

**DATE:** March 4, 2021

**FILE:** 1700-02/2021/335-338

**TO:** Chair and Members  
Comox Valley Sewage Commission

**FROM:** Russell Dyson  
Chief Administrative Officer

Supported by Russell Dyson  
Chief Administrative Officer

***R. Dyson***

**RE: 2021-2025 Financial Plan – Comox Valley Sewerage Service –  
Functions 335-338**

### Purpose

To provide the Comox Valley Sewage Commission with the recommended 2021-2025 Financial Plan and work plan highlights for the Comox Valley Sewerage Service (CVSS), functions 335-338.

### Recommendation from the Chief Administrative Officer:

THAT the recommended 2021-2025 financial plan for Comox Valley Sewerage Service, functions 335-338, be approved which includes the estimated capital costs and recommended funding strategy for the sewer conveyance project as provided to the Sewage Commission on February 23, 2021.

### Executive Summary

- The delivery of wastewater conveyance, treatment and discharge services is critical to the residents, businesses and institutions of the Comox Valley. As part of the COVID-19 renewal and response, staff identified temporary reductions in service costs that will translate to increased contribution to reserves to either use for future COVID-19 response or as required to fund service expenditures.
- Revenue requirements remain unchanged from those approved in the 2020-2024 Financial Plan for the years 2021-2023, with the 2024 year being moderated from an original 9.3% increase which was being utilized to cover the anticipated costs of borrowing associated with conveyance and treatment upgrades to an average 5.5% annual increase over the five year plan.
- The updated revenue requirements are based on the comprehensive funding strategy developed for the conveyance project, as well as considering other necessary upgrades to the treatment centre and marine outfall in the long term capital plan.
- Personnel costs for the service have increased seven and a half per cent (7.5 per cent) and are driven by the first full year of the new sewer treatment plant operator position hired in 2020, the wastewater portion of a new electrician/instrument technician position, an anticipated increase in position rating for the senior operators and increases to benefits and wages scheduled in the CUPE agreement.
- A stable and incremental long term funding strategy has been developed optimizing both reserves and debt which provides for moderate increases over the five year financial plan, and inflationary increases over the long-term. This strategy provides stability to the member municipalities as well as flexibility for their operational and capital infrastructure. A summary of the recommended requisition levels as compared to the prior financial plan is below.

Requisition Revenues	2021	2022	2023	2024	2025
2020-2024 FP approved	\$6,800,000	\$7,200,000	\$7,600,000	\$8,300,000	TBD
Recommended 2021-2025 FP	\$6,800,000	\$7,200,000	\$7,600,000	\$8,000,000	\$8,400,000

- The updated capital cost for the conveyance pipe replacement project is \$73 million for a full replacement over 2021-2023 including the estuary pipe, due to its original construction and current condition providing significant risk of failure than originally anticipated. This was determined through work completed throughout 2020 and into early 2021 through value engineering, geotechnical studies and condition studies under the LWMP.
- Note that as the sewer conveyance project budget and related funding strategy was so integral to developing a sound financial plan for this service, the deliverance of the proposed financial plan which was originally based on the 2020-2024 approved plan was delayed as final engineering studies were integrated into developing the 2021-2025 financial plan, which included considerable collaboration with municipal partners. Therefore, a recommended budget with more relevant figures is being provided to the Commission which follows their endorsement of the sewer conveyance pipe project plan and related funding strategy for the Alternate Approval Process (AAP) expected February 23, 2021 which is the main driver for this service's financial plan.
- In collaboration with the member municipality partners a comprehensive sewerage service funding strategy has been determined. The strategy ensures a moderate annual increase to the requisition with an average 5.5 per cent rate increase over the five year financial plan. This is achieved through a mix of reserves and debt, with approximately \$21 million of funding from reserves and a \$52 million borrowing with repayment over a 30-year term. This extended term is in recognition that the conveyance pipe will provide service life over the next 80 years. The utilization of reserves and a longer debt term ensures that both current and future ratepayers fund this significant investment.
- The Liquid Waste Management Planning (LWMP) process began in 2018, with selection of preferred solutions for treatment and resource recovery in late 2020. Selection of the preferred conveyance option of tunneling forcemain option 2 is being recommended to the Commission on February 23, 2021 with the above noted funding strategy and related AAP and household impacts estimated at \$150/household. The conveyance pipe upgrade is the first core upgrade in the LWMP that ensures sustainable service of the regional sewer system, with planned treatment plant upgrades following in the ten year plan and marine outfall upgrades anticipated within the next 15 years. These projects have all been contemplated in the sewer financial plan as presented through a wholesome funding strategy that maximizes available funding and provides moderate increases in requisition in the five year financial plan, and inflationary increases thereafter. This long-term rate stability provides for sustainable sewer service of the regional system and for the local municipal systems.
- Significant resources are being expended on engaging with the public and all key stakeholders throughout the LWMP process to ensure that the finished LWMP has the support of the community.
- Capital projects completed in 2020 include the installation of an equalization basin at the Comox Valley Water Pollution Control Centre (CVWPCC), upgrades to the CFB pump station, beach nourishment on sewer forcemain along Willemar Bluffs and control system upgrades at the Courtenay pump station and CVWPCC. A close-out report for projects completed in 2020 is attached as Appendix A to this report.
- Several key capital infrastructure projects were initiated in 2020 and will be completed in 2021, including completion of odour control upgrades at the CVWPCC and design of conveyance upgrades following completion of the LWMP process.
- Funding for capital projects will be from a combination of capital works reserves, development cost charge (DCC) reserves, new debt and grant funding (where available). Reserve funds are projected to meet minimum levels in 2023 with the funding of the significant conveyance project and maximizing available funds, but with stable and

