

**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, OCTOBER 13, 2021**

SUBJECT **Core Area Liquid Waste Management Service - 2022 Operating and Capital Budget**

ISSUE SUMMARY

To provide an overview of the 2022 Core Area Liquid Waste Management Service budget including 2021 year end budget projections and budget highlights.

BACKGROUND

As of 2021 the Core Area Wastewater System has provided wastewater collection, conveyance and tertiary treatment for the sewered areas of the seven participating municipalities and two First Nations, serving a population equivalent of approximately 320,000 and treating an average of almost 82 million litres of wastewater per day. It is also noted that the Capital Regional District (CRD) owns and operates other sub-regional and local wastewater systems on the Saanich Peninsula and across the Electoral Areas, allocating service and program costs on a cost recovery basis.

The CRD accepted operational responsibility for the McLoughlin Point Wastewater Treatment Plant (MPWWTP) on January 13, 2021, and the other conveyance system components, including pump stations and pipelines, between September 2020 and May 2021. Acceptance of the Arbutus Attenuation Tank, is anticipated by November 2021. As reported in July, the commissioning period for the MPWWTP and the system as a whole is anticipated to extend well into the performance period for the MPWWTP, ending December 2022.

The 2022 Core Area Liquid Waste Management Service budget has been prepared for the Core Area Liquid Waste Management Committee's (Committee) consideration. The Committee will make budget recommendations to the CRD Board through the Committee of the Whole, on October 27, 2021. The 2022 budget reflects the operating costs of the MPWWTP and conveyance system, based on the first year of full system operation in 2021. The budget summary is attached as Appendix A.

As noted last year, the operating budget will continue to be refined over the next few years as:

- The operation of the MPWWTP is optimized through the second year of the contractual performance period.
- Equipment/process Operating and Maintenance (O&M) requirements provided by contractor/equipment supplier that served as the basis for the CRD maintenance management plans are optimized and modified to incorporate worker safety requirements and minimize other impacts such as odour.
- The outcome of the disk filter chemical pilot testing is known (by end of 2022) and the future chemical requirements (alum or ferric chloride) are confirmed.
- Biosolids disposal solutions and costs are determined (beyond three year time period).

2021 Year End Financial Projections

The 2021 budget for conveyance and treatment operations was \$28.2 million. At year end 2021, expenses are estimated to be \$25.3 million. The net variance of \$3.0 million or 10.5% of the 2021 operating budget is primarily a result of:

- Treatment process chemical expenses (ferric chloride) are estimated to be \$1.36 million under budget primarily due to on-going process/chemical use optimization with advice from the contractor (Harbour Resource Partners (HRP)) and the CRD's process engineering consultant in order to maximize the effectiveness of the secondary treatment processes.
- Electricity expenses are estimated to be \$1.5 million under budget primarily due to some electrical equipment operating at less load than anticipated, reducing power consumption and peak load period costs.
- Equipment repair costs are estimated to be \$1.0 million under budget as a result of fewer repairs due to age of equipment.
- Provincial outfall permit costs are estimated to be \$0.5 million over budget due to extension of Clover Point and Macaulay Point outfall permits (for 2021 only) to allow commissioning activities.
- Contracted services to assist with commissioning activities are estimated to be \$0.3 million over budget.

With regards to 2021 capital expenditures, the 2021 budget for the Residuals Treatment Facility (RTF) Hartland Resource Management General Partnership (HRMG) payment under the P3 Agreement was set at \$5.5 million. Based on the terms of the agreement, the two month delay in Service Commencement, drove a \$1 million year end variance. In addition, the 2021 debt expenditures are estimated to be \$0.3 million under budget at year end as a result of deferral of long term borrowing associated with the ongoing capital plan.

The total budget surplus is proposed to be budgeted as follows:

- \$1.3 million additional transfer to the Operating Maintenance Reserve Fund (described further below)
- \$0.6 million additional transfer to the Equipment Replacement Reserve Fund (described further below)
- \$1.5 million additional transfer to the Capital Reserve Fund (described further below)
- \$0.2 million carried forward to offset 2022 budget

2022 Operating Budget

Conveyance and Treatment Operations

The 2022 operating budget for conveyance and treatment operations reflects non-discretionary expenses such as negotiated staff wages/salaries, regulatory program and corporate support services, residuals treatment and disposal costs, and other operating expenses such as chemicals and electricity costs and overhead. With the operational experience gained with the new infrastructure this year, budget realignment and adjustments have been incorporated across the budget including reductions in the chemical and electricity expense budgets. However, staff are not proposing reductions consistent with the projected 2021 variances until more operating experience is gained and longer term operating/cost trends are established. The 2022 budget

also includes \$0.2 million for additional one-time environmental programs staffing expenses and operating supplies for MPWWTP and \$0.4 million in cyclical maintenance expenses funded from the Operating Reserve Fund.

