Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Notice of Meeting and Meeting Agenda
Core Area Liquid Waste Management Committee

Wednesday, July 28, 2021 **1:30 PM** **6th Floor Boardroom**
625 Fisgard Street
Victoria, BC V8W 1R7

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We pledge to make our meetings a place where all feel welcome and respected.

1. Territorial Acknowledgement

2. Approval of Agenda

3. Adoption of Minutes

3.1. 21-271 Minutes of the January 27, 2021 meeting.

Recommendation: That the minutes of the Core Area Liquid Waste Management Committee meeting of January 27, 2021 be adopted.

Attachments: Minutes - Jan. 27, 2021

4. Report of the Chair

5. Presentations/Delegations

Due to limited seating capacity, this meeting will be held by Live Webcast without the public present.

To participate electronically, complete the online application for "Addressing the Board" on our website. Alternatively, you may email the CRD Board at crdboard@crd.bc.ca.

6. Committee Business

6.1. 21-562 Residuals Treatment Facility - Bylaw No. 4414 - Other Municipal Solids Tipping Fees and Charges Bylaw No. 1, 2021

Recommendation: The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:
1. That CRD Bylaw No. 4414, "Other Municipal Solids Tipping Fees and Charges Bylaw No. 1, 2021", be introduced and read a first, second, and third time; and
2. That CRD Bylaw No. 4414 be adopted.

Attachments: Staff Report: RTF-Bylaw 4414 -Other Municipal Solids Tipping Fees & Charges

Appendix A: CRD Bylaw No. 4414

6.2. 21-198 Core Area Wastewater System Commissioning and Operations Update and Construction Completion Status Report

Recommendation: The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:
That this report be received for information.

Attachments: Staff Report: Core Area Wastewater System Update & Status Report

Appendix A: Governance Transition Report (May 17, 2021)

Appendix B: WTP Remaining Works Status Report (July 2021)

7. Notice(s) of Motion

8. New Business

9. Adjournment

Next Meeting:
Special Meeting Wednesday, September 22, 2021 at 11:30 am

Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Meeting Minutes

Core Area Liquid Waste Management Committee

Wednesday, January 27, 2021 **1:30 PM** **6th Floor Boardroom**
625 Fisgard Street
Victoria, BC V8W 1R7

PRESENT
Directors: D. Blackwell (Chair), L. Seaton (Vice-Chair)(EP), S. Brice, B. Desjardins, J. Brownoff (for F. Haynes)(EP), L. Helps, B. Isitt (EP), J. Loveday (EP), R. Martin (EP), R. Mersereau (1:33 pm), K. Murdoch (EP), D. Screech, N. Taylor, G. Young

Staff: L. Hutcheson, General Manager, Parks and Environmental Services; T. Robbins, General Manager, Integrated Water Services; D. Fairbairn, Vice Chair, Core Area Wastewater Treatment Project Board; D. Clancy, Project Director, Core Area Wastewater Treatment Project Board; E. Scott, Deputy Project Director, Core Area Wastewater Treatment Project Board; M. Lagoa, Deputy Corporate Officer; S. Closson, Committee Clerk (Recorder)

EP - Electronic Participation

Regrets: F. Haynes, Board Chair C. Plant (ex-officio)

The meeting was called to order at 1:30 pm.

1. Territorial Acknowledgement

Chair Blackwell provided a Territorial Acknowledgement.

2. Approval of Agenda

MOVED by Director Brice, SECONDED by Director Desjardins,
That the agenda for the January 27, 2021 Core Area Liquid Waste Management Committee meeting be approved.
CARRIED

3. Adoption of Minutes

3.1. 21-101 Minutes of the July 22, 2020 and October 7, 2020 Core Area Liquid Waste Management Committee meetings

MOVED by Director Desjardins, SECONDED by Director Taylor,
That the minutes of the Core Area Liquid Waste Management Committee meetings of July 22, 2020 and October 7, 2020 be adopted as circulated.
CARRIED

4. Chair's Remarks

Chair Blackwell noted this is the Core Liquid Waste Management Committee's

first meeting of the year. She noted it was nice to be back as Chair and hopes the committee will make good progress this year.

5. Presentations/Delegations

There were no presentations or delegations.

6. Committee Business

6.1. 21-077 2021 Core Area Liquid Management Committee Terms of Reference

MOVED by Director Screech, SECONDED by Director Mersereau,
That the Core Area Liquid Waste Management Committee receive the 2021 Terms of Reference attached as Appendix A.
CARRIED

6.2. 21-098 Wastewater Treatment Project Q4 2020 Quarterly Report

D. Fairbairn spoke to the 2020 Q4 Report.

Discussion ensued on the following:
- original project scope
- winter storm overflows
- inflow and infiltration systems (I & I)
- Trent Force Main
- project close out report

MOVED by Director Taylor, SECONDED by Director Helps,
The Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:
That this report be received for information.
CARRIED

6.3. 21-097 Wastewater Treatment Project November 2020 Monthly Report

MOVED by Director Brice, SECONDED by Director Taylor,
The Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:
That this report be received for information.
CARRIED

6.4. 20-700 Wastewater Treatment Project Q3 2020 Quarterly Report

MOVED by Director Helps, SECONDED by Director Brice,
The Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:
That this report be received for information.
CARRIED

6.5. 20-795 Wastewater Treatment Project October 2020 Monthly Report

MOVED by Director Helps, SECONDED by Director Brice,
The Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:

That this report be received for information.
CARRIED

7. Notice(s) of Motion

There were no Notice(s) of Motion.

8. New Business

There was no new business.

9. Adjournment

MOVED by Director Helps, SECONDED by Director Mersereau,
That the January 27, 2021 Core Area Liquid Waste Management Committee meeting be adjourned at 1:55 pm.
CARRIED

_____
CHAIR

_____
RECORDER

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EEP 21-32

REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, JULY 28, 2021

SUBJECT **Residuals Treatment Facility – Bylaw No. 4414 – Other Municipal Solids Tipping Fees and Charges Bylaw No. 1, 2021**

ISSUE SUMMARY

Approval of the tipping fees bylaw for processing of regional wastewater residuals at the Residuals Treatment Facility (RTF) that are generated outside of the core area service.

BACKGROUND

The Core Area Wastewater Treatment Project included the construction of the RTF, located adjacent to the Hartland Landfill. The RTF was built to produce Class A biosolids from wastewater residuals generated at the new McLoughlin Point Wastewater Treatment Plant. The RTF also has the capacity to accept wastewater residuals from other facilities within the capital region but located outside of the core area through the Other Municipal Residual Solids (OMS) receiving station. Staff estimate that OMS could represent approximately 10% of the total solids processed through the RTF.

The OMS station is designed to receive residuals from transfer trucks and incorporate them into the larger RTF process stream, as follows:

- Dewatered Residuals: high solids content (greater than or equal to 10%) residuals are loaded into the OMS reception hopper and then directed into the main sludge pump reception hopper.
- Pumpable Residuals: low solids content (less than 10%) residuals are pumped to either the residual storage tank or directly into the digester.

Annual revenue generated from the OMS is an economic opportunity for the core area to offset a portion of the fixed annual capital and operational costs for the RTF. Based on the five-year budget for 2021, projected fees could recover about 10% of the total annual operating and capital cost of the RTF.

CRD Bylaw No. 4414 (Appendix A) provides the administrative mechanism to receive these other municipal solids at the RTF.

ALTERNATIVES

The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:

Alternative 1

1. That CRD Bylaw No. 4414, “Other Municipal Solids Tipping Fees and Charges Bylaw No. 1, 2021”, be introduced and read a first, second, and third time; and
2. That CRD Bylaw No. 4414 be adopted.

Alternative 2

That CRD Bylaw No. 4414 be referred back to staff for additional information.

IMPLICATIONS

Financial Implications

Selection of appropriate and competitive fees is an important consideration in maximizing the use of the RTF for other municipal solids. Fees are structured on a cost recovery basis while reflecting the region's need to meet regulatory requirements for wastewater management. In addition, the tipping fees incorporate an understanding of the cost (per tonne) to produce and beneficially reuse biosolids generated at the RTF. With no operational data available, there is a level of uncertainty around the Capital Regional District's (CRD) current estimated costs. Primary sources of uncertainty include estimates for anaerobic digester solids reduction volumes, dried biosolids beneficial reuse costs and timing of a future plant expansion. Given these uncertainties, staff are recommending tipping fees be designated for a three-year performance period of 2021-2024. After this performance period, appropriate OMS fees can be established based on collected RTF operational data and generated OMS revenue. Once the evaluation is complete, if required, an amendment to Bylaw No. 4414 will be put forward for consideration.

Provided below are the recommended fees developed to recover costs for disposal of OMS dewatered and pumpable residuals for the period of 2021-2024:

- Dewatered Residuals - $225 per wet tonne: This fee accounts for RTF costs to process dewatered residuals into a dried Class A biosolid and beneficial use under the CRD's biosolids beneficial use strategy. The rate is set to be equivalent to the estimated per tonne cost for the RTF to produce and beneficially reuse biosolids from core area wastewater residuals.

- Pumpable Residuals - $45 per wet tonne: This fee was selected to be competitive with the current market place costs for liquid waste processing, and hence provides an economically viable alternative at the OMS station. The rate considers costs to process residuals into a dried Class A biosolid, use of the centrate return line for excess liquids and beneficial reuse of biosolids.