incremental revenue increases through the five year plan these levels are projected to increase to meet future capital funding requirements.

Prepared by:

***K. La Rose***

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Kris La Rose, P.Eng  
Senior Manager of Water  
/Wastewater Services

Concurrence:

***M. Rutten***

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Marc Rutten, P.Eng  
General Manager of  
Engineering Services

### Government Partners and Stakeholder Distribution (Upon Agenda Publication)

None	✓
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### Board Strategic Drivers

The Comox Valley Regional District (CVRD) board has set four strategic drivers to guide service delivery. Not all services will be influenced by all drivers. Table 1 notes the degree of influence the drivers have on projects and work plans.

**Table 1: Board Strategic Drivers**

<b>Fiscal Responsibility:</b>	<b>Climate Crisis and Environmental Stewardship and Protection:</b>
<ul style="list-style-type: none"> <li>The CVSS is facing a period of intense capital spending over the next 5 to 15 years due to the age and capacity of infrastructure and the resolution of environmental risk. A review of options to phase or stage capital upgrades to spread out impact to users has been considered in development of the capital upgrade plan moving forward, as well as a wholesome funding strategy that utilizes both reserves and debt and ensures that both current and future ratepayers fund long service life upgrades and also ensures funding capacity remains for the municipal infrastructure systems with moderate and incremental revenue increases.</li> </ul>	<ul style="list-style-type: none"> <li>The primary driver for replacement of the conveyance system is to decommission the forcemain along Willemar Bluffs to eliminate the risk of failure of this section of pipeline and associated major environmental impact.</li> <li>All new infrastructure will be designed for resilience to projected impacts of sea level rise and climate change.</li> </ul>
<b>Community Partnerships:</b>	<b>Indigenous Relations:</b>
<ul style="list-style-type: none"> <li>The LWMP process involves intensive consultation with stakeholders from within and outside the service area communities to select the preferred conveyance approach and levels of treatment at the CVWPCC.</li> <li>The service is also inherently a collaboration between service participants, which works closely with its neighbours to resolve issues and ensure palatable funding strategies to regional ratepayers for core upgrades and ensures the infrastructure invested meets the needs of all stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>In late December 2020 a Community Benefits &amp; Accommodation Agreement was signed between the CVRD and KFN to resolve historical and future impacts of the sewer infrastructure on KFN Indian Reserve No. 1 (IR1), including a commitment to extend sewer service to the KFN development lands in the south.</li> </ul>

**Rethink Comox Valley / COVID-19 Response and Renewal**

On May 12, 2020, the board adopted a COVID-19 renewal plan for the review of service levels and all necessary, critical and functional projects slated for the next five years. At the August 11, 2020 Sewage Commission meeting, recommended actions for the plan were brought forward and the following actions were approved:

- Holding service revenue requirements over 2021 and 2022 to previously projected levels, but reduce operational expenses, as detailed within the August 11, 2020 staff report and within the financial plan, to allow for increased reserve contributions to allow for any unanticipated covid-19 impacts.
- Waiving the municipal fee rate for SkyRocket until the end of 2022 to help reduce municipal costs.
- Participation in an inter-regional Mutual Aid Agreement (MAA) with neighboring regional districts and municipalities, and a separate local Comox Valley MAA with smaller water and sewer purveyors to ensure the Comox Valley Water System and Comox Valley Sewer System are covered in case staffing falls below emergency levels, and that we are doing our part to provide the same comfort to smaller purveyors in the Comox Valley.