The total 2022 operating expenditures are budgeted at \$28.3 million, an increase of 0.14% or a 1.2% decrease excluding cyclical maintenance costs (funded through operating reserves). The remaining \$21.0 million is associated with liquid and solids treatment operations.

Table 1: 2022 Year over Year Budget Comparison

Expenditure Type	2022 Financial Plan (millions)	2021 Financial Plan (millions)	Change (millions)	% Change
Operations	28.3	28.2	0.0	0.1%
Debt Servicing	7.5	6.7	0.7	11.1%
Capital Funding	5.5	5.5	0	0.0%
Transfers to Reserves	9.8	10.3	-0.5	-5.1%
Total	\$ 51.1	\$ 50.8	\$ 0.3	0.5%

Environmental Services Programs Operations

There are several environmental programs that the Core Area Wastewater Service participates in as part of the liquid waste management function which are also critical to achieving the CRD's commitments under the Liquid Waste Management Plan (LWMP). These programs are summarized below. The requisition impact in 2022 for these programs are within or under the benchmark increase of 2%. As itemized in the service planning staff report on this agenda, service level adjustments with regards to biosolids management and lab services are included in the 2022 budget.

Regional Source Control Program – The program is aimed at reducing contaminants that industries, institutions and households discharge into sanitary sewers. The program will be more important than ever in point-of-discharge contaminant reduction in order to protect the sewage collection and treatment systems, the quality of the treatment plant sludge and biosolids, the marine receiving environment, and public and worker health and safety.

Septage Disposal Program – The program provides oversight for the contract between the CRD and SPL Wastewater Recovery Ltd. who provides septage receiving and processing services for the CRD.

Onsite Sewage System Management Program – The program manages septic system maintenance through bylaw compliance monitoring and educational materials in order to reduce the impacts of failing septic systems on human health and the environment.

Core Area Liquid Waste Management Plan Administration – The program manages the LWMP and oversees implementation of the commitments. The program also conducts all reporting and plan amendment preparation for the service.

Harbours Studies Program – The program provides for the CRD to work in partnership with other stakeholders, including communities, local governments and senior governments, to protect and improve the environmental quality of Victoria and Esquimalt harbours.

Core Area Stormwater Quality Management Program – Using an integrated watershed

management approach, the program coordinates the management of stormwater quality, including investigations to assess shoreline discharges and contaminant sources, in order to protect the marine environment.

Inflow and Infiltration Enhancement Program – The program provides for the CRD to engage with the participants to identify and reduce the amount of rain and ground water that enters the sanitary sewer systems. The program budget is funded through the conveyance and treatment budget.

Marine Monitoring Program - The program provides for the marine environment sampling and testing and regulatory reporting related to the effluent discharges from CRD wastewater facilities. The program budget is funded through the conveyance and treatment budget.

2022 Capital Budget

Capital Plan

As noted last year, long term capital plan has now been prepared for the 5, 10, 20 and 30 year time horizons for the major asset categories. The plan includes projects that will replace infrastructure at end-of-service life to ensure the system continues to operate reliably without service interruptions or risk to property, public health or the environment. The plan also includes projects that add conveyance capacity 'just in time' in order to convey flows to 2045 and utilize the ultimate design capacity of existing conveyance facilities, such as pump stations, and the MPWWTP. The value of the 30 year capital plan is estimated at \$116.4 million.

The capital budget for 2022 is \$36.5 million (including \$26.9 million carried forward from 2021 (Q2 estimate) and excluding Core Area Wastewater Treatment Project (CAWTP) debt); the total 2022-2026 capital budget is \$56.9 million (see Appendix B). This capital program will be funded almost entirely by long-term debt, with three 2022 projects funded by \$1.4 million from the Capital Reserve Fund (2021 budget surplus transfer). There are projects planned in each of the major asset categories including pump stations upgrades, gravity sewer and manhole upgrades and replacements, pressure pipe upgrades, flow meter installations and replacements, system control and communications upgrades, and outfall retrofits.