The proposed fee structure represents an estimated annual revenue stream of approximately $1.1-$1.3 million, if all potential municipal or sub-regional facilities use the OMS station. This projected revenue represents roughly 10% of the budgeted annual operational and capital costs of the RTF facility and represents a full recovery of the estimated 10% capacity usage. OMS disposal and beneficial use is subject to changes in processing costs, transportation costs and capital outlay, which may be reflected in future rate adjustments.

Environmental & Climate Implications

Beneficial use of residuals at the RTF has many positive climate implications (e.g., displacing coal as fuel in cement kilns, promoting plant growth for carbon sequestration and methane capture of landfill gas). Directing residuals within the capital region to the RTF also ensures their beneficial reuse conforms to all provincial and regional regulatory requirements.

Since 2011, a temporary allowance has been provided to facilities within the capital region to deposit wastewater residual solids at the Hartland Landfill. This allowance runs counter to the Ministry of Environment & Climate Change Strategy requirement for beneficial reuse of wastewater residuals, and consumes valuable airspace in the landfill. The OMS receiving station represents an available beneficial reuse option in the region. Furthermore, staff anticipate that the landfill allowance for other facilities will be rescinded upon stable operation of the RTF.

CONCLUSION

Through the Other Municipal Residual Solids (OMS) receiving station, the Residuals Treatment Facility has capacity to accept wastewater residuals from municipal and sub-regional facilities located outside of the core area. Annual revenue generated from the OMS station is an economic opportunity for the Core Area Wastewater Service to offset a portion of the fixed annual capital and operating costs for the Residuals Treatment Facility. Selection of appropriate and competitive OMS fees is an important consideration in maximizing the use of this option. Bylaw No. 4414 outlines recommended tipping fees of $225 per wet tonne for dewatered residuals and $45 per wet tonne for pumpable residuals. Given uncertainties in operational and financial data, the developed tipping fees in Bylaw No. 4414 are designated for a three-year performance period to be revisited in 2024.

RECOMMENDATION

The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:

1. That CRD Bylaw No. 4414, “Other Municipal Solids Tipping Fees and Charges Bylaw No. 1, 2021”, be introduced and read a first, second, and third time; and
2. That CRD Bylaw No. 4414 be adopted.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: CRD Bylaw No. 4414, “Other Municipal Solids Tipping Fees and Charges Bylaw No. 1, 2021”

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4414

* *

A BYLAW TO PROVIDE FOR FEES AND CHARGES FOR TIPPING WASTEWATER SOLIDS FROM OTHER MUNICIPALITIES AT THE RESIDUAL SOLIDS TREATMENT FACILITY

* *

WHEREAS:

A. Pursuant to section 397 of the *Local Government Act*, the Board may, by bylaw, impose a fee or charge payable in respect of all or part of a service of the regional district, or the use of regional district property.

B. The Capital Regional District established wastewater services and facilities to collect, convey, treat and dispose of sewage within the Core Area for participating municipalities of Colwood, Esquimalt, Langford, Oak Bay, Saanich, Victoria and View Royal, under *Liquid Waste Management Core Area and Western Communities Service Establishment Bylaw No. 1*, 1995 (Bylaw No. 2312), and constructed a Residual Solids Treatment Facility.

C. The Board wishes to authorize and impose the fees and charges payable for the tipping of wastewater solids generated at other facilities in the capital region at the Residuals Solids Treatment Facility.

NOW THEREFORE, the Board of the Capital Regional District, in open meeting assembled, enacts as follows:

Tipping Fees

1. The Board hereby authorizes and imposes fees and charges for the tipping of wastewater solids at the Residuals Solids Treatment Facility from other Municipal sources, as set out in the attached Schedule “A” – Other Municipal Solids Tipping Fees.

Conditions of Access and Use

2. No party shall dispose of wastewater solids at the Residuals Solids Treatment Receiving Facility except in accordance with this Bylaw.

3. The Residuals Solids Treatment Receiving Facility is located at 280 Willis Point Road. Wastewater solids are defined as described in Schedule “A”, Table 1.

4. All deliveries made by covered and secure trucks to prevent spillage and unnecessary odours.

5. All trucks must enter and exit through the Hartland north road access unless otherwise directed.

6. All trucks must weigh in and weigh out.

7. Every party depositing wastewater solids at the Residuals Solids Treatment Receiving Facility shall pay to the Capital Regional District the applicable fees in the amounts as set out in the attached Schedule “A”.

8. **Credit.** Parties depositing liquid waste at the liquid waste site on a regular basis may apply to the Regional District for credit. If the Treasurer is satisfied of the credit worthiness of the party, credit may be granted to that party, in which case payment of the charge imposed under this bylaw shall be made and credit extended on the following conditions:

    i) The party receiving credit shall pay to the Regional District all fees in full within thirty (30) days of the last day of the month for which an invoice has been submitted. The Regional District will invoice monthly for liquid waste delivered during the preceding month. The invoice amount will be based on the total quantity of the waste delivered during the month, and the posted rates in effect at the time of delivery.

    ii) Late payment(s) will be subject to an interest penalty of 1 1/2 % per month.

    iii) The Regional District reserves the night to cancel, upon five (5) days' notice, the credit offered herein for late payment, non-payment or other justified cause as judged solely by the Regional District.

9. The fees and charges established under this Bylaw shall come into effect on the date of adoption of this bylaw.

10. A failure to comply with a condition of site access set out in ss. 2 to 7, or on conditions of use set out in section 7, is an offence.

11. This Bylaw may be cited as "Other Municipal Solids Tipping Fees and Charges Bylaw No.1, 2021".

READ A FIRST TIME THIS	__	DAY OF	__	2021
READ A SECOND TIME THIS	__	DAY OF	__	2021
READ A THIRD TIME THIS	__	DAY OF	__	2021
ADOPTED THIS	__	DAY OF	__	2021

_____ _____

CHAIR CORPORATE OFFICER

Schedule "A"

Other Municipal Solids Tipping Fees and Charges

Table 1:

Wastewater Solids	Description	Tipping fee
Pumpable Residuals	Low solid content (less than 10%) residuals solids are pumped to either the Residual Storage Tank or directly into the Residuals Treatment Facility Digester	$45 / wet tonne
Dewatered Residuals	High solids content (equal to or greater than 10%) residuals are loaded into the Other Municipal Solids Reception Hopper and then directed into to the main dewatered sludge hopper	$225 / wet tonne

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REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, JULY 28, 2021

SUBJECT **Core Area Wastewater System Commissioning and Operations Update and Construction Completion Status Report**

ISSUE SUMMARY

To provide the Committee a Core Area Wastewater System commissioning and operations update and a construction completion status report.

BACKGROUND

On January 13, 2021, the Capital Regional District (CRD) accepted operational responsibility for the McLoughlin Point Wastewater Treatment Plant (MPWWTP). The CRD accepted operational responsibility for the other conveyance system components, including pump stations and pipelines, between September 2020 and May 2021. The CRD has not accepted operational responsibility for the Arbutus Attenuation Tank yet. Although the new conveyance and treatment infrastructure constructed under the project was tested and deemed ready for service commencement as it was handed over to the CRD for operation, the commissioning period of the MPWWTP and the system as a whole is anticipated to extend well into the two year performance period for the MPWWTP (ending December 2022). During this time, the commissioning activities at the MPWWTP and conveyance infrastructure facilities are expected to periodically impact plant performance and effluent quality, and some plant and conveyance facility systems, including odour management. In general, the commissioning activities can be summarized as follows:

1. Operations personnel training – During the first six months of operation, CRD staff have been continuously gaining familiarity and operating experience with the new infrastructure. Even experienced operations staff that have gained previous experience at other plants need time to learn and gain confidence in the MPWWTP operation. Supplementary training on specific pieces of equipment or procedures has been provided as necessary.
2. Operational documentation – Documentation provided by the contractors including, standard operating procedures, safety procedures, and preventative maintenance routines, are being continually updated to reflect changes resulting from actual operating experience. Many procedures developed at the design and start-up phases of the project, such as 3-month and 6-month major maintenance routines or complex lock-out/tag-out procedures to take equipment/processes out of service, had not been carried-out in the field, so various documents have required revisions and the time to complete the maintenance tasks has been longer than it will be once staff are familiar with the work.
3. Equipment adjustments/failures – The MPWWTP and the Conveyance Pump Stations contain many components, including process mechanical equipment (treatment process equipment, screens, pumps, motors, valves, chemical feed systems), electrical, instrumentation and control equipment (motor controls, switchgear, generators, SCADA controls), that can require adjustment or fail once under normal operating conditions. Resolution of these equipment issues has had some impact on plant performance.
4. MPWWTP optimization – CRD staff have been working closely with the Harbour Resource Partners' (HRP) commissioning and performance period representatives (one representative is stationed at MPWWTP until December 2022), the Owner's engineer, Stantec, as well as a plant optimization engineer (who was previously under contract with

HRP and has since been retained by the CRD) to monitor plant process performance and make on-going recommendations to CRD regarding plant operations.

ALTERNATIVES

Alternative 1
The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:
That this report be received for information.

Alternative 2
The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:
That staff provide additional information.

IMPLICATIONS

Effluent Compliance and Reporting

The CRD manages its Core Area liquid waste in accordance with the Core Area Liquid Waste Management Plan (up to and including Amendment 12), and the Municipal Wastewater Regulation Registration (Registration) for the MPWWTP, issued on June 9, 2020 and revised on February 22, 2021 by the BC Ministry of Environment and Climate Change Strategy (ENV) under the *Environmental Management Act*. The Registration sets out the wastewater treatment and performance criteria for the MPWWTP and authorizes the CRD to discharge treated effluent to the receiving waters.