**Economic Recovery Task Force Actions (if applicable)**


No applicable actions.

**Financial Plan Overview**

The 2021-2025 proposed five-year financial plan for the CVSS service, functions 335-338 , including service establishment information, the requisition summary and the operating and capital (if applicable) budgets, is available within the full proposed budget binder, provided in both searchable PDF and e-reader formats, located on the CVRD financial plan web page at [www.comoxvalleyrd.ca/currentbudget](http://www.comoxvalleyrd.ca/currentbudget).

Table 2 on the following page summarizes the 2021 proposed budget as compared to the 2020 adopted budget. Significant variances from 2020 adopted budget will be discussed in the financial plan sections that follow.

Table 2: Financial Plan Highlights



2020

Recommended Budget

#335 Comox Valley Sewerage

Operating	2020 Budget	2021 Recommended Budget	Increase (Decrease)
Revenue			
Requisition	6,400,000	6,800,000	400,000
Sale Services User Fees	1,039,045	989,204	(49,841)
Other Revenue/Recoveries	700	700	-
Prior Years Surplus	519,510	-	(519,510)
	\$ 7,959,255	\$ 7,789,904	\$ 169,351
Expenditures			
Personnel Costs	1,777,633	1,910,333	132,700
Directors Remuneration	7,200	8,400	1,200
Operating	2,630,117	2,563,710	(66,407)
Contribution to Reserve	2,515,253	2,292,482	(222,771)
Transfer to Other Functions	82,000	35,000	(47,000)
Debt Charges	947,052	904,959	(42,093)
Prior Years Deficit	-	75,020	75,020
	\$ 7,959,255	\$ 7,789,904	\$ (169,351)
Capital			
Funding Sources			
Debt Proceeds	3,000,000	-	(3,000,000)
Transfer from Reserve	9,239,000	8,633,873	(605,127)
	\$ 12,239,000	\$ 8,633,873	\$ (3,605,127)
Funding Applied			
Capital Projects & Equip	12,239,000	8,633,873	(3,605,127)
	\$ 12,239,000	\$ 8,633,873	\$ (3,605,127)

Highlights of the 2021-2025 proposed financial plan for functions 335-338 include:

#### Revenue Sources

The main revenue sources for the service and rates are described below:

- Required sewer service revenues: the CVSS is largely funded by direct requisition from the two participating municipalities, being the City of Courtenay and Town of Comox. Increases to the requisition are in line with what was proposed in the 2020-2024 financial plan for the 2021-2023 years and have been moderated for 2024-2025 for an average 5.5 per cent annual increase over the five year plan and are consistent with what was approved in the COVID-19 response and renewal plan. Significant collaboration has occurred to develop the proposed municipal requisition levels which impact user rates in the City of Courtenay and Town of Comox, with the focus on ensuring the requisitions are similar to what has previously been approved with a focus to moderate them through the five year plan to palatable levels to the ratepayers and to ensure funding remains to operate and upgrade the municipal infrastructure sewer systems. The requisition levels have been determined to

ensure adequate funding is available for the conveyance pipe replacement upgrade as well as necessary upgrades to the treatment plant and marine outfall over the long term capital plan for aging infrastructure to ensure the regional sewer service is sustainable over the short and long term.

Requisition Revenues	2021	2022	2023	2024	2025
2020-2024 FP approved	\$6,800,000	\$7,200,000	\$7,600,000	\$8,300,000	TBD
Recommended 2021-2025 FP	\$6,800,000	\$7,200,000	\$7,600,000	\$8,000,000	\$8,400,000

- Department of National Defence contributions are projected to increase proportional to their wastewater generation and the overall operational budget. Finalization of a revised sewer use agreement between the CVRD and DND in mid-2020 has brought cost recovery from DND in line with the purely flow based apportionment used to allocated costs between the municipal participants.
- Revenue from the KFN IR1 is budgeted to remain unchanged.
- Revenue from disposal of septage at the CVWPCC is projected to increase proportional to the increases in municipal requisition. Updates to the septage tipping fees was completed in 2020 to ensure rates are increased proportional to increases of the municipal requisition for future years. In addition a policy and rates for the disposal of wastewater from holding tanks was developed and implemented in 2020.