Capital Funding

There are two primary elements to the capital program funding. There are reserve funds established through annual contributions to allow accumulation of funds for future expenditures or pay-as-you-go funding; there are four reserve funds for the Service which are explained in more detail below. Then there are debt servicing costs (principal and interest payments) associated with long term capital infrastructure financing; in summary, for treatment and conveyance, there are three different debt programs, one associated with legacy conveyance system project financing (debt outstanding estimated at the end of 2021 of \$2.5 million which will be retired by 2025), one associated with the CAWTP financing (debt outstanding estimated at the end of 2021 of \$94.1 million which will be retired by 2032 based on current financing strategy). New financing under the \$57 million loan authorization approved in 2021, will result in long-term debt funding near the end of 2022, as short-term financing is currently used to fund active projects within the Core Area. In summary, future capital funding will be a combination of reserves and debt financing. Debt financing in this case is supporting an appropriate level of investment in system capital while balancing a lower annual funding requirement. As the capital program

progresses, any project surpluses will be used to fund upcoming capital and offset future borrowing requirements.

The 2022 budget for the Residuals Treatment Facility HRMG payment under the P3 Agreement is set at \$5.5 million. Based on the terms of the agreement, this budget amount is fixed until 2040.

Reserve Funding

There are currently four reserve funds established for this service. Reserves serve a number of purposes including stabilizing revenue requirements and funding capital renewal and replacement. Additional organization guidance is provided through the Board approved Asset Management Strategy, Capital Reserve Guidelines, and various financing strategies.

The four reserve funds established by bylaw are:

1. The Operating Maintenance Reserve
2. Equipment Replacement Reserve
3. CAWTP Debt Retirement Reserve
4. Capital Replacement Reserve

The Operating Maintenance Reserve fund is used to pay for significant O&M expenses that do not occur on an annual basis, such as odour control system carbon replacement, marine outfall inspections and pipe pigging/cleaning. 2022 operating maintenance reserve fund contributions are set at \$1.0 million.

The Equipment Replacement Reserve fund is used to pay for 'minor' equipment replacement that typically has a service life of less than five years and/or a value of less than \$25,000. The 2022 equipment replacement reserve fund contributions are set at \$0.9 million. Based on projected expenses to meet operational requirements, this is the anticipated level of annual funding, with inflationary adjustments over time.

CAWTP Debt Retirement Reserve Fund – is used to accumulate funds sufficient to pay down the treatment program debt issuances, in full, as they hit their 10 year renewal option. The establishment of this fund aligns with the financing strategy approved by the Board in 2019 which was designed to deliver the most cost effective financing structure, with the lowest overall cost to the participants. The combined annual contribution to the Debt Retirement Reserve and the debt servicing costs for the CAWTP financing totals \$12 million (plus issuance costs in 2022).

Capital Replacement Reserve Fund – This fund is used to pay for 'major' equipment and infrastructure replacement that has a service life of 5 to 25 years or more, such as major mechanical, electrical and instrumentation equipment, treatment process and odour control equipment and WWTP building equipment such as heating and cooling systems. The replacement and funding of other components of the wastewater system that have a service life of up to 75 years, such as gravity trunk sewers and forcemains, large pumps, electrical distribution systems, concrete tanks and superstructures and major building components, will be part of the long term capital plan and largely funded through a combination of reserves and long term financing. The 2022 reserve fund contribution has been set at \$3.1 million. Based on an evaluation of the service lives and value of the assets that would be replaced using this fund, and given that the need for the funding will significantly increase 20 to 25 years from now, the annual contribution will likely be smaller and vary for the next ten years while the CAWTP debt is paid down. In alignment with the CAWTP financing strategy and Asset Management Strategy, the long term

plan is to increase the annual contribution equal to debt servicing costs once the debt is retired.

In summary and to illustrate the long-range forecasts of the operating, capital and reserve expenditures, Appendix B demonstrates the allocation of total budget.

2022 Budget Context – Conveyance and Treatment

The following tables summarize the total 2022 wastewater conveyance and treatment expenditures and revenues. The totals are also summarized in Appendix C, along with 2021 year end projections and 2022-2026 budget projections.

