts have been analyzed for the three bridge crossings (Fifth Street Bridge, 17th Street Bridge, Piercy Bridge) to obtain an understanding of the traffic profile in terms of peak hour and traffic volume.

The traffic for all three bridges generally reaches a morning peak around 8 am and then continuously builds throughout the day and reaches the afternoon peak at between 4 pm and 5 pm. The directional traffic on all three bridges is generally balanced. During the PM peak hour, Fifth Street Bridge, 17th Street Bridge, and Piercy Bridge carry approximately 1000, 1500, and 250 vehicles per hour per direction respectively. See **Figure 4-1** through **Figure 4-3**.

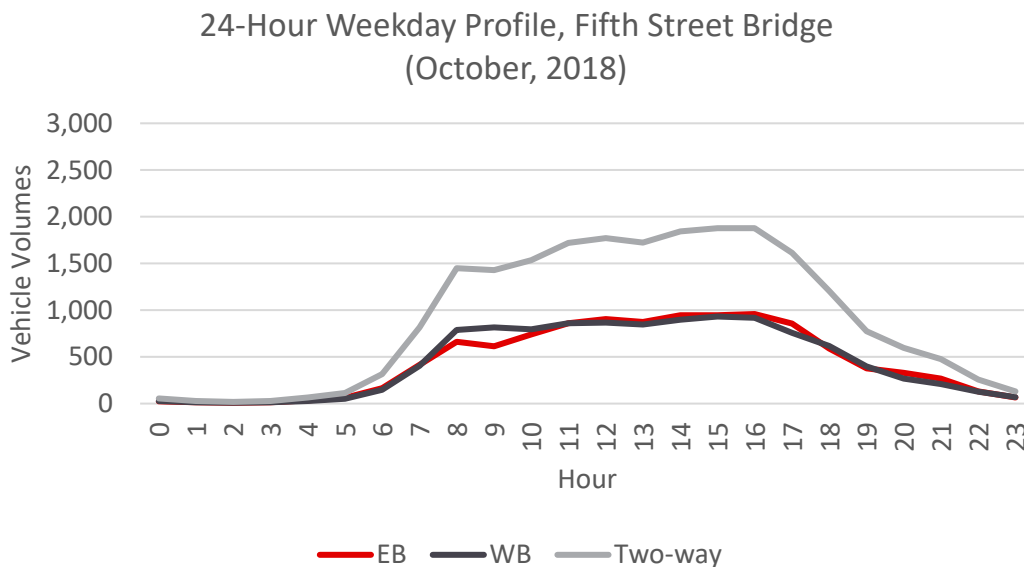


Figure 4-1. 24-Hour Traffic Volume Profile (Fifth Street Bridge)

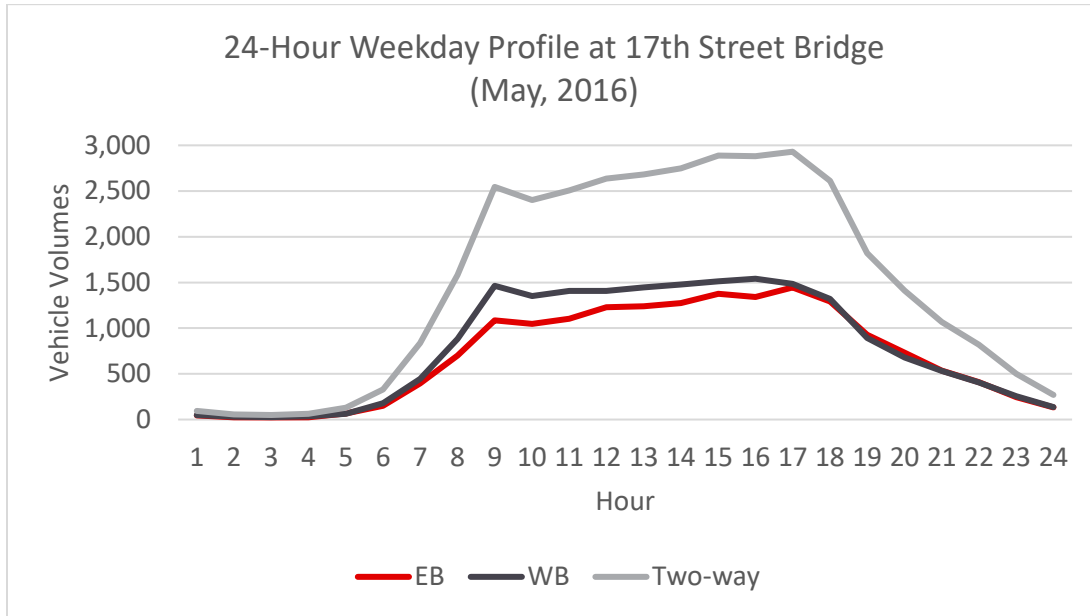


Figure 4-2. 24-Hour Traffic Volume Profile (17th Street Bridge)

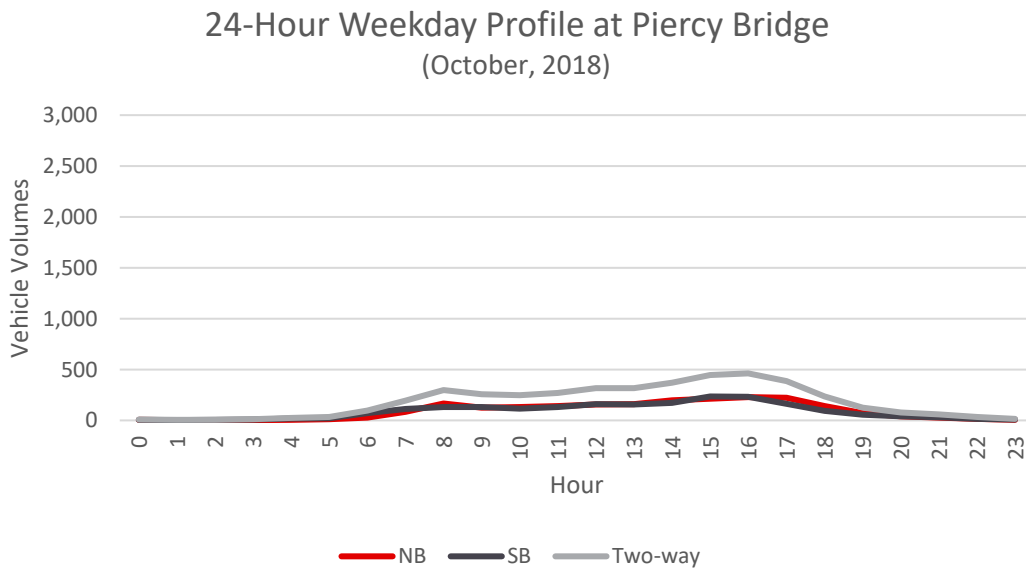


Figure 4-3. 24-Hour Traffic Volume Profile (Piercy Bridge)

4.2 Typical Traffic Condition

Google Typical Traffic indicates that afternoon traffic conditions are typically worse than morning conditions. Traffic pressure is generally concentrated around the City’s core areas and major connections including the Fifth and 17th Street bridges, Cliffe Avenue and Ryan Road. See **Figure 4-4**. Based on observed traffic counts and traffic performance from Google Traffic, the Fifth Street and 17th Street bridges appear to operate near or at full capacity during the PM peak period.

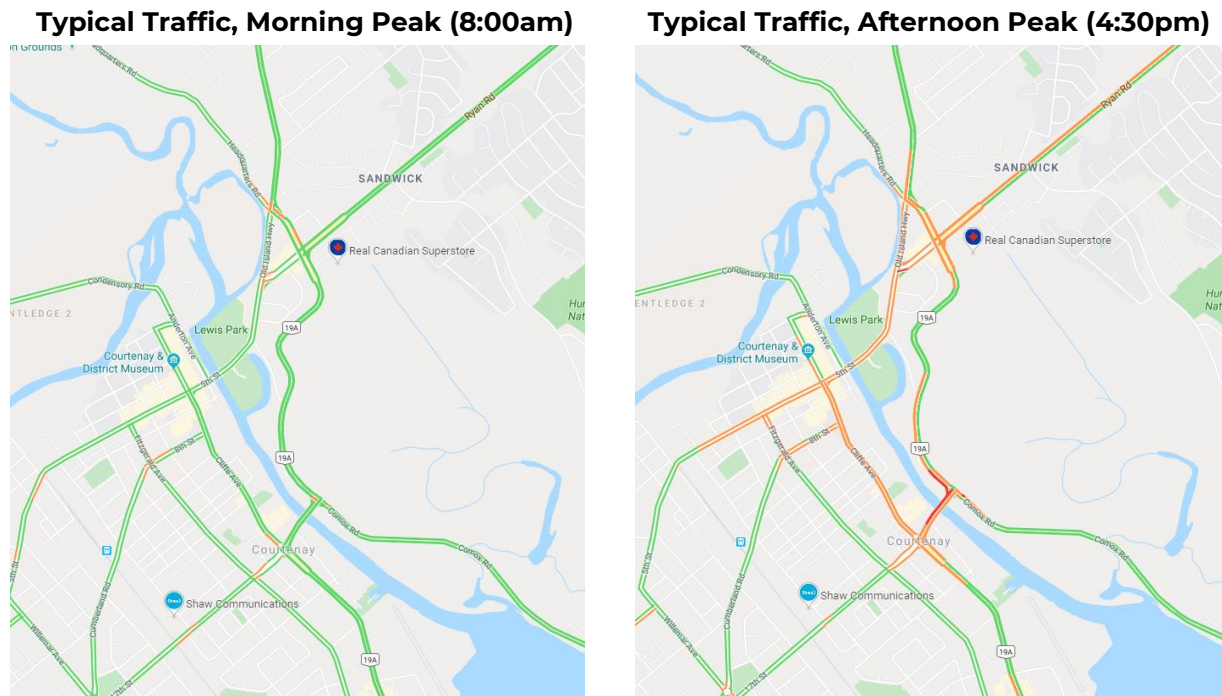


Figure 4-4. Typical Traffic Conditions in Courtenay (Source: Google Traffic)

On certain days, actual traffic performance is worse than Google Typical Traffic’s long-term average. **Figure 4-5** below illustrates one Thursday in November 2019 where the travel speeds on bridges and major connections were much slower than usual.