The Federal Wastewater Systems Effluent Regulations (WSER), which fall under the *Fisheries Act*, require the Core Area's wastewater to be treated such that the effluent discharged from the MPWWTP not exceed a monthly average of 25 mg/litre for total suspended solids (TSS) and 25 mg/litre for carbonaceous five-day biochemical oxygen demand ($cBOD_5$). The provincial Registration is the more stringent regulatory requirement.

For context, the MPWWTP treatment system consists of primary treatment using Lamella Plate Settlers and Densadeg high rate clarifiers, a three step secondary treatment process using 2mm fine screens, moving bed biofilm reactors (MBBR) and biological aerated filters (BAF), and mechanical tertiary treatment using five micron disk filters. The MPWWTP is designed to achieve the criteria set out in the Registration as follows:

1. The MPWWTP will provide tertiary treatment to flows up to 216 megalitres /day (MLD) (or 2X the Average Dry Weather Flow (ADWF)) and primary treatment for flows up to 432 MLD (or 4X the ADWF) and meet the following effluent quality requirements:
2. When Daily Flow <2X ADWF, the single day $cBOD_5$ & TSS must be ≤25 mg/L
3. When Daily Flows <2X ADWF, the monthly mean $cBOD_5$ & TSS must be ≤10 mg/L
4. When Daily Flows <2X ADWF, pH must be in the 6-9 range
5. When Daily Flows ≥2X ADWF, cBOD5 & TSS must be ≤130 mg/L (discharge of blended tertiary and primary treated effluent)
6. The number of days per calendar year where flow exceeds 2X ADWF causing a discharge of blended tertiary and primary treated effluent must not exceed 70

Regular compliance reporting under federal and provincial legislation is carried out in accordance with requirements. The Province is notified immediately when effluent quality criteria are not met (e.g. exceedance of maximum suspended solids limits), and compliance reports for all seven of the CRD's wastewater facilities are submitted on a monthly basis. Reporting to the Federal government is completed via online submission on a quarterly basis. Staff have submitted the required regulatory reporting, and meet with representatives of ENV regularly to discuss compliance related issues.

In summary, although the Federal WSER effluent quality criteria have been met, with the exception of TSS in April (26.5 mg/L (actual) vs. 25 mg/L (limit)), the provincial Registration requirements for $cBOD_5$ and TSS (monthly averages and some single day exceedances) have not been consistently met during the first six of the commissioning period. In addition, as per the Registration and WSER requirements, the CRD reports all treatment process interruptions or bypasses to ENV and/or Fisheries and Oceans Canada (DFO). Between January and June there have been 14 reports to the regulators, including 7 related to plant bypasses or other unauthorized discharges resulting from commissioning, and 7 related to TSS or $cBOD_5$ discharge loadings above the maximum effluent quality limits. It is important to note that despite the observed instances of non-compliance with the Registration, there are no anticipated adverse impacts to health or the environment. These events have no significant environmental impact due to the generally low level of exceedances and discharge location. However, the goal is to operate MPWWTP consistently in full compliance as soon as possible, so each event that potentially contributes to non-compliance is carefully reviewed and an incident summary/probable cause and mitigation measures/corrective actions are documented.

The critical issues contributing to plant performance and reduced effluent quality are summarized as follows:

1. Tertiary Disk Filters – the cloth media on the filters was clogging as a result of higher than expected organic loading, reducing the effectiveness of the tertiary treatment process for periods between February – July. In addition, the filter backwash valves and actuators have not operated properly, impacting the tertiary treatment process performance. All of the valves and actuators within the disk filter system are being replaced mid-August.
2. Organic and fibrous material screening – At the Clover and Macaulay Pump Stations and MPWWTP, fine screening equipment continue to be adjusted and optimized to maximize material capture and improve automated washing processes in order to maintain operational effectiveness and reduce solids entering the treatment processes.
3. BAF and MBBR media volumes in treatment process vessels – reduced media volumes in the vessels due to attrition resulting from backwashing and media loss has reduced the secondary treatment capacity. With the replacement media expected to arrive imminently, the MBBR media will be added by the end of July followed by the BAF media addition in August. The BAF backwash operation has also been a focus of the process optimization

Residuals Treatment Facility

In recent months, the Residuals Treatment Facility (RTF) has experienced a number of challenges regarding production of Class A Biosolids and achieving completion in accordance with the Service Commencement Agreement executed March 29, 2021. In early April, Digester #2 biological processes became upset, necessitating storage of wastewater residuals in digester

#3. Due to the dryer's inability to process undigested residuals, the digester upset resulted in de-watering and landfill disposal of the undigested residuals between late April and early July.

In addition to working to resolve the upset in digester #2, repairs to digester #1 were completed and "Certified" as of May 6, and HRMG immediately began seeding and preparing the digester for operations. As of mid-July, operation of digesters #1 and 2 has stabilized and the facility is able to process 100% of the influent from MPWWTP into dried Class A biosolids.

HRMG and the CRD are currently working to resolve service failures related to the quality of effluent discharged from the RTF into the centrate return line. HRMG is currently developing and considering options for reducing the daily loading of biological oxygen demand in the effluent.

Staff are also testing options for ensuring particle size of the Class A biosolids are suitable for disposal at the Lafarge cement plant. Currently, staff anticipate implementation of an engineered screening option this summer, which will allow for regular trucking and disposal of biosolids to commence this summer under the CRD's approved short term biosolids management plan.

Operating Budget

The Committee will recall that the total 2021 operating expenditures are budgeted at $28.2 million, of which $8.1 million is associated with conveyance system operations and $20.1 million is associated with liquid and solids treatment operations. At the end of the second quarter, the budget remains on track and underspent in two areas.

First, due to the commissioning challenges at the RTF, the facility did not achieve Service Commencement until March and there have been performance adjustments to the HRMG operating payments since April, resulting in a budget variance. Second, the MPWWTP electricity consumption/costs are tracking lower than anticipated, also resulting in a budget variance. Staff will continue to monitor the budget closely in preparation of the 2022 operating budget.

CRD staff continue to negotiate the Core Area Wastewater Service Agreements with the Songhees and Esquimalt First Nations, which set out treatment capacity allocations as well as the operating and capital cost apportionments.

Communications and Community Engagement

CRD staff continue to communicate and engage regularly with various stakeholders typically on commissioning and construction related matters. Questions or concerns are received via email (wastewater@crd.bc.ca) or phone (250-940-7400). In addition, commissioning and maintenance activity information is posted bi-weekly on the CRD website and public advisories are issued for specific activities that are likely to cause odour or noise impacts in localized areas.

The majority of the concerns received have been related to odour from the MPWWTP. CRD staff continue to respond to every complaint and are logging and mapping every complaint in order to try to correlate the occurrence with operational activities and other potential contributing factors. There has been significant effort over the past few months to identify the potential sources of odour at the MPWWTP. As noted, staff are still refining the plant operation and working through the three month and six month major plant maintenance cycles which staff are discovering generate some odour depending on the type of maintenance activity, due to open tank hatches

and exhaust fans not maintaining negative air pressure. In addition, through neighborhood odour surveys conducted over the last several weeks, staff have identified other sources of odour in some areas. We are working closely with the City of Victoria to identify potential sources along the City sewer system and Esquimalt sewer system. We are also conducting work to ensure the underground chambers and odour control systems along the residuals conveyance pipeline are functioning properly and that other manholes along the gravity pipeline heading to the Macaulay Point Pump Station are sealed.

However, as per the Core Area Wastewater Project Agreement between the CRD and HRP, the plant is to have been designed such that odour laden air at the plant will be captured and treated prior to discharge such that all air exhausted from the plant will contain a maximum odour concentration at and beyond the plant site boundary of less than five odour units per cubic metre (not perceptible). In addition, the odour treatment systems are designed with sufficient redundancy in place to allow for all normal maintenance activities to occur without interruption or reduction in the level of odour treatment and without exceeding the plant site boundary concentration limit. The CRD remains committed to achieving the requirements of the Project Agreement.

Construction Completion Status Report

In May, the CRD Board received the Wastewater Treatment Project Governance Transition Report, attached as Appendix A, which identified the remaining works and commitments beyond the Project Board's term, as well as the committed funds associated with fulfilling the remaining items. Although the vast majority of construction has been completed as reported in May, there are some remaining deficiencies that staff are working through with the various contractors and final project close-out deliverables have not been received for most of the project components. The table attached as Appendix B summarizes the construction works remaining as of July and the anticipated completion dates. The project budget continues to carry funds to complete the construction, provide for consulting services and to meet other obligations and commitments which need to be finalized. The Governance Transition report summarizes committed project funding as of May 17 for obligations remaining to be fulfilled and of note is the outstanding negotiation and resolution of the work and costs related to the District of Saanich Residuals Conveyance System Infrastructure Access Agreement.

As expected with a newly constructed, large, complex facility, during the initial operating period, some components and equipment will fail or not perform as expected. CRD staff continue to work with HRP at MPWWTP to identify and address these issues through the warranty management process; between January and June there have been 164 warranty items identified, some of which have been resolved.

