Comox Valley REGIONAL DISTRICT

Agenda

Notice of meeting of the

SEWER EXTENSION SOUTH LIQUID WASTE MANAGEMENT PLAN ADDENDUM JOINT TECHNICAL AND PUBLIC ADVISORY COMMITTTEES (TACPAC)

Wednesday, September 21, 2022

CVRD Civic Room, 770 Harmston Ave and Zoom

12:30 – 5:00pm

Join Zoom Meeting

https://us02web.zoom.us/j/84229280875?pwd=cFlGM1RSdWlOTUpTZzJwVmRWUWxEQT09

Meeting ID: 842 2928 0875

Passcode: 514493

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Item, Time	Description	Owner
1.1 12:30 – 12:35	Call to Order and Territorial Acknowledgement	Facilitator
1.2 12:35 – 12:40	Welcome	CVRD
1.3 12:40 – 1:10	Introductions	Facilitator
1.4 1:10 – 1:55	Discussion Paper #1: LWMP objectives and purpose • Description of provincial LWMP process and guidelines ○ Role of committees – Steering, PAC and TAC • CVSS LWMP process • Sewer Extension South LWMP Addendum process	WSP
1.5 1:55 – 2:15	Public Consultation – SES LWMP Addendum	CVRD
1.6 2:15 – 3:00	Discussion Paper #2: Summary of past work • Summary of prior south LWMP process • What's changed since 2016	Associated Engineering / CVRD
1.7 3:00 – 3:15	Break	
1.8 3:15 – 4:00	Discussion Paper #3: South wastewater flows and loads, treatment objectives, Comox Valley Sewer Service LWMP • Review of Area A population projections and resulting wastewater flows and loads. • Summary of treatment objectives as identified in CVSS LWMP • Summary of Stage 1 and 2 CVSS LWMP and its provisions for wastewater flows from Area A.	WSP
1.9 4:00 – 4:30	TAC/PAC Committee Process • Terms of Reference • Decision Making Process and Areas of Focus ○ Meeting Dates	Facilitator

1.10 4:30 – 4:40	Preview of Meeting #2 • Sewer Extension South project design, costs, phasing • Collection system options and cost comparisons • Pump stations design and siting options • Draft Stage 1 Environmental Impact Study	Facilitator/CVRD
1.11 4:40 – 5:00	Round table discussion	Facilitator
1.12 5:00	Adjournment	Facilitator

COMOX VALLEY REGIONAL DISTRICT
REPORT NUMBER: 18P-00276-00

DISCUSSION PAPER 1: LWMP OBJECTIVES

SEPTEMBER 21, 2022

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HTTPS://WWW.COMOXVALLEYRD.CA/SEWEREXTENSION

1 LIQUID WASTE MANAGEMENT PLAN

1.1 LWMP PROCESS

The provincial Liquid Waste Management Plan (LWMP) process is designed to allow BC communities to develop their own solutions for managing liquid waste while meeting regulatory requirements. The scope of work for a LWMP is specific to each local government, reflecting the communities' goals and objectives, and is discussed at the outset of the process with the Ministry of Environment and Climate Change Strategy Regional Manager.

The strategy provided in the plan must ensure the management and disposal of treated waste are sufficiently protective of public health and the environment. Public, stakeholder and rightsholder consultation is a key component of plan development to ensure that multiple interests have been considered and that the LWMP is supported by the community. An approved LWMP confers two critical authorizations to the local government:

- Regulatory authorisation to proceed with the works identified in the plan, and for treated water discharges.
- Borrowing authorisation to finance the works identified in the plan.

Provincial LWMP guidelines describe a three-stage planning process, each involving meaningful public, stakeholder, and rightsholder consultation, and with Ministry of Environment and Climate Change Strategy review after each stage. Figure 1 includes a detailed summary of a typical LWMP process. The three stages are summarized below:

- Stage one identifies existing conditions and community goals and then develops a wide range of options for managing liquid waste in the plan area. The options are considered for regulatory compliance, practicality, and achievement of community goals, and pared down to a short list.
- Stage two is a detailed evaluation of the shortlisted options, and additional environmental impact studies, if appropriate. Stage two ends with the selection of the preferred solution for the key plan components.
- Stage three consists of further development of the selected option for implementation, operation and financing. Operational certificates and a formal implementation schedule and financing plan are established, and the completed plan is submitted for approval by the Minister of Environment and Climate Change Strategy.

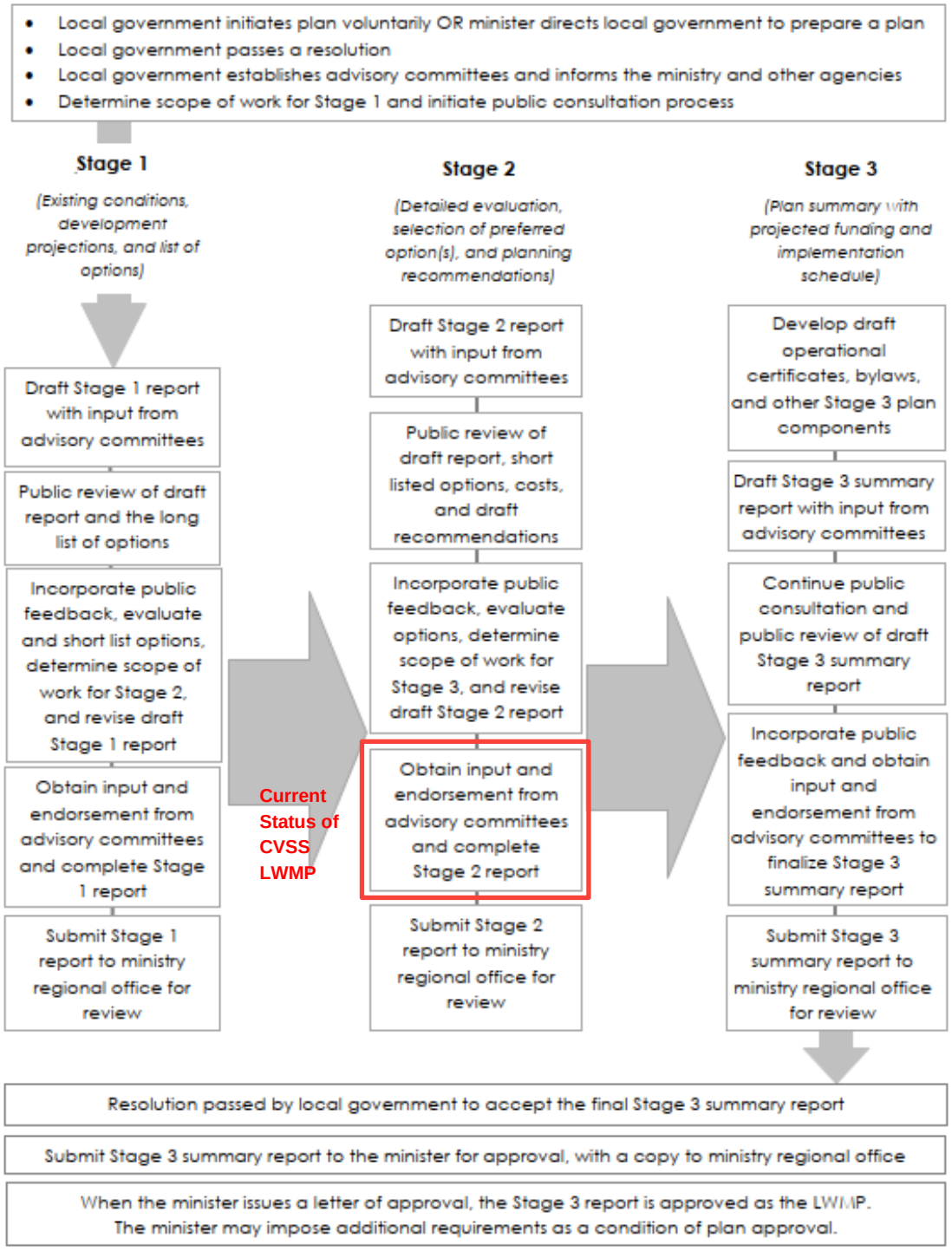

Figure 1 Typical Three-Stage Planning Process

The stages are often combined to make use of prior investigations and past planning work. The Comox Valley Sewer Service (CVSS) LWMP currently underway, has combined Stages 1 and 2 in the planning process. The Sewer Extension South LWMP Addendum is also combining Stages 1 and 2 due to the considerable body of past planning work that has been completed for the area.

1.2 COMMITTEES

In addition to the technical work required to complete an LWMP, plan development is also informed through input from three committees:

- Public Advisory Committee
- Technical Advisory Committee
- Steering Committee

In certain circumstances, local governments may find it beneficial to establish a single advisory committee to fulfill the role of both the public and the technical advisory committee to improve communication and reduce the number of meetings required. In this specific case for the Sewer Extension South LWMP Addendum process, the public and technical advisory committee meetings are being combined.

After the LWMP is complete and approved a fourth committee, the plan monitoring committee, will be developed to aid in plan implementation, monitoring, and to provide ongoing advice to the local government council or board of directors and staff. It is desirable for a plan monitoring committee to have continuity of membership from the advisory committee(s).

1.2.1 STEERING COMMITTEE

The steering committee will guide and receive input and recommendations from the public and technical advisory committees and make recommendations to the local government council or board of directors. The steering committee will normally include senior political and technical representatives of the local government. The Ministry of Environment and Climate Change Strategy and the consulting team may also be represented on the steering committee.

For the CVSS LWMP process, the Comox Valley Sewage Commission acts as the Steering Committee, and for the Sewer Extension South LWMP Addendum, the CVRD Electoral Areas Services Committee will act as the Steering Committee.

1.2.2 PUBLIC ADVISORY COMMITTEE (PAC)

The public advisory committee will represent community and stakeholder interests in the planning process. In order to ensure that the public advisory committee best reflects community interests, local governments should seek to invite representation from each of the following sectors or groups, which exist in the community:

- Elected representative(s) from the municipalities or electoral area(s) within the plan area;
- First Nations within or adjacent to the plan area;
- Local environmental groups;
- Residents of electoral area(s) or municipalities in the plan area;
- Local business groups and rate-payer associations;
- Generators of large liquid waste discharges;
- Local school districts;
- A technical advisory committee representative;
- The consulting team; and
- The Ministry of Environment.

A draft Terms of Reference for the Sewer Extension South LWMP Addendum PAC, further describing the roles and responsibilities of the PAC and its membership, has been developed and will be provided for consideration at the first meeting.

1.2.3 TECHNICAL ADVISORY COMMITTEE

The technical advisory committee will be established concurrently with the public advisory committee. In order to ensure that the technical advisory committee primarily reflects government interests, the local government should seek and invite representation from the following governments, agencies and organizations:

- The Ministry of Environment;
- Engineering and/or planning departments of the regional district and member municipalities;
- First Nations;
- Health Authorities;
- Provincial and federal ministries or agencies who have indicated interest or whose mandate will be affected by or will affect the planning process; and
- A public advisory committee representative, including at least one non-governmental and one governmental representative from that committee.

A draft Terms of Reference for the Sewer Extension South LWMP Addendum TAC, further describing the roles and responsibilities of the TAC and its membership, has been developed and will be provided for consideration at the first meeting.

2 CVSS LWMP

2.1 SUMMARY

The Comox Valley Regional District (CVRD) owns and operates the Comox Valley Sewerage System (CVSS) which provides regional conveyance, treatment and disposal of wastewater for the City of Courtenay, Town of Comox, Department of National Defense (DND) and the K'ómoks First Nation (K'ómoks).

The Comox Valley Water Pollution Control Centre (CVWPCC), which was largely constructed in the 1980's, treats wastewater from approximately 20,000 households in the service area, discharging an average daily flow of about 17,000 m^3 of treated effluent to the Strait of Georgia via a 3 km outfall. Upgrades will be required to improve effluent quality to meet community commitments, to increase plant capacity due to population growth, and to renew existing plant infrastructure.

To appropriately consider regional, long-term liquid waste management planning questions for the service, the CVRD is preparing a combined Stage 1 and 2 LWMP. The plan aims to:

1. Facilitate a decision on required upgrades to the regional conveyance system,
2. Develop options for upgrades to the Comox Valley Water Pollution Control Centre to achieve effluent quality targets and resource recovery options, and
3. Advance solutions within a rigorous framework of stakeholder and rightsholder consultation to inform each stage of decision-making. Throughout each stage, decision-making was advanced through the Technical and Public Advisory Committee (TACPAC), consultation with K'ómoks First Nation, and public consultation meetings.

Stage 1 of the CVSS LWMP process was completed in 2018-2019 and included:

- A review of background information, including past work and definition of the service plan area, regulatory requirements, treatment standards, and design criteria;
- Consultation with K'ómoks First Nations as well as Public Advisory Committee (PAC) and Technical Advisory Committee (TAC) meetings were held
- A long list of conceptual alternative options and associated cost estimates for wastewater conveyance, treatment and resource recovery was developed in consultation with the TACPAC to develop a short-list of preferred options to carry forward to Stage 2 of the LWMP;

Stage 2 of the CVSS LWMP process was completed between 2019-2022 and includes:

- Further development of the shortlisted options for wastewater conveyance, treatment and resource recovery that were carried forward from Stage 1, including more detailed technical evaluation and cost estimates;
- Short-listed options were evaluated in consultation with the TACPAC and preferred options for advancement to Stage 3 of the LWMP were identified;
- Consultation with K'ómoks First Nation and Public consultation was held to obtain input on proposed LWMP solutions, including the development of a Community Benefits Agreement

The draft Stage 1 and 2 LWMP report is currently being reviewed by K'ómoks First Nation and the CVSS LWMP TACPAC. The report will be presented to the Comox Valley Sewage Commission, with a recommendation to approve the report. Upon incorporation of requested changes from K'ómoks and the TACPAC, and approval from the Sewage Commission, the report is anticipated to be submitted to the MoECCS this fall. Upon provincial approval of the Stage 1 and 2 report the CVRD would then move forward with developing a CVSS LWMP Stage 3 report.

3 SEWER EXTENSION SOUTH LWMP ADDENDUM

3.1 OVERVIEW

The intention of the addendum is to include consideration of the Sewer Extension South (SES) project within the context of the Comox Valley Sewerage Service (CVSS) Liquid Waste Management Plan (LWMP). Technical work in support of the LWMP addendum will summarize the work completed to date for the Sewer Extension South Project, including the design development of the forcemain and pump stations and collection system options. It will also involve the preliminary design of local collection systems and a Stage 1 Environmental Impact Study (EIS). LWMP addendum development will be informed by the Sewer Extension South Technical and Public Advisory Committee, consultation with K'ómoks First Nation, and public consultation meetings.

3.2 BACKGROUND

Establishing a regional wastewater service in the communities of Royston and Union Bay has long been a topic of discussion, with a number of failed attempts at introducing a service in the past. In 2015, a nearly complete Stage 1/2 South Region Liquid Waste Management Plan (LWMP) process resulted in the development of the South Sewer Project, a proposal that would see treated effluent from a new south wastewater treatment plant conveyed to the existing CVSS outfall at Cape Lazo for discharge. A 2016 referendum on this proposal was unsuccessful, causing the loss of grant funds that had been allocated to the project, thus curtailing progress towards a wastewater solution for the area.

Following the 2016 referendum, efforts continued to examine options for providing sewer servicing to the CVRD South Region. In 2018, the Comox Valley Sewage Commission agreed in principle to the concept of receiving wastewater flows from portions of Electoral Area A and K'ómoks First Nation, subject to the resolution of governance, terms of service, financial impact and regulatory considerations. In 2020, the Sewage Commission supported several recommendations to allow for the future receipt of Electoral Area A and K'ómoks First Nation wastewater into the existing Comox Valley sewer system.