Google Live Traffic (4:30pm Thursday November 28, 2019)

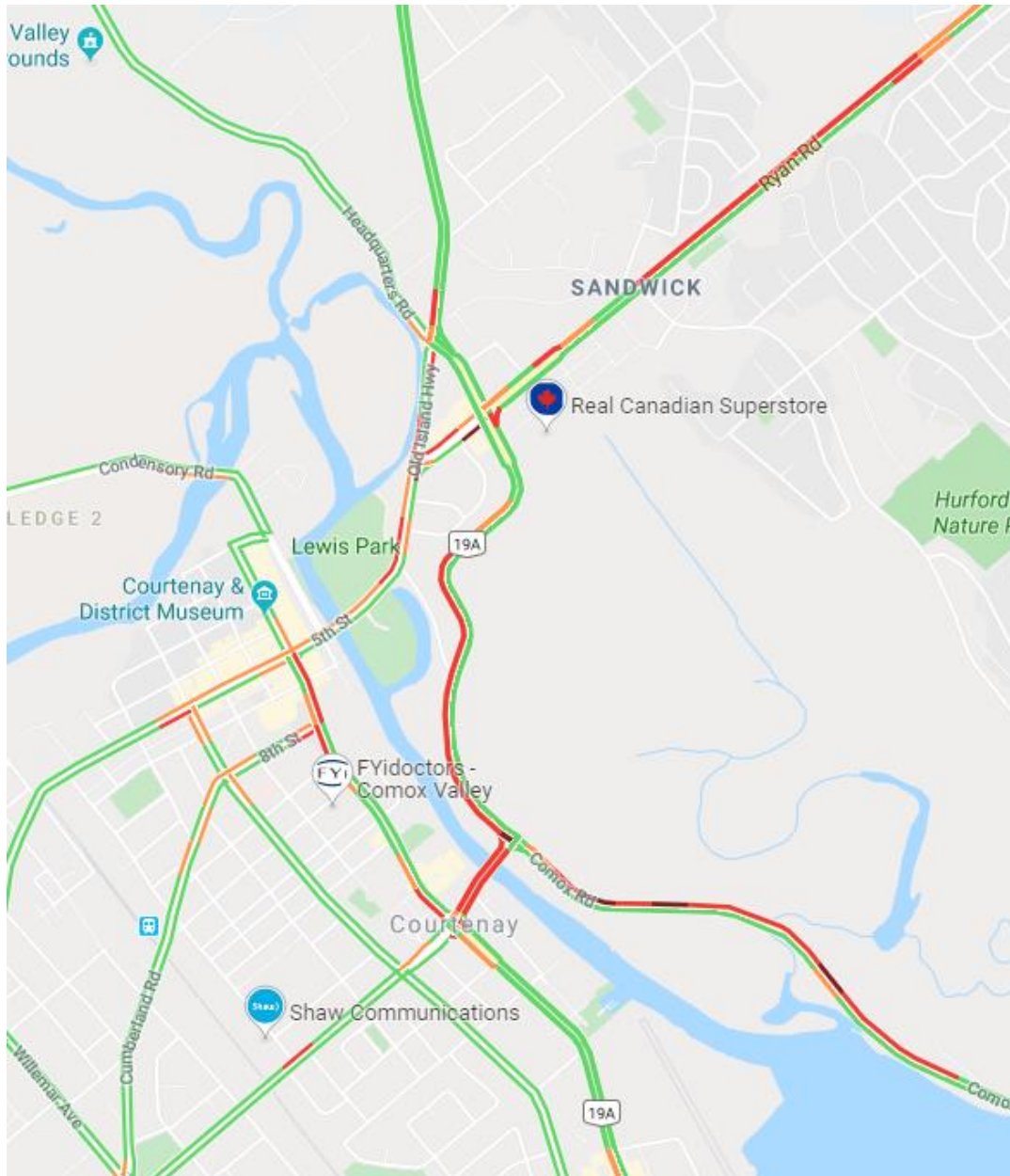


Figure 4-5. Live Traffic Conditions in Courtenay (Source: Google Traffic)

4.3 Travel Pattern (Origin + Destination)

The majority of vehicles using the Fifth Street Bridge travel between downtown Courtenay and areas in east Courtenay via Ryan Road or Old Island Highway. Origins and destinations of Fifth Street Bridge traffic is illustrated in **Figure 4-6**.

A limited number of Fifth Street Bridge vehicles access the area via Cliffe Avenue and Highway 19a/Comox Road. These vehicles are assumed to cross the Courtenay River via the 17th Street Bridge.

Eastbound (Leaving Downtown)



Westbound (Entering Downtown)



Figure 4-6. Origin and Destination of Fifth Street Bridge Traffic (Source: Travel Demand Model)

4.4 Travel Time

There are three options to cross the Courtenay River when travelling between east and west Courtenay, as shown in **Figure 4-7**. Generally, the travel distance via the Fifth Street Bridge or 17th Street Bridge is much less as compared to the Piercy Bridge, which requires circuitous routing via Piercy Road / Condensory Road.

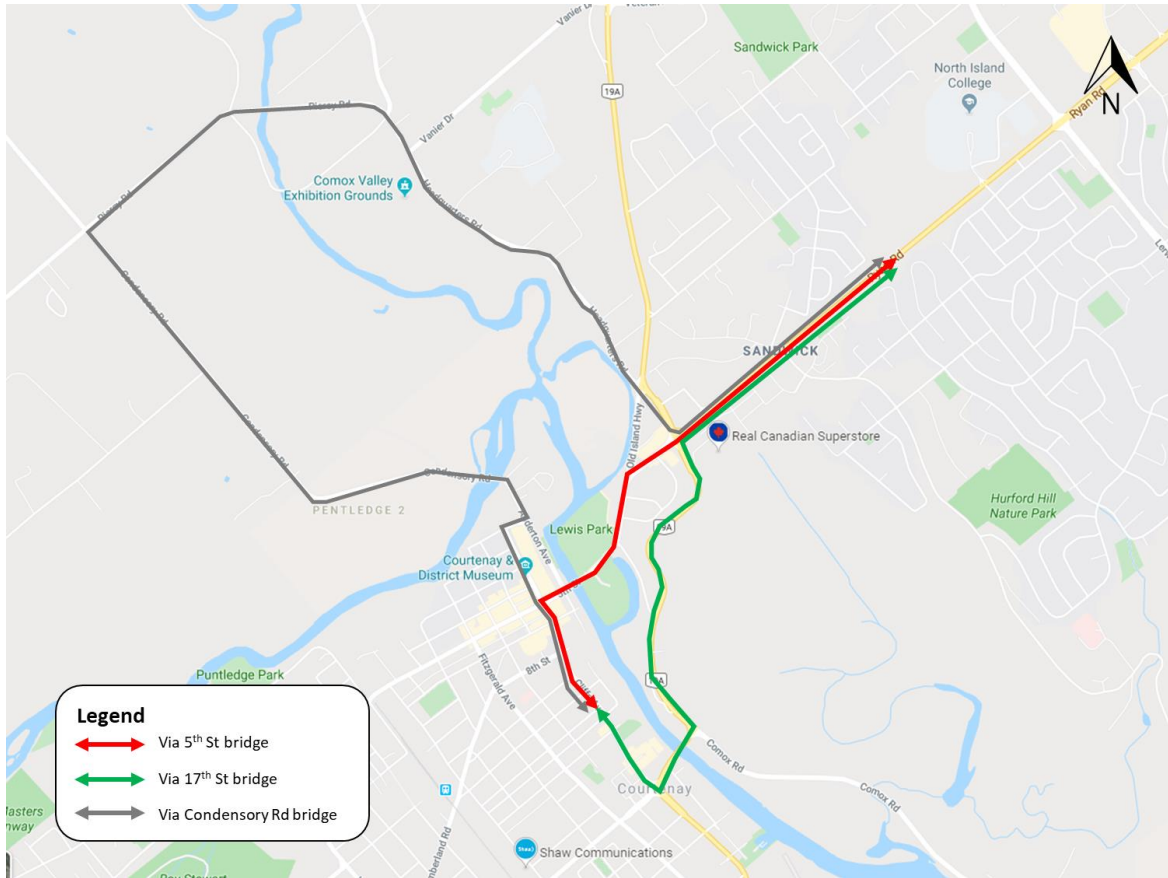


Figure 4-7. Courtenay River crossing options between east and west Courtenay

Travel times to leave and enter downtown Courtenay during a typical weekday PM peak hour have been estimated using Google Typical Traffics information.

Table 4-1 summarizes the typical travel time and distance between Cliffe Avenue and Ryan Road via the three routes illustrated in the figure above.

	Fifth Street Bridge		17th Street Bridge		Condensory Rd Bridge	
	Distance (km)	Travel Time	Distance (km)	Travel Time	Distance (km)	Travel Time
From Cliffe Ave to Ryan Rd	2.4km	4-8 min	3.5km	5-10 min	8.1km	10-14 min
From Ryan Rd to Cliffe Ave		5-10 min		6-12 min		10-16 min

Table 4-1. Google Travel Time between Cliffe Avenue and Ryan Road

5.0 Traffic Conditions - During Construction

The following describes how the planned rehabilitation works will impact traffic. This includes both the impact on the transportation function and capacity on the bridge, as well as the impact on local and network-wide traffic conditions. The preceding analysis also provides a baseline against which possible mitigation options can be tested to ensure they will have value in addressing traffic challenges.

During the rehabilitation work, the capacity on the Fifth Street Bridge will be reduced from two lanes to one lane, as described in *Section 2.0*. Four scenarios for how the single lane could be operated were developed. These scenarios are:

- 1. Single lane alternating** - This scenario maintains traffic from both directions by alternating eastbound and westbound traffic flows. Traffic control persons or temporary traffic signals will be required at both ends of the bridge to allow / stop traffic safely.
- 2. Westbound (WB) only open.** - This scenario closes the bridge to eastbound traffic and keeps it open in the westbound direction.
- 3. Eastbound (EB) only open** - This scenario closes the bridge to westbound traffic and keeps it open in the eastbound direction.
- 4. Mid-day direction change** – This scenario operates the bridge in the westbound direction in the morning and the eastbound direction in the afternoon, or vice-versa

A high-level analysis of the impact of the construction on the Fifth Street Bridge's traffic capacity and resulting network wide traffic performance has been assessed for the scenarios during the PM peak hour. Visum³ was utilized to estimate the change in traffic on each link resulting from the reduced bridge capacity associated with each scenario. Traffic analysis software Synchro and SimTraffic were used to perform traffic operational analysis. Signal timing was optimized as necessary. For this analysis it was assumed that the mode share splits remain unchanged and there are no impacts from emergency vehicles and transit buses. Once a preferred option(s) is identified then more detailed analysis, including consideration of transit and emergency vehicle accommodation will be completed.

The results and network impacts described below are for the PM peak hour which is the busiest period for Courtenay's road network. For most of the day the impacts will be less

³ Visum is a macro transportation demand model and was previously used to support the City's Transportation Master Plan

significant. However, supporting the use of alternative transportation and encouraging off-peak travel to mitigate traffic pressures will be critical and highly recommended.

5.1 Scenario 1: Single Lane Alternating

With single lane alternating traffic, the resulting capacity of the bridge is anticipated to be reduced by half to 500 vehicles per hour per lane. Most traffic is expected to divert to the 17th Street Bridge while a small number of motorists will divert via the Piercy Bridge. It is anticipated that both the Fifth Street and 17th Street bridges will operate over capacity during the peak periods. The Piercy Bridge has spare capacity but due to the much longer travel distance it is not an attractive option for many motorists. Consequently, more severe delays and queues are expected to occur resulting in longer peak periods along 17th Street, 5th Street, Cliffe Avenue and Ryan Road.

SimTraffic results indicate that the average network travel time in Courtenay during the PM peak hour will increase by approximately 40% under this scenario.

5.2 Scenario 2: Westbound Only Open

In this scenario, all eastbound traffic needs to travel via other bridges and the 17th Street Bridge is expected to receive most of the diverted traffic. Analysis shows that this scenario would result in gridlock, excessive delays, and long queue lengths throughout the network. The 17th Street Bridge eastbound and its intersection with Comox Road is the main constraint restricting downstream capacity. Eastbound queues from the 17th Street / Comox Road intersection extend back to the 17th Street / Cliffe Avenue intersection (as they currently do during select periods). Consequently, the diverted eastbound and northbound traffic cannot proceed through the 17th Street / Cliffe Avenue intersection. Significant construction would be required to increase capacity for the affected movements, and therefore this option is not recommended and is not further evaluated.