CONCLUSION

The CRD accepted operational responsibility for the various facilities constructed under the Core Area Wastewater Treatment Project between September 2020 and May 2021. The CRD has not accepted operational responsibility for the Arbutus Attenuation Tank yet. Although the new conveyance and treatment infrastructure constructed under the project was tested and deemed ready for service commencement as it was handed over to the CRD for operation, the commissioning period of the MPWWTP and the system as a whole is anticipated to extend well into the two year performance period for the MPWWTP (ending December 2022). During this time, the commissioning activities at the MPWWTP and conveyance infrastructure facilities are expected to periodically impact plant performance and effluent quality, and some plant and conveyance facility systems, including odour management. Regular compliance reporting under federal and provincial legislation has been carried out in accordance with requirements.

With regards to the operating budget, at the end of the second quarter, the budget remains on track and underspent in two areas. Although the vast majority of construction associated with the project has been completed as reported in May, there are some remaining deficiencies that staff are working through with the various contractors and final project close-out deliverables have not been received for most of the project components. There are funds committed under the approved project budget to fulfill the remaining items, all of which are expected to be concluded by year end.

RECOMMENDATION

The Core Area Liquid Waste Management Committee recommends to the Capital Regional District Board:
That this report be received for information.

Submitted by:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services
Concurrence:	Russ Smith, Acting General Manager, Parks & Environmental Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

Appendix A: Wastewater Treatment Project Governance Transition Report (May 17, 2021)
Appendix B: Wastewater Treatment Project Remaining Works Status Report (July 2021)

Wastewater Treatment Project

Treated for a cleaner future

CRD Wastewater Treatment Project

Governance Transition Report

Report Date: May 17, 2021

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1 Executive Summary

1.1 Wastewater Treatment Project

The Capital Regional District planned, procured and constructed the Wastewater Treatment Project (the "Project") in order to meet the provincial and federal regulations for the core area's wastewater by December 31, 2020.

On May 25, 2016 the Regional Board of the CRD (the "CRD Board") established the Wastewater Treatment Project Board (the "Project Board") under Bylaw 4109 (the "CRD Core Area Wastewater Treatment Board Bylaw No. 1, 2016") for the purposes of administering the Project. The CRD Board adopted by resolution terms of reference ("Terms of Reference") for the Project Board for the purposes of establishing principles governing the WTP. The Terms of Reference are attached as Schedule "A" to the CRD Core Area Wastewater Treatment Board Bylaw No. 1, 2016.

On May 25, 2016 the CRD Board also delegated certain of its powers, duties and functions to the Project Board under Bylaw 4110 (the "CRD Core Area Wastewater Treatment Project Board Delegation Bylaw No. 1, 2016").

In accordance with the CRD Core Area Wastewater Treatment Project Board Delegation Bylaw No. 1, 2016 the Project Board appointed a Project Director to oversee all aspects of the Project. In accordance with the Terms of Reference, the Project Director was responsible for leading a Project team to plan, procure, and implement the WTP.

The Project Board also appointed a Deputy Project Director. The Project Director and Deputy Project Director were delegated authority in accordance with Bylaw 4186 (the "CRD Delegation Bylaw No. 1, 2017"), which delegates to the CRD's officers and employees the authority to acquire and purchase goods and services on behalf of the CRD, subject to the CRD's purchasing policies and procedures, and signing authority limitations.

Under these two delegations of authority, the Project Board and Project Team entered into agreements and made commitments in order to achieve the purposes for which the Project Board was established.

The Project Board have fulfilled their role and function as defined in the Terms of Reference, and the term of the Project Board and Project Team concludes on May 24, 2021. The Project Team have fulfilled the vast majority of the commitments, but some remain to be fulfilled after the Project Board's term, in many cases as a result of the commitments' recurring or deferred nature (for example administering construction contracts warranty periods that extend beyond the Project Board's term, or receipt of close-out documentation).

1.2 Objective of this Governance Transition Report

The objective of this Governance Transition Report is to facilitate a comprehensive Project close-out and successful transition by providing a summary of the following:

- Identifying the source of the various commitments made, and for each outlining the commitments that remain to be fulfilled beyond the Project Board's term;

- Summarising the funds committed in the Project's budget to complete the activities remaining to close-out the construction contracts and the obligations remaining to be fulfilled in the Project's funding, First Nation and land access agreements; and
- Outlining the location and organisation of Project documentation.

More detailed supporting documentation is available in the Project files, and in every case the source agreement should always be referred to for the definitive obligation: this report summarises the status of Project commitments and activities as of May 2021, for convenience as a reference only.

Note that another document (the Project Completion Report) has been written to mark the completion of the Wastewater Treatment Project, and includes:

- an assessment of the Project's performance against the goals established by the CRD Board and the key performance indicators approved by the Project Board;
- the identification of variances from the baseline plans prepared by the Project Board and/or Project Team, in terms of the Project's scope, schedule and cost;
- the identification of Project successes and challenges; and
- an outline of the Project-related commitments and activities that extend beyond May 2021.

2 Project Commitments: Source and Summary Status

This report section outlines the Project-related commitments and activities that extend beyond May 2021, and is organised in the following five categories:

i) Activities related to closing-out the Project's construction contracts;

ii) Obligations remaining to be fulfilled in the Project's funding, First Nation and land access agreements;

iii) Committed funds for the resources required to oversee the completion of the remaining obligations and close-out the construction contracts; and

iv) Operating and maintenance obligations related to the infrastructure built by the Project; and

v) A summary of the status of First Nations artwork and signage that either has or is to be installed.

Appendix A summarises the sources of the Project commitments, which can be categorised as:

- Construction contracts;
- Funding agreements;
- First Nation agreements; and
- Land access agreements.

The Project budget includes committed funds (as outlined in this report) to complete the activities remaining to close-out the construction contracts and the obligations remaining to be fulfilled in the Project's funding, First Nation and land access agreements.

In addition, the Project budget includes an appropriate amount of contingency, based on the Project Team's assessment of the: status of each component; the risks associated with the remaining work and the outstanding obligations; and the funds and resources committed to complete these. In summary, the Project budget includes contingency as follows:

- $1 million for the McLoughlin Point Wastewater Treatment Plant, to cover the potential incentive payment to HRP, that is payable after the completion of the performance period (which concludes on January 12, 2023), and will be payable at an amount (of up to $1 million) to be determined based on performance against milestones over the two year performance period; and
- no contingency is anticipated to be required for the Residuals Treatment Facility component, as the remaining construction-period risks are allocated to HRMG in the Project Agreement, as amended by the Service Commencement Agreement;
- $1.74M for the conveyance component, which is anticipated to be more than sufficient given the nature of the remaining commitments and activities; and
- no contingency is anticipated to be required for the Project Management Office as the resource commitments to support close-out activities allow for the conveyance contractors' schedules to slip, and should be sufficient provided all contracts achieve total completion by year end.

2.1 Construction Contracts

The Project Team entered into a number of design and construction contracts in order to build the Project, as summarized in Table 1.

Table 1 – Contracting Strategy, Design Consultant and Construction Contractor

Project Component	Contract	Contracting Strategy	Design Consultant	Construction Contractor
McLoughlin Point WWTP	McLoughlin Point Wastewater Treatment Plant	Design Build Finance	Harbour Resource Partners (Graham Infrastructure and AECOM Canada)	
Residuals Treatment Facility	Residuals Treatment Facility	Design Build Finance Operate Maintain	Hartland Resource Management Group (Synagro Capital, Maple Reinders PPP Ltd., Bird Construction Inc.)	
Conveyance System	Clover Point Pump Station	Design Build	Kenaidan Contracting Ltd.	
	Macaulay Point Pump Station & Forcemain	Design Build	Kenaidan Contracting Ltd.	
	Clover Forcemain	Design Bid Build	Kerr Wood Leidal	Windley Contracting Ltd.
	Residual Solids Conveyance Line	Design Bid Build	Parsons	Don Mann Excavating Ltd.
	Residual Solids Pump Stations	Design Bid Build	Parsons	Knappett Projects Inc.
	Arbutus Attenuation Tank	Design Bid Build	Kerr Wood Leidal	NAC Constructors Ltd.
	Trent Forcemain	Design Bid Build	Stantec	Jacob Bros Construction

As of May 2021, the vast majority of construction has been completed: the Arbutus Attenuation Tank and Clover Point Pump Station are the only Project sites with some minor construction activities remaining. The works remaining under each construction contract are summarised in Table 2, and the Project budget includes committed funds (as outlined in Table 2) to complete the remaining works and close-out the construction contracts.

The CRD are now operating the infrastructure built under each contract, with the exception of:

- the Arbutus Attenuation Tank, which is expected to be operational in June 2021; and
- the Residuals Treatment Facility, which has been delivered through a design-build-finance-operate maintain contract, pursuant to which the Hartland Resource Management Group are responsible for operating and maintaining the facility until the end of 2040.