The combined CVSS LWMP Stage 1 and 2 draft plan referenced above speaks to the potential for acceptance of wastewater from these areas, and bylaw amendments are in development to facilitate the expansion of the CVSS service area accordingly. Notably, the first of these, an amendment to the "Comox Valley Sewer Service Establishment Bylaw No 2541, 2003" expanding the CVSS service area to include a portion of Electoral Area A was adopted by the CVRD board in August 2022.

Recognizing the extensive planning, engineering and engagement work that has been completed for the CVSS LWMP, and similar work that has been completed for the Sewer Extension South Project, CVRD is moving forward with an addendum to the CVSS LWMP to include consideration of the Sewer Extension South Project. The development of the addendum is following provincial LWMP guidelines, including the involvement of public and technical advisory committees (PAC/TAC) and further public engagement. Should the project be supported by the community through the LWMP addendum process, a Sewer Extension South LWMP Addendum Stage 1 and 2 report is anticipated to be submitted to the province in fall 2023.

Upon provincial approval of the CVSS LWMP Stage 1 and 2 report, and a Sewer Extension South LWMP Addendum Stage 1 and 2 report, the CVRD would then move forward with developing a CVSS LWMP Stage 3 report, reflecting an expanded CVSS service area that includes those portions of Electoral Area A expected to be serviced by the Sewer Extension South project.

3.3 PLANNING COMPONENTS

The following Table 1 shows the planning components listed in the BC Interim Guidelines for preparing Liquid Waste Management Plans that are included in the Sewer Extension South LWMP Addendum process. The table also indicates the work completed by the CVSS LWMP that is therefore not required in the Sewer Extension South LWMP addendum.

Table 1 LWMP Addendum Sections

COMPONENTS	COMMENTS	INCLUDED IN CVSS LWMP	INCLUDED IN SES LWMP ADDENDUM
5.1 Plan Area	Area anticipated for servicing by Sewer Extension South (existing Electoral Area A neighborhoods, UBE & K'ómoks)	✓	✓
5.2 Land Use and Development	Summarize existing plans, as provided in previous reports	✓	✓
5.3 Environmental Resources and Impacts	Cape Lazo discharge location covered by CVSS LWMP. Include discussion of prior South Sewer Project work that ruled out other discharge options	Limited inclusion	
5.4 Existing infrastructure, including flow and load projections	Review and include existing information, as provided in previous reports	✓	✓
5.5 Source control	Consideration of Source Control requirements given anticipated land uses in future collection system service areas	✓	✓
5.6 Volume Reduction	Analyse the per capita flows and compare with other communities to see if there is scope for reductions.	Limited inclusion	
5.7 Reclaimed Water	Covered by CVSS LWMP	✓	✗
5.8 Inflow and Infiltration	Analyze proportions of I&I in influent stream, as part of flow and load projections. Discussion of potential I&I reduction measures in accordance with CVSS LWMP targets.	Limited inclusion	
5.9 Combined Sewer and Sanitary Overflows	None are present in Electoral Area A	✓	✗
5.10 (a) Wastewater Treatment – central plant	Covered by CVSS LWMP	✓	✗
5.10 (b) Wastewater Treatment – unserviced areas and on-site systems	Summary of existing on-site systems, based on analysis of Island Health records provided by CVRD, and previous septic risk assessment work completed by WSP	✓	✓
5.11 Non-Point source pollution	Summary of impacts of non-point source pollution (ie shellfish norovirus)	✓	✓
5.12 Stormwater Management	Not within scope of Sewer Extension South project	✓	✗
5.13 Septage and Biosolids	CVRD Biosolids management plan is already in place, and to be included for information and completeness	Limited inclusion	
5.14 Integrated Resource Recovery	Covered by CVSS LWMP	✓	✗
5.15 Cost Estimates	Class D cost estimates for long list options (provided in previous reports) and Class C for short list options.	✓	✓

1. ✓ – Included within the respective report.
2. ✗ – Excluded from the Addendum report.
3. 'Limited inclusion' – included in reports as short summaries.

3.4 WAY FORWARD

The following TAC/PAC meetings are scheduled for the duration of the Sewer Extension South LWMP addendum. Table 2 also includes the proposed materials and discussion papers to be presented for TAC and PAC consideration at each meeting.

K'ómoks First Nation is a key Sewer Extension South project partner. The CVRD is committed to its partnership with K'ómoks and recognizes that community wastewater service to the Royston/Union Bay area is a shared priority that is important for reconciliation. Consultation with K'ómoks continues through an established process with Chief and Council and staff. In addition to this ongoing engagement, K'ómoks is also represented on the TAC/PAC.

Table 2 Summary of Materials for TAC/PAC Meetings

TITLE	DESCRIPTION	PROGRESS
TAC/PAC Meeting #1 (September 21, 2022)		
Discussion Paper 1: LWMP Objectives	A discussion paper outlining LWMP objectives and process as well as the purpose and scope of the Sewer Extension South addendum.	✓
Discussion Paper 2: LWMP Summary of Past work	Summary of past work undertaken during the 2014-2015 South Region LWMP process.	✓
Discussion Paper 3: Flows and Loads for the SES as well as background and provisions in the CVSS LWMP	A discussion paper summarising the flows and loads per population projections, treatment objectives as identified in CVSS LWMP, and brief summary of existing CVSS LWMP work and its provisions for flows from Area A.	✓
TAC/PAC Meeting #2 (November 23, 2022)		
Discussion Paper 1: Conveyance Piping Design and Cost	A discussion paper summarising the conveyance piping design and cost estimate. This paper will be a summary of the work completed in the South Region Royston Union Bay Sewer Extension Preliminary Design.	
Discussion Paper 2: Collector System Design	A discussion paper summarising the collector system design options to be considered, including capital, operating and life cycle cost comparisons.	
Discussion Paper 3: Pump Station Design and Siting	A discussion paper summarising pump station design and siting, including capital and operating costs.	
Draft Stage 1 EIS	Draft Stage 1 Environmental Impact Study (EIS).	
TAC/PAC Meeting #3 (December 12, 2022)		
Discussion Paper 1: Collection System and Project Phasing	A discussion paper summarising the collection system and project phasing options	
Decision Matrix	A decision matrix for the selection of preferred project options	
TAC/PAC Meeting #4 (May 10, 2023)		
Draft Addendum Report	Draft Sewer Extension South Addendum Report.	
TAC/PAC Meeting #5 (September 13, 2023)		
Final Stage 1 EIS	Final Stage 1 Environmental Impact Study (EIS) Final Sewer Extension South Addendum Report.	

Sewer Extension South Addendum

Public Consultation Plan

June 2022

Comox Valley
REGIONAL DISTRICT

comoxvalleyrd.ca

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1.0 Introduction

The Comox Valley Regional District (CVRD) is preparing to engage the public in the development of an addendum to the Comox Valley Sewer Service (CVSS) Liquid Waste Management Plan (LWMP), with the goal of developing a regional wastewater solution for the communities of Royston, Union Bay and K'ómoks lands south of Courtenay.

This document outlines the consultation plan, intended to collect feedback and input on the planning of a new service critical to the protection of Baynes Sound, community health, sustainable development and reconciliation.

This consultation is based on the INFORM, CONSULT and INVOLVE areas of the International Association for Public Participation (IAP2)'s engagement spectrum. The commitment to the community for this level of engagement is that the CVRD will obtain feedback on analysis, alternatives and/or decisions, and will implement public engagement throughout the process to ensure concerns and goals are understood and considered.

Consultation will be held between September 2022 and summer 2023 and will include a range of tools including online and in-person opportunities for discussion with the general community, establishment of the public and technical advisory committees and ongoing consultation with K'ómoks First Nation through an established process, as well as outreach to 14 Nations with overlapping traditional territories.

This extensive consultation, phased through the development of the addendum, will ensure the community can help determine the plan ahead as it is created, rather than being tasked with a referendum decision once a plan is complete. A successful LWMP consultation on this project will allow a path forward for this critical service in the area.

2.0 Overview

BACKGROUND

Establishing a regional wastewater service in the communities of Royston and Union Bay has long been a topic of discussion, with a number of failed attempts at introducing a service in the past due to a number of reasons. Most recently, a referendum on the South Sewer Project in 2016 was unsuccessful, causing the loss of grant funds that had been allocated to the project and curtailing the progress of a community wastewater solution in the area.

This lack of progress has allowed impacts on the Baynes Sound Shellfish Industry to continue and has created roadblocks to reconciliation with the K'ómoks First Nation both on the basis of protection of culturally significant areas and pursuing economic development interests in the area.

Following an analysis of the existing infrastructure and capacity of the Comox Valley Sewer Service – which currently services Courtenay, Comox and K'ómoks First Nation - the Comox

Valley Sewage Commission made the unprecedented decision in 2020 to receive wastewater from the Royston/Union Bay area. This opened the door to a collaborative waste management solution for the region that would see wastewater collected into the current conveyance system, treated at the existing Comox Valley Water Pollution Control Centre on Brent Road, and released via the marine outfall at Cape Lazo.

Between 2018-2022 the CVRD has undertaken a LWMP planning process for the Comox Valley Sewer Service (CVSS), which resulted in a Stage 2 draft plan being prepared for submittal to the province in summer of 2022. The plan includes direction on conveyance, treatment and resource recovery for the CVSS.

Recognizing the extensive planning work that has already been completed for the CVSS LWMP, and also the extensive planning and engagement work that has been completed for the sewer extension south area, it's proposed that an addendum to the CVSS LWMP be pursued, to include plans for the Royston/Union Bay area.

CONSULTATION AREA AND TARGET AUDIENCE

While the engagement for the CVSS LWMP included extensive outreach within the City of Courtenay, Town of Comox and K'ómoks First Nation, the proposed addendum to extend the sewer south is proposed to focus on those in the highest environmental risk communities of Royston and Union Bay with service also planned for the K'ómoks south lands and Union Bay Estates.

Primary target audiences for public consultation activities include:

- Residents, property and business owners in Royston and Union Bay
- Environmental stewardship and industry organizations
- Community groups

First Nations consultation includes:

- K'ómoks First Nation
- Wei Wai Kum Nation
- We Wai Kai First Nation
- Homalco First Nation
- Tla'amin Nation
- Qualicum First Nation
- Lake Cowichan First Nation
- Penelakut Tribe
- Lyackson First Nation
- Cowichan Tribes
- Halalt First Nation
- Stz'uminus First Nation
- Snuneymuxw First Nation
- Snaw'naw'as First Nation

Partners include:

- K'ómoks First Nation
- Union Bay Estates

Secondary audiences include:

- Local media
- Comox Valley Sewage Commission (City of Courtenay, Town of Comox, Department of National Defence)

REGIONAL INTERESTS

For the wider Comox Valley region, planning for a Sewer Extension South LWMP addendum will raise interest particularly around:

Ensuring that the CVSS can accommodate the new area and that there is a fair sharing of operational and capital costs on the existing system

- The importance of protecting Baynes Sound – for environmental and public health, recreation, reconciliation and for the economic value of seafood production in the area
- Protecting the work and schedule already completed for the CVSS LWMP and maintaining confidence that the decisions achieved through that process will be retained.

LOCAL INTERESTS

For property owners and residents in Royston/Union Bay, there is expected to be a high degree of interest, in particular around:

- **Details about the proposed service**: Residents have long discussed the concept of a community wastewater service, and are well-versed enough to have interest in specifics such as collection routes, pump station locations, timing and of course, cost
- **The process ahead**: With a wide range of opinions on the proposed service, there will be interest in the planning and approval processes, and the likelihood the process has in delivering the new service,
- **Affordability:** The question of a community wastewater service has ultimately come down to cost a few times already. This includes capital and operational costs, as well as insight into individual costs for connecting to the service, decommissioning of septic systems and affordability strategies for those who have recently installed new systems, or who are on fixed incomes.

Given the long history of this discussion in the community, individual interests will be quite specific, and for many, opinions will be influenced by proposals presented in the past and their outcomes.

FIRST NATIONS INTERESTS

The Sewer Extension South Project includes K'ómoks First Nation fee simple lands and K'ómoks treaty settlement lands, which include ancient historical sites that hold great cultural, environmental and economic value for the K'ómoks peoples. Key to reconciliation for the Nation is the reclaiming of these lands that will enable K'ómoks to become self-determining and prosperous.

The CVRD is committed to supporting K'ómoks in its goal of reclaiming and protecting these lands from the environmental risk posed by leaking septic systems that are threatening the health

of Baynes Sound. Recent Norovirus outbreaks have negatively impacted the aquaculture interests of the K'ómoks First Nation and the health of Baynes Sound directly affects the economic, food, social and ceremonial rights of the K'ómoks people.

A dedicated First Nations consultation will help the CVRD to understand any concerns or interests from the other 14 Nations with overlapping territory in the areas of Royston, Union Bay, Hornby Island and Denman Island.

STUDY PROCESS

With the larger CVSS LWMP draft prepared for submittal, the Sewer Extension South addendum will require a smaller, more focused engagement. There will still be stages for feedback through the plan development, ensuring the community can participate as details are confirmed and options are narrowed.

The CVRD is proposing four phases in the development of the addendum, from initiation to submittal. Each will include PAC/TAC meetings, updates for the K'ómoks First Nation and an opportunity for the community to learn more and weigh in with feedback.

The framework for this consultation is outlined in the following section.

3.0 Public Consultation Framework

While a full LWMP requires broad and extensive engagement, the proposed addendum will be more focused on the particular area it applies to and the degree of service that is proposed to be installed there (collection and conveyance – not treatment). All engagement though will follow the principles that guided the wider LWMP process.

PRINCIPLES

The following principles will guide public consultation:

- Follow IAP2 Spectrum of Public Participation: This acknowledged best practice of public engagement will guide consultation.
- Meet provincial LWMP Requirements: The specific requirements of the LWMP process ensure meaningful input is sought from the public – these will guide consultation plans.
- Support the Work of the LWMP Technical Consultant/Engineer: Public consultation will support and align with the efforts of the technical consultant.
- Demonstrate transparency and competency in planning: Sharing information and working through planning and decision-making processes with interested and affected parties (IAPs).
- Offer options for community involvement: By using a range of tools, the public will be able to engage in a method that suits them.

OBJECTIVES

1. Provide information about LWMPs, and the process for the Comox Valley Sewer Service

2. Offer opportunities for active public involvement and clear opportunities for feedback.
3. Explain how feedback will be received and considered.
4. Create a record of engagement at the end of the process
5. Demonstrate how engagement was considered and how input influenced final decisions.

TEAM ROLES

The development of the technical portion of the LWMP will be managed by the CVRD's Engineering Department with the support of consulting engineers. Management of the Public Advisory Committee (PAC) will primarily be led by the engineering department.

The CVRD's Senior Manager of Strategic Initiatives, with support of public engagement and communications consultants will plan, deliver and manage the public engagement, community outreach and First Nations Consultation portion of the LWMP development work.

CONSULTATION MILESTONES AND ESTIMATED TIMELINE

DATES	PROJECT MILESTONES
May-Sept. 2022	Phase 1/Project Initiation • INFORM – Update the community about the next steps for wastewater planning in the region, building on already-completed updates in Nov/Dec 2021(mailer/open house) and May 2022 (letter) • COLLABORATE – Invite residents to join public advisory committee and host first meeting • INFORM – Invite interested residents to observe public advisory committee meetings. • CONSULT – Initiate consultation with First Nations.
Oct 2022- Jan. 2023	Phase 2: Phasing, Collection System, Pump Station • COLLABORATE – Work with TAC/PAC to review proposed project phasing and components, evaluation and selection of collection options. • CONSULT – In early 2023, host update for community about planning work and collect feedback on collection options, pump station siting/design. • CONSULT – Continue consultation with First Nations.
Jan. 2023- June 2023	Phase 3: Development of Draft Addendum • COLLABORATE – PAC/TAC meetings, draft review/direction • CONSULT – Host open house event for residents to share update on draft addendum, collect feedback for consideration. • CONSULT – Continue consultation with First Nations

June -Sept 2023	Phase 4: Review/Approval • COLLABORATE – Work with PAC/TAC to report on final draft • INFORM – Share final draft with community along with public consultation summary and Environmental Impact Study • CONSULT – Continue consultation with First Nations
October 2023	Submit Final Draft Addendum and Environmental Impact Study • INFORM: Provide project update to all audiences.