5.3 Scenario 3: Eastbound Only Open

In this scenario, all westbound traffic needs to travel via other bridges, and 17th Street Bridge is expected to receive most of the diverted traffic. With no network modifications this scenario would also result in gridlock, excessive delays, and long queue lengths. One of the critical movements is the westbound right turn at 17th Street / Cliffe Avenue. Currently the westbound right turn is channelized with yield control since there is only one northbound receiving lane on Cliffe Avenue. Additionally, long southbound queues occur on Comox Road at 5th Street as there is a significant increase in demand for the westbound left-turn

movement by motorists diverting to the 17th Street Bridge. The network constraints can be mitigated through the following network changes:

- ▶ **17th Street / Cliffe Avenue** - Convert one of the dual southbound to eastbound left-turn lanes on Cliffe Avenue to create a second westbound receiving lane. This enables the northbound right-turn traffic to have its own receiving lane and operate as a free flow movement.
- ▶ **5th Street / Comox Road** - Extend the existing westbound left-turn lane into the current TWLTL (two-way left turn lane) at the 5th Street / Comox Road intersection to provide more storage and add a protected westbound left-turn phase to the signal (or use a traffic control person).

With the network improvements listed above, 17th Street Bridge is expected to accommodate the additional westbound traffic to some degree. However, the 17th Street Bridge is expected to be over capacity during the peak periods with more severe delays and queues compared to current conditions, particularly in the southbound direction on Comox Road approaching the 17th Street Bridge. SimTraffic results indicate that the average network travel time in Courtenay during the PM peak hour will increase by approximately 35% under the eastbound only open scenario.

5.4 Scenario 4: Mid-day Direction Change

This scenario is a hybrid of Scenarios 2 and 3 where the bridge would be operated as eastbound only in the morning and westbound only in the afternoon or vice-versa (westbound only in the morning and eastbound only in the afternoon). This can provide benefits where there is different peak travel direction during the morning and afternoon rush-hours. However, as illustrated in **Figure 4-1**, there is no peak travel direction in Courtenay on the Fifth Street Bridge. During any hour of the day, the volume of vehicles travelling eastbound or westbound across the bridge is essentially the same. Therefore, changing the direction of the bridge operation mid-day will not provide any traffic efficiency benefits over Scenario 2 or 3. This option is also likely to be more confusing to the public as they must remember which direction traffic is flowing at different times of day and make the signage/public information more complex as time of day and directional information would also need to be communicated. Therefore, this option is not recommended or evaluated further.

5.5 Summary and Recommendation

A high-level analysis of the three scenarios for the Fifth Street Bridge has identified that the westbound only open scenario causes network-wide gridlock. All traffic leaving downtown

must divert to the 17th Street Bridge which results in a significant increase in demand for the left-turn from 17th Street to Comox Road. This movement does not have sufficient capacity which causes congestion on 17th Street, Cliffe Avenue, 5th Street and eventually across the 5th Street Bridge and Ryan Road. Therefore, this option is not recommended. Queuing during the PM peak hour is significantly higher under this scenario, as shown in **Figure 5-1**.

The mid-day direction change scenario was found to provide no traffic benefits since there is not a peak travel direction on the Fifth Street Bridge and therefore is not recommended.

The single lane alternating and eastbound only open options both result in a similar level of overall delay on the network. However, both options will result in long delays and queue lengths during the peak periods. Single lane alternating allows residents and commuters similar access to what they currently enjoy, albeit maybe more slowly. It also provides continued access to and from the downtown. Additionally, single lane will provide more balanced network performance at bridges as well as highways and municipal roads. Therefore, single lane alternating is recommended.

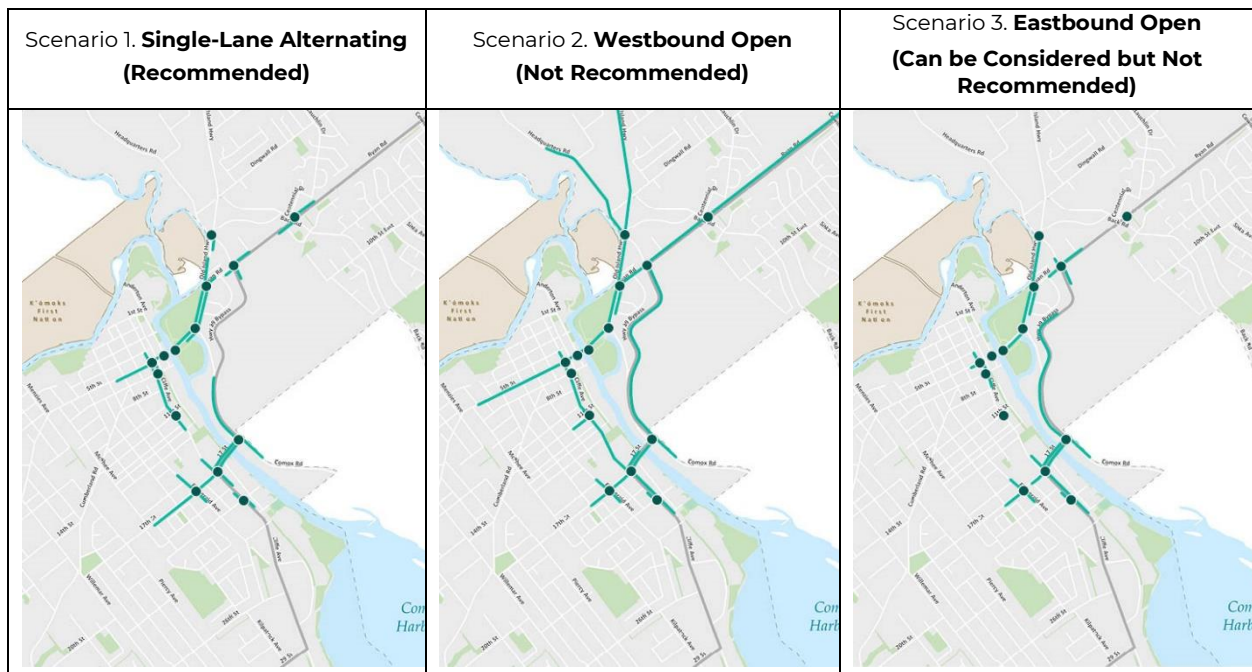


Figure 5-1. Estimated PM Peak Hour Queuing for Traffic Management Options

6.0 Traffic Management

Based on the traffic analysis results in *Section 5.0*, review of community and stakeholder input, and through discussions with the City Staff, the Single Lane Alternating option was selected as the preferred option for traffic management on the bridge. This option provides a more balanced network performance at the bridges as well as highways and municipal roads and is most responsive to the concerns identified by the public and stakeholders. Details of the traffic management plan in the following section of this document correspond to the Single Lane Alternating option, which includes consideration of the following items:

- ▶ Traffic queue storage locations to minimize disruption to local businesses.
- ▶ Accommodation of priority vehicles.
- ▶ Connectivity for pedestrian and cyclist facilities.
- ▶ Traffic control methods including time-of-day modifications to the traffic management to best accommodate peak and off-peak traffic.
- ▶ Intersection Modifications; and
- ▶ Travel time forecasts.

Figure 6-1: illustrates the key considerations to the Traffic Management Strategies.

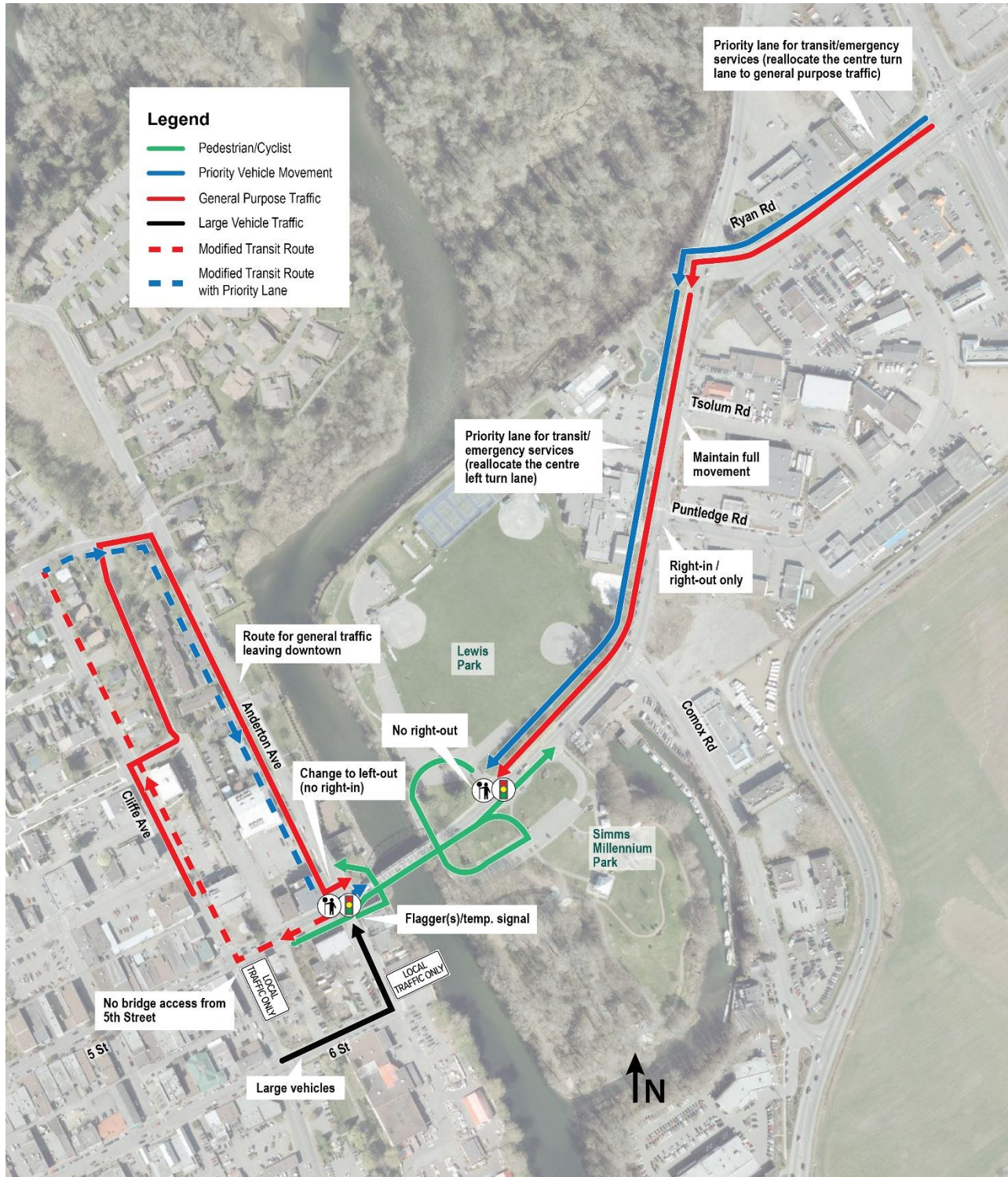


Figure 6-1: Overall Traffic Management Strategy

6.1 Queue Storage Location Comparison (General Purpose Traffic)

With the reduced capacity due to use of single lane alternating traffic, congestion and queues can be expected. For traffic leaving downtown two options for managing the queue have been identified:

- ▶ 5th Street – illustrated in **Figure 6-2**, this option requires minimal network changes and uses 5th Avenue to store traffic queues; or
- ▶ Anderton Avenue – illustrated in **Figure 6-3**, this option uses Cliffe Avenue and Anderton Avenue north of 5th Street to store traffic queues by converting the right-in at Anderton Avenue to left-out and restricting a few movements on 5th Street.