#### Personnel

There is a seven per cent increase in personnel costs for 2021 as compared to 2020, the drivers for these increases are:

- The first full year of the new sewer treatment plant operator position hired in 2020
- Wastewater portion of new electrician/instrument technician position
- Anticipated increase in position rating for senior operators
- Increases to benefits and wages scheduled in the CUPE agreement.

#### Operations

The majority of the budgeted 2021 operating expenses remained unchanged from 2020 amounts. A decrease in some operating expenses was identified as part of the COVID-19 response and renewal plan resulting in a three per cent decrease in the overall operating budget being anticipated. Table 3 below highlights the significant operating expense variances.



**Table 3: Operating Expense Variances**

Account Code	Description	2020 Adopted Budget	2021 Recommended Budget
03-2-336-254	<b>Chemicals:</b> Increase in chemical consumption with addition of new scrubber as part of odour control upgrades underway and due for completion before summer 2021.	\$178,000	\$223,000
03-2-336-366	<b>Engineering Fees:</b> Completion of CVWPCC site master plan as per recommendation from LWMP process.	\$60,000	\$250,000
03-2-336-387	<b>Other Professional Fees:</b> Bulk of LWMP expense now complete, and transition from planning to delivery of capital projects outside of operational budget.	\$245,000	\$176,000
03-2-336-438	<b>Contract Services Equipment/Machinery (CVWPCC):</b> Reduction in electrical services costs with hiring of in-house electrician.	\$89,000	\$70,000
03-2-336-468	<b>Minor Capital:</b> Deferred upgrades to Courtenay and Jane Place pump stations pending major upgrades or replacement through LWMP process.	\$285,000	\$75,000
03-2-337-438	<b>Contract Services Equipment/Machinery (Composting):</b> Reduction in electrical services costs with hiring of in-house electrician.	\$45,000	\$33,000
03-2-338-438	<b>Contract Services Equipment/Machinery (Pump Stations):</b> Reduction in electrical services costs with hiring of in-house electrician.	\$55,000	\$46,000

Capital

See below for a detailed list of budgeted capital projects summary. Appendix A provides a capital project close out summary for all projects completed in 2020.

Capital projects scheduled for 2021 include:

- CVWPCC: Completion of the basement piping replacement project that began in 2020; delay of project start due to COVID-19 has delayed completion until 2021. Completion of the phase two odour control upgrades at the plant began in 2020, including covering of the bioreactors and addition of a new chemical scrubber and will be complete in mid-2021.
- Sewer Conveyance Upgrades: The preferred conveyance route of option 2 tunnel forcemain full upgrade and related funding strategy is being recommended to the Sewage Commission on February 23, 2021, and has been incorporated into this recommended financial plan. Completion of the indicative design for the conveyance alignment with WSP and procurement of an owners engineer for design are planned tasks for 2021. The \$73 million project is planned to be funded through \$52 million borrowing and \$21 million reserves through a comprehensive funding strategy for this project developed in collaboration with municipal partners to ensure stable and incremental requisition levels. An AAP for borrowing of funds will be completed in spring 2021 with an estimated impact of

\$150/household. A 30-year debt term is recommended for this project given its 80 year expected service life and to ensure both current and future ratepayers fund this investment.

Design work for both the sewer conveyance, to remove the forcemain from Willemar Bluffs, and at the treatment plant for capacity upgrades will begin in 2021. Both the level of treatment at the CVWPCC and conveyance alignment have been reviewed and completed through the LWMP process to develop the capital plan. A site master plan for the CVWPCC will be completed in 2021, which will further refine the long term expansion and upgrade plans for the site based on the level of treatment decision made through the LWMP process in late 2020.

A summary of the five year capital plan including carry forwards from 2020, for a total 2021 capital project budget of \$8,633,873 is below.