4.0 Consultation Methods and Tools

In order to collect information from as many people as possible, the CVRD will use a range of tools to share information and receive feedback. Using online, mail and in-person tools will allow people to participate in a way that works best for them. The tools expected to be used are outlined below.

4.1 ONGOING TOOLS

PROJECT WEBSITE

The project website – already started at www.comoxvalleryd.ca/sewerextension - will continue to serve as an information hub for engaged participants. Along with introductory information such as FAQs, this will be the location for linking staff reports and outlining timelines ahead. It will include:

- Up-to-date project information
- Link to ConnectCVRD – the CVRD's online engagement forum
- Calendar of public events, PAC/TAC meetings
- Resource materials (e.g. FAQs, staff reports, studies)

ONLINE CONSULTATION FORUM

The CVRD has a well-established online consultation hub at ConnectCVRD, which is regularly updated for active projects and has a strong foundation of already-active members. The CVSS LWMP consultation plan included an active ConnectCVRD page that hosted surveys, ideas boards, Q&A sections and videos.

The CVRD will create a ConnectCVRD page specifically for the Sewer Extension South Addendum that will again be used as a central collection point for feedback. This online forum will be promoted through the outreach materials.

SOCIAL MEDIA

Using the CVRD's social media accounts, brief updates will be provided as milestones are reached and new engagement opportunities are identified. Any social media updates will link to the ConnectCVRD, encouraging the posting of questions/comments.

PUBLIC ADVISORY COMMITTEE (PAC)

A public advisory committee will be established as part of the LWMP addendum process and tasked with gathering and relaying public feedback and providing comment to the technical team. The opportunity to join the PAC will be promoted via ads in newspapers, newsletter and online. Members will be recruited from residents and homeowners in the area, with the goal of fair representation, across the geographic area, and from those with relevant experience. Meetings will be open to the public for interested members of the community to observe.

PHONE/EMAIL LOG

A phone/email log will be created to record questions and comments that are submitted to the project team outside of events/online consultation forum.

TRADITIONAL MEDIA

Traditional media channels (radio, print) will be used as appropriate to keep the public informed as project milestones are achieved and to invite participation in specific phases of engagement.

4.2 MILESTONE-SPECIFIC TOOLS

OPEN HOUSES: ONLINE AND IN-PERSON

Community information events will be held to share updates at key stages and to collect feedback at critical decision points. Events will be offered both in-person at a local venue, as well as online for those who prefer to participate that way. Events will include information boards, feedback opportunities and will be staffed by CVRD and project team members. Questions/comments will be recorded and will form part of the formal record of engagement.

PROMOTIONAL MATERIALS

Using tools like advertising or handouts, promotional materials will be used as needed to highlight engagement opportunities for the public.

DIRECT MAIL

To ensure that critical information reaches all properties within the proposed service area, direct mail will be used. The CVRD has already usSewer ed direct mail to share letters and newsletters about the proposed sewer extension project, generating good activity and feedback in previous outreach opportunities.

5.0 Outcomes and Products

PUBLIC CONSULTATION REPORT

The proceedings of consultation activities will be documented and available as part of the submitted draft addendum at the end of the LWMP process. It will include:

- An overview of consultation activities related to each phase of the engagement process
- Samples of informational materials provided to the public and stakeholders
- Record of reach and participation
- Synopsis of feedback themes, trends and findings
- Summary of incorporation of public feedback in the final plan

COMMENT LOG/INPUT RECEIVED

All input/comments received, including comment logs, will be provided to the CVRD in their raw form at project end, to form part of the official record of the public consultation process.

Associated Engineering | 75 YEARS

SUMMARY OF THE 2014-2016 SOUTH REGION STAGE 1/2 LWMP PROGRAM

Comox Valley Regional District

SEPTEMBER 2022

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1 INTRODUCTION

1.1 Overview

Baynes Sound is one of the most productive ecosystems on the east coast of Vancouver Island, with significant recreational, cultural, and economic value. Protection of shellfish in and around Baynes Sound is of key importance to the local economy, a significant portion of which is based on the harvesting of shellfish resources.

For many years, there has been concern that a large number of on-site septic systems in the waterfront communities of Royston and Union Bay were failing and impacting the water quality of Baynes Sound. Evidence indicating problems with the effectiveness of these systems due to system age, environmental constraints, lot size and density has resulted in significant focus over the years to deliver improved wastewater services to these communities.

The CVRD's planning efforts, studies and investigations have established a sizeable body of knowledge about the wastewater management needs of the South Region, with work dating back over 30 years. The following list provides a summary of reports and investigations that had been conducted prior to initiating the Stage 1/2 South Region LWMP process in 2014:

1. Integrated Resource Recovery Interim Report: South Region Project, Farallon Consulting, August 2012
2. South Region Sewage Collection, Treatment and Discharge Study, Associated Engineering, April 2011
3. Comox Valley Regional District Regional Growth Strategy, Bylaw No. 120, 2010
4. Comox Valley Regional District Sanitary Sewer Master Plan, McElhanney Consulting, 2010
5. Royston/Union Bay Sewage Collection, Treatment and Discharge Study Update, Koers and Associates, November 2009
6. Royston and Union Bay Sewage Study: Effects of Onsite Sewage Systems on Water Quality, Payne Engineering Geology, May 2009
7. Royston/Union Bay Sewage Collection, Treatment and Discharge Study, Koers and Associates, September 2005
8. Royston/Union Bay Liquid Waste Management Plan Comparative Evaluation of Integrated Wastewater Management Alternatives, Komex International, January 2005
9. Royston Union Bay Sewage Project: Feasibility of Soil Based Treatment of Wastewater, Payne Engineering Geology, July 2005
10. Marine Disposal Feasibility Report, Royston/Union Bay Sewage Collection, Treatment and Disposal Study, Komex International, December 2004
11. Royston Liquid Waste Management Plan Stage 1, Anderson Civil Engineering, May 2002
12. Union Bay Liquid Waste Management Plan Stage 2 Report, February 2001
13. Review of Secondary Wastewater Treatment Technologies for Union Bay, Leslie Consultants, December 2000
14. Union Bay Liquid Waste Management Plan Stage 1 Report - September 1998
15. Comox-Strathcona Electoral Area A Liquid Waste Management Plan Stage 1, Stanley Associates Engineering, April 1996
16. Impact of Connecting Cumberland and Royston to the Comox-Strathcona Regional Collection System and Wastewater Treatment Plant, NovaTech Consultants, May 1992
17. Royston, Union Bay Sewerage System Preliminary Review, Associated Engineering, December 1979

In 2013, a $15 million grant from the Gas Tax Strategic Priorities Fund (SPF) was allocated towards construction of a wastewater collection system and treatment facility for the area in partnership with the Village of Cumberland (Cumberland) and the K'ómoks First Nation (KFN).

In 2014, following the allocation of SPF funding, the Comox Valley Regional District (CVRD) retained Associated Engineering (B.C.) Ltd. (AE) to complete a combined Stage 1 and 2 Liquid Waste Management Plan (LWMP) and an Environmental Impact Study (EIS) for the South Region. The overall objective of the LWMP was to evaluate wastewater management alternatives and with the help of the Technical Advisory Committee (TAC) and Public Advisory Committee (PAC), establish a firm direction for the CVRD to move forward with a sewage collection, treatment and disposal system for the CVRD's South Region. Through the evaluation of options, the LWMP eventually focused on the implementation of the South Sewer Project (SSP), which included construction of a new collection system, treatment facility, and conveyance infrastructure which would transport treated wastewater to the CVRD's regional Comox Valley Water Pollution Control Centre for discharge through the existing outfall off Cape Lazo. The concept of a new outfall into Baynes Sound was not supported by the LWMP Public and Technical Advisory Committees.

At the time of study, the communities within Electoral Area A that were included in the South Region LWMP were:

- Royston
- Union Bay

Note: the Village of Cumberland was undergoing a separate LWMP to the CVRD's South Region LWMP, but, were included as project partners in the South Sewer Project and were thus included in the CVRD's overall plan. K'ómoks First Nation (KFN) was also partner in the South Sewer Project.

In 2015, the LWMP development process was paused, and in 2016, after an unsuccessful referendum on the South Sewer Project, it was evident that there was a need to pivot the LWMP process. This summary memorandum generally covers the work performed between July 2014 to March 2015.

In 2022, the Sewer Extension South Project is now being developed with a new lens. The new plan will be developed in cooperation with the KFN as a key partner and will support environmental protection of Baynes Sound. The proposal builds on the options evaluated through the South Region LWMP, supporting discharge to the environment via the existing outfall at Cape Lazo, while providing greater cost efficiencies through a partnership with the Comox Valley Sewer Service.

1.2 Objectives

The objectives of this summary memorandum are as follows:

- Provide the newly formed LWMP TAC/PAC with a summary of the 2014-2015 LWMP Stage 1 and 2 efforts for the South Region, including Royston, Union Bay and Cumberland.
- Provide assistance to the CVRD and new TAC/PAC members by providing the history/context for LWMP efforts that are being restarted in 2022.

2 DESCRIPTION OF 2014-2015 LWMP PROGRAM

2.1 Objectives

The LWMP process is normally divided into three stages. Stage 1 involves high-level investigations that examine the current wastewater management strategies. Stage 2 uses information developed during Stage 1 as well as supplemental studies to evaluate specific questions related to future wastewater management strategy alternatives. And finally, Stage 3 uses the information developed in both Stage 1 and Stage 2 to establish and advance the implementation plan for the communities preferred wastewater management strategy. The 2014-2015 South Region LWMP process summarized in this report was being developed as a combined Stage 1/2 process, relying on the previous planning work that had already been undertaken.

The objective of the 2014 Stage 1/2 South Region LWMP process was to develop an overall plan for municipal wastewater management through adequate public consultation that protects public health and the environment. Additional objectives of the LWMP were to address topics such as water conservation, climate change adaptation, sustainable financial management, and resource and energy recovery. The public consultation portion of the LWMP aimed to provide adequate consultation of stakeholders, general public, and local First Nation communities to facilitate the development of community acceptance and ownership.

As part of the Stage 1/2 South Region LWMP, an environmental impact study (EIS) of the receiving environment was initiated. EIS investigations, which were largely focused on the shortlisted wastewater management scenarios and supported the analyses of options for the discharge of treated wastewater to the environment.

2.2 Regulatory Requirements

2.2.1 Provincial Regulations

The regulatory landscape for wastewater collection, treatment, and management in British Columbia is somewhat complex. In 2014, there were two different pathways for a local government to obtain a formal authorization for a return of treated effluent to the environment from the British Columbia Ministry of Environment (BC MOE). Note this process is generally the same in 2022.

Municipal Wastewater Regulation (MWR)

The MWR Registration pathway requires the discharger be fully compliant with the MWR. In order to register, the discharger must submit a formal detailed application for review and acceptance by BC MOE. Registration formally replaces any/all previous discharge permits.

- British Columbia Municipal Wastewater Regulation (MWR),
  - https://www.bclaws.gov.bc.ca/civix/document/id/lc/statreg/87_2012

Liquid Waste Management Planning Process (LWMP)

- Liquid Waste Management Process
  - https://www2.gov.bc.ca/gov/content/environment/waste-management/sewage/liquid-waste-management-plans

The LWMP process is intended to provide a more flexible pathway to an Owner for formal authorization. As mentioned in **Section 2.1**, it is a three-stage planning process, that requires the Owner to form a Technical Advisory Committee (TAC) and Public Advisory Committee (PAC) and work with these committees to form a waste management plan that is tailored to the community. It can also provide a community with additional time to achieve

full compliance with the MWR, if necessary and beneficial. Acceptance of a Stage 3 LWMP by the BC MOE grants the Owner an Operational Certificate.

One added advantage of an approved LWMP is that it provides the local government the necessary authority to move forward with plan implementation (Section 24(7) of the Environmental Management Act) without requiring further elector assent or approval. By contrast, registration under the MWR does not provide the same authority, therefore an assent process in alignment with the *Local Government Act* is required to borrow funds and construct new liquid waste infrastructure.

The CVRD elected to follow the LWMP process, as it provided the community with more flexibility and the ability to manage community-specific priorities of the South Region.

2.2.2 Federal Regulation

The Wastewater Systems Effluent Regulation (WSER), was first introduced in 2012, and came into effect in 2015. The requirements set out in WSER impact the majority of wastewater dischargers in Canada, including the CVRD, and require that all facilities meet at least secondary treatment standards.

- https://laws-lois.justice.gc.ca/PDF/SOR-2012-139.pdf

The WSER includes some treated effluent discharge criteria that are not contained in the provincial MWR.

2.2.3 Other Considerations

Vancouver Island In-Stream Phosphorus Objective

In 2012, the BC MOE published a Vancouver Island Phosphorus Objective for streams. This objective sets an average allowable limit of 0.005 mg/L, and a maximum no greater than 0.010 mg/L for Total Phosphorus levels in Vancouver Island streams during the summer season (May 1st to September 31st). The objective of the guidance is to control excessive nutrient input and resulting impact to steams.

- https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-reference-documents/phosphorous_management_vi_streams_guidance_2014.pdf

2.3 Flows and Loads

2.3.1 Flows

Population projections were made to the year 2060, using a steady annual growth rate of 2.7% for the following areas:

- Royston
- Union Bay
- Village of Cumberland

At the time, 2006 BC Statistics were used to estimate the present-day population at the time (to 2010) for the communities of Royston and Union Bay, while 2010 BC Statistics were used for the Village of Cumberland. The South Region LWMP considered that development projects on the horizon would increase the contributing population, potentially in the order of 9900 units from 2010 to 2030.

For the South Region LWMP, flows were projected from 2010 to 2060. The average dry weather flows were developed based on a per-capita flow rate of 240 L/cap/day. Since municipal wastewater flows have daily and seasonal variation, a variety of "peaking factors" are used to estimate the range of municipal wastewater flows that the system will need to manage, as follows:

- Average Dry Factor 1.25
- Maximum Month Factor 1.5
- Maximum Day Factor (2010) 2.0
- Maximum Day Factor (2035) 1.9
- Maximum Day Factor (2060) 1.8
- Peak Hour Factor 3.0

Inflow and Infiltration (I&I) is a key component contributing to peaking factors. I&I is classified as groundwater and/or stormwater that enters into a wastewater collection system. This can occur through groundwater seeping into broken sewer pipes and stormwater entering through improper connections from sump pumps, roof drains, yard drains, manhole lids, and catch-basins. Projected wastewater flows for the South Region collection included I&I allowances in accordance with the guidelines provided in The Master Municipal Construction Document Associated (MMCD).

In 2014, the Village of Cumberland was underway to separate stormwater and wastewater collection systems in an effort to reduce I&I which was reported to be as high as 0.17 L/s/ha. Conversely, a Royston/Union Bay study conducted by Koers and Associates (2005) assumed I&I for the design of the wastewater collection system was a conservative estimate of 0.06 L/s/ha.

2.3.2 Loads

The characteristics of the wastewater were estimated based on the product of the 2035 Average Dry Weather Flow or the 2035 Maximum Month Flow by the typical constituent generation rate (Metcalf & Eddy, 2003). **Table 2-1** shows the assumed wastewater quality characteristics developed in 2014.