Figure 6-2: 5th Street Queue Option

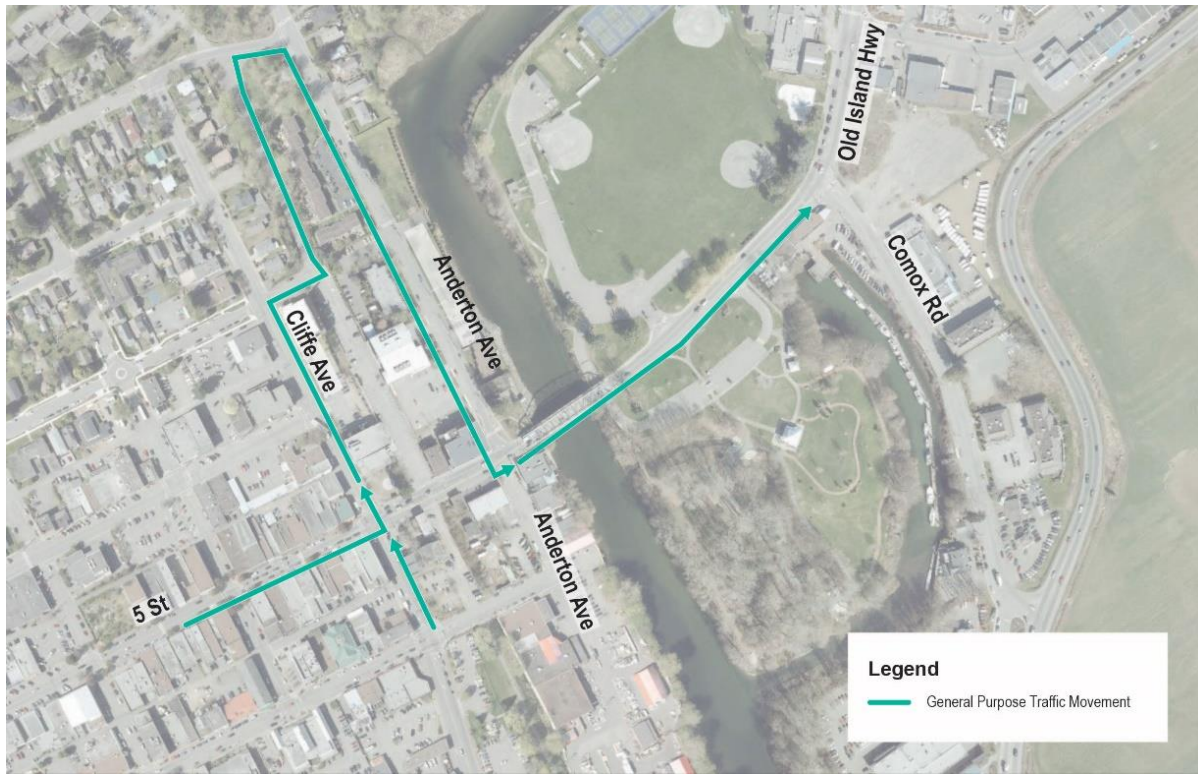


Figure 6-3: Anderton Avenue Queue Option

6.1.1 5th Street Queue Option

In this option there are minimal changes to the existing road network and routing for traffic leaving downtown via the Fifth Street Bridge. Traffic would queue along 5th Street and the various side roads, including Cliffe Avenue. Estimated queue lengths during the PM peak hour are illustrated in

Figure 6-4, below. The actual queue lengths will vary depending upon day-to-day traffic fluctuations and how behaviour changes in response to the construction (change of trip time, use of 17th Street Bridge, walk or cycle, etc.). However, congestion on 5th Street and the side roads can be expected which will limit access to local businesses and access to parking downtown.

6.1.2 Anderton Avenue Queue Option

An alternative approach is to restrict 5th Street from Cliffe Avenue to Anderton Avenue to local traffic only (no access to the bridge) and require all traffic leaving downtown to access the bridge from the north side of Anderton Avenue as shown in **Figure 6-3**. This would require converting the right-in at Anderton Avenue and 5th Street to a left-out and re-routing

transit. The transit re-routing is discussed further in Section 6.2 as part of the Priority Vehicles. Estimated queue lengths during the PM peak hour are illustrated in

Figure 6-4, below. The actual queue lengths will vary depending upon day-to-day traffic fluctuations and how behaviour changes in response to the construction (change of trip time, use of 17th Street Bridge, walk or cycle, etc.). This option is intended to minimize the impact of congestion and queuing on local businesses by moving the queue out of the downtown core, off 5th Street and most of Cliffe Avenue to Anderton Avenue.

On Anderton Avenue, removing the parking on the west side of the road should be considered with use of this space as a lane for traffic queuing to access the bridge. This would enable 2-way free flow traffic to be maintained for access to destinations on Anderton Avenue, such as the Filberg Centre. Similarly, creation of a dedicated queueing lane on 1st Street should be considered. There appears to be sufficient room to accommodate a queue on the right side of 1st Street while maintaining two-way traffic. This will enable access to the Condensory Bridge and destinations on Anderton Avenue to be maintained. Traffic control personnel may be required to help manage the queue, especially during the initial phase of the construction.

Additionally, use of the laneway between Cliffe Avenue and Anderton Avenue for traffic destined to the bridge is suggested for consideration⁴. This laneway appears to have minimal direct accesses and its use would minimize the impact of queues on the residents on Cliffe Avenue between 3rd Street and 1st Street.

6.1.3 Queue Storage Location Recommendation

As discussed, above, a high-level traffic analysis has been completed to compare the PM peak hour queues for the 5th Street and Anderton Avenue options as illustrated in

Figure 6-4. The Anderton Avenue Detour scenario will store most of the queues on Anderton Avenue instead of 5th Street, which will minimize impacts to the downtown core businesses. Therefore, the Anderton Avenue Queue option is recommended and is the basis of the subsequent sections. Traffic control methods/devices at key locations will be discussed in detail in Section 6.4 along with intersection modifications in Section 6.5.

⁴ As an alternative to using the laneway, traffic could be directed to continue on Cliffe Avenue to 1st Street. This can be considered further at future stages of the Traffic Management Plan Development with consideration of the trade-offs of potential impacts to residents versus a higher volume of traffic utilizing the laneway.

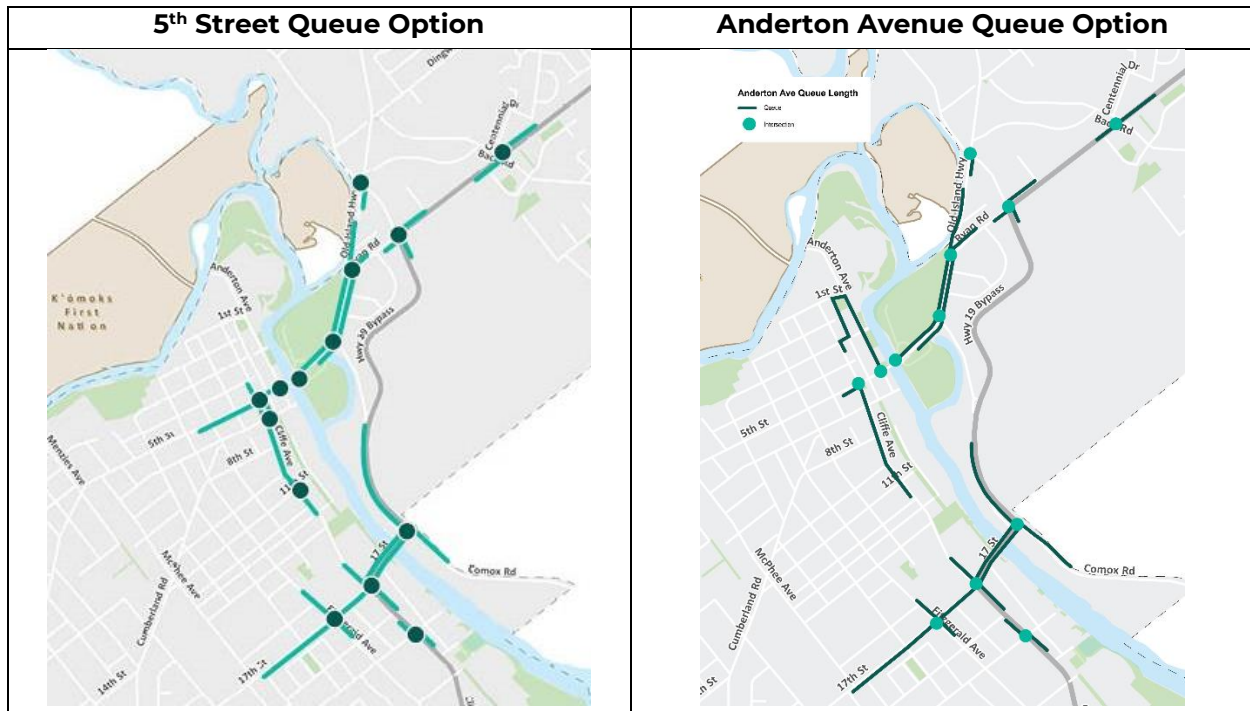


Figure 6-4: Estimated Queue Lengths

Under the Anderton Avenue Queue option, large vehicles (for example, trucks that are less than 3.6m in height) leaving Downtown Courtenay will be directed to travel via 6th Street/Anderton Avenue. Additionally, large vehicles that exceed the 5th Street Bridge's height restriction (approximately 3.6m) or vehicles with trailers/boats will be directed to use the 17th Street Bridge or Piercy Bridge instead.

Turning templates for key movements at key locations along Cliffe Avenue, have been reviewed to ensure that vehicles can turn safely during the construction phase. The movements that were evaluated include:

Cliffe Avenue/6th Street/Anderton Avenue route for trucks (Truck Route)

- ▶ Right turn from 5th Street onto Cliffe Avenue
- ▶ Left turn from Cliffe Avenue onto 6th Street
- ▶ Left turn from 6th Street onto Anderton Avenue
- ▶ Right turn from Anderton Avenue onto the Fifth Street Bridge

Cliffe Avenue/3rd Street/Laneway/1st Street/Anderton Avenue route for general purpose traffic (GP Route)

- ▶ Left turn from 5th Street to Cliffe Street

- ▶ Right turn from Cliffe Street to 3rd Street
- ▶ Left turn from 3rd Street to laneway
- ▶ Right turn from laneway to 1st Street
- ▶ Right turn from 1st Street to Anderton Avenue
- ▶ Left turn from Anderton Avenue to the Fifth Street Bridge

The review indicates that the design vehicles (heavy single unit trucks for trucks and motorhomes for general purpose traffic) generally are able to turn along the designed detours. For the truck route, trucks may need to make a wider right turn from 5th Street onto Cliffe Avenue by using the middle lane instead of the curbside lane. At Anderton Avenue where trucks need to turn right onto the Fifth Street Bridge, they may drive over the painted median on 5th Street. For the general-purpose route, the full width of 3rd Street and laneway will be taken for turning, which are as expected and acceptable.