Table 2 – Summary of Works Remaining on the Project's Construction Contracts at May 2021

Project Component	Summary of Works Remaining at May 2021	Project Personnel Available after May 2021 to Provide Continuity	Last Monthly Invoice processed and included in Expended Project Budget (see note 1)	Amount included within Project Budget Forecast to Complete: Covers Completed (but not yet invoiced) and Remaining Works (see note 2)
McLoughlin Point Wastewater Treatment Plant	• Providing advice and guidance to optimize plant performance over the remainder of the two-year performance period (to January 12, 2023); • Complete warm weather odour test; and • DFO authorization reporting.	• Project Manager, Wastewater Treatment Plant; • Owner's engineer: Stantec	April 2021	$2.22M (to cover performance period commitments)

Residuals Treatment Facility	• Complete activities required to achieve Completion, primarily being:
	  ○ Residual effluent line modifications; and
	  ○ Address residual effluent quality (including demonstrating compliance to the CRD's satisfaction for the purposes of the second 15-day acceptance test);
	• Complete change orders related to:
	  ○ Modifications at ring road connector;
	  ○ Changes to biosolids loadout chute;
	  ○ Down payment of sprung structure lease;
	• Minor deficiency items; and
	• Record drawing submission.
		• Project Manager, Residuals Treatment Facility;
		• Owner's engineer: Stantec
			March 2021	$127M (to cover capital cost)
				
				$0.25M (to cover completion of change orders)

Macaulay Point Pump Station and Forcemain	• Landscaping; • Minor deficiency items; and • Record drawing submission.	• Project Manager, Clover & Macaulay Point Pump Stations; • Owner's engineer: Stantec	March 2021	$0.34M
Clover Point Pump Station	• Generator ventilation rectification; • Inlet channel debris removal (see note 3); • Final acceptance testing (note that final acceptance testing has had to be deferred until after the inlet channel debris removal is completed);	• Project Manager, Clover & Macaulay Point Pump Stations; • Owner's engineer: Stantec	March 2021	$1.19M

Project Component	Summary of Works Remaining at May 2021	Project Personnel Available after May 2021 to Provide Continuity	Last Monthly Invoice processed and included in Expended Project Budget (see note 1)	Amount included within Project Budget Forecast to Complete: Covers Completed (but not yet invoiced) and Remaining Works (see note 2)
	• Completion of landscaping (this will complete the public realm improvements and is expected to be complete at the end of Q2, 2021) • Minor deficiency items; and • Record drawing submission.			
Clover Forcemain	• Landscaping; and • Quarterly post-construction stability surveys over the warranty period	• Project Manager, Clover & Macaulay Point Pump Stations; • Project Manager, Deputy Conveyance Manager • Design consultant: KWL	November 2020	$0.16M
Residual Solids Conveyance Line	• Minor restoration on the BC Hydro access road to be completed once BC Hydro has completed the pole relocation (gate, tree replacement, final road surface); and • Peers Creek survey; and • DND roadway tie-in	• Project Manager, Clover & Macaulay Point Pump Stations; • Project Manager, Deputy Conveyance Manager • Design consultant: Parsons • Owner's engineer: Stantec	March 2021	$0.03M
Residual Solids Pump Stations	• Removal of low floats and upgrade programming; • Supply and installation of automated valve actuators; • Landscaping; • Minor deficiency items; and • Record drawing submission	• Project Manager, Clover & Macaulay Point Pump Stations; • Project Manager, Deputy Conveyance Manager • Design consultant: Parsons	March 2021	$0.43M
Trent Forcemain	• Restoration; • Minor deficiency items; and • Record drawing submission	• Project Manager, Clover & Macaulay Point Pump Stations;	March 2021	$1.58M

Project Component	Summary of Works Remaining at May 2021	Project Personnel Available after May 2021 to Provide Continuity	Last Monthly Invoice processed and included in Expended Project Budget (see note 1)	Amount included within Project Budget Forecast to Complete: Covers Completed (but not yet invoiced) and Remaining Works (see note 2)
		• Project Manager, Deputy Conveyance Manager • Owner's engineer: Stantec		
Arbutus Attenuation Tank	• Final commissioning activities; • Site grading and landscaping; • Minor deficiency items; and • Record drawing submission	• Project Manager, Clover & Macaulay Point Pump Stations; • Project Manager, Deputy Conveyance Manager • Design consultant: KWL	April 2021	$1.71M
Conveyance Subtotal				**$5.44M**
Total				**$134.91M**

Notes to Table 2:

1. *This is the last monthly invoice that was received and processed before the cut-off for the April 2021 cost period: invoices received to this date are captured in the Project budget in the column 'Expended to April 30, 2021'.*
2. *This is within the amount included in the Project budget in the column 'Forecast to Complete': it covers work completed but not yet invoiced (i.e. work conducted after the last monthly invoice shown in the previous column) as well as the forecast cost of the work remaining.*

   Note that for some Project components the amount in the 'Forecast to Complete' column in the Project budget differs from that shown in the table above, as it also includes committed funds to fulfil the outstanding obligations in the Project's First Nation and land access agreements.
3. *This activity was not part of the original scope of the Project, and is required as a result of the pre-existing condition of the inlet channel (resulting from the build-up of debris over decades of use), and can only be completed in low flow conditions. The need to complete inlet channel debris removal has pushed out the schedule for the completion of some other scope elements of the contract.*

2.1.1 Construction Contract Claims

The Project Team has negotiated and either rejected or settled construction claims as they have arisen, and none are outstanding as of May 2021. Table 3 summarises information regarding Project contractors that have formally released the CRD from claims for any events or circumstances up to the date shown.

Table 3 – Contractors Releasing CRD from Claims up to the Date Shown

Contract	Contracting Strategy	Date of Release
McLoughlin Point Wastewater Treatment Plant	Design Build Finance	January 12, 2021 (Acceptance Date: date responsibility for operating transitioned to CRD)
Residuals Treatment Facility	Design Build Finance Operate Maintain	March 29, 2021
Clover Point Pump Station	Design Build	March 31, 2021
Macaulay Point Pump Station & Forcemain	Design Build	March 31, 2021
Clover Forcemain	Design Bid Build	N/A (not required, all claims were settled or rejected over the course of construction)
Residual Solids Conveyance Line	Design Bid Build	N/A (not required, all claims were settled or rejected over the course of construction)
Residual Solids Pump Stations	Design Bid Build	N/A (not required, all claims were settled or rejected over the course of construction)
Arbutus Attenuation Tank	Design Bid Build	April 30, 2021
Trent Forcemain	Design Bid Build	May 6, 2021

2.1.1 Third-Party Insurance Claims

The Project has dealt with a number of third party claims over the course of construction. Third party claims are generally submitted through the wastewater e-mail address or come to the Project Team's attention through a municipality, and all claims that are submitted are reviewed by the Project Team to determine who is the appropriate Project contractor to forward the claim to. The Project contractor coordinates with their insurance company to evaluate the claim and determine the next steps. In many cases an adjuster will visit the third party claimant and inspect the areas of concern, following which they provide a response to the claimant. In some cases the claimant is directed to make a claim under their own insurance policy.

The CRD's only obligation with respect to any third-party insurance claims (whether they are yet to be resolved or yet to be submitted) is to direct them to the relevant Project contractor. The Project Team have endeavoured to ensure appropriate follow-up and communication.

2.1.2 BC Hydro

The Project required a number of BC Hydro infrastructure adjustments and improvements to be made, some of which were organised and paid for directly by the Project Team, with the remainder included within the scope of the relevant Project contractor's construction contract.

All BC Hydro infrastructure adjustment and improvements required for the Project (whether arranged directly by the Project Team or through the Project's contractors) have been completed, with the only exception being the relocation of one hydro pole within DND property at Work Point which is anticipated to be completed by BC Hydro before the end of Q3 2021. BC

Hydro are coordinating this work with DND, and the CRD has no further obligations related to BC Hydro's work.

BC Hydro have been fully-paid for the infrastructure adjustment and improvements arranged directly by the Project Team. The spreadsheet at the following link provides references to documents that outline the scopes of work and invoices for that work:

BC Hydro Final Cost Report

2.2 Obligations Remaining to be Fulfilled in the Project's Funding, First Nation and Land Access Agreements

In addition to the Project's nine construction contracts, approximately 20 funding, First Nation and land access agreements were entered into in order to deliver the Project (refer to Appendix A for a list of the agreements). There are a relatively small number of obligations remaining to be fulfilled in the Project's funding, First Nation and land access agreements, as summarised in the following subsections.

The Project budget includes committed funds to fulfil the outstanding obligations, as summarised in Table 4.

Note that many of the agreements contain:

- 'passive' obligations – for example the funding agreements include the requirement to maintain records for a certain number of years, and make them available upon request; and/or
- 'funding' obligations – for example the Esquimalt agreements include commitments for the CRD to fund amenity improvements subject to the Township advancing planning and approvals by certain dates, and the Project has committed funds to cover these obligations, as summarised in Table 4.