Table 2-1
Estimated Wastewater Characteristics

Constituent	Unit	During Average Dry Weather Flow Conditions	During Wet Weather Flow Conditions
5-day biochemical oxygen demand (BOD_5)	mg/L	335	280
Chemical oxygen demand (COD)	mg/L	735	610
Total suspended solids (TSS)	mg/L	370	305
Ammonia nitrogen (NH_3-N)	mg/L	28	24
Total phosphorus (TP)	mg/L	12	10
Temperature	°C	20	12

2.3.3 Biosolids Production

For the purpose of the South Region Stage 1/2 LWMP, it was assumed that the dewatered solids produced from treatment would be trucked to the CVRD's Skyrocket Composting facility. At the time, CVRD was readying to expand the Skyrocket facility to provide capacity for growth.

2.4 Environmental Impact

As part of the LWMP development, an important requirement from the BC MOE was that an Environmental Impact Assessment be completed prior to any authorization being granted. The South Region project was considered to be a "greater risk" project according to the Ministry guidelines since the location of the treatment effluent discharge would be in a sensitive receiving environment, in proximity to shellfish and commercial fishing. This required the EIS to be undertaken in two stages.

The intent of the first stage (Stage 1) was to review existing information and develop recommendations for site-specific data collection and analysis. After completion of a Stage 1 assessment, the intention would have been for the BC MOE to provide comment and confirm the scope of the Stage 2 investigation. The key outcome of the Stage 2 EIS would have been to determine whether or not the level of treatment specified in the MWR was adequate to protect human health and the environment. If not, recommendations on additional treatment or other mitigation measures would be made.

During the South Region LWMP, neither a Stage 1 nor Stage 2 EIS was completed due to the cancellation of the program. Notwithstanding, the work that was completed can be grouped into two categories:

1. Investigations that supported the analyses of the options for the discharge of treated wastewater to the environment, which are presented in **Section 3.** The major environmental technical memorandums that were completed during the LWMP work are summarized in **Table 2-2.**
2. Initial preparations for the Stage 1 Environmental Impact Study (EIS) for the preferred option. This work was only completed to a 30% level before the program was cancelled. The background data collected and reviewed prior to cancellation included the following:
    - Geospatial information for mapping sensitive areas (eelgrass beds, shellfish tenures, herring spawning areas, etc.).
    - Water quality data from shellfish harvesting areas collected by Environment Canada.
    - Literature on the local shellfish industry.
    - Previously completed environmental assessment and monitoring reports from the Comox Valley Water Pollution Control Centre (CVWPCC).
    - Fisheries data.

Table 2-2
Summary of Environmental Assessment Work undertaken during the 2014-2015 LWMP process

Document Date	Title	Key Findings
November 2014	South Region Liquid Waste Management Plan Discharge-to-Ground Options Technical Memorandum	Led to the decision to carry out field investigations.
April 2015	Feasibility of Continuing to Use Private Septic Systems as Primary Wastewater Strategy Technical Memorandum	Led to the TAC/PAC recommending that CVRD not pursue an "enhanced status quo" option that would see private on-site systems remain as the wastewater treatment system in the region. The "enhanced" aspect is that on-site systems would be subject to a new bylaw that would require higher construction and maintenance standards. Click here for a link to the memorandum.
April 2015	Southern Region Liquid Waste Management Plan Subsurface Discharge Options Technical Memorandum	The TAC/PAC chose not to proceed further with this option because the Vancouver Island Health Authority expressed concerns over potential future effects on drinking water wells.
November 2015	Advantages and Disadvantages of Cape Lazo Discharge Options and Regulatory Requirements for CVWPCC Upgrades Technical Memorandum	Led to the recommendation that a single outfall combining the CVWPCC and new South Region would be preferred over separate outfalls based on a combination of lower ecological footprint, regulatory risk, and operation, maintenance, and monitoring costs.
May 2016	South Region Wastewater Project Environmental Overview Study: Treated Effluent Main and Water Reclamation Facility Site	Was completed to provide a resource for future discussions regarding the selected option

2.5 Advisory Committees and Public Outreach

Input from local First Nations, stakeholders, and the local public was sought to guide the development of the LWMP so that it would be in-line with the community's goals and objectives and accepted by the community as a whole. A Technical Advisory Committee (TAC) and a Public Advisory Committee (PAC) were established for this purpose. (Refer to **Appendix A** for a summary of the TAC and PAC members during the 2014 South Region LWMP.)

In addition to the TAC/PAC, a public consultation program was undertaken through multiple avenues. Public events were held where members of the general public viewed information regarding the LWMP, and interacted with the project team. Information was also exchanged through the CVRD's LWMP website (www.comoxvalleyrd.ca under Departments – Sewer Services – Regional Sewer Initiatives – South Region) where meeting minutes and newsletters were made available, comment forms submitted to southsewer@comoxvalleyrd.ca, and PlaceSpeak (www.placespeak.com/southregionlwmp), an online public forum. A comprehensive summary of the public engagement efforts undertaken to support 2014-15 LWMP efforts is available on the CVRD's website (click here for link).

2.6 Timeline of Meetings

Five joint TAC/PAC meetings were held as part of the LWMP Stage 1/2 process. A summary of the meeting timelines is provided in **Table 2-3**. The recommendations from the PAC and TAC were directed to the Steering Committee (SC).

Table 2-3
Summary of TAC/PAC Meetings during the 2014 South Region LWMP

Meeting Title	Meeting Date	Objectives
TAC/PAC Meeting #1	July 14, 2014	The purpose was to discuss the LWMP committee's terms of reference and provide an overview of the LWMP process and environmental impact study.
TAC/PAC Meeting #2	September 9, 2014	The purpose was to brainstorm and gather feedback from the TAC/PAC membership to assist AE in developing a long list of options to initiate the screening and evaluation process.
TAC/PAC Meeting #3	October 30, 2014	The purpose was to present an overview of the screening and comparative evaluation process, review the raw elements, and undertake a discharge option location screening exercise.
TAC/PAC Meeting #4	January 13, 2015	The purpose was to present an overview of the updated screening table of the short list of options and undertake a scenario development exercise.
TAC/PAC Meeting #5	Part a March 4, 2015 Part b March 5, 2015	Part a The purpose was to present the results of previous investigations to the committees and to engage the committee members in the triple bottom line analysis (TBL). The results of the TBL analysis were then carried forward to day two of the workshop, which included a TBL plus risk (TBL + R) analysis. Part b On Day two, the objective was to review the TBL analysis conducted on the previous day for the four scenarios, and to add the risk factors to the analysis. The committee would then be able to make a recommendation to the steering committee for a preferred south region wastewater management solution.

3 DESCRIPTION OF 2016 LWMP OPTIONS ANALYSIS

3.1 Overview of the Triple Bottom Line Methodology and Glossary of the Options

The desired goal for the Stage 1/2 South Region LWMP was for the CVRD, stakeholders, and the public to have confidence that all viable alternatives have been considered and evaluated in an unbiased, understandable, documented and defensible manner. The purpose of the process utilized throughout the CVRD's South Region LWMP was to conduct a thorough analysis, ultimately resulting in a preferred wastewater management scenario. The following sequence of events describes the step-wise process used to select the preferred scenario:

1. Achieve an understanding of the framework (i.e. the provincial and federal regulations) applicable to the LWMP
2. Collect the raw elements (including interests, ideas, values, and risks)
3. Organize the raw elements into discharge options for the proposed wastewater treatment facility (long list of options)
4. Identify any 'show stoppers' and screen the discharge options
5. Develop the short list of scenarios (a scenario is comprised of a collection and conveyance system, a wastewater treatment system, potential IRR opportunities, and a discharge location)
6. Conduct a comparative evaluation for the short-listed scenarios
7. Select the preferred wastewater management scenario

For Step 6, a structured Triple Bottom Line + Risk (TBL + R) evaluation process was used to optimize the delicate balance between social, environmental and economic considerations.

The TBL+R process is a comparative evaluation framework that combines familiar multi-criteria analyses with standard risk assessment methodologies. The key strength of this approach is the discussion it generates over a series of interactions between attributes, which ultimately enables stakeholders, First Nations, and the general public to develop evaluation criteria, weight these criteria according to their values, and then make comparisons between alternatives based on the information the analysis provides to them. The output from the TBL+R process illustrates the relative ranking of the alternative scenarios in a consistent and understandable format that accurately reflects the community's values. This approach also encourages contributions and input that will directly inform the decision-making process.

For each option, quantifiable metrics were developed (e.g. how many kilometers a truck is going to need to drive). From here, for each metric, the team developed weightings in a collaborative approach using input from the TAC/PAC. A score was assigned to each of the metrics for each option, and from here, a final score was attributed to each option. In addition, a risk assessment of the wastewater management scenarios was subsequently conducted to understand how the consideration of risk affected the TBL ranking.

The process is further illustrated by the graphic included in **Appendix B**.

3.2 Long List Discharge Options Overview

Nine wastewater discharge options were developed in 2014, which were based on previous studies as well as feedback received from the TAC/PAC. The discharge options are summarized in Column 1 of **Table 3-1**.

In order for high-level screening of the long list, each of the discharge options was evaluated based on screening categories. A detailed colour-coded table was developed for the purpose of documenting the high-level evaluation. The following categories were reviewed:

- Compliance with the MWR
- Other regulatory implications
- Wastewater treatment implications
- Social community aspects
- Archaeological considerations

Column 2 of **Table 3-1** summarizes the overall findings and decision made for each of the options on the long-list of discharge options. From the nine different discharge options, four scenarios were developed (Scenarios A through D).

Table 3-1
Summary of discharge options and screening exercise results

Discharge Option	Decision
1. Discharge to Baynes Sound	- Developed into Scenario A
2. Discharge to Strait of Georgia beyond Comox Bar (Sandy Island Marine Park)	- Developed into Scenario B
3. a. Discharge to Cape Lazo	- Eliminated by the Steering Committee due to redundancy of having twin outfall pipes side by side
3. b. Treatment in the South Region, conveyance of treated effluent to the CVWPCC to be combined with final effluent discharge to the outfall off Cape Lazo	- Developed into Scenario C
4. Connect to the existing Comox Valley Water Pollution Control Centre (CVWPCC)	- Although this option was under consideration by the TAC/PAC, it was eliminated by the Steering Committee because it involved conveyance of raw wastewater across the estuary - The governance of Comox Valley Sewerage Service did not have provision for sewerage service to Electoral Area A or to the Village of Cumberland. Board support to an amendment to the governance structure would have been required
5. Discharge to the Trent River or to Washer / Hart Creek	- Eliminated given the inability to meet the dilution requirements as set in the MWR and the In-stream Phosphorus objective set by the MOE
6. Ground Discharge to a single location	- Eliminated due to the insufficient land availability and capacity
7. Ground discharge to multiple locations	- Eliminated due to inadequate soil characteristics and water table conditions
8. Discharge to sub-surface ground (i.e. injection)	- Developed into Scenario D
9. Management and improvement of existing on-site systems	- Eliminated based on the feasibility of upgrading the existing on-site systems for full compliance

3.3 Short List Scenarios Overview

The short-listed discharge options were developed into the scenarios shown in **Table 3-2**. For all scenarios, collection and conveyance would be through eight pumps stations, separated into three phases.

The discharge locations for the shortlisted options are shown in **Figure 3-1.**

On the treatment side, all treatment options would be sited in the South Region and flows from the Village of Cumberland were included in the planning.

From a resource recovery perspective, all options could consider an energy recovery system and reuse of treated/reclaimed effluent.

Table 3-2
Shortlisted Scenarios for LWMP

	Scenario A: Discharge to Baynes Sound	Scenario B: Discharge to the Strait of Georgia	Scenario C: Discharge to Cape Lazo	Scenario D: Discharge to Ground at Depth
Treatment	- Advanced secondary treatment to produce high quality effluent	- Secondary treatment to meet the regulatory effluent requirements	- Advanced secondary treatment to produce high quality effluent	- Advanced secondary treatment to produce high quality effluent
Discharge	- Discharge to Baynes Sound	- Discharge to the Strait of Georgia beyond Comox Bar (Sandy Island Marine Park)	- Discharge to Cape Lazo through a shared/upgraded outfall with the CVWPCC	- 6 discharge wells, with approximately 300 m to 600 m spacing between each well
Resource Recovery Opportunities	- Beneficial reuse of biosolids from SkyRocket composting facility	- Beneficial reuse of biosolids from SkyRocket composting facility	- Beneficial reuse of biosolids from SkyRocket composting facility	- Beneficial reuse of biosolids from SkyRocket composting facility

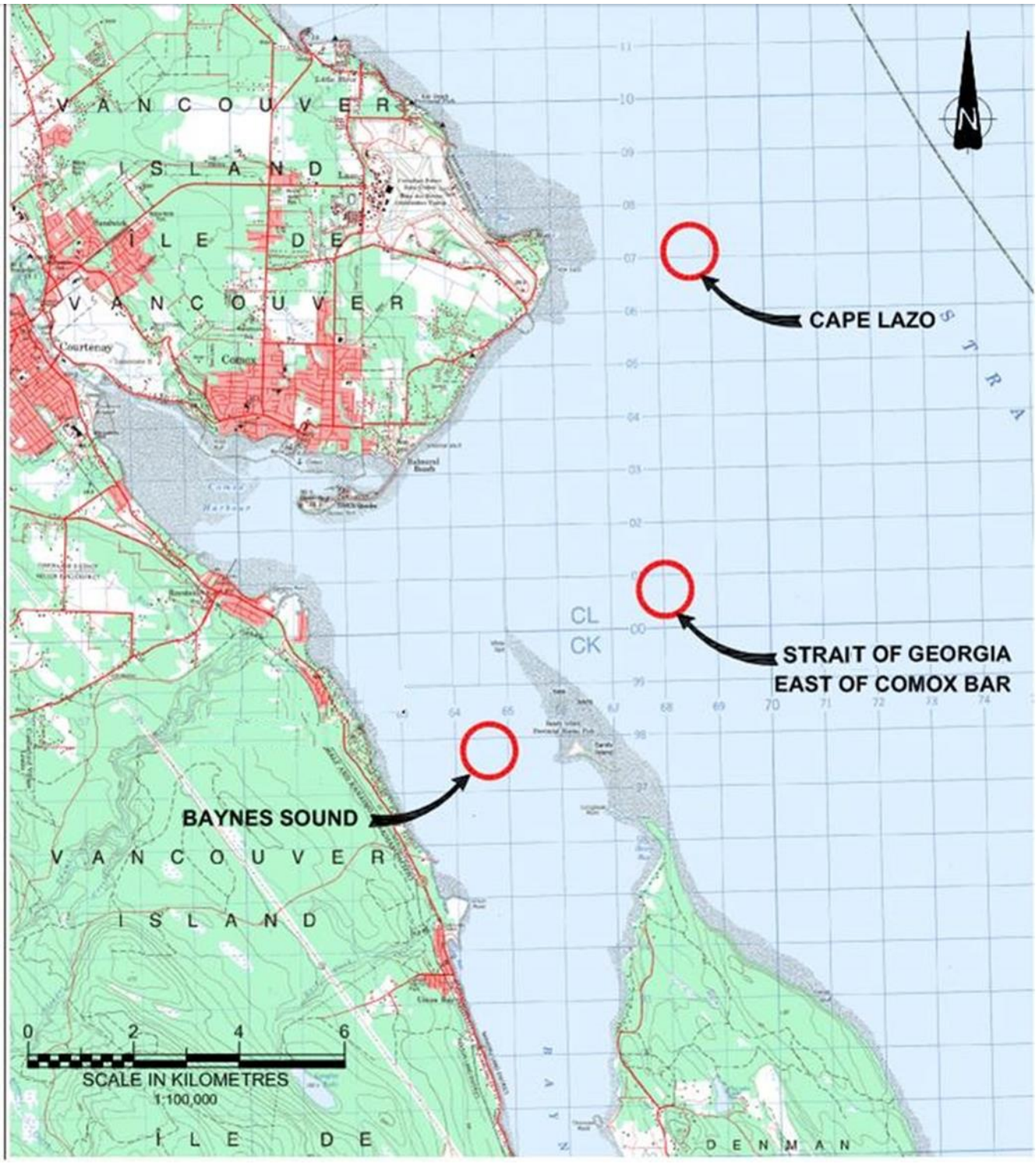


Figure 3-1
Marine Discharge Locations for the Short-Listed Scenarios (Scenario A = Baynes Sound; Scenario B = Strait of Georgia beyond Comox Bar (Sandy Island Marine Park); Scenario C = Cape Lazo; Scenario D = not indicated (ground discharge)

3.4 Evaluation and Selected Scenario

The TBL method required that quantifiable metrics be developed for use in the evaluation of options. **Table 3-3** summarizes the quantifiable attributes that were utilized in the Stage 1/2 South Region LWMP.