Clear signage and a comprehensive communications strategy will be required to direct these vehicles to travel via 6th Street/Anderton Avenue and/or the 17th Street and Piercy Bridges.

6.2 Priority Vehicles

The needs of priority vehicles (emergency services, BC Transit, School Buses, etc.) require specific consideration as part of the traffic management strategy development to ensure they experience as little delay as possible. The following opportunities have been identified:

- ▶ For traffic entering downtown, creation of a priority vehicle (queue jumper) lane on the westbound bridge approach to enable BC Transit and emergency services to bypass the general traffic queues.
- ▶ For traffic leaving downtown, utilizing a separate queuing space for general purpose traffic to provide priority access to the bridge for BC Transit and emergency services.
- ▶ Enabling communication between the traffic control people and emergency services to enable them to pro-actively manage traffic for any approaching emergency vehicles. This could be achieved by providing the traffic control people and emergency services with radios on the same frequency.
- ▶ Use of temporary signals instead of traffic control people is recommended for the night time period when traffic volumes are lower. The signals should be able to be operated with a relatively short cycle length that will minimize delays for emergency services. However, opportunities to provide emergency services pre-emption as part of any temporary traffic signals can also be explored. If emergency pre-emption is not possible with the temporary traffic

signals and emergency services priority is necessary at night, an alternative approach would be to have traffic control people on-site overnight.

- ▶ Volunteer fire department members may need to cross the bridge in a personal vehicle to access the fire hall and respond to a call. These first responders would also be able to use the priority vehicle lane/route. Each responder could have a bright sign or piece of paper to put on their dash or otherwise display to indicate to the traffic control people that they are responding to a call and permitted to use the priority vehicle facilities.

6.2.1 *Westbound (Entering Downtown) Priority Vehicle (Queue Jumper) Lane*

On the park side of the bridge, 5th Street has a 3-lane cross-section from the bridge to Comox Road. It consists of one through lane in each direction and an eastbound right turn lane to Comox Road. Given the relatively low eastbound right turn volumes, the right turn lane can be combined with the through lane to allow for adding a queue jumper lane.

The segment of Old Island Highway between Comox Road and Ryan Road is also a three-lane road consisting of one through lane in each direction and left turn lanes or TWLT (two-way left turn) lanes in the middle. A variety of factors including current lane geometry, expected queue length during construction, and bus routes, were reviewed to determine if it is feasible to temporarily add a fourth lane on Old Island Highway to accommodate priority vehicles. Key findings include:

- ▶ According to BC Transit' bus routes and schedule information, most of the buses heading to Downtown Courtenay via the Fifth Street Bridge come from Ryan Road;
- ▶ The queue length on 5th Street/Old Island Highway during construction is expected to build up beyond Ryan Road; and
- ▶ The road width of this segment ranges between 13.7m to 15.2m (roughly measured using aerial images).

Based on the findings, the segment of Old Island Highway provides sufficient space to accommodate a temporary priority lane, assuming 3.3m⁵ for a general-purpose travel lane, 3.5m for a left turn lane and 3.5m for a queue jumper lane (13.6m in total)⁶. Most access along

⁵ 3.0m is the minimal width for general travel through lane as per TAC's Geometric Design Guide for Canadian Roads, Chapter 4, Table 4.2.3

⁶ 3.3m as the minimal width for bus lanes as per BC Transit Design Guidelines, Chapter 5.

Old Island Highway should be restricted to right-in/right-out to minimize conflicts. This is discussed further in *Section 6.5.2*.

The queue jumper lane, located on the right side of the westbound approach, can serve priority vehicles including emergency vehicles and transit buses. Park users can also utilize this lane to bypass traffic queues with a few exceptions which will be further discussed in *Section 6.5.3*.

Through discussions with BC Transit there has been a request to include an extension of the priority lane up Ryan Road, from the Old Island Highway. This lane would act as an extension of the priority lane on the Old Island Highway. This addition would require a second temporary lane to be added to Ryan Road on the approach to the Old Island Highway. There is a center median that on Ryan Road and an existing turning lane that has adequate width to accommodate a second lane. This would create two left hand turn lanes at the intersection, one for general traffic and a second for priority vehicles. This requires minor upgrades to the intersection in the form of an additional vehicle detection loop. It is anticipated that both turn lanes would use the same existing traffic light for turning direction.

Figure 6-5 illustrates the recommended queue jumper lane location.

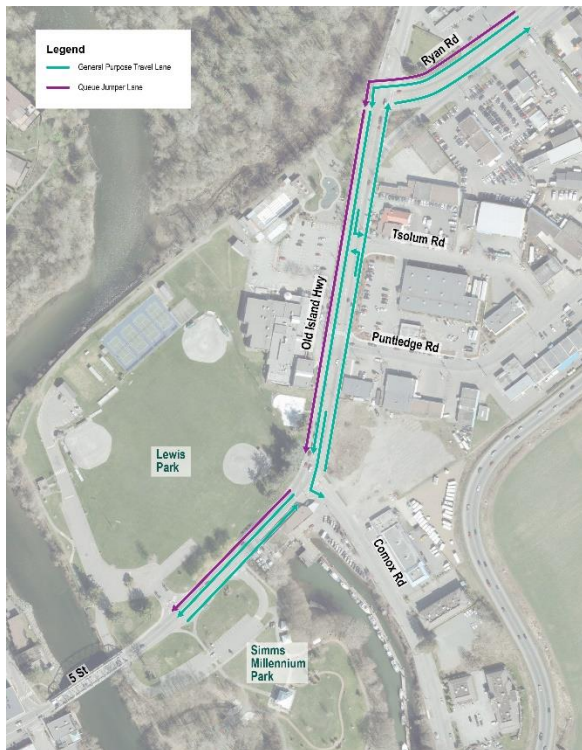


Figure 6-5: Queue Jumper Lane (East Side)

6.2.2 Eastbound (Leaving Downtown) Priority Route

The current right-in only from the Fifth Street Bridge to Anderton Avenue is changed to left-out only to enable general purpose traffic to access the bridge via Cliffe Avenue, 1st Street and Anderton Avenue as discussed in Section 6.1. Therefore, all buses entering downtown Courtenay via the Fifth Street Bridge can no longer turn right onto Anderton Avenue and will need to be rerouted. As illustrated in **Figure 6-6**, the proposed re-routing for buses is to proceed straight on 5th Street before turning right onto Cliffe Avenue, right onto 1st Street, and finally right to Anderton Avenue. This route will enable the same locational stops with temporary relocation of bus stops to the opposite side of the road which will need to be coordinated with BC Transit.

As two-way traffic is being maintained on Anderton Avenue in addition to the bridge queue, buses can use the travel lane to by-pass the queue and get to the front of the line for the bridge.

If general purpose traffic is directed to use the laneway between Cliffe Avenue and Anderton Avenue, large trucks may find some of the turns too tight. Instead large trucks can use the same routing as the buses or access the bridge via the south side of Anderton Avenue (6th Street, left on Anderton Avenue, right onto the bridge).

Emergency services can use the same routing as buses, or alternatively they can access the Fifth Street Bridge directly from Fifth Street by ignoring the local traffic only restriction at 5th Street and Cliffe Avenue.

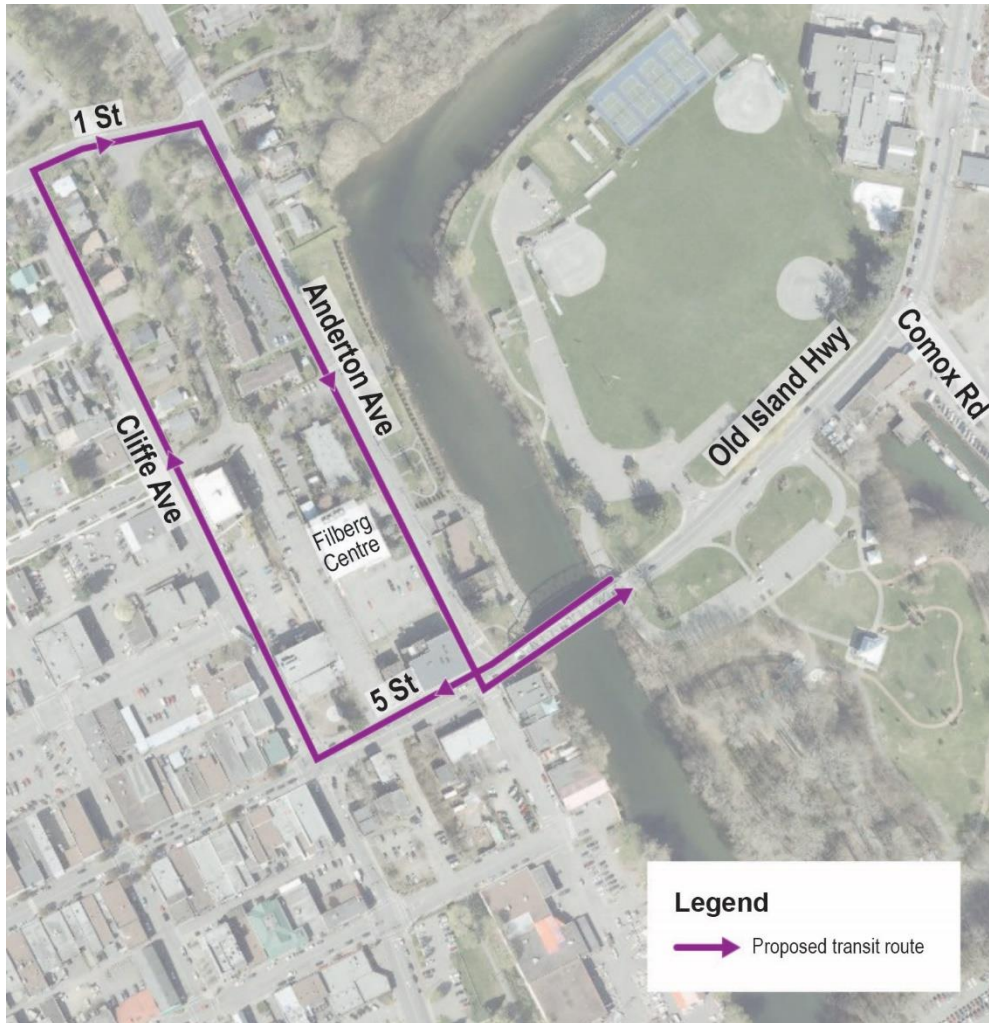


Figure 6-6: Transit Routes (West Side)

6.3 Pedestrians and Cyclists

Providing pedestrian and cyclist facilities for individuals to safely navigate during the construction phase is crucial. Good connectivity for pedestrians and cyclists will not only ensure the users' safety but also encourage individuals to choose walking or cycling instead of driving and help reduce congestion.