**Table 4: Five Year Capital Plan Carry Forwards Summary**

Capital Plan	2020 CFWD	2021	2022	2023	2024	2025
Capital Equipment	\$-	\$-	\$-	\$-	\$260,000	\$260,000
Sewer Conveyance Upgrades	-	4,200,000	25,800,000	43,000,000	-	-
Annual AM Projects	-	-	132,000	211,000	150,000	-
CFB Comox Pump Upgrades	82,024	-	-	-	-	-
Annual Capital Projects	50,000	160,000	145,000	45,000	-	-
LWMP – Ph 1 CVWPCC Upgrades	-	-	-	-	2,000,000	7,676,768
Vehicle Purchase	-	50,000	-	-	-	100,000
EQ Basin	125,000	-	-	-	-	-
Bio Reactors Odour Control	3,966,849	-	-	-	-	-
<b>TOTAL</b>	<b>\$4,223,873</b>	<b>\$4,410,000</b>	<b>\$26,077,000</b>	<b>\$43,256,000</b>	<b>\$2,410,000</b>	<b>\$8,036,768</b>



Reserves

The 2021-2025 Recommended Financial Plan utilizes all available capital works and DCC reserves, effectively drawing reserve funds down to minimum levels by 2023 with the sewer conveyance pipe upgrade completion, although these funds start to increase again in 2024 as they are built back up to fund treatment plant upgrades in the ten year financial plan. Available funds are maximized through the long-term capital plan with the utilization of debt borrowing as necessary, and ensure stable and incremental revenue levels.

A significant portion of the DCC reserve fund was spent in 2018/2019 to complete the Hudson Trunk, Greenwood Trunk and Odour Control Upgrade capital projects. Starting in 2020 the DCC reserve funds were at minimal levels, DCC collections have been estimated conservatively at \$1.75 million annually over the financial plan although recent collections have been over \$2 million. Any available DCC funds will be utilized to fund eligible projects through the long-term capital plan.

The projected reserve fund balances as at December 31, 2020, are provided in Table 5.

**Table 5: Projected Ending Reserve Fund Balances**

<b>Reserve Levels</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Future Expenditure Reserve	\$224,286	\$299,048	\$373,810	\$448,572	\$523,334	\$598,096
Capital Works Reserve	6,566,854	4,475,701	6,787,951	965,107	2,719,321	3,556,533
DCC Reserve	7,971,043	5,396,043	3,346,043	296,043	546,043	619,275
<b>TOTAL</b>	<b>\$14,762,183</b>	<b>\$10,170,792</b>	<b>\$10,507,804</b>	<b>\$1,709,722</b>	<b>\$3,788,698</b>	<b>\$4,773,904</b>

The finalized reserve fund balances will be updated once the 2020 year end is completed.

The capital works reserve fund is used to fund both the asset management plan and priority capital projects required for the service, while DCC reserves can only be used to fund projects which increase the capacity of the service and are included on the DCC project list.

Debt

The 2021-2025 financial plan includes the recommended funding strategy of \$52 million of borrowing for the sewer conveyance pipe replacement project, and \$6 million for the first phase of the treatment plant upgrades planned for 2025 through short-term borrowing through construction with transfer to long-term in 2026. The long term capital plan funding strategy provides for a mix of reserves and debt with stable and incremental revenues to fund operational costs and ongoing capital investment through transfers to reserves and debt servicing. At an estimated debt rate of 3 per cent through the Municipal Finance Authority (MFA) triple AAA credit rating, utilizing borrowing at terms of 20 to 30 years ensures that both current and future ratepayers fund the significant investments required in the next few years to provide sustainable regional sewer service to the region for decades to come.

An estimate of debt levels over the next five years for existing and planned debt issues is summarized below.

**Table 6: Debt Levels Estimate**

<b>Long-Term Debt Levels</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
MFA Issue 80	\$332,668	\$166,344	\$-	\$-	\$-
MFA Issue 95	441,140	330,855	220,570	110,285	-
MFA Issue 99	42,985	34,388	25,791	17,193	8,597
MFA Issue 102	589,602	491,335	393,068	294,801	196,534
MFA Sewer Conveyance	-	-	-	52,000,000	50,667,253
<b>TOTAL</b>	<b>\$1,406,395</b>	<b>\$1,022,912</b>	<b>\$639,429</b>	<b>\$52,422,280</b>	<b>\$50,872,384</b>

**Revenue Impacts**

The costs of the service are apportioned between the participating areas on the basis of the metered volume of sewage flows from each municipality relative to the total volume of combined sewage flows at the CVWPCC during the previous calendar year. Sewer user rates are set by the participating municipalities.