Table 3-3
Summary of Quantifiable Metrics Developed for the TBL Analysis

TBL Category	Quantifiable Attribute	Method of Quantification	Units
Environmental	Carbon footprint	Green House Gas (GHG) emissions associated with operations over an analysis horizon from 2019 to 2060	tonnes of Carbon Dioxide (CO_2) emissions
	Receiving environment loading	The sum of the anticipated ratio of the effluent to the influent concentrations for Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), total phosphorus, and total nitrogen	Unitless
	Effluent dilution potential	The dilution ratio in the receiving environment at the edge of the Initial Dilution Zone (IDZ) as defined by the MWR	Dilution : 1
	Sensitive land and foreshore disturbance	Disturbed terrestrial and foreshore area in locations classified as 'sensitive ecosystems'	Area in m^2
Social	Residential area truck traffic	The number truck trips associated with transporting solids to the SkyRocket facility with operations over an analysis horizon from 2019 to 2060	Number of trucks
Economic	Life cycle costs	Total net present value of capital and O&M costs, as well as revenues from IRR opportunities to year 2060	2015 dollars
	Initial Phase 1 capital costs	Phase 1 (2018) Capital Costs for property, collection, treatment, and outfall	2015 dollars

In addition to the quantifiable attributes within the TBL framework, six risk factors (RF) were developed to address the stakeholder's concerns:

- RF 1: Need to address viruses in the short term
- RF 2: Need to address viruses in the long term
- RF 3: Need to address trace organic compounds in the long term
- RF 4: Need to address microplastics in the long term
- RF 5: Regulatory rejection
- RF 6: Schedule delay

For each Scenario, the RFs were evaluated as the product of the probability of such an event occurring and its severity should the event occur. The scoring included input from experts in the field (Brian Kingzett – Vancouver Island University) as well as local knowledge provided by the TAC/PAC members.

3.4.1 Weightings

Once the quantified attributes and the risk factors were presented to the TAC/PAC, the committee participated in an exercise that yielded an agreed-upon weighting for each of the criteria. The TAC/PAC were instructed to rate the main attribute (i.e. Environmental, Social, Economic, Risk) that is of most importance at 100. All other main attributes were to be rated in relation to the most important one. Similarly, within each main attribute, the sub-attribute that is of most importance was rated at 100. All remainder sub-attributes were weighted in relation to the most important sub-attribute.

Table 3-4 summarizes the weighting of the main attributes and the sub-attributes as adopted by the TAC/PAC. The Environmental and Risk categories were of most importance to the TAC/PAC. Within the Environmental Category, the Receiving Environment Loading was of the most importance.

Table 3-4
Summary of Weightings

Main Attribute	Sub-Attribute	Weighting	
Environmental		**100**	
	Carbon footprint		50
	Receiving environment loading		100
	Effluent dilution potential		100
	Sensitive land disturbance		60
Social		**40**	
	Residential area truck traffic		100
Economic		**70**	
	Life cycle cost (2018 to 2060)		100
	Initial capital cost (2018)		100
Risk		**100**	
	Risk Factor Consequence		100

3.4.2 Results

Figure 3-2 and **Figure 3-3** show the results of the TBL assessment without risk, and with risk, respectively. Risks associated with Scenario D were determined to be inherent (i.e. risks that could not be mitigated by design) and as a result, Scenario D was not shown in **Figure 3-3**, and this scenario was eliminated.

In addition, for the risk analysis (**Figure 3-3**), the Social category was removed (i.e. a total weighting = 0). Although the number of truck trips associated with Scenario B was greater than that associated with the remainder of the scenarios, the number of truck trips for all scenarios was agreed to be inconsequential over a time period of one year.

The modifications to the attributes and weightings resulted in a considerable change from the analysis that excluded consideration of risk. Based on the weightings agreed upon by the TAC/PAC, and the changes applied to the analysis, Scenario C (Discharge to Cape Lazo) had the highest score. This is attributed to the favourable scoring in the risk

category (shown by the size of the Red-coloured bar) and the Environmental Category (shown by the size of the Green-coloured bar).

Scenario A (Baynes Sound) scored highest until inherent risks were considered. The TAC/PAC expressed considerable concern over the short- and long-term risk to the shellfish industry in Baynes Sound including the potential for future international regulations that could hurt the shellfish industry. This was a key contributor to the collapse of social license for this option.

Notwithstanding the addition of the Risk category to the analysis (which was the most detrimental to Scenario A, the total score associated with Scenario A (discharge to Baynes Sound) trailed only slightly behind Scenario C. This is owing to Scenario A being the most economically feasible. Finally, Scenario B (discharge to the Strait of Georgia) had the lowest score due to its lower economic feasibility, and increased risk associated with the scenario.

On March 5, 2015, after five meetings over seven months, the TAC and PAC recommended discharge to the Strait of Georgia off Cape Lazo through a combined outfall with the existing Comox Valley Waste Pollution Control Centre (CVWPCC) as the preferred solution (Scenario C).

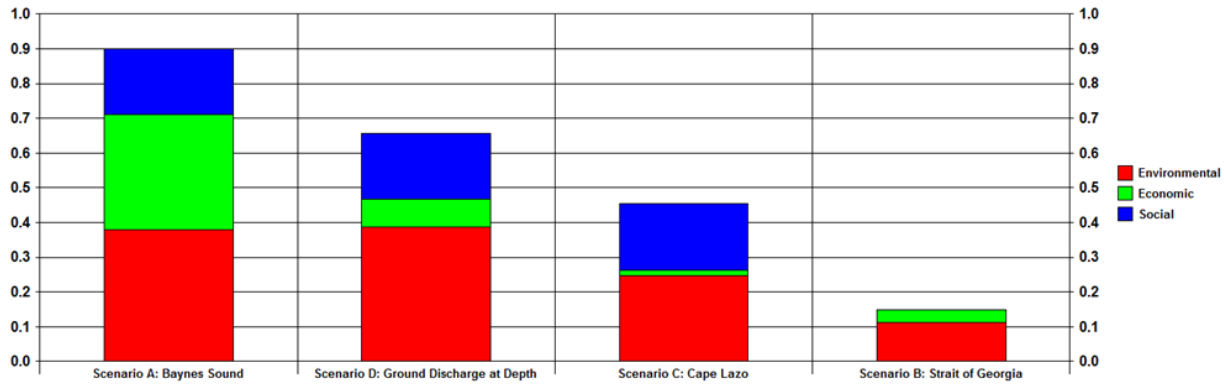


Figure 3-2
TBL Results (without risk metrics)

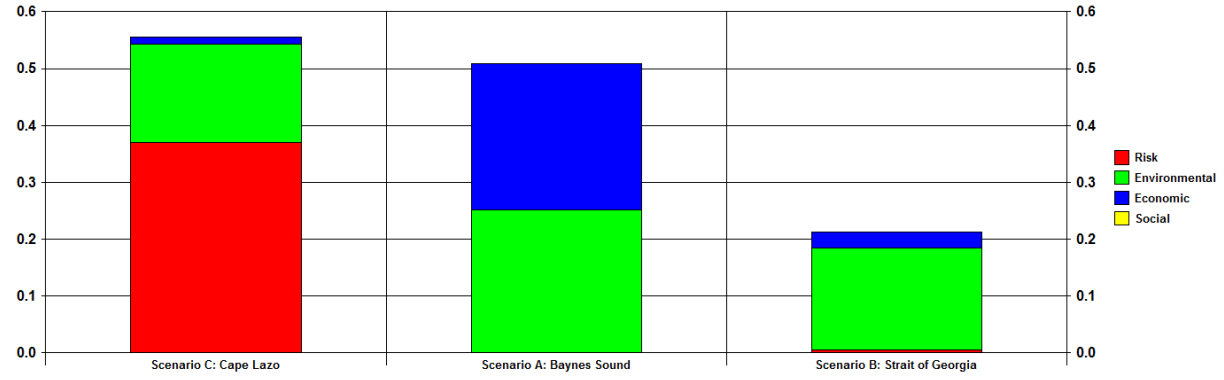


Figure 3-3
TBL Results (with risk metrics)

3.5 Capital Cost Overview

As part of the TBL analysis, capital and life-cycle costs for the different scenarios were developed for the four scenarios (**Table 3-5**). The estimates were developed in $CAD 2015 and at the time, it was recognized that the level of accuracy for the cost estimates was +/- 30%. Due to this level of precision, the attributes under the Economic category were determined to be not statistically different among the four scenarios. This resulted in a slightly lower weighting of the Economic category relative to the Environmental and Risk categories.

Table 3-5
Capital and Lifecycle Costs Developed during the 2014-2015 LWMP TBL Evaluation ($CAD 2015)

Criteria	Units	Scenario A	Scenario B	Scenario C	Scenario D
Life cycle cost (2018 to 2060)	2015 $	$163,910,000	$179,100,000	$183,320,000	$176,180,000
Initial capital cost (2018)	2015 $	$49,700,000	$58,850,000	$57,890,000	$57,770,000

4 TERMINATION OF LWMP PROCESS

Despite the collaborative approach taken on the LWMP, on June 18, 2016, a referendum for the South Sewer Project failed to achieve support of the electorate.

Following the referendum, extensive collaboration with the Comox Valley Sewage Commission has resulted in a revised proposal whereby untreated wastewater from the south region would be conveyed into existing Comox Valley Sewer Service infrastructure for treatment at the Comox Valley Water Pollution Control Centre and discharge via the Cape Lazo outfall, thus eliminating the need for a separate treatment plant in the south.

Concurrent to these efforts, the Comox Valley Sewer Service is part way through a LWMP process, being executed as a combined Stage 1 and 2 process. The final LWMP Stage 1 and 2 report outlining the preferred options for conveyance, treatment and resource recovery is expected to be submitted for provincial review this fall.

Through consultation with the BC Ministry of Environment and Climate Change Strategy, the decision was made to consider the extension of sewer services south through an addendum to the Comox Valley Sewer Service LWMP that is currently underway.

CLOSURE

This report was prepared for the Comox Valley Regional District.

The services provided by Associated Engineering (B.C.) Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,
Associated Engineering (B.C.) Ltd.

Sylvia Woolley, M.A.Sc., P.Eng.
Wastewater Process Engineer

Tom Robinson, M.A.Sc., P.Eng.
Project Manager

TR/fd

APPENDIX A – TAC/PAC MEMBERS

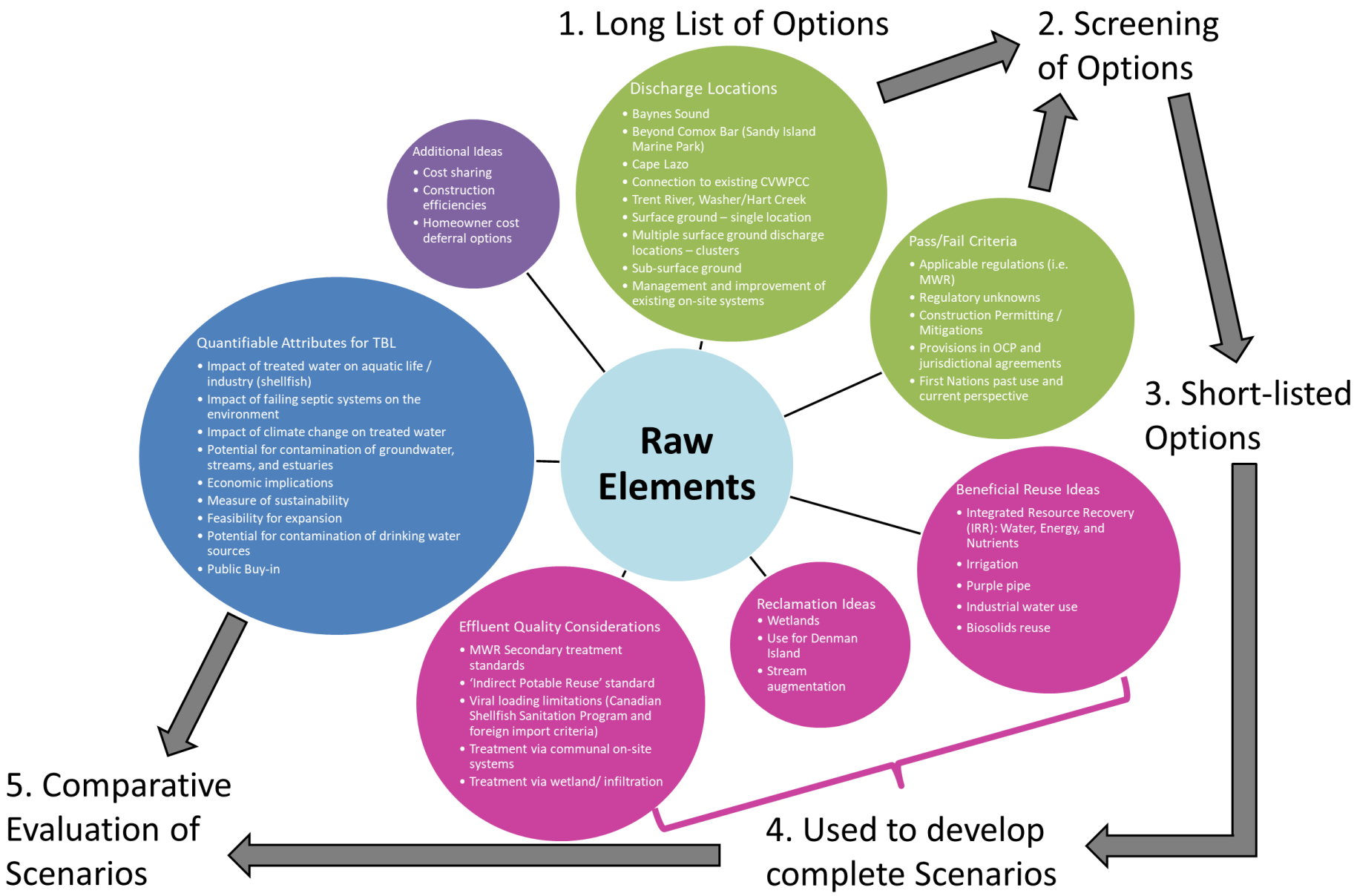
Table A-1
List of Technical Advisory Committee Members

Organization	Appointed	Alternate
Union Bay Improvement District	Alan Webb	Kevin Douville
Ministry of Community, Sport, and Cultural Development	Catriona Weidman	Brian Bedford
Island Health	David Cherry	Gary Anderson
Fisheries and Oceans Canada	Juanita Rogers	
Ministry of Environment	Kirsten White	
City of Courtenay	Lesley Hatch	Craigh Parry
Village of Cumberland	Rob Crisfield	Sundance Topham
Town of Comox	Shelly Ashfield	Glenn Westendorp
K'ómoks First Nation	Pam Shaw	Wilma Mack/Nicole Rempel
Island Trust	Rob Milne	Courtney Simpson