The Fifth Street Bridge currently allows pedestrians and cyclists on both sides of the bridge. On the west (downtown) side of the bridge, there is a pathway underneath the bridge that connects to Anderton Avenue. On the east side of the bridge, there is a pathway underneath the bridge connecting Lewis Park and Simms Millennium Park.

During construction, the bridge should maintain connections for pedestrians and cyclists on one side at a minimum. The south side is preferred because it involves fewer conflicting points between pedestrians and cyclists and vehicles on the west (downtown) end of the bridge.

It is recommended to maintain the underpass on both sides of the bridge open for pedestrians and cyclists. However, some construction activities may necessitate a closure. Use of shipping containers or another method to separate pedestrians and cyclists from construction activities and protect them from any overhead work occurring on the underside of the bridge could be considered to enable pedestrians and cyclists to use the underpass while there is construction in the vicinity. Shipping containers are frequently used to protect pedestrians from overhead hazards when there is construction adjacent to the sidewalk and the sidewalk would otherwise need to be closed. However, the bridge has very low clearance and there may not be sufficient space for a shipping container.

If the underpass needs to be closed to pedestrians and cyclists, use of flaggers on the Lewis Park side to direct their movements and facilitate crossing of 5th Street should be considered. However, it is important to note that each crossing of 5th Street on the Lewis Park side will impact the single lane alternating operation and reduce the vehicular capacity. Therefore, closing the underpass to pedestrians and cyclists on the Lewis Park side should be considered a less desirable solution and only utilized if absolutely necessary and/or for a limited period when there is work occurring in the immediate vicinity of the underpass.

On the downtown side pedestrians and cyclists can cross Anderton Avenue, then 5th Street. The proposed operation of the single lane alternating traffic with vehicles entering downtown using 5th Street while traffic exiting downtown using Anderton Avenue will result in opportunities to cross both roads with no conflicting traffic.

6.4 Traffic Control Methods

During the daytime peak period (between approximately 7:00am and 7:00pm), use of traffic control people on both sides of the bridge to direct traffic and facilitate the single lane alternating is recommended. Traffic control people are better able than temporary traffic signals to respond to variations in traffic demand to maximize the throughput of the bridge. Additionally, they can adjust the traffic control to prioritize emergency services and transit. **Figure 6-7** illustrates the locations of the traffic control people. Additional traffic control people may be required to monitor signs and the detour operations.



Figure 6-7: Locations of Flaggers (Peak Periods)

On the west (downtown) side, the traffic control person will manage the single lane alternating traffic to ensure the westbound traffic flows through the 5th Street and Cliffe Avenue intersection and doesn't back up to the bridge. They will also ensure emergency services and transit gets priority access to the bridge.

On the east side, the traffic control person will manage the single lane alternating traffic and monitor park usage and prevent short-cutting traffic, which is discussed in detail in *Section 6.6.2*.

During off-peak periods, the traffic volumes are much lower, and a temporary signal can be used instead of traffic control people on both sides of the Fifth Street Bridge. The signal's cycle length will be determined following the recommendations from the Ministry's *Traffic Management for Work on Roadways (2015)*.

This document was prepared based on the assumption that the bridge can only accommodate one travel lane during the construction phase, therefore, flaggers/temporary signals will be required at all times during the construction phase. If the contractor is able to open both travel lanes during part of the day, it is recommended to open both lanes during the daytime and return to single-lane alternating at night with temporary signal on both ends of the Fifth Street Bridge.

6.5 Intersection Modifications

Intersection modifications have been identified in the immediate vicinity of the Fifth Street Bridge, plus on the wider road network to accommodate the change in traffic patterns associated with more traffic using the 17th Street Bridge and the Piercy Bridge. These changes will include both signal optimization and layout modifications.

6.6 Signal Optimization

Signal optimization (phase/cycle length and phasing changes) are recommended for a number of MoTI and City of Courtenay intersections to better accommodate the traffic patterns during the construction phase. Intersections recommended for signal optimization by priorities include:

High Priority

- ▶ 5th Street & Cliffe Avenue
- ▶ 5th Street & Comox Road
- ▶ 17th Street & Cliffe Avenue
- ▶ 17th Street & Comox Road

Medium Priority

- ▶ Old Island Highway & Ryan Road
- ▶ Ryan Road and Highway 19A
- ▶ Cliffe Avenue & Westerly Access Road
- ▶ Cliffe Avenue & 6th Street

Low priority

- ▶ Rest of the signalized intersections in Courtenay

Locations ranked as high priority mean that their signal timings would require to be re-timed to ensure the detour traffic can flow through the Fifth Street Bridge and 17th Street Bridge efficiently. Locations ranked as a medium priority mean that these locations will likely require signal re-timing to best accommodate the traffic patterns at a network level. Locations ranked as low priority mean that these locations will not likely require immediate signal re-timing. They can be monitored throughout the construction phase on an as-needed basis.

In particular, the signal at the intersection of 5th Street & Cliffe Avenue should operate concurrently with the flagger/temporary signal at the Fifth Street Bridge to allow westbound traffic (traffic entering Downtown Courtenay) to flow through without stopping. This

operation can be achieved by having a fixed cycle length that is consistent with the single lane alternating operating time and appropriate timing splits during peak periods and off-peak hours. It will also be important that the left turn lane on 5th, turning north on Cliffe, is phase to provide adequate time for this movement to occur.

The signal controllers noted above have recently been reviewed from a functionality and reliability perspective. While most of the controllers are anticipated to have the capability of handling revised signal timings and different timing plans by time-of-day; the 5th Street & Cliffe Avenue controller is known to be unreliable and may not be able to be optimized for the single lane alternating conditions. The City should explore options for replacement of this controller prior to the bridge closure or an alternative would likely require the use of temporary signals at this intersection. It should also be noted that the controller at 5th and Comox Road has recently been replaced and has been confirmed to be able to accommodate any changes.

The two MoTI signals (17th Street & Cliffe Avenue and 17th Street & Comox Road) noted as high priority were not reviewed as part of the recent controller review. These signals should be assessed prior to the construction phase to confirm functions.

6.6.1 Turn Restrictions/Modifications

In addition to the signal optimization outlined above, some turn restrictions or intersection modifications were identified. These changes will enable the intersections to operate as efficiently as possible with the change in traffic patterns.

Cliffe Avenue and 5th Street

Since no traffic will be permitted to access the bridge via 5th Street, 5th Street should be restricted to local traffic only at Cliffe Avenue. As illustrated in **Figure 6-8**, all traffic travelling towards the bridge on 5th Street would be directed to turn onto Cliffe Avenue. The left-turn restriction from 5th Street to Cliffe Avenue would be removed and adjustments to the lights will be required to facilitate a left turn movement. It is expected that vehicles will be still permitted to access the businesses in the block between Cliffe Avenue and Anderton Ave but will have to turn right onto Anderton Avenue rather than cross the bridge.



Figure 6-8: 5th Street and Cliffe Avenue Modifications

Anderton Avenue and 6th Street

Anderton Avenue should be restricted to local traffic and large trucks at 6th Street since no general-purpose traffic will be permitted to access the bridge from this side of Anderton Avenue. Any vehicles visiting a business in this block of Anderton Avenue would need to turn around and return to 6th Street.

Anderton Avenue and 5th Street

As shown in **Figure 6-9**, traffic would be permitted to make the left-turn from Anderton Avenue on to the bridge since this is the proposed queue storage location for general purpose traffic. No traffic entering downtown would be permitted to make a right-turn to Anderton Avenue. On the south side of Anderton Avenue buses and emergency services will be permitted to make a right turn from Anderton Avenue on to the bridge, but no general traffic. The configuration of the concrete barriers on Anderton Avenue may need to be adjusted to facilitate the right-turn from the bridge to Anderton Avenue.

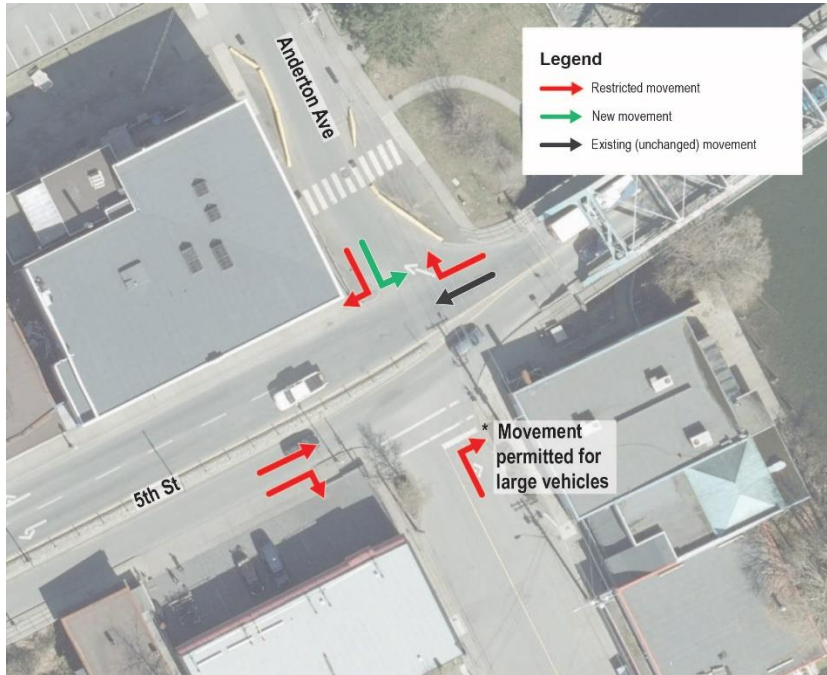


Figure 6-9: Anderton Avenue and 5th Street Modifications

Old Island Highway and Comox Road

The southbound left-turn lane from Old Island Highway to Comox Road would need to be temporarily extended to facilitate the increase in traffic using the 17th Street Bridge.

Old Island Highway -Puntledge Road to Tsolum Road

Some access management to allow a smoother traffic flow during the construction phase and also minimize confusion and challenges with travelling through traffic cones is recommended for Old Island Highway from Puntledge Road to Tsolum Road as illustrated in **Figure 6-10**. Specifically restricting the following accesses to right-in, right-out only: Puntledge Road, the south driveway to the Lewis Recreation Centre/Outdoor Pool, and the driveway to National Car and Truck Sales. All turning movements would be permitted at the Tsolum Road/north driveway to the Lewis Recreation Centre.