Table 4: Committed Project Funding for Obligations Remaining to be fulfilled in the Project's First Nation and Land Access Agreements

Agreement	Project Funding Covers	Project Funding	Location of Committed Funding
Transport Canada Licence: McLoughlin Point Harbour Crossing (see note 1)	Anticipated annual fee for 20 year term	$0.02M	CP.100.751.100.155
Transport Canada Licence: McLoughlin Point Outfall (see note 1)	Anticipated annual fee for 20 year term	$0.12M	CP.100.751.100.156
Township of Esquimalt Host Community Impact 5-Year Agreement	Lyall Street Enhancements	$0.95M	CP.100.831.100.130
Township of Esquimalt Host Community Impact 5-Year Agreement	Remaining payments to fulfil public art and historical interpretive signage commitments	$0.02M	CP.100.831.100.136
Township of Esquimalt Community Impact Mitigation Operating Agreement	Community Impact Fee ($55k + CPI est. 2%) 25 years	$1.73M	CP.100.831.600.605
Fisheries Act Authorization for the McLoughlin Point Outfall	Fulfillment of the remaining obligations	$0.06M	CP.100.881.100.115
City of Victoria Licence of Occupation: Clover Point Pump Station	Commitment: one-time payment of $75,000 for the maintenance of the public washrooms	$0.08M	CP.330.805.100.150
Business Case commitment to Colwood Reserves	Fund reserve	$2.00M	CP.800.000.600.606
WSANEC Leadership Council Memorandum of Understanding	Commitment - $16k per month for 2021- Fund operating reserve Dec 2020	$0.13M	CP.800.000.600.609
District of Saanich RSCL Infrastructure Access Agreement	Fulfilment of outstanding obligations	$1.76M	CP.800.000.830.010
TOTAL		**$6.79M**	

Notes to Table 4:

1. *These licences are in the process of being finalised by CRD's Corporate Services (real estate) Department: they could not have been entered into sooner as they require as-built information in order to be finalised. The licences will be required for the operating period of the assets: the Project is funding the annual fee for the first term (of 20 years), and upon expiry the CRD will need to renew both licences.*

2.2.1 Funding Agreements

The federal and provincial governments assisted the Capital Regional District in funding the Project. Project documentation regarding funding agreements can be found here:

Funding Agreements

Table 5 summarises the status of the funding agreements related to the Project, and detailed supporting documentation is available in the Project files. In addition, CRD finance staff seconded to the Project Team are familiar with the status of the funding agreements.

The Project's budget includes $1.5M for the financing costs estimated to be incurred after May 2021. This estimate of financing costs was provided by the CRD's finance department, and covers differences in the timing between the receipt of funds (from senior governments and requisitions from the core area municipalities) and the Project's expenditures.

Table 5 – Summary of Status of Project's Funding Agreements at May 2021

Funding Partner	Agreement	Funds Outstanding	Status
Infrastructure Canada	Building Canada Fund	-	All funding received
Infrastructure Canada	Green Infrastructure Fund	$5M	All documentation submitted and under Infrastructure Canada's review; awaiting release of $5M holdback
Infrastructure Canada	P3 Canada Fund	$41M	Discussions ongoing with Infrastructure Canada to ensure eligibility for maximum amount
Province of BC	Contribution Agreement	$62M	All documentation submitted and under the Province's review; awaiting payment of final tranche of funding ($62M)
Federation of Canadian Municipalities	GMF 16576	$3M	Documentation compiled for signature and then to be sent to MFA once the grant audit is completed and submitted to CRD by KPMG.
Federation of Canadian Municipalities	GMF 15822	$0.2M	All documentation submitted; awaiting payment
Federation of Canadian Municipalities	GMF 16342	$0.2M	All documentation submitted; awaiting payment

2.2.2 First Nation Agreements

The CRD entered into three agreements with First Nations related to the Project, as follows:

- Esquimalt First Nation Support Agreement;
- Songhees First Nation Support Agreement; and
- WSANEC Leadership Council Memorandum of Understanding;

In summary:

- All of the CRD's obligations under the Esquimalt and Songhees First Nation Support Agreements have been fulfilled, and close-out letters from the Esquimalt and Songhees First Nations confirming this have been received.
- The only First Nation agreement with outstanding obligations is the WSANEC Leadership Council Memorandum of Understanding: the Project budget has committed funding to cover the remaining capacity funding, and the remainder of the outstanding obligations are not specific to the Project (they are broader to the CRD).

The CRD's First Nations Relations Department have supported and coordinated with the Project Team throughout Project delivery, and the fulfilled and outstanding obligations in the First Nation agreements were reviewed and transferred to the CRD's First Nations Relations Department in a meeting on March 12, 2021.

2.2.3 Land Access Agreements

The CRD entered into multiple land access agreements related to the Project. The following sub-sections summarise the status of the land access agreements as at May 2021.

2.2.3.1 Township of Esquimalt

The CRD entered into three agreements with the Township of Esquimalt related to the Project, as follows:

- Host Community Impact 5-Year Agreement;
- Community Impact Mitigation and Operating Agreement; and
- Amenity Reserve Fund Administration Agreement.

The Project Team are of the opinion that all of the commitments under the three agreements have been met, and the CAO of the Township of Esquimalt is preparing to take a close-out letter to Council confirming this.

Some of the obligations have been fulfilled by the Project committing funds, which are to be drawn upon subject to the passing of time (e.g. the community impact fee defined in the Community Impact Mitigation Operating Agreement) or the Township advancing planning and approvals (e.g. the Lyall Street Enhancements in the Host Community Impact 5-Year Agreement).

Documentation regarding the fulfilled and outstanding obligations can be found in the relevant governance transition summary, and in addition the CAO of the CRD and/or finance staff seconded to the Team have been included in correspondence regarding the funded obligations.

There is also an ongoing obligation to participate in the Esquimalt Liaison Committee: see section 3.3.1 of this report.

See also section 3.4 of this report for information regarding the Technical Working Group the Project Team established with the Township of Esquimalt.

2.2.3.2 City of Victoria

The City of Victoria granted two licences to the CRD related to the Project, as follows:

- Dallas Road Licence of Occupation; and
- Clover Point Pump Station Licence of Occupation.

The majority of obligations within both licences have been fulfilled, with a limited number of CRD responsibilities remaining, primarily related to the submission of documentation and the City's sign-off on landscaping.

Documentation regarding the fulfilled and outstanding obligations can be found in the relevant governance transition summary, and in addition Project Team members remaining with the CRD past May 2021 (being: the Project Manager, Clover & Macaulay Point Pump Stations; and the Project Manager, Deputy Conveyance Manager) are familiar with the status of the Licences of Occupation.

See also section 3.4 of this report for information regarding the Technical Working Group the Project Team established with the City of Victoria.

2.2.3.3 District of Saanich

The CRD entered into an agreement with the District of Saanich related to the Project, as follows: District of Saanich RSCL Infrastructure Access Agreement.

A number of obligations within the agreement have been fulfilled. The Project Team have committed funds for a financial proposal that is currently under the District of Saanich's review: the Project Team have proposed this as an alternative means to fulfil the majority of the outstanding obligations. If the District of Saanich agree to this approach the majority of obligations within the agreement will have been fulfilled, and a limited number of CRD responsibilities will remain, primarily related to the Peers Creek culvert replacement.

Documentation regarding the fulfilled and outstanding obligations can be found in the relevant governance transition summary, and in addition the CAO of the CRD is familiar with the rationale behind the financial proposal offered to the District of Saanich to fulfil the outstanding obligations.

One of the CRD's infrastructure improvements obligations under the Agreement was to replace culverts at Peers Creek. Parsons (under a contract with the CRD) designed two replacement (larger diameter) culverts and new headwalls, and Don Mann (under a contract with the CRD) constructed the improvements under the supervision of Stantec (under a contract with the CRD). Current Environmental were engaged by Parsons during the design, and the Project Team have subsequently engaged them directly to review concerns raised by nearby residents. Stantec are currently in the process of finalizing the completion report related to this improvement, for submission to the District of Saanich.

See also section 3.4 of this report for information regarding the Technical Working Group the Project Team established with the District of Saanich.

2.2.3.4 Greater Victoria Harbour Authority

The CRD entered into two agreements with the Greater Victoria Harbour Authority related to the Project, as follows:

- Compensation Agreement; and
- Right to Enter Agreement.

All of the CRD's obligations under the Greater Victoria Harbour Authority Agreements have been fulfilled, and close-out documentation from the Authority confirming this has been received.

2.2.3.5 Other Land Access Agreements

The CRD entered into three other land access agreements with third parties related to the Project, as follows:

- DND Licence Agreement for Access to Federal Real Property;
- Rock Bay Lease Agreement; and
- MOTI

All of the CRD's obligations under these agreements have been fulfilled, and close-out documentation from the relevant counterpart confirming this has been received.

2.3 Committed Funds for the Resources Required to Oversee the Completion of the Remaining Obligations and Close-Out the Construction Contracts

The Project Team have identified the resources (both Project Team staff and Project consultants) with the knowledge and expertise required to support the delivery of the remaining works, and the outstanding commitments, and the Project budget includes committed funds for the required resources, as follows:

- Project staff transitioning to CRD: see Table 6, which outlines project management, document control and finance staff resources that the Project budget will fund post May 2021;
- Project consultants: see Table 7, which outlines $1.96M of funds that will be committed, primarily for design consultants (KWL and Parsons) and the Project's owner's engineer (Stantec), to support Project close-out activities; and
- The remainder of the CRD finance department allocation for the current year (approximately $91k).

These resource commitments are based on the close-out activities forecast to be required post May 2021, and a conservative forecast of when those activities will be complete: Table 8 includes the actual or forecast dates for substantial and total completion for each of the Project's construction contracts, but the resource commitments in Tables 6 and 7 (and the Project's budget) allow for these schedules to slip, and should be sufficient provided that all contracts achieve total completion by year end.