Table A-2
List of Public Advisory Committee Members

Organization	Appointed	Alternate
Resident, Royston	Alun Jones	
Resident, Union Bay	Anne Alcock	Bruce Livesey
Resident, Royston	Claudette Dlawse	
Comox Valley Environmental Council	Larry Peterson	
Underwater Harvesters Association	Grant Dovey	Mike Atkins
Friends of Baynes Sound Society	Phil Robertshaw	Norm Prince
BC Shellfish Growers Association	Roberta Stevenson	
Resident, Royston	Brigid Walters	
Resident, Kilmarnock, Union Bay	Susanna Kaljur	Rob Smith
Estuary Working Group	Wayne White	Bill Heath
Association of Denman Island Marine Stewards	Edina Johnston	
Resident, Denman Island	David Critchley	
Association of Denman Island Marine Stewards	Liz Johnson	David Graham

APPENDIX B – OVERVIEW OF THE SELECTION PROCESS GRAPHIC


1. Long List of Options
2. Screening of Options
3. Short-listed Options
4. Used to develop complete Scenarios
5. Comparative Evaluation of Scenarios
Raw Elements
Discharge Locations
• Baynes Sound
• Beyond Comox Bar (Sandy Island Marine Park)
• Cape Lazo
• Connection to existing CVWPCC
• Trent River, Washer/Hart Creek
• Surface ground – single location
• Multiple surface ground discharge locations – clusters
• Sub-surface ground
• Management and improvement of existing on-site systems
Additional Ideas
• Cost sharing
• Construction efficiencies
• Homeowner cost deferral options
Pass/Fail Criteria
• Applicable regulations (i.e. MWR)
• Regulatory unknowns
• Construction Permitting / Mitigations
• Provisions in OCP and jurisdictional agreements
• First Nations past use and current perspective
Quantifiable Attributes for TBL
• Impact of treated water on aquatic life / industry (shellfish)
• Impact of failing septic systems on the environment
• Impact of climate change on treated water
• Potential for contamination of groundwater, streams, and estuaries
• Economic implications
• Measure of sustainability
• Feasibility for expansion
• Potential for contamination of drinking water sources
• Public Buy-in
Beneficial Reuse Ideas
• Integrated Resource Recovery (IRR): Water, Energy, and Nutrients
• Irrigation
• Purple pipe
• Industrial water use
• Biosolids reuse
Reclamation Ideas
• Wetlands
• Use for Denman Island
• Stream augmentation
Effluent Quality Considerations
• MWR Secondary treatment standards
• 'Indirect Potable Reuse' standard
• Viral loading limitations (Canadian Shellfish Sanitation Program and foreign import criteria)
• Treatment via communal on-site systems
• Treatment via wetland/ infiltration

COMOX VALLEY REGIONAL DISTRICT
REPORT NUMBER: 18P-00276-00

DISCUSSION PAPER 3: FLOWS AND LOADS FOR THE SEWER EXTENSION SOUTH LWMP ADDENDUM & BACKGROUND AND PROVISIONS IN THE COMOX VALLEY SEWER SERVICE LWMP

CONFIDENTIAL

SEPTEMBER 21, 2022

1 DISCUSSION PAPER #3

1.1 BACKGROUND

The south region of the CVRD, part of Electoral Area A Baynes Sound, is located south of the City of Courtenay, bordering the waters of Baynes Sound. This area produces 70% of BC's cultured oysters and is a prized natural feature of the Comox Valley that holds important cultural, economic, environmental, and recreational value. There is no centralized sewage collection system in the area, and privately owned onsite septic systems are utilized for wastewater management. These systems are reported to have a history of failures with the potential to negatively impact the environment and public health.

In 2018, the Comox Valley Sewage Commission agreed in principle to the concept of receiving wastewater flows from portions of Electoral Area A and K'ómoks First Nation (K'ómoks), subject to the resolution of governance, terms of service, financial impact and regulatory considerations. In 2020, the Sewage Commission supported several recommendations to allow for the future receipt of Electoral Area A and K'ómoks wastewater into the existing Comox Valley sewer system.

Expansion of the area serviced by the Comox Valley Sewer Service (CVSS) would provide sewage services to existing developed areas in the south region, including Royston and Union Bay. The service expansion would also facilitate future sewer servicing for K'ómoks development lands in the south and Union Bay Estates (UBE), a comprehensive development area anticipated to include almost 3,000 future dwelling units and commercial, institutional, recreational and resort facilities. The servicing of these areas is anticipated to proceed in phases.

Currently, wastewater is conveyed from the City of Courtenay, Town of Comox, K'ómoks, and the Department of National Defence to the Comox Valley Water Pollution Control Centre (CVWPCC), where it receives secondary treatment followed by outfall discharge to open marine waters in the Strait of Georgia near Cape Lazo. The layout of the system is illustrated in Figure 1 below. The figure also includes the illustration of the proposed Sewer Extension South project, indicating how the south region could tie into the CVSS.

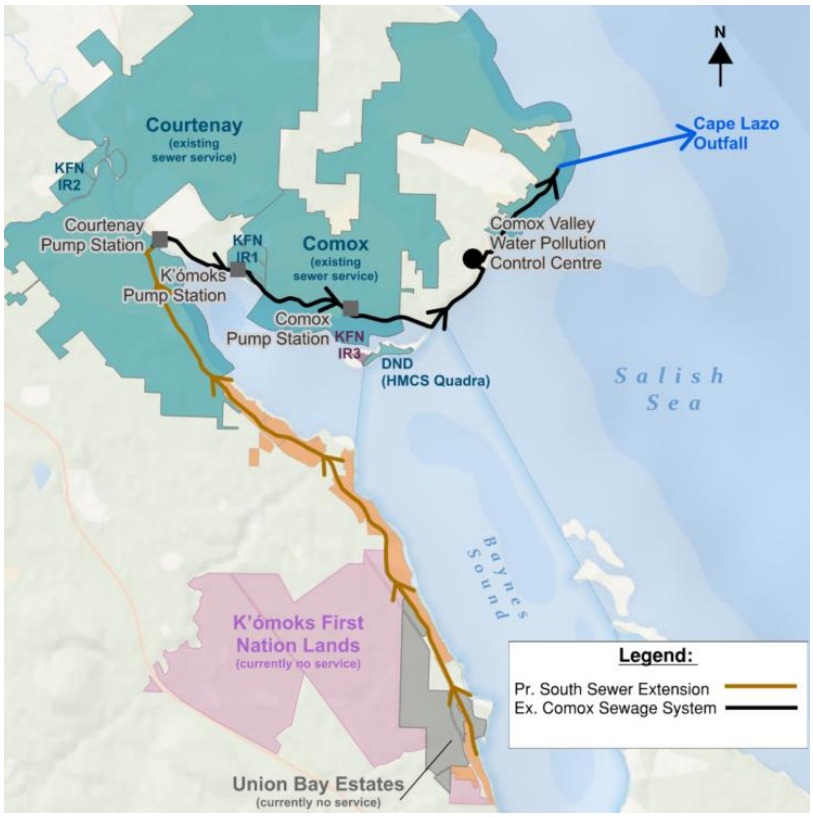


Figure 1 System Overview

1.2 BRIEF

The discussion paper includes the following information:

- Summary of flows and loads per population projections.
- Summary of treatment objectives as identified in CVSS LWMP.
- Summary of ongoing CVSS LWMP work and its provisions for flows from Area A.

2 POPULATION & DESIGN FLOWS

Per the provincial LWMP guidelines, a LWMP process is an effective tool in areas where there is considerable growth and development, or where there are known problems with existing liquid waste infrastructure. As a forward-looking planning document, an LWMP is intended to anticipate a community's future liquid waste management needs. As a key input into this work, it is necessary to consider potential future growth and development within the community and translate this into population projections.

The following section outlines the assumptions used to develop the population projections and design flow calculations for the south region as discussed in the Population and Flow Basis of Design memo and summarised in the following sections.

2.1 POPULATION PROJECTIONS

The population growth projections of the existing and future developments are summarised in **Table 1** below.

Table 1: Population Projections

YEAR	ROYSTON	GARTLEY	KILMARNOCK	UNION BAY	NEW DEVELOPMENT AREAS	TOTAL
2020	986	372	593	819	0	**2,770**
2025	1,011	381	608	839	258	**3,098**
2030	1,037	391	623	861	1,548	**4,460**
2035	1,063	401	639	882	2,488	**5,473**
2040	1,090	411	655	905	3,428	**6,489**
2045	1,117	421	672	928	6,258	**9,396**
2050	1,146	432	689	951	9,088	**12,305**
2055	1,175	443	706	975	9,488	**12,787**
2060	1,204	454	724	1,000	9,888	**13,270**
2065	1,235	465	742	1,025	10,288	**13,755**
2070	1,266	477	761	1,051	10,688	**14,243**

The following assumptions were used to develop the population projections:

- The number of dwellings in the existing developed areas was obtained from the 2017 CVRD South Regional Sewer Service Map.
- The residential density of 2.1 persons/property from the 2016 Census for the CVRD for Area 'A' was used for determining the population in 2017.
- The growth rate for the existing developed areas was 0.91% for the years 2017-2019 from the 2016 Census for the CVRD for Area 'A'. From 2020 onwards, a medium growth scenario was assumed with a growth rate of 0.5%.
- Union Bay Estates (UBE) assumes a growth rate consistent with McElhanney's Kensington Union Bay Estates Sanitary Master Plan (2019).

- The K’ómoks development is assumed to begin in 2025 with 80 persons. A medium growth scenario was used, this corresponded to a population growth rate of 80 persons per year with a residential density of 2.1 persons per unit.

Development projections in the area are varied and changing, with multiple residential development projects proposed, which creates uncertainty for future build-out populations. According to the information supplied by the CVRD, the proposed developments are either in the planning and/or design/construction phase. Union Bay Estates will be developed in phases with civil works construction underway in the anticipated first phase area. Development of K’ómoks lands had not commenced at the time of writing this report.

The catchment areas, comprised of existing and future new development areas, for each of the proposed future pump stations are shown in **Figure 2**.

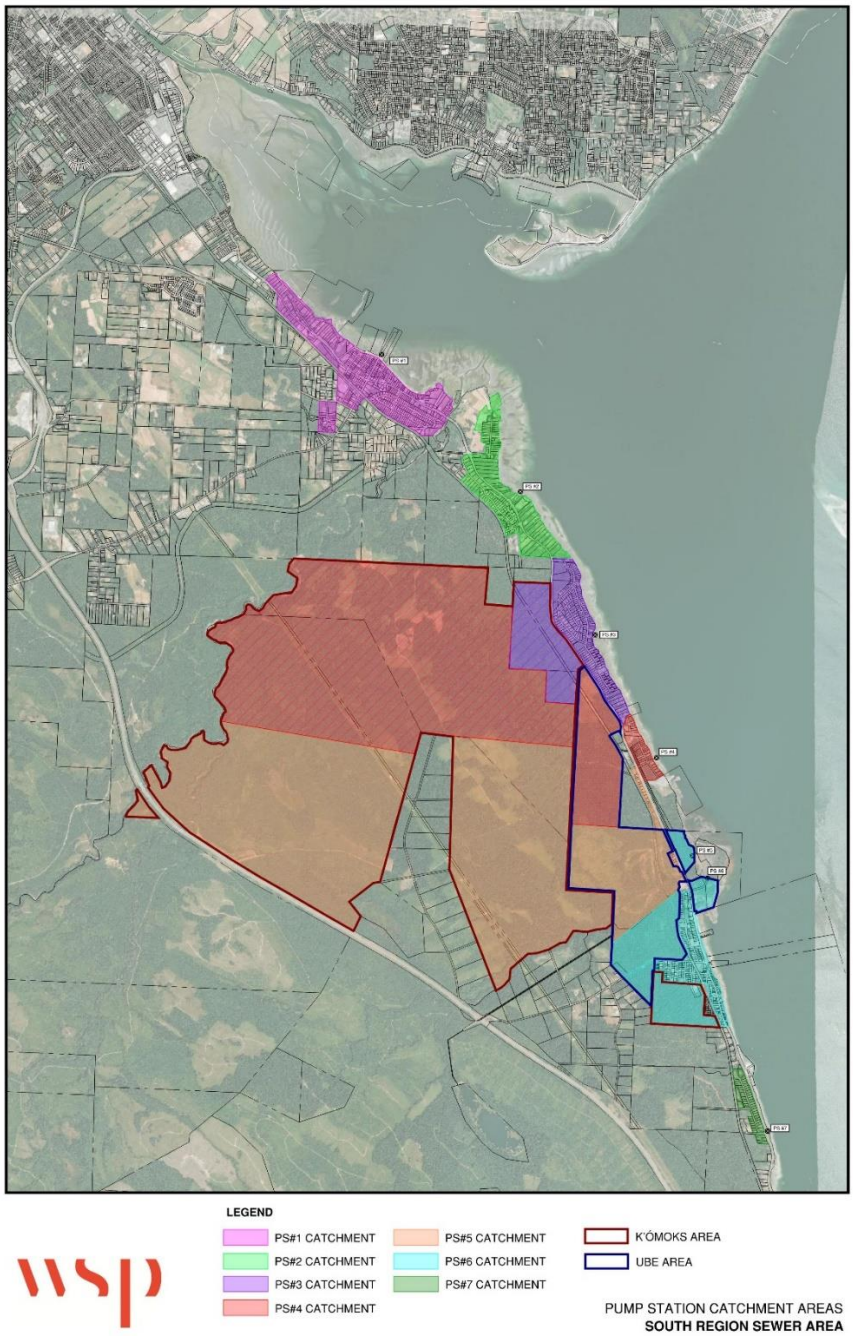


Figure 2: Pump Station Catchment Areas

2.2 FLOWS

Table 2 summarises the contributing Average Dry Weather Flow (ADWF), Peak Dry Weather Flow (PDWF) and Peak Wet Weather Flow (PWWF) for the projected populations in 2025 and 2070 for each pump station catchment. The ADWF represents the average daily sewage flow entering a Sewage system with minimal infiltration. The PDWF is defined as the most likely peak sanitary flow during a typical dry weather day. The PWWF is obtained by adding inflow and infiltration to the peak dry weather flow.

Table 2: Pump Station Catchment Population, Area and Flow

		PS#1 Catchment	PS#2 Catchment	PS#3 Catchment	PS#4 Catchment	PS#5 Catchment	PS#6 Catchment	PS#7 Catchment
2025	**Population**	1011	381	547	155	120	776	108
	Area (ha)	133	81	72	115	151	128	15
	Peaking Factor	3.2	3.2	-	-	-	-	3.2
	ADWF (L/s)	2.8	1.1	3.5	0.4	0.3	2.2	0.3
	PDWF (L/s)	9.0	3.4	11.2	1.4	1.1	6.9	1.0
	I&I (L/s)	8.0	4.9	4.3	6.9	9.1	7.7	0.9
	PWWF (L/s)	17.0	8.2	15.5	8.3	10.1	14.6	1.8
2070	**Population**	1266	477	2943	3111	4085	3615	135
	Area (ha)	133	81	145	169	206	163	15
	Peaking Factor	3.2	3.2	-	-	-	-	3.2
	ADWF (L/s)	3.5	1.3	20.9	8.6	11.3	11.8	0.4
	PDWF (L/s)	11.3	4.2	62.7	25.6	33.3	36.6	1.2
	I&I (L/s)	8.0	4.9	8.7	10.2	12.3	9.8	0.9
	PWWF (L/s)	19.2	9.1	71.4	35.8	45.6	46.4	2.1

The following assumptions were used in the calculation of the flows:

- 240 L/cap/day was used as specified in the 2014 MMCD Design Guidelines for ADWF.
- The peaking factor was calculated using the formula from the 2014 MMCD Design Guidelines of PF = 3.2/P0.105, where P is the population in thousands rounded to the nearest thousand.
- The inflow and infiltration (I&I) rate for all existing and proposed developments is 0.06 L/s/ha as specified in the 2014 MMCD Design Guidelines.
- The PWWF was calculated using the formula for design flow from the 2014 MMCD Design Guidelines, where the design flow, Q = population x per capita flow x peaking factor + I&I contribution

2.3 ORGANIC LOAD CONTRIBUTION

The same data and assumptions that were used for the determination of the loads in the CVSS LWMP were used to determine the organic load contributed by the south region. The information below indicates the loads and the assumptions made in the CVSS LWMP submission of stages 1 and 2 dated August 8, 2022.