**Citizen/Public Relations**

In 2017, the CVRD awarded a multi-year contract to Zinc Strategies, a communications consultant, to assist the CVRD with communications for water and wastewater capital projects. With the significant amount of capital spending the CVSS is facing, Zinc Strategies has been crucial in supporting the CVRD Communications team to develop education and outreach material to inform the public about the various upcoming capital projects, including communications materials for the LWMP. Zinc Strategies will continue to support the CVRD Communications team on sewer projects in 2021.

Attachments: Appendix A – “Capital Project Close Out”

The table below highlights the projects, approved budgets, and actual/estimates on project completion.

Project	Total Project Budget	Actual/Estimate at Completion	Difference
CFB Comox PS Upgrade	\$1,300,000	\$1,290,000	(\$10,000)
CVWPCC Phase 1 Upgrades			
Basement Piping	\$501,000	\$318,000*	(\$183,000)
EQ Basin	\$6,610,000	\$2,687,000	(\$3,923,000)
Beach Nourishment Project at Willemar Bluffs	\$220,000	\$214,000	(\$6,000)
PLC Replacements at CVWPCC and Courtenay PS	\$152,000	\$145,000	(\$7,000)
<b>Total for Projects</b>	<b>\$8,783,000</b>	<b>\$4,654,000</b>	<b>(\$4,129,000)</b>

\*Estimate to project completion

**CFB Comox PS Upgrade**

<b>Objective:</b>	Upgrade facility for additional flows and add valve chamber for safety and equipment longevity	
<b>Scope Summary:</b>	<ul style="list-style-type: none"> <li>• Replace pumps, piping, and valves</li> <li>• Replace motor control centers including VFDs for optimizing pump control</li> <li>• Add new valve chamber for personnel safety and equipment longevity</li> <li>• Add new instrumentation to monitor station parameters to optimize transmission system upgrades and diagnose issues</li> </ul>	
<b>Final Project Cost:</b>	Total	\$1,290,000** not complete, – tracking under budget
<b>Project Timeline:</b>	Design:	December 2019 – June 2020
	Start of construction:	August 2020
	In operation:	December 2020 (temporary power)
	Project Completion:	January 2021

**Project Photos:**

Photo 1- New piping, flow meter and valves



Photo 2- Preparation for paving on Anderton Road

**Equalization (EQ) Basin and Basement Piping (under construction) at CVWPCC**

<b>Objective:</b>	The intent of the EQ basin is to help buffer peak wet weather flows to the CVWPCC and to ensure the outfall is not overloaded during high tides. It is expected be used about 50 hours/year. The intent of the basement piping project is the replacement of a number of process pipes that run within the basement of the CVWPCC as they are at the end of their service life and are in poor condition.
<b>Scope Summary:</b>	<ul style="list-style-type: none"> <li>Excavation and construction of a 6,400m<sup>3</sup> double lined EQ basin.</li> <li>Construction of two spoil berms between basin and Curtis Road with the intention of disrupting air flow and blocking sight lines to the plant.</li> <li>Replacement of a number of process piping lines within the basement of the CVWPCC.</li> </ul>
<b>Approved Budget:</b>	\$7,160,000 in 2019-2023 financial plan. <ul style="list-style-type: none"> <li>\$4,460,000 from capital works reserve.</li> <li>\$2,700,00 from short term borrowing (not necessary).</li> </ul>
<b>Final Project Cost:</b>	EQ Basin: \$2,687,000 Basement Piping: \$318,000 (nearing completion, project start date was delayed due to COVID-19)
<b>Project Timeline:</b>	<i>EQ Basin:</i> Design: January 2017 - May 2019 Start of construction: July 2019 In operation: March 2020 <i>Basement Piping:</i> Start of construction: September 2020 In operation: February 2021 (forecast)