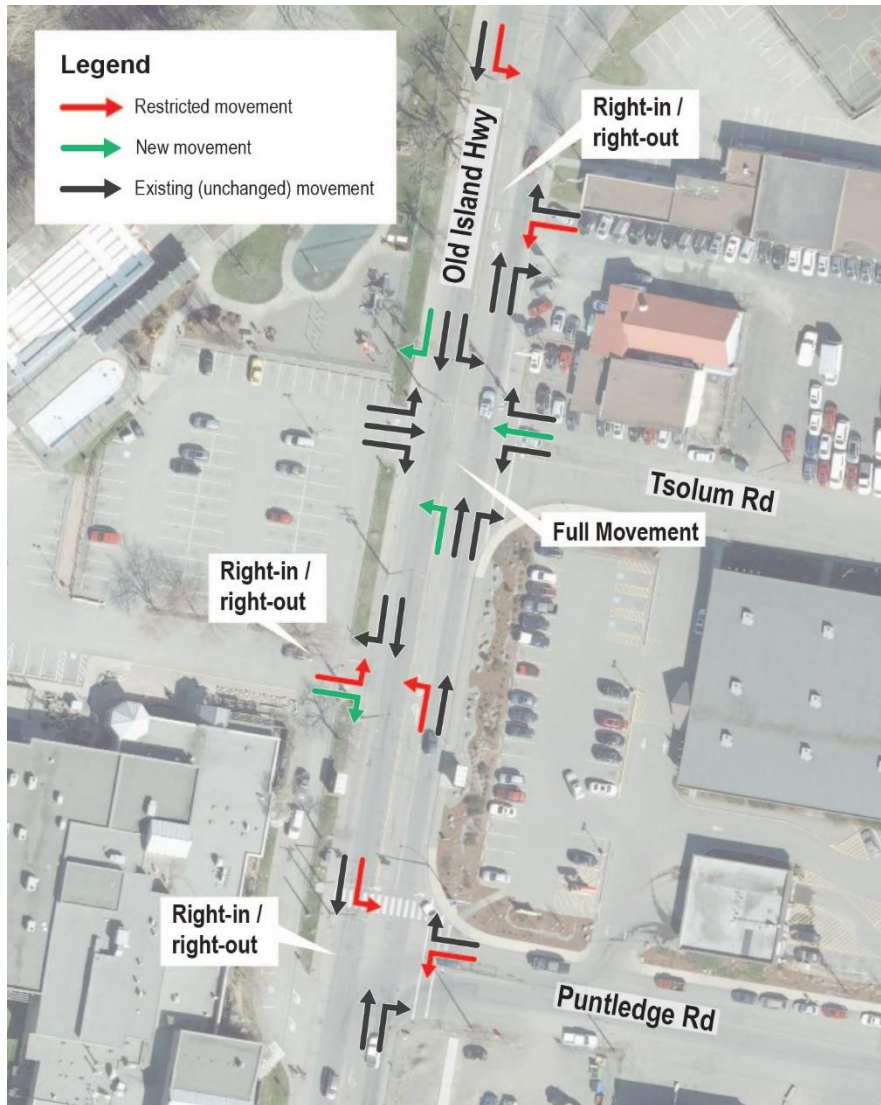


Figure 6-10: Old Island Highway Modifications

6.6.2 Park Access and Traffic Management

Currently there are parking lots on either side of 5th Street for Simms Millennium Park and Lewis Park. Access to these parking lots is restricted to right-in, right-out using median islands. Motorists are able to enter/exit in any direction to/from 5th Street by using the underpass between the two parks. These parking lots have a number of potential uses during the construction phase including: parking for park users, facilitating Park-and-Ride/Walk/Bike to reduce single occupancy vehicles, and/or construction staging.

The priority vehicle lane can be utilized by motorists accessing these parking lots to avoid being stuck in any congestion. However, to prevent abuse of the priority vehicle lane closing the right-out from Lewis Park to the bridge is recommended.

The underpass between Lewis Park and Simms Millennium Park is currently open to all modes including pedestrians, cyclists, and vehicles (with height restrictions). During the construction phase, it may be necessary to close the underpass to facilitate construction. (However, opportunities to maintain access for pedestrians and cyclists throughout construction by providing protection from construction activities/overhead hazards should be considered. This is discussed further in *Section 6.3.*)

Underpass Open to Vehicular Traffic

If the underpass is open to vehicular traffic, individuals can choose to park at either Lewis Park or Simms Millennium Park. The right-out access from Lewis Park to the bridge should be closed to prevent short-cutting traffic using the park to bypass the traffic queues on 5th Street/Old Island Highway.

Underpass Closed to Vehicular Traffic

If the underpass is closed to vehicular traffic, maintaining the right-out restriction from Lewis Park is still recommended. To enable users to exit the Lewis Park parking lot, either the concrete median would need to be reconfigured, or a flagger positioned to enable 2-way traffic (right-in, left-out) to use the existing entrance.

For the Simms Millennium Park parking lot users would only be able to access the parking lot by first crossing the bridge based on the current island configuration. This means that the trips destined to this park cannot use the westbound queue jumper lanes to prevent short cutting traffic.

The travel routes under these scenarios are illustrated in **Figure 6-11**. A hybrid scenario that closes the underpass for a portion of the construction and maintains the connection for the rest of the phase can also be considered.

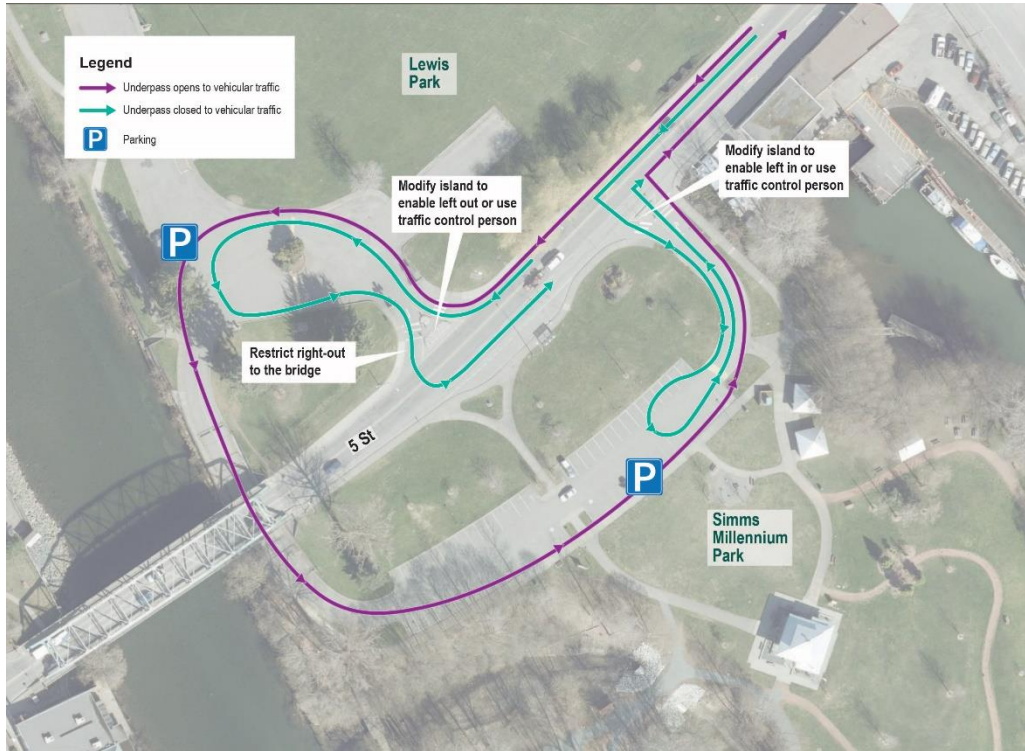


Figure 6-11: Park Access Routes

The strategies for traffic management described in this document are designed for the regular times during the construction phase. During special events that take place at the parks, special considerations will be given on case by case basis.

6.6.3 Laneway Between Cliffe Avenue and Anderton Avenue

If the laneway between Cliffe Avenue and Anderton Avenue is used as a queue storage location some minor improvements should be made including basic asphalt patching at the corner from the 3rd Street to the laneway, signage indicating the laneway is 1-way only, and some brush clearing to improve sightlines at the exit from laneway at 1st Street along with the addition of a stopbar and stop sign.

6.7 Travel Time Forecast

Forecasts of the potential delay associated with the construction activities have been developed. These forecasts represent the average delay during the PM peak hour on a typical day and assuming no one switches to a different mode or shifts their travel to another time of day. Depending upon daily fluctuations, weather and a variety of other factors, some motorists are likely to experience more delay while others may experience less delay.

6.7.1 General Purpose Traffic

The travel time for general purpose traffic was forecasted based on a trip between the north of the intersection of Back Road and Ryan Road and the intersection of Cliffe Avenue and 13th Street as shown in **Figure 6-12**. As shown in

Table 6-1, motorists are anticipated to experience 6 to 10 minutes of additional delay.

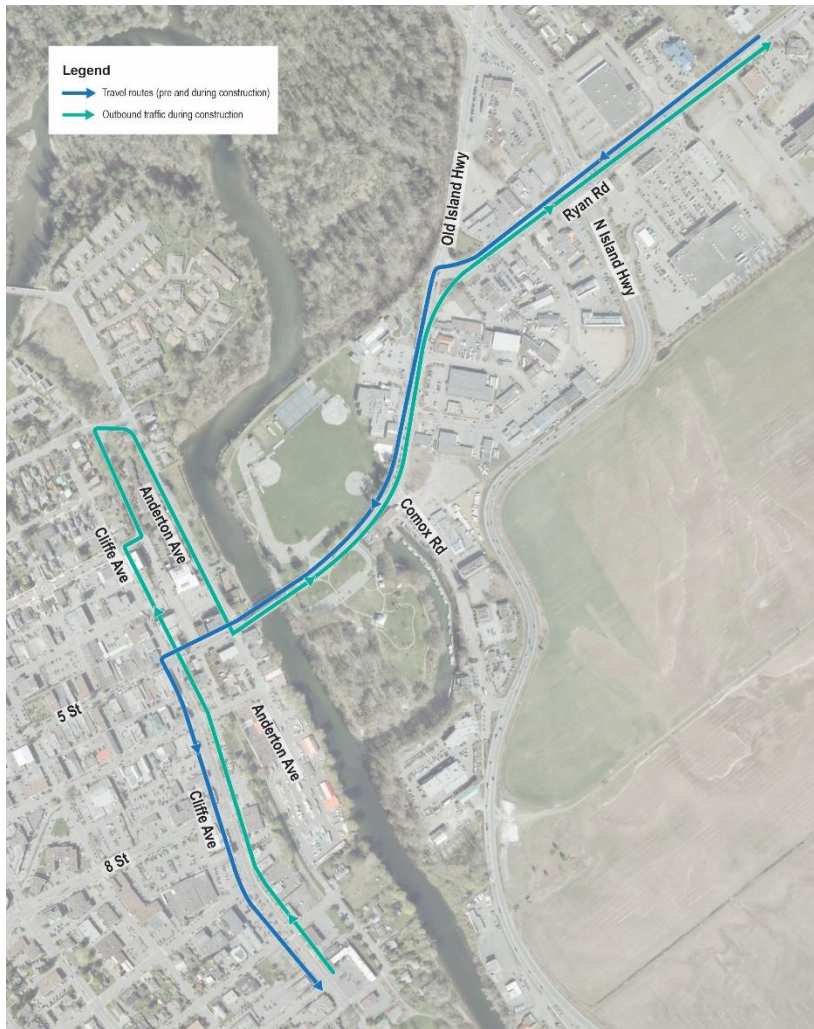


Figure 6-12: Travel Time Origin and Destination for General Purpose Traffic

Direction	Pre-construction	During Construction	Change
Entering Downtown (Ryan Rd to Cliffe Ave)	9 minutes	15 minutes	6 minutes
Leaving Downtown (Cliffe Ave to Ryan Rd)	7 minutes	17 minutes	10 minutes

Table 6-1: Travel Time for General Purpose Traffic

6.7.2 Transit

The travel time impacts for transit were also assessed. The transit assessment is based on a bus starting at the intersection of Old Island Highway and Ryan Road, entering downtown, then returning to the same start point as shown in **Figure 6-13**, below. Transit is anticipated to experience approximately 5 minutes of additional delay, as shown in **Table 6-2**. However, if there is congestion on the wider network the overall impact of the construction on transit could be more significant.