Historical (2013 to 2019) CVWPCC influent 5-day Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS) loadings were used to develop average per capita unit loading rates. The $cBOD_5$ and TSS data were taken from weekly composite samples. Table 3 shows the historical per capita loads.

Table 3 Historical Influent Loading, 2013 to 2019

		HISTORICAL INFLUENT LOADING [1] KG/D				INFLUENT UNIT LOADING G/C/D			
Year	**Population [2]**	**Average BOD_5**	**Max Month BOD_5**	**Average TSS**	**Max Month TSS**	**Average BOD_5**	**Max Month BOD_5**	**Average TSS**	**Max Month TSS**
2013	39,714	3,327	4,241	3,425	4,383	84	107	86	110
2014	40,369	3,720	8,983	4,144	6,198	92	223	103	154
2015	41,266	3,675	5,641	3,977	5,351	89	137	96	130
2016	42,354	2,605	6,919	4,405	6,988	62	163	104	165
2017	42,962	2,946	4,306	4,116	5,189	69	100	96	121
2018	43,498	2,764	5,530	4,375	6,824	64	127	101	157
2019	44,370	4,245	5,722	3,292	7,145	96	129	74	161
					Average	**79**	**127[3]**	**94**	**142**

[1] Plant Data. We have assumed this data includes all return streams from the plant.
[2] Population was obtained from BC Stats.
[3] Refer to table 5-4: CVWPCC historical Loading, 2013 to 2019

No data were available for Total Kjeldahl Nitrogen (TKN), therefore loading data is based on per capita unit rates from ISL (2016). The TKN loading determined in ISL (2016) was based on 13 g/c/d, which is considered typical for domestic wastewater without any industrial loading. ISL (2016) also determined a peaking factor of 1.1 between average and max month loading. These same values were carried forward for projecting TKN load to the CVWPCC. Table 4 shows the projected future loads to the CVWPCC for BOD_5, TSS, and TKN.

Similar values to those used for the CVSS LWMP have been used in the table below to project the organic loads contributed by the south region. These values are conservative as it is calculated by the combined organic load and no distinction has been made between industry & commercial effluent and domestic sewage. This indicates that the Influent Unit loading is based on a combination of industry & commercial effluent and domestic sewage, thus provision has been made for possible industry & commercial effluent from the south region.

Table 4: South Region Load Projections, 2020-2060 to the CVWPCC

	2020	**2030**	**2040**	**2050**	**2060**
Population Projections	2770	4460	6489	12305	13270
Average BOD_5 (kg/d)	219	352	513	972	1048
Max month BOD_5 (kg/d)	352	567	825	1565	1688
Average TSS (kg/d)	260	419	610	1157	1247
Max month TSS (kg/d)	393	633	921	1747	1884
Average TKN (kg/d)	36	58	84	160	173
Max month TKN (kg/d)	40	64	93	176	190

3 CVSS LWMP PROVISIONS

3.1 POPULATION

During the development of Stage 1 and 2 LWMP for the Comox Valley Sewer System, population and sewage flow estimates were developed for the south region based on previous work and more recent information regarding planned development. This information was used to assess the impacts of conveying the south region wastewater flows to connect with the CVRD wastewater conveyance and treatment systems. The impacts of the planned K'ómoks development, as well as planned development in existing developed areas of the south region were included in the evaluation.

The existing developed areas under consideration for servicing include Royston, Union Bay, and neighborhoods between, shown in orange on Figure 3 below.

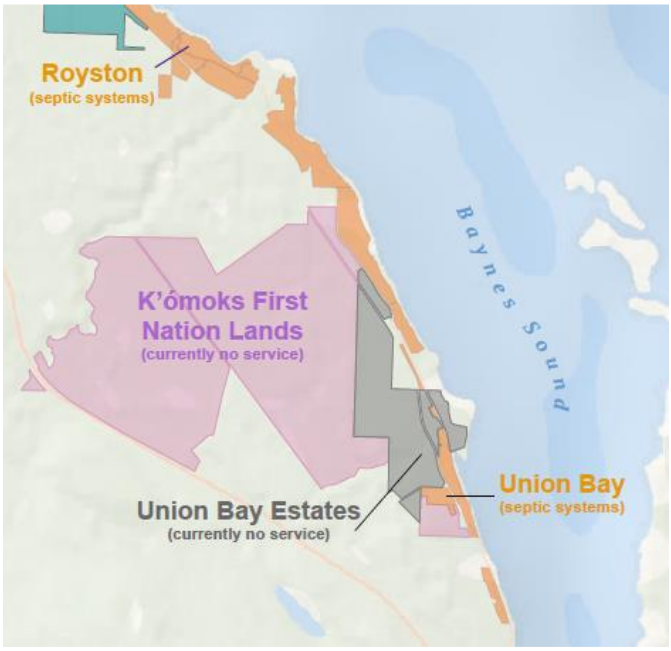


Figure 3 Areas under Consideration

It was assumed that the development would be limited in these areas to maintain their existing density. There were no available data for the current population; for the purpose of this study, the existing population was estimated based on the existing number of dwellings and an assumed population density of 2.1 people per dwelling taken from the 2016 Census for the CVRD's Area A. As of 2019, the estimated population of the south region was estimated at 2,756 people.

A medium growth scenario was used in the Stage 1 and 2 LWMP for the Comox Valley Sewer System, resulting in a service population for the south region of approximately 9,100 people by the year 2060.

Table 5 below provides the population provisions that were made for in the CVSS LWMP.

Table 5: Projected South region population

YEAR	EXISTING	NEW DEVELOPMENT AREAS	TOTAL
2019	2,756	0	2,756
Projected			
2020	2,770	67	2,837
2030	2,912	1,217	4,129
2040	3,061	2,737	5,798
2050	3,217	4,207	7,424
2060	3,382	5,677	**9,059**
2070	**3,555**	**7,147**	**10,702**

Notes: Table from the "*South Region Service Area Impacts on CVSS Conveyance and Wastewater Infrastructure*, and *South Region Forcemain Cost Estimate"* report

At the time of the development of the CVSS LWMP, limited information was available on the expected population growth and development in the south region. With the assistance of the CVRD the estimated population and development projections have been updated in the WSP Technical Memorandum with regards to the populations and flows, as shown in section 2.1 Population above. All the future flows are projected by using the assumption with available information. As information, such as master planning documentation, Census and development plans are updated, the assumptions will be more accurate, and the future projections will have a higher degree of accuracy.

The differences between the CVSS LWMP population projections (Table 5) and the more recent Sewer Extension South population projections above are shown in Table 6 below.

Table 6: Population differences

YEAR	CVSS LWMP	UPDATED FLOW PROJECTION	DIFFERENCE
2020	2,837	2,770	-67
2030	4,129	4,460	331
2040	5,798	6,489	**691**
2050	7,424	12,305	4,881
2060	9,059	13,270	4,211
2070	10,702	14,243	3,541

For the next 20 years (2040), the difference in projected populations is negligible between the two reports. The difference of 691people in 2040 is less than 11%. Such a small variance will not have a large impact on the flows and loads of the entire system and is acceptable in terms of planning purposes. On the entire system contributing to the CVWPCC, the difference in population is less than 1.2%. As more studies and planning are done for the south region, the figures will be updated.

3.2 CVSS – WASTEWATER TREATMENT

3.2.1 BACKGROUND

One of the planning components for a LWMP is the study of the wastewater treatment plant. This will identify treatment objectives for the plan area and relate to LWMP goals of protection of public health and the environment. Preventing wastewater management impacts to the marine environment is a key driver for both the CVSS LWMP process and the Sewer Extension South LWMP Addendum process.

The Wastewater Treatment plant assessment has been completed as part of the CVSS LWMP. Below is a summary of the treatment objectives and outcomes of the CVSS Stage 1 and 2 LWMP process.

3.2.2 LOCATION OF THE CVWPCC

The CVRD has a single existing wastewater treatment facility (located at Brent Road near Cape Lazo) and outfall that currently serves the communities of Courtenay and Comox, CFB Comox and K'ómoks. The existing treatment plant, the Comox Valley Water Pollution Control Centre (CVWPCC), has an adequate unused area for major expansions of the facilities in the future as required.

3.2.3 CVWPCC TREATMENT PERFORMANCE FOR THE CVSS LWMP

The CVWPCC effluent quality data were reviewed and analyzed for the period from 2014 to 2019. The effluent was sampled and analyzed for five-day carbonaceous biochemical oxygen demand ($cBOD_5$) and total suspended solids (TSS) at least once a month as required by the discharge permit.

The monthly average TSS concentration exceeded the Federal Wastewater Systems Effluent Regulation (WSER) criteria of 25 mg/L only once during the review period (in 2017). The effluent daily TSS concentration was consistently below the allowable maximum specified in both Permit No. 5856 (60 mg/L) and the Municipal Wastewater Regulation (MWR) (45 mg/L). The monthly average effluent TSS concentration was typically in the range of 5 mg/L to 15 mg/L from 2014 to 2019.

The plant effluent quality for $cBOD_5$ was within the regulatory limits specified in the WSER, the MWR, and Permit No. 5856. Similar to the data for TSS, the monthly average $cBOD_5$ concentration was typically in the range of 5 mg/L to 15 mg/L.

The average percentage removal of TSS during the assessed period (2014 to 2019) was consistently high, ranging from 90% to 99% with an average effluent concentration of less than 9 mg/L. The removal rate of $cBOD_5$ was consistently at least 93% with an average effluent concentration of less than 7 mg/L. This is indicative of excellent performance for a secondary treatment plant.

3.2.4 OPERATIONAL CERTIFICATE

The effluent discharge from the CVWPCC reflects a very high-performing secondary wastewater treatment facility, with effluent quality parameters well within regulatory requirements. However, the volume of the discharge chronically exceeds the allowable daily maximum of 18,500 m3/d specified in the plant Discharge Permit No. 5856 by more than 10%; this means that a permit amendment will not be granted by the Ministry of Environment and Climate Change Strategy (MECCS). The CVRD will begin the process of applying for an Operational Certificate (OC) under the LWMP in Stage 3 of the LWMP. Effluent quality should meet the requirements of both the provincial MWR and the federal WSER.

An updated Stage 2 Environmental Impact Study (EIS) based on the applicable discharge flow and effluent quality will be required to support the application for an Operational Certificate (OC); this and other required supporting information is listed in the Information Requirements Table Issued by the MECCS. Since the Stage 2 EIS will be based on the proposed maximum day discharge contained in the OC, it is prudent to consider using a discharge flow projected well into the future, at least to the year 2030 (45,000 m3/d) and possibly to 2040 (51,000 m3/d); this will avoid having to re-do the EIS for an increase in flow prematurely. To avoid paying excessive permit discharge fees in the near term, and to avoid repeated revisions to the OC to accommodate increasing flows, it may be possible to include a table in the OC that ties allowable maximum day discharge to system service population; this should be discussed with MECCS when the draft OC is developed in Stage 3 of the LWMP.

3.2.5 OPTIONS FOR TREATMENT

— *Stage 1*

During Stage 1 of the CVSS LWMP, four options for treatment were identified for discussion with the TAC/PAC. The four options were based on the effluent quality to be produced and were presented as concepts for the planning of future expansions and/or upgrades. Option 1 would be to meet the provincial and federal discharge standards; these standards have been developed to protect the receiving environment, and the provincial regulation allows the

regulating body to impose additional standards in specific cases where this is shown to be needed to protect the environment. Options 2, 3 and 4 were based on voluntarily enhancing effluent quality beyond what is required by the regulations.

— *Stage 2*

The Stage 2 work was a high-level review of the estimated capacity of the existing infrastructure at the CVWPCC, what would be required for expansion to handle 2040 flows and loads, and cost estimates for different levels of wastewater treatment at the CVWPCC.

The objective of the Stage 2 wastewater treatment options assessment was to enable decision-making to identify the desired level of wastewater treatment to provide at the CVWPCC by comparing the costs and benefits of the different options.

— *Recommendation*

During stage 2 and the engagement meetings, the recommended level of treatment for the next CVWPCC expansion is to maintain the current level of treatment (i.e., secondary treatment for the entire plant flow) with the addition of effluent disinfection. This is shown in Figure 4 below.

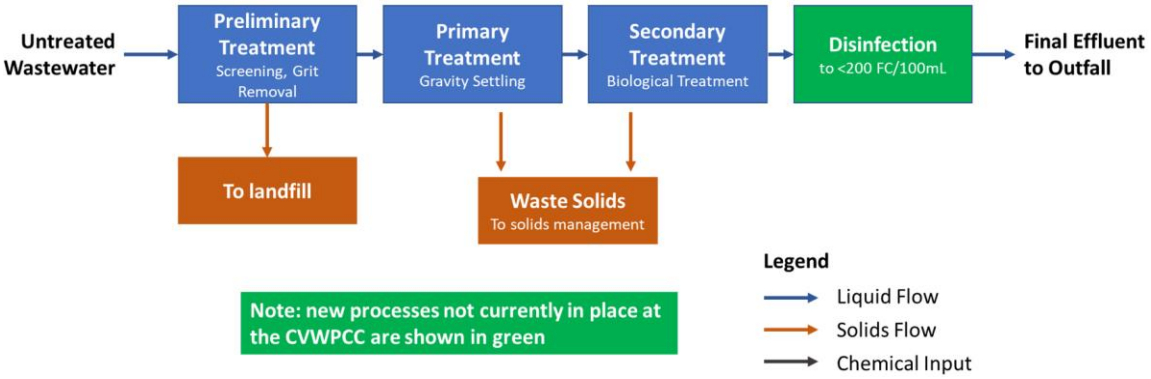


Figure 4: CVWPCC recommended Option

The proposed method for disinfection is Ultraviolet (UV) and has the following advantages:

— Effective inactivation of most viruses, bacteria, and spores
— Physical process rather than a chemical disinfectant
— No residual by-products that could harm humans or aquatic life

3.2.6 IMPACT OF THE SES LWMP ADDENDUM ON THE CVWPCC

The impact of the south region's flows and loads contribution does not impact the decision of the preferred wastewater treatment process option selected through the Stage 1 and 2 CVSS LWMP.

The CVWPCC will require capacity upgrades due to the increased flow and load from overall growth in the population of the CVSS service area, including the potential future addition of portions of Electoral Area A. A Facility Master Plan, currently underway, is being completed to develop the basis of design for this future plant expansion. Should the population in the service area, including the south region, expand quicker than currently projected, the main result is a reduced capacity horizon, meaning that an upgrade of the plant will be required earlier.

4 WAY FORWARD

The population and flow projections outlined in this report will be discussed with the Sewer Extension South LWMP Addendum PAC/TAC at meeting number one and will be used as the basis of design for the upcoming technical reports being considered by the committee through the addendum process.