Table 6: Committed Project Funding for Project Staff Transitioning to CRD to Support Project Close-Out Activities Post May 2021

Project Role	CRD Role	Transition	Project Funding Role Until
Project Manager, Wastewater Treatment Plant	Manager, Core Area Wastewater Treatment and Conveyance Operations	Phased over 2019-2020	July 4, 2021
Project Manager, Clover Point Pump Station and Macaulay Point Pump Station and Forcemain	Engineer, Integrated Water Services	May 25, 2021	December 31, 2021
Project Controls Manager	Continuation of Project Role	May 25, 2021	August 30, 2021
Project Manager, Residuals Treatment Facility	Continuation of Project Role	May 25, 2021	July 31, 2021
Project Manager, Deputy Conveyance Manager	Continuation of Project Role	May 25, 2021	July 31, 2021
Financial Analyst	Continuation of Project Role	May 25, 2021	August 1, 2021
Document Controller	Document Controller	June 1, 2021	December 31, 2021

Table 7: Committed Project Funding for Project Consultants to Support Project Close-Out Activities Post April 2021

Consultant	Scope Post April 2021	Scope Anticipated to Conclude	Last Monthly Invoice processed and included in Expended Project Budget (see note 1)	Amount included in Project Budget Forecast to Complete: Covers Completed (but not yet invoiced) and Remaining Works (see note 2)
Stantec	Owner's engineer, supporting the close-out of the following contracts: • McLoughlin Point Wastewater Treatment Plant; • Residuals Treatment Facility; • Macaulay Point Pump Station and Forcemain; • Clover Point Pump Station; and • Trent Forcemain	October 31, 2021	April 2021	$646k
KWL	Design consultant, supporting the close-out of the following contract: Clover Forcemain	October 31, 2021	March 2021	$67k
KWL	Design consultant, supporting the close-out of the following contract: Arbutus Attenuation Tank.	October 31, 2021	March 2021	$490k
Parsons	Design consultant, supporting the close-out of the following contracts: • Residual Solids Conveyance Line; and • Residual Solids Pump Stations.	October 31, 2021	January 2021	$504k
Mike McCoy	Operations expert, supporting primarily the operations team at the Wastewater Treatment Plant, but also available to assist with the operation of the conveyance components	August 30, 2021	April 2021	$168k
Stantec	Conclusion of Asset Management Consulting Services for CRD's Integrated Water Services Department	CRD's Finance Department are managing the scope	Dec 2020	$41k
EMA	Conclusion of Operational Readiness Review	CRD's Integrated Water Services Department are managing the scope	April 2021	$46k
TOTAL FORECAST COMMITTED PROJECT FUNDING FOR PROJECT CONSULTANTS TO SUPPORT PROJECT CLOSE-OUT ACTIVITIES POST APRIL 2021				**$1.96M**

Notes to Table 7:

1. *This is the last monthly invoice that was received and processed before the cut-off for the April 2021 cost period: invoices received to this date are captured in the Project budget in the column 'Expended to April 30, 2021'.*
2. *This is the amount included in the Project budget in the column 'Forecast to Complete': it covers work completed but not yet invoiced (i.e. work conducted after the last monthly invoice shown in the previous column) as well as the forecast cost of the work remaining*

Table 8 – Project Construction Contracts: Actual or Forecast Substantial and Total Completion

Project Component	Substantial Completion	Total Completion
McLoughlin Point Wastewater Treatment Plant (see note 1)	October 2020	January 12, 2021
Residuals Treatment Facility (see note 1)	March 4, 2021	*June 30, 2021*
Macaulay Point Pump Station and Forcemain	*June 24, 2021*	*July 26, 2021*
Clover Point Pump Station (see note 2)	*October 26, 2021*	*November 19, 2021*
Clover Forcemain	August 27, 2020	*May 31, 2021*
Residual Solids Conveyance Line	*April 30, 2021*	*May 31, 2021*
Residual Solids Pump Stations	*May 15, 2021*	*July 15, 2021*
Trent Forcemain	*July 09, 2021*	*July 30, 2021*
Arbutus Attenuation Tank	*July 30, 2021*	*September 3, 2021*

Notes to Table 8:

1. *This table includes the actual or forecast dates for substantial and total completion for each of the Project's construction contracts, but the resource commitments in Tables 6 and 7 (and the Project's budget) allow for these schedules to slip, and should be sufficient provided that all contracts achieve total completion by year end.*
2. *The concepts of substantial and total completion don't strictly apply to these contracts, instead the dates included are proxies, based on:*
    a. *substantial completion: ready for intended use; and*
    b. *total completion: Independent Certifier confirms acceptance testing complete*
3. *The requirement to complete inlet channel debris removal at Clover Point Pump Station was not part of the original scope of the contract: it is required as a result of the pre-existing condition of the inlet channel (resulting from the build-up of debris over decades of use), and can only be completed in low flow conditions. The need to complete inlet channel debris removal has pushed out the schedule for the completion of some other scope elements of the contract.*

2.4 Operation and Maintenance of Infrastructure Built by the Project

2.4.1 Responsibility for Operations and Maintenance of Project Components

The CRD's Integrated Water Services department are responsible for operating and maintaining all of the Project components other than the Residuals Treatment Facility (see section 7.3.3) upon completion of their commissioning period, and this transfer has occurred for all components other than the Arbutus Attenuation Tank, for which the transfer is forecast to occur in June 2021.

This responsibility includes:

- managing the contractual warranties for each of the Project components;
- administering the two-year performance period for the McLoughlin Point Wastewater Treatment Plant, as outlined below.

The McLoughlin Point Wastewater Treatment Plant contract includes a two-year performance period, from the acceptance date (January 2021). Over the performance period the CRD will

operate and maintain the McLoughlin Point Wastewater Treatment Plant, and Harbour Resource Partners are responsible for:

- monitoring operations;
- consulting with and providing advice to the CRD and the CRD's plant manager with respect to the operation of the Facility;
- assisting with environmental and regulatory compliance;
- preparing and updating the operations manual and operations and maintenance plans;
- assisting with the evaluation of the performance of the Project and the implementation of plans to achieve continued compliance with the process performance guarantees;
- assisting with the development and implementation of plans that will minimize use of power, chemicals, water and labour; and
- responding to warranty claims.

There are physically interfacing works and screened, degritted wastewater is required to be delivered in order for the performance period to operate as intended. Responsibility for these interfaces is retained by the CRD: it was the Project Team's responsibility to manage the interfaces during construction and commissioning, and upon the acceptance date (January 2021), the CRD's Integrated Water Services department assumed responsibility for the operation of the McLoughlin Point Wastewater Treatment Plant and the management of the interfaces.

2.4.2 Contract Administration of Residuals Treatment Facility Project Agreement

The Residuals Treatment Facility was procured through a design-build-finance-operate-maintain contract under which Hartland Resource Management Group have the responsibility to design, build, partially-finance, operate and maintain the facility to meet the performance specification and contract requirements over the term of the contract.

The Residuals Treatment Facility has been constructed and is close to completing commissioning, and the Hartland Resource Management Group will be responsible for operating and maintaining the facility over the next 20 years. The Project's committed budget includes the net present value of the capital cost of the Residuals Treatment Facility.

There are physically-interfacing works and residual solids required to be delivered and biosolids required to be transported in order for the contract to operate as intended. The CRD's Parks and Environmental Services Department are responsible for managing these interfaces and administering the contract over the 20 year operating and maintenance period.

2.4.3 Environmental Management and Permits

To the extent allowed by the Project schedule, the Project Team assigned responsibility for obtaining permits to the relevant Project contractor, in order to avoid the Project Team inadvertently constraining the relevant contractor's execution flexibility. The contractor's knowledge of construction means, methods and schedule also put them in the best position to assess which of their activities required a permit and what the permit application should contain.

The notable exception to the above approach was registration under the Municipal Wastewater Regulation, which the Project Team coordinated with the support of: members of the CRD's Parks and Environmental Services and Integrated Water Services Departments; Project consultants (predominantly Stantec and KWL) and Project contractors (predominantly HRP and Kenaidan).

The CRD's Parks and Environmental Services Department and/or Integrated Water Services department (as applicable) are responsible for:

- environmental monitoring and/or mitigation activities related to the operation and maintenance of Project components, and
- compliance and reporting pursuant to the:
    - Municipal Wastewater Regulation registration;
    - Federal Wastewater System Effluent Regulations, including the transitional authorizations; and
    - Fisheries Act Authorization for the McLoughlin Point Outfall: HRP obtained this Authorization and were responsible for fulfilling the planning, construction and year 1 monitoring obligations of this Authorization; the CRD's Integrated Water Services Department are responsible for fulfilling the remaining obligations.

Other than the obligations outlined above, the CRD do not have any obligations related to permits obtained during the planning, construction or commissioning phase of the Project.

Note the Operational Certificate for the Residuals Treatment Facility is in CRD's name, but HRMG are responsible for maintaining and complying with it, including fulfilling all ongoing monitoring and reporting obligations.

Project documentation regarding regulatory approvals and permits can be found here: Regulatory approvals, licenses and permits

2.4.4 Responsibility for Operations and Maintenance of Project Amenities

In furtherance of the Project's goal to deliver a solution that adds value to the surrounding community and enhances the liveability of neighborhoods, the Project either funded or funded and delivered a number of amenities and/or infrastructure improvements. These amenities and infrastructure improvements have been transferred to the benefitting municipality to operate and maintain, as outlined in Table 9 below, with the exception of the public realm improvements at Clover Point (which are covered in section 2.1 and are anticipated to be completed and handed over at the end of Q2, 2021). With the exception of the completion of the public realm improvements at Clover Point, the CRD's outstanding responsibilities are limited to coordinating the relevant contractor's response to any warranty claims.