Table 2: 2022 Budgeted Expenses

Budget Component	2022 Budget (millions)	% of Total
Treatment Plant O&M	14.1	27.6%
Conveyance System O&M	7.3	14.3%
Residuals Treatment Facility Operating	7.0	13.7%
Residuals Treatment Facility Capital	5.5	10.8%
Operating Reserve Fund Contributions	1.0	2.0%
Equipment Replacement Reserve Fund Contribution	0.8	1.6%
Long-term Capital Reserve Fund Contribution	3.1	6.1%
CAWTP Debt Retirement Reserve Fund Contribution	4.8	9.4%
CAWTP Debt Servicing	7.3	14.3%
Capital Renewal & Capacity Upgrades Debt Servicing	0.2	0.4%
Total	\$ 51.1	100.0%

Table 3: 2022 Budgeted Revenue

Budget Component	2021 Budget (millions)	% of Total
Other Municipal Solids - SPWWTP	0.9	1.8%
Hartland Leachate	0.2	0.4%
Core Area Wastewater Operations - Surplus Carryforward	0.2	0.4%
Core Area Wastewater Operations - Ops Reserve	0.3	0.6%
Core Area Wastewater Operations Payments in Lieu	0.8	1.6%
Core Area Wastewater Operations - Requisition	27.7	54.2%
Core Area Wastewater Capital - Payments in Lieu	0.6	1.2%
Core Area Wastewater Capital - Requisition	20.4	39.9%
Total	\$ 51.1	100.0%

Requisition

The 2022 requisition is \$48.0 million after incorporating the requisition for capital and debt servicing of the new and existing conveyance and treatment system works, as well as system operations. The 2022 requisition represents a 0.97% increase over the 2021 requisition.

Requisition levels remain in line with the business case. The final incremental lift to \$40M for

wastewater treatment was in 2021. Total requisition of \$51.1M in 2022 includes funding for both wastewater operations as well as the pre-existing conveyance operations.

ALTERNATIVES

Alternative 1

That the Core Area Liquid Waste Management Committee recommends that the Committee of the Whole recommends that Capital Regional District Board:

1. Review and approve the 2022 Core Area Liquid Waste Management Service operating and capital budgets as presented; and
2. Direct staff to balance the 2021 actual revenue and expenses on the transfer to the operating, equipment, and capital replacement reserves.

Alternative 2

That the Core Area Liquid Waste Management Committee refer the budget back to staff for additional information for the Capital Regional District Board's consideration.

IMPLICATIONS

Environmental Implications

The treated effluent regulatory criteria that apply to the operation of the McLoughlin WWTP and the Core Area System are set out in the CRD's Provincial Registration and the Federal Wastewater System Effluent Regulations. Treatment plant performance continues to improve resulting in more consistent effluent quality and compliance than in the first six months of operation (reported in July).

Disinfection of treated effluent is not required to meet the regulations at this time. However, future consideration of the need to disinfect effluent will be subject to on-going monitoring of the impact of wet weather overflows and treated discharges. Management of wet weather discharges will be advanced through the on-going implementation of CRD and municipal inflow and infiltration reduction programs. Progress on inflow and infiltration initiatives and other commitments under the Core Area LWMP will be reported regularly to the Committee.

Intergovernmental Implications

Staff will continue to work closely with Esquimalt and Songhees First Nations to finalize Wastewater Service Agreements for each Nation.

With respect to residual solids treatment operations, the province has accepted of the short-term biosolids contingency plan. As directed by the province, the CRD will continue to develop the long-term biosolids strategy for implementation by January 1, 2025. The budget implications of the final strategy will be considered by the Committee in advance and will be reflected in future budgets.

Social Implications

The potential neighbourhood impacts related to the operation of the conveyance system and WWTP, including noise and odour, will continue be closely monitored by the CRD. If further modifications to equipment are determined to be necessary to mitigate impacts, staff will report to the Committee. The CRD will continue to respond to concerns and engage with the community groups and committees as necessary.

Financial Implications

As forecasted in previous reports to the Committee, the 2022 operating and capital budgets include requisitions to cover expenditures associated with the operation of the conveyance system, WWTP, RTF, as well as on-going capital investment and longer-term reserve contributions. The operating and capital cost apportionments for each participant are as per CRD Bylaw No. 4304, adopted by the CRD Board in August 2020.

Alignment with Board & Corporate Priorities

The 2019-2022 CRD Corporate Plan is aligned to the Board direction. It highlights the initiatives the CRD needs to deliver over the Board's four-year term to address the region's most important needs. The Corporate Plan identified six initiatives under the Wastewater initiative, that fall under the Core Area Liquid Waste Management Committee's mandate. Progress on these initiatives to date and upcoming initiatives affecting the 2022 budget are set out for the Committee and Board in the Service Planning report.