Comox Valley REGIONAL DISTRICT

Committee Terms of Reference

COMOX VALLEY SEWERAGE SYSTEM LIQUID WASTE MANAGEMENT PLAN, SEWER EXTENSION SOUTH ADDENDUM

TECHNICAL ADVISORY COMMITTEE

Background

The communities of Royston and Union Bay rely on on-site septic systems for wastewater management; these systems are at risk of failure, causing impacts to the local environment, and posing potential public health risks. Sewer servicing proposals for these Electoral Area A communities have a long history, with studies dating back several decades. In 2015, a nearly completed stage 2 Liquid Waste Management Plan (LWMP) identified discharge of treated effluent at the existing Cape Lazo as the leading option for management of south region liquid waste. At the time, this option consisted of building a stand-alone wastewater treatment facility in the south region, and conveying treated effluent from this facility for discharge at the Cape Lazo outfall.

After a proposal based on this option failed to find the support of the electors in 2016, extensive collaboration with the Comox Valley Sewage Commission has resulted in the current project concept whereby untreated wastewater from the south region would be conveyed into existing Comox Valley Sewer Service (CVSS) infrastructure for treatment at the Comox Valley Water Pollution Control Centre, and discharge at the Cape Lazo outfall. Efforts continue on several fronts to advance this proposal, termed the Sewer Extension South Project.

Concurrent to these efforts, the CVSS is part way through a LWMP process with consideration to three components of the service – conveyance, treatment, and resource recovery. Following a successful AAP process last year, work is now underway to upgrade or replace a significant portion of existing CVSS conveyance infrastructure, based upon the preferred conveyance option from the LWMP process. The final Stage 1 & 2 report outlining the preferred options for conveyance, treatment and resource recovery is in development for submission to the province in summer 2022.

The CVRD is now embarking on an addendum to the CVSS LWMP to consider sewer servicing options for the south region. This addendum once complete and approved will become part of the overall LWMP for the entire CVSS service area, which will include those parts of Electoral Area A anticipated to be serviced by the Sewer Extension South project.

Role of the Committees and the TAC

While the responsibility for the management of the LWMP ultimately rests with the CVRD Board of Directors, the Steering Committee, Technical Advisory Committee (TAC) and Public Advisory Committee (PAC) will assist in this responsibility by providing input, perspective, specific expertise and recommendations. Members of these committees are expected to participate in meetings and assist with:

- Identifying goals and challenges;
- Generating and reviewing ideas to meet them; and
- Working towards consensus solutions.

To assist with communication and understanding of the process, committee members will be sent the meeting agenda packages and meeting notes for all three committees. All meetings are envisioned to be joint TAC-PAC meetings, and the CVRD may combine the two committees into one if it proves advantageous to do so.

The TAC is an advisory group who will consider technical information related to the south region LWMP amendment on behalf of the Steering Committee. It is the responsibility of the TAC to review and become familiar with the Sewer Extension South project and how it fits within the CVRD's LWMP process. The TAC will also provide input and feedback on relevant technical reports, discussion papers and other documents provided by CVRD Project Staff and the Consultant.

Role and Responsibilities of TAC Members

The role of TAC members is to develop and maintain a broad understanding of the issues and implications for stakeholders, residents and the environment in order to make appropriate recommendations to the Steering Committee. It is also the responsibility of the TAC members to review and become familiar with the Sewer Extension South project, how it fits within the CVRD's LWMP process and the function of the CVSS itself.

Participating in the TAC is both a privilege and an obligation. Members have an important liaison role with the responsibility to represent and inform the organizations or communities they have been selected to represent. They are expected to bring their own perspectives to the table, but must be prepared to provide to, and disseminate from the committee, the full range of perspectives, including those with which they may disagree.

It is intended that recommendations to the Steering Committee will be made by consensus, though there may be some that are recorded as non-consensus. A consensus recommendation may include the identification of a specific interest or concern to be noted in the record but not as a limiting factor. A non-consensus recommendation will be made if, after adequate deliberation, the member(s) is/are still not in accord with other members. The non-consensus party must provide a written submission for the record, outlining the rationale for the non-consensus recommendation, within one week of the distribution of the draft meeting notes.

Membership

The CVRD will seek and invite representation from key stakeholder agencies and organizations with interests or jurisdiction in the project area (see attached list of invited public, community, business, and stewardship stakeholders). The total number of representatives will be at the discretion of the CVRD. The appointments will be based on agency and organizational representation and will not be personal appointments. A list of representatives will be attached once committee membership is finalized.

Members will submit one alternate for approval of the whole at the first meeting or immediately to CVRD Project Staff upon resignation of the primary or alternate.

Termination of a member that is falling short of his/her obligations, not considered to be actively participating, or is not abiding by the code of conduct (below) will be at the discretion of the CVRD.

The TAC will stand for the duration of the LWMP addendum process at minimum. At the completion of the LWMP addendum, follow up activities may be required, the Sewer Extension South Addendum TAC will be dissolved and combined with the CVSS LWMP TAC for

development of the final Stage 3 CVSS LWMP. Upon completion of the CVSS LWMP, a plan monitoring committee will be struck and some members may be asked to stand, to ensure continuity.

TAC Representative to the PAC
The LWMP guidelines suggest each committee elect a chairperson to administer the committee. The committee shall elect the chairperson and alternate from amongst its members at the inaugural meeting. The role of the chairperson or alternate is to represent the TAC in discussions with the PAC, the Steering Committee, the CVRD Board and Project Staff, as needed. The proposed approach to hold all meetings as combined TAC-PAC meetings is intended to work towards the LWMP guidelines objective of forming linkages between committees to maximize cooperation. From time-to-time, the chairperson or alternate may also be responsible for in responding to media requests on behalf of the TAC.

Code of Conduct
During meetings, public events, and other activities related to the LWMP project, all participants of the committee will endeavour to conduct themselves as follows:

- Support an open and inclusive process;
- Disclose any potential conflicts of interest;
- Treat others with courtesy and respect;
- Listen attentively with an aim to understand;
- Speak in terms of interests versus positions;
- Where a member is espousing a favored position or course of action, they must fully and honestly disclose the reasons for their positions;
- Be open to outcomes, not attached to outcomes;
- Focus on service provision; and
- Share and discuss ideas from a professional perspective.

Members are responsible for coming prepared to meetings and to liaise with groups or organizations to which they are accountable or have a fiduciary responsibility.

Members are responsible for attending all meetings. If an occasion arises in which members are unable to participate in person, their appointed alternate should attend on their behalf.

Communications with the General Public
TAC members may find themselves from time liaising with the general public, and must do so in accordance with the code of conduct outlined above.

The committee meetings will be closed to the public, however the meeting notes will be made available to the public unless it was agreed to in advance that a particular discussion was to be confidential, in which case, the meeting notes will not be made widely available. Confidential topics at committee meetings may fall under Section 90 of the *Community Charter*.

The responsibility to respond to public comment rests with CVRD Project Staff and the CVRD Board, unless otherwise indicated.

Contact with the Media
Any contact with the media regarding issues related to the work of this committee shall be handled by the CVRD Project Staff or the committee representative. The latter only applies if there is agreement by the CVRD Project Staff and committee. If the matter under questioning by the media

deals with CVRD Board policy around issues related to the work of this committee, the matter shall be referred to the CVRD Board Chair. The CVRD Chief Administrative Officer and the communication department will provide assistance and/or guidance to those persons responding to the media.

Frequency of Meetings
Meetings will be expected to occur both on an ongoing basis (for example, monthly, quarterly or at key milestones) and as required to address pressing LWMP process issues that arise. It is expected that approximately five committee meetings will be held over the course of the LWMP addendum process. TAC meetings will normally be held at the CVRD offices during business hours, with an option for committee members to attend virtually via Zoom. The committee members will also be expected to participate in public consultation activities, which may include separate meetings, open houses, webinars, or less formal gatherings.

Committee Administration
CVRD Project Staff and the Consultant will be responsible for managing, scheduling and facilitating all meetings, with the assistance of a professional facilitator, and for providing administrative support.

CVRD Staff will ensure the agenda and all material are provided to the members prior to the meeting. Items of new business should be brought to the attention of CVRD Staff prior to the meeting, for consideration and distribution to group members in advance of the meeting; the inclusion of such items will be at the discretion of CVRD Project Staff.

The CVRD Project Staff will appoint a recording secretary for the purposes of preparing meeting notes. The record shall reflect the meeting purpose, key points from the discussion of agenda items, and the ensuing recommendations or action items.

The draft meeting notes will be distributed to committee members for review prior to being finalized. The final meeting notes will be provided to the CVRD Board, the CVRD Project Staff, and the Steering Committee, the TAC and the PAC. Where the Board feels it is necessary, the PAC representative may be asked to meet with and brief the Board on particular items or issues.

Resources
Direct meeting expenses, such as costs related to the provision of a meeting facility, snacks, beverages, photocopying and other related activities will be covered and coordinated by CVRD Project Staff. Committee members will be responsible for their own travel expenses.

Invitation List
- BC Ministry of Environment and Climate Change Strategy
- BC Ministry of Municipal Affairs
- BC Ministry of Agriculture and Food
- BC Ministry of Transportation and Infrastructure
- BC Ministry of Health
- Island Health
- Fisheries and Oceans Canada
- Environment Canada
- K'ómoks First Nation
- City of Courtenay Engineering Staff

- Town of Comox Engineering Staff
- CVRD Engineering Staff

Comox Valley REGIONAL DISTRICT

Committee Terms of Reference

COMOX VALLEY SEWERAGE SYSTEM LIQUID WASTE MANAGEMENT PLAN, SEWER EXTENSION SOUTH ADDENDUM

PUBLIC ADVISORY COMMITTEE

Background

The communities of Royston and Union Bay rely on on-site septic systems for wastewater management; these systems are at risk of failure, causing impacts to the local environment, and posing potential public health risks. Sewer servicing proposals for these Electoral Area A communities have a long history, with studies dating back several decades. In 2015, a nearly completed stage 2 Liquid Waste Management Plan (LWMP) identified discharge of treated effluent at the existing Cape Lazo location as the leading option for management of south region liquid waste. At the time, this option consisted of building a stand-alone wastewater treatment facility in the south region, and conveying treated effluent from this facility for discharge at the Cape Lazo outfall.

After a proposal based on this option failed to find the support of the electors in 2016, extensive collaboration with the Comox Valley Sewage Commission has resulted in the current project concept whereby untreated wastewater from the south region would be conveyed into the existing Comox Valley Sewer Service (CVSS) infrastructure for treatment at the Comox Valley Water Pollution Control Centre, and discharge at the Cape Lazo outfall. Efforts continue on several fronts to advance this proposal, termed the Sewer Extension South Project.

Concurrent to these efforts, the CVSS is part way through a LWMP process with consideration to three components of the service – conveyance, treatment, and resource recovery. Following a successful AAP process last year, work is now underway to upgrade or replace a significant portion of existing CVSS conveyance infrastructure, based upon the preferred conveyance option from the LWMP process. The final Stage 1 & 2 report outlining the preferred options for conveyance, treatment and resource recovery is in development for submission to the province in summer 2022.

The CVRD is now embarking on an addendum to the CVSS LWMP to consider sewer servicing options for the south region. This addendum once complete and approved will become part of the overall LWMP for the entire CVSS service area, which will include those parts of Electoral Area A anticipated to be serviced by the Sewer Extension South project.

Role of the Committees and the PAC

While the responsibility for the management of the LWMP ultimately rests with the CVRD Board of Directors, the Steering Committee, Technical Advisory Committee (TAC) and Public Advisory Committee (PAC) will assist in this responsibility by providing input, perspective, specific expertise and recommendations. Members of these committees are expected to participate in meetings and assist with:

- Identifying goals and challenges;
- Generating and reviewing ideas to meet them; and
- Working towards consensus solutions.

To assist with communication and understanding of the process, committee members will be sent the meeting agenda packages and meeting notes for all three committees. All meetings are envisioned to be joint TAC-PAC meetings, and the CVRD may combine the two committees into one if it proves advantageous to do so.

The PAC is an advisory group whose primary role is to represent "community interests" – the people, areas and environments that are served and potentially impacted by the south addendum, and provide advice to the Steering Committee accordingly. The PAC will:

- Consider community goals as represented by major planning documents (OCP's, Sustainability Plans, etc);
- Consider public opinion and feedback related to the LWMP on behalf of the Steering Committee;
- Provide feedback on documents provided by the CVRD Project Staff and/or the Consultant;
- Have the authority to provide input and recommendations to the Steering Committee on matters pertaining to the LWMP.

Role and Responsibilities of PAC Members

The role of PAC members is to develop and maintain a broad understanding of the issues and implications for stakeholders, residents and the environment in order to make appropriate recommendations to the Steering Committee. It is also the responsibility of the PAC members to review and become familiar with the Sewer Extension South project, how it fits within the CVRD's LWMP process and the function of the CVSS itself.

Participating in the PAC is both a privilege and an obligation. Members have an important liaison role with the responsibility to represent and inform the organizations or communities they have been selected to represent. They are expected to bring their own perspectives to the table, but must be prepared to provide to, and disseminate from the committee, the full range of perspectives, including those with which they may disagree.

It is intended that recommendations to the Steering Committee will be made by consensus, though there may be some that are recorded as non-consensus. A consensus recommendation may include the identification of a specific interest or concern to be noted in the record but not as a limiting factor. A non-consensus recommendation will be made if, after adequate deliberation, the member(s) is/are still not in accord with other members. The non-consensus party must provide a written submission for the record, outlining the rationale for the non-consensus recommendation, within one week of the distribution of the draft meeting notes.

Membership

The CVRD will seek and invite representation from key public, community, business, and stewardship stakeholders with interests in the project area (see attached list of invited public, community, business, and stewardship stakeholders). The total number of representatives will be at the discretion of the CVRD. Appointment of local resident representatives will be performed by the Electoral Area Services Committee to ensure the accountability of the process. A list of representatives will be attached once committee membership is finalized.

Members will submit one alternate for approval of the whole at the first meeting or immediately to CVRD Project Staff upon resignation of the primary or alternate, with the exception of resident representatives who may provide an alternate only if one is available.

Termination of a member that is falling short of his/her obligations, not considered to be actively participating, or is not abiding by the code of conduct (below) will be at the discretion of the CVRD.

The PAC will stand for the duration of the LWMP addendum process, which is expected to be approximately one to two years. At the completion of the LWMP addendum, the Sewer Extension South Addendum PAC will be dissolved and combined with the CVSS LWMP PAC for development of the final Stage 3 CVSS LWMP. Upon completion of the CVSS LWMP, a plan monitoring committee will be struck, and some PAC members will be encouraged to stand, to ensure continuity.

PAC Representatives to the TAC

The LWMP guidelines suggest each committee elect a chairperson to administer the committee. The committee shall elect the chairperson and alternate from amongst its members at the inaugural meeting. The role of the chairperson or alternate is to represent the PAC in discussions with the TAC, the Steering Committee, the CVRD Board and Project Staff, as needed. The proposed approach to hold all meetings as combined TAC-PAC meetings is intended to work towards the LWMP guidelines objective of forming linkages between committees to maximize cooperation. From time-to-time, the chairperson or alternate may also be responsible for in responding to media requests on behalf of the PAC.

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Committee Administration
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Resources
Direct meeting expenses, such as costs related to the provision of a meeting facility, snacks, beverages, photocopying and other related activities will be covered and coordinated by CVRD Project Staff. Committee members will be responsible for their own travel expenses.

Honorarium
In acknowledgement of the volunteer nature of many of the representatives on the PAC, and to encourage participation through to the end of the process, committee members will be entitled to claim an honorarium of $125 per PAC meeting. Committee members will be required to submit a claim in writing or via email to receive the honorarium.

Invitation List

- Area A Director
- Local Residents
    - Union Bay area (2)
    - Royston core area (2)
    - Other Royston/Union Bay neighborhoods (2)
- K'ómoks First Nation
- Comox Valley Conservation Partnership
- Association for Denman Island Marine Stewards
- BC Shellfish Growers Association
- Underwater Harvesters Association
- Comox Valley Chamber of Commerce
- School District 71
- CVRD Engineering Staff
- CVRD Planning Staff
- Islands Trust