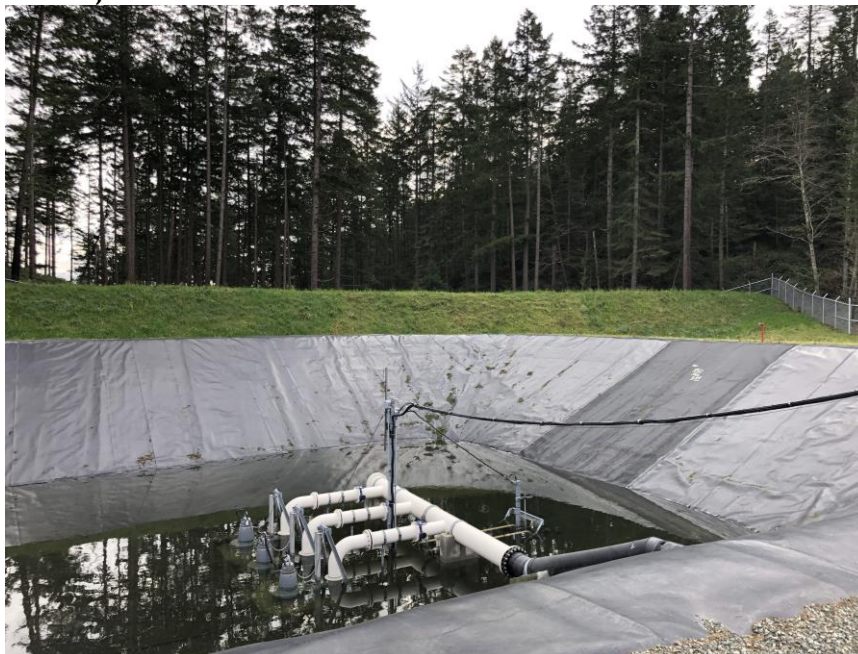
**Project Photos:**

Photo 1- Completed EQ Basin



Photo 2- Basement piping, primary sludge lines replaced.



**Beach Nourishment Project at Willemar Bluffs**

<b>Objective:</b>	To add additional cover over the forcemain in two locations, where annual inspections revealed continued reduction in depth of cover, to mitigate risk of forcemain being exposed to wave action.	
<b>Scope Summary:</b>	The project included supply and placement of 2114 tonnes of beach fill consisting of cobble and sand along approximately 200 meters of beach.	
<b>Final Project Cost:</b>	Total	\$214,000
<b>Project Timeline:</b>	Design:	June 2020
	Start of construction:	October 2020
	Completion:	November 2020

**Project Photos:**

Photo 1- Nourishment Areas along Willemar Bluffs



Photo 2- Material Placed at Nourishment Areas

**CVWPCC and Courtenay Pump Station PLC Replacement**

<b>Objective:</b>	To replace aging control system infrastructure as well as antiquated PLC and HMI/SCADA programming standards using internal workforce to help with cost savings.	
<b>Scope Summary:</b>	<ul style="list-style-type: none"> <li>• Design new PLC rack,</li> <li>• Design new control panel layout</li> <li>• Develop new PLC program</li> <li>• Develop new SCADA screens</li> <li>• Purchase equipment</li> <li>• Install purchased equipment and execute electrical work.</li> <li>• Shutdown existing control system while maintaining facility operation.</li> <li>• Commission new control system.</li> </ul>	
<b>Final Project Cost:</b>	Total	\$144,000
<b>Project Timeline:</b>	Design:	September 2019
	Start of construction:	(Courtenay Pump Station) May 2020 (CVWPCC) July-August 2020
	In operation:	(Courtenay Pump Station) June 2020 (CVWPCC) September 2020

**Project Photos:**

Photo 1- CVWPCC PLC Rack

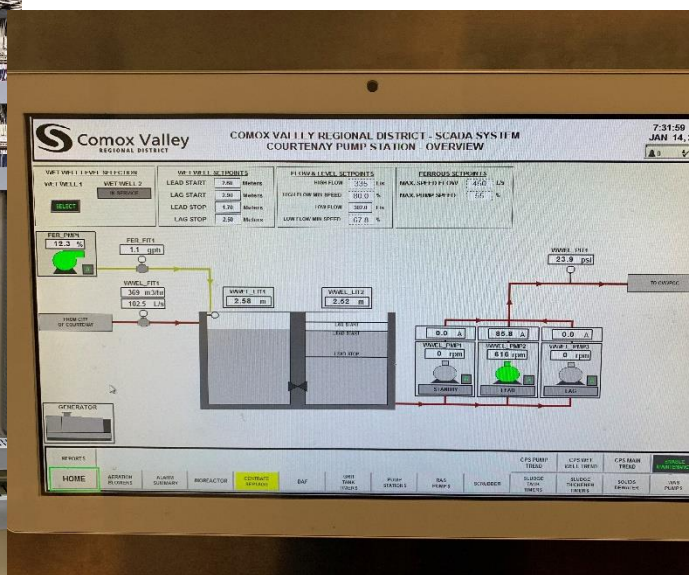


Photo 2- Courtenay PLC – New SCADA Screen