CONCLUSION

This 2022 Core Area Liquid Waste Management Service budget has been prepared for the Core Area Liquid Waste Management Committee's (Committee) consideration. The Committee will make budget recommendations to the Capital Regional District (CRD) Board through the Committee of the Whole. The 2022 budget reflects the operating costs of the McLoughlin Point Wastewater Treatment Plant (WWTP) and the conveyance system, as well as the existing and new capital costs and reserve fund contributions. The operating budget will continue to be refined over the next two to three years as the operation of the WWTP is optimized through the two year contractual performance period and the CRD gains experience with the new operation. The CRD has resumed investment in the renewal of the conveyance system infrastructure that existed prior to the CAWTP, to ensure the system continues to operate reliably and without impacts on public health or the environment. The financial implications of the 2022 operating and capital budget vary by participant, depending on the operating and capital cost apportionments associated with annual flow and allocated treatment capacity.

RECOMMENDATION

That the Core Area Liquid Waste Management Committee recommends that the Committee of the Whole recommends that Capital Regional District Board:

1. Review and approve the 2022 Core Area Liquid Waste Management Service operating and capital budgets as presented; and
2. Direct staff to balance the 2021 actual revenue and expenses on the transfer to the operating, equipment, and capital replacement reserves.

Submitted by:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services
Concurrence	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

Appendix A: Budget Summary
Appendix B: Five Year Capital Plan
Appendix C: Long-term Budget Overview

APPENDIX A

3.717 & 3.798C - Core Area Wastewater Combined Summary

3.717 - OPERATING COSTS:

- Allocation - IWS Operations
- Allocation - Standard Overhead
- Allocation - Enviro Monitoring & Marine Protection Programs
- Biotreatment and Disposal
- Operating - Other
- Repairs & Maintenance
- Electricity & Utilities
- Supplies - Chemical & Other

TOTAL OPERATING COSTS

*Percentage Increase over prior year

3.717 - RESERVE:

Transfer to Operating Reserve
Transfer to Equipment Replacement Fund

3.798C - RESERVE:

Transfer to RTF Capital
Transfer to Capital Replacement Reserve
Transfer to WTP Debt Retirement Reserve

TOTAL CAPITAL / RESERVESCAWTP Debt
CAWW Debt

3,798C - Total Debt Expenditures

MFA Debt Reserve

TOTAL COSTS

*Percentage Increase over prior year

Internal Recoveries

TOTAL COSTS LESS INTERNAL RECOVERIES

*Percentage Increase over prior year

FUNDING SOURCES (REVENUE)

Estimated Balance C/F from 2021 to 2022
Balance C/F from 2020 to 2021
Grants in Lieu of Taxes
Transfer from Operating Reserve
Revenue - Other

TOTAL REVENUE

REQUISITION

*Percentage increase over prior year

PARTICIPANTS: Victoria, Oak Bay, Esquimalt, Saanich, View Royal, Colwood, Langford, Esquimalt FN, Songhees FN

CAPITAL REGIONAL DISTRICT
FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2022 to 2026

Service No.	3.798C	Carry						
	Debt - Core Area Wastewater Capital	Forward from	2022	2023	2024	2025	2026	TOTAL
		2021						

EXPENDITURE

Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$120,000	\$120,000	\$0	\$0	\$0	\$0	\$0	\$120,000
Land	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Engineered Structures	\$26,575,000	\$36,168,000	\$8,030,100	\$11,280,000	\$17,380,000	\$1,510,000	\$1,510,000	\$67,868,100
Vehicles	\$220,000	\$220,000	\$0	\$0	\$0	\$0	\$0	\$220,000
	\$26,915,000	\$36,508,000	\$8,030,100	\$11,280,000	\$17,380,000	\$1,510,000	\$1,510,000	\$74,708,100

SOURCE OF FUNDS

Capital Funds on Hand	\$1,697,100	\$1,697,100	\$1,068,100	\$0	\$0	\$0	\$0	\$2,765,200
Debenture Debt (New Debt Only)	\$10,225,000	\$17,515,000	\$6,800,000	\$11,150,000	\$17,350,000	\$1,500,000	\$1,500,000	\$48,015,000
Equipment Replacement Fund	\$0	\$828,000	\$162,000	\$130,000	\$30,000	\$10,000	\$10,000	\$960,000
Grants (Federal, Provincial)	\$14,992,900	\$14,992,900	\$0	\$0	\$0	\$0	\$0	\$14,992,900
Donations / Third Party Funding	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reserve Fund	\$0	\$1,475,000	\$0	\$0	\$0	\$0	\$0	\$1,475,000
	\$26,915,000	\$36,508,000	\$8,030,100	\$11,280,000	\$17,380,000	\$1,510,000	\$1,510,000	\$74,708,100

Appendix C – Long-term Budget Overview