Figure 6-13: Travel Time Route for Transit

Route	Pre-construction	During Construction	Change
5 th St/Ryan Rd to Downtown and return	5 minutes	10 minutes	5 minutes

Table 6-2: Travel Time for Transit

7.0 Transportation Demand Management

Transportation demand management (TDM) refers to strategies that influence travel behavior. Opportunities to use TDM approaches to address challenges during the bridge rehabilitation works are explored in the following sections, both in terms of shifting travel demand to mode/options that are less impacted and shifting travel demand to off-peak periods.

7.1 Mode Shift

A number of opportunities to facilitate and support shifting travel to modes that are less impacted by the bridge rehabilitation have been identified.

7.1.1 Park-and-Ride

Park-and-ride would require establishing and promoting parking locations available to commuters throughout the construction period. These could be located in both downtown/west Courtenay and east Courtenay, to facilitate park-and-ride activities in both directions over the bridge. Typical target parking areas may include public facilities or commercial sites with under-utilized parking supply. Currently the Lewis Park/Simms Millennium Park parking lots have been identified as potential park-and-ride locations⁷.

There are three travel options that may be considered for transporting individuals between the identified park-and-ride parking areas and key end destinations such as downtown Courtenay, North Island College and North Island Hospital. Important for all options is that they result in greater convenience and/or reduced travel time as compared to a single-occupant vehicle, which may be achieved by bridge traffic control facilitating priority vehicles and/or identified detour routes that are more effective than the Fifth Street Bridge.

The three opportunities are as follows:

1. **Transit** – Encourage use of route no.1 (Comox Mall / Anfield Centre) or other routes in east or west Courtenay that might access dedicated parking areas. A subsidy or free Transit could be provided for any passenger using the park-and-ride. For example, free Transit or a reduced fare could be provided for individuals boarding the bus at specified park-and-ride locations (such as Lewis or Millennium Simms Park). A dated

⁷ It is difficult to predict the level of park and ride demand. It is our understanding that during weekdays Lewis Park has excess parking capacity which is likely to provide sufficient space for park-and-ride. Limited utilization of park-and-ride is anticipated during the evening or weekends however. However, if park-and-ride demand in Lewis Park exceeds capacity an area on the grass could be used as overflow as necessary.

voucher for a free or reduced fare return trip could be given to the individual to identify them as a park-and-ride user.

This approach has the benefit of utilizing an existing service and potentially exposing new users to transit which may encourage increased Transit use post construction. Transit service across the Fifth Street Bridge is very frequent which means minimal wait times, depending upon the park-and-ride location. However, this may cause some existing transit users to change patterns and start driving to the park-and-ride location to access the subsidy. If Lewis or Millennium Simms Parks are used for park-and-ride, motorists could use the queue jumper lane to reduce their travel time. The financial impact of providing a transit subsidy would depend upon the level of subsidy and the number of users.

2. **Rideshare** – Targeted communications could be used to encourage ridesharing and reduce the number of vehicles crossing the Fifth Street Bridge. Allowing high-occupancy vehicles to utilize the priority vehicle route/lanes could also be considered to further encourage rideshare. Creation of dedicated parking spaces at key end-point locations such as North Island College (outside peak semesters such as summer months) and some of the commercial areas along Ryan Road would also support rideshare. Some potential locations for priority parking spaces are illustrated in **Figure 7-1**.

The parking spaces for rideshare will be subject to interest and cooperation from the property owners, including issues of liability. Temporary signage and information would need to be made available clarifying which areas of identified parking are available for rideshare and the conditions of using the parking area. For example, a maximum stay of 10 to 12 hours and rideshare activities only.

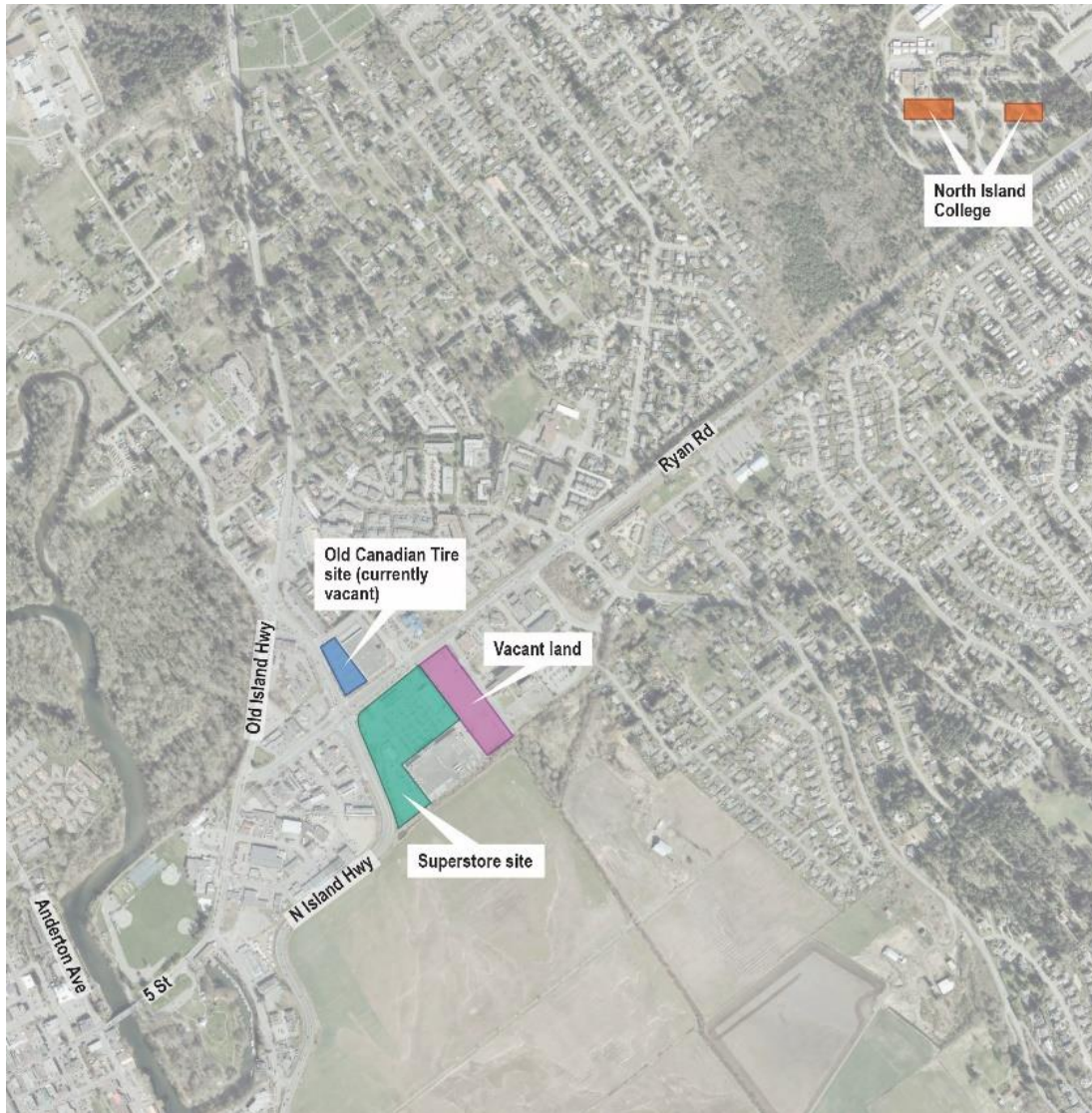


Figure 7-1: Potential Parking Locations for Rideshare

3. **Shuttle** – Consideration may be given to operating a shuttle service during the construction period operating between identified park-and-ride locations and key destinations. For this to be an appealing option the shuttle must operate throughout the day (or timed to align with key shift start/end time) and have high enough frequency to be competitive with driving. The daily cost to operate a shuttle is likely at least \$1000⁸ per day. This approach may be challenging to justify given the considerable operating cost over the project life and unknown demand. In many

⁸ This is based on an assumed hourly rate of \$100, a single vehicle and 10 hours of service (7:30am-5:30pm)

cases it might be more cost effective to provide a Transit subsidy rather than operate a separate shuttle.

7.1.2 Park-and-Walk/Bike

There is opportunity for dedicated parking spaces in Lewis Park, Simms Park and/or Lewis Recreation Centre that allow motorists originating east Courtenay and destined for downtown Courtenay to park in these locations and walk/bike over the Fifth Street Bridge to access downtown. If using park-and-bike, individuals would drive to the designated parking location with their bike on/in their vehicle, cycle to their destination, secure their bike at their destination then cycle back to their vehicle at the end of the day. This option will not appeal to all motorists as the walk/bike trip may be further than many are willing to make or they lack secure bicycle parking at their destination. Traffic accessing the parking lots could be permitted to utilize the priority vehicle lanes which would provide a time savings and incentive to bike/walk across the bridge.

7.1.3 Encouraging Cycling

Facilitating and encouraging cycling through the bridge construction is important not only to helping realize the City's sustainable transportation objectives and improving travel choice, but also realizing a greater proportion of trips by bicycle in order to manage traffic volumes during bridge construction. Retaining cyclist access to downtown, Lewis Park, Lewis Centre and other nearby destinations is a key component of the traffic management strategy and should be an important message in project communications. This includes maintaining uninterrupted cyclist access on the 5th Street Bridge throughout the construction period and allowing for connections to key cycling routes. The closure of lanes and turn restrictions imposed on vehicle traffic will not impact cyclists, as they will still be able to utilize the bridge access points where traffic will be re-routed. Recent improvements in the City's cycling network (i.e., 5th Street, Fitzgerald Ave) help provide safe, comfortable access to/from the 5th Street Bridge. Further, the provision of a transit / high-occupancy vehicle (HOV) lane on the bridge east approach during construction will result in the curb lane experiencing lower volumes (i.e., less traffic) than current conditions and will be more appealing to cyclists. The added delay experienced by motorists during the construction period will not impact cyclists to the same extent, making cycling a more competitive alternative from a travel time perspective and encouraging a greater proportion of cycling trips.

7.2 Time-of-Day Travel

Opportunities will be identified to encourage travel outside peak periods to minimize congestion during busy times. The following are opportunities that may be explored:

- ▶ Options to stagger work shift times to avoid peak congestion periods
- ▶ Altering school or post-secondary class / bell times to avoid peak congestion periods
- ▶ Ensuring elective activities and special events are scheduled outside peak periods where possible

Another approach taken will be to explore opportunities to encourage working from home to avoid the need to travel altogether. This may be pursued by encouraging / incentivizing individuals throughout the Comox Valley to work remotely and/or by working with some of the larger employers and organizations to encourage working remotely among their employees.

8.0 Communications

Construction has potential to impact a variety of stakeholders and residents. As a result, strategic and timely communications will be an important mitigation effort to assist in minimizing impacts to the community. Proactive communications will occur throughout all stages of construction in an effort to mitigate impacts to the travelling public and to adjacent areas.

A detailed communications plan will guide communications prior and throughout construction to keep the public informed and to appropriately anticipate and respond to unplanned issues.