Table 9 – Summary of Project Amenities Constructed by Project Contractors for which Operating and Maintenance Responsibility have been Transferred to a Third Party

Party Responsible for Operating and Maintaining Asset	Asset	Project Contractor Responsible for Construction and Warranty
City of Victoria	Cycle Path along Dallas Road	Windley
City of Victoria	Public Realm Improvements at Clover Point	Kenaidan
District of Saanich	Hartland Water System Improvements	Knappett

2.5 Signage and First Nations Artwork

In furtherance of the Project's goal to 'deliver a solution that adds value to the surrounding community and enhances the liveability of neighborhoods', and in some cases in fulfilment of commitments in the Host Community Impact 5-Year Agreement with the Township of Esquimalt (regarding public art and historical interpretive signage), the Project has arranged for the production of signage and First Nations Artwork as outlined in Table 10. Installation has either occurred or is scheduled to occur in the near future.

Project documentation regarding First Nations artwork and signage can be found here:
Project Signage and First Nations Artwork

Table 10 – Summary of Status of First Nations Artwork and Signage at May 2021

Artwork	Intended Installation Location	Status of Artwork	Artist	Status of contract with Artist/Signmaker	Installation to be Completed by	Anticipated Date of Installation
Peace Pole	Macaulay Point	Stored in Songhees Carving Shed	Ake Lianga and Bradley Dick	N/A (artwork organized through and paid for by the Pacific Peoples' Partnership: contact April Ingham, Executive Director)	Kenaidan	By end of May, 2021
Salish Art Metal Sculpture	Macaulay Point	Installed	Darlene Gait	Fully paid	Kenaidan	Already installed
Chief's Chair	Macaulay Point	Installed	Dylan Thomas	Final payment to be made upon delivery	Kenaidan	Already installed
Interpretive Signs (two)	Clover Point and Macaulay Point	Under fabrication	Urban Sign	Final payment to be made upon delivery	Kenaidan	By end of June, 2021
Interpretive Signs (five)	McLoughlin Point	Under fabrication	Urban Sign	Final payment to be made upon delivery	CRD's Integrated Water Services Department	By end of June, 2021
Seawolf shroud	Clover Point	Installed at Clover Point	Clarence Dick	Fully paid	Kenaidan	Already installed

3 Project Communications and Engagement

The Project Team, with the input and review of the CRD's Senior Manager of Corporate Communications, developed the Wastewater Treatment Project's Communications and Engagement 2020 Outlook (the 2020 Outlook). This document was developed to supplement the Project's Communications and Engagement Plan by highlighting communications and engagement opportunities and context specific to the final year of construction, and the transition of the Project from construction through commissioning and into the operating phase. The Communications and Engagement 2020 Outlook was approved by the Project Board in May 2020, and implemented by the Project Team.

In accordance with the 2020 Outlook, over the course of the final year of construction on the Project, the responsibility for communications and engagement transitioned from the Project Team to relevant CRD Departments, generally upon the Project entering the operating phase. This responsibility included: responding to public questions; providing stakeholder information; participating in the Esquimalt Liaison Committee; and responding to media enquiries.

3.1 Project Telephone Line and E-mail Address

The Project's dedicated 24/7 telephone line was closed in March 2021 (when the majority of the remaining construction was constrained to contained sites), and responsibility for monitoring the wastewater e-mail address was transferred to communications staff in the CRD's Integrated Water Services Department at the end of March 2021.

A tracking log of all public correspondence received through the below two channels can be found at the following link Public correspondence log

- E-mails received through the Project Board (cawtpb@crd.bc.ca) and Project e-mail address (wastewater@crd.bc.ca), up to March 2021; and
- Calls received through the Project's dedicated 24/7 telephone line.

3.2 Media Inquiries

The CRD's Senior Manager of Corporate Communications was the point of contact for media throughout Project delivery, with responsibility for coordinating with the Project Team to manage media inquiries related to the Project. After May 2021 it is anticipated that the CRD's Senior Manager of Corporate Communications will continue to be responsible for managing media inquiries with the support of the CRD's Parks and Environmental Services and/or Integrated Water Services Department representatives, as applicable to the inquiry.

3.3 Community Committees

The Project Team met and communicated with various community associations either regularly and/or when requested to update residents in areas where construction was taking place. None of these updates were intended to continue past the commissioning phase, with the exception of the Esquimalt Liaison Committee for which responsibility was transferred to the CRD's Integrated Water Services Department upon the McLoughlin Point Wastewater Treatment Plant becoming operational, as outlined below.

3.3.1 Esquimalt Liaison Committee

In accordance with the Community Impact Mitigation and Operating Agreement with the Township of Esquimalt, the Esquimalt Liaison Committee was established in May 2017 to provide a forum for the discussion of issues related to the construction and operation of the Wastewater Treatment Plant and the Macaulay Point Pump Station and Forcemain, including traffic management plans.

The committee includes representatives from the Township of Esquimalt, West Bay Residents Association, Lyall Street Action Committee, Macaulay Elementary School Parent Advisory Committee, Department of National Defence, and the CRD.

During Project construction, representatives from the McLoughlin Point Wastewater Treatment Plant contractor Harbour Resource Partners, the Macaulay Point Pump Station and Forcemain contractor Kenaidan Contracting Ltd. and the Residual Solids Conveyance Line contractor Don Mann Excavating also attended as appropriate.

The Esquimalt Liaison Committee met monthly during the construction phase and the agreement requires meetings continue at least twice annually while the McLoughlin Point Wastewater Treatment Plant is in operation. The Committee discussed an intent to review the meeting schedule once the McLoughlin Point Wastewater Treatment Plant was operational.

The Project Team attended the Esquimalt Liaison Committee meetings until the plant become operational, and responsibility for attending the meetings and representing the CRD has transitioned to the CRD's Integrated Water Services Department.

The Terms of Reference for the Esquimalt Liaison Committee can be found here: Esquimalt Liaison Committee Terms of Reference

Information related to the Esquimalt Liaison Committee meetings attended by Project Team members can be found here: Esquimalt Liaison Committee Documents

3.3.2 City of Victoria Neighbourhood / Community Associations

There are three neighbourhoods in close proximity to Project construction in Victoria. The Project Team communicated and met with the James Bay Neighbourhood Association, the Fairfield Gonzales Community Association and Victoria West Community Association as needed. Engagement with these neighbourhood and community associations was focused on construction progress and mitigation measures.

The Project Team established a committee with representatives of the James Bay Neighbourhood Association (JBNA) to provide a forum for the discussion of issues relating to

mitigation of construction impacts of the Wastewater Treatment Project on the community. Monthly updates were provided to the committee by email and meetings were held approximately quarterly. With the vast majority of construction along Dallas Road complete (and only some restoration and landscaping remaining) the Project Team has concluded the JBNA-specific meetings and updates.

Information related to the JBNA meetings attended by Project Team members can be found here: JBNA documents

3.3.3 Saanich / Electoral District A / Willis Point

The Project Team met with the Saanich Community Association Network (SCAN) and engaged with SCAN and other community or neighbourhood associations in close proximity to Project construction in Saanich, including the Willis Point Community Association and Mount Work Coalition.

Early in Project planning the Project Team discussed establishing a Saanich community liaison committee but Saanich community representatives stated their preference was to receive Project updates through email for distribution to their members.

Parks and Environmental Services representatives have generally been included in recent e-mail correspondence with Saanich community association representatives, in order to enable a continuity as the Residuals Treatment Facility transitions from the commissioning to operating phase.

3.4 Local Government Technical Engagement: Staff Working Groups

Complementing the ongoing engagement with elected officials, local government technical engagement was established with the three primary core area municipalities most directly affected by construction: Victoria, Esquimalt, and Saanich. The Technical Engagement Program with each primary municipality ensured there was regular contact with the Wastewater Treatment Project Team and key municipal staff. It provided a forum to ensure accurate technical information was available to municipal staff as Project planning and construction proceeded, and to ensure technical issues were raised, discussed and addressed and, where possible, to coordinate municipal works with Project construction.

The technical engagement process was managed by the Project Team. The Wastewater Treatment Project provided information to local government staff, and received input and feedback from staff. In some cases, the Project Team sought specific input about technical issues to further Project design and development, or to inform construction.

Terms of Reference were developed for each committee, and included:

- Local government staff participants – these generally included a senior engineer, senior planner, and other staff recommended by each municipality;
- The Project Team appointed a representative for each municipality and contractor representatives also attended meetings where appropriate; and
- Meeting frequency varied but was generally a minimum of quarterly during construction, with the option for either party to request additional meetings.

Documentation relevant to each technical working group, including meeting minutes, can be found here:

- Township of Esquimalt Technical Working Group;
- City of Victoria Technical Working Group; and
- District of Saanich Technical Working Group.

4 Project Documentation

All documents and records related to the Wastewater Treatment Project have been organized in accordance with the CRD Records Classification System (RCS). All Project records fall under the 5220 index, for which the CRD's retention policy is as follows:

- Time in office is SO "Superseded or Obsolete" when the project is completed;
- Time in Storage is 7 years; and
- Final State is SR "Selective Retention" as all minor or trivial projects will be destroyed and all other projects will be permanently retained.

4.1 Software Packages

Two software packages have been used for the Project's document management: SharePoint and Prolog Enterprise. These are both document management and collaboration software packages used to assist in the management of the documents. SharePoint has been used mainly for sharing Project documents between Project Team members, while Prolog has been used by Project Team members, Project consultants and Project contractors for Project collaboration.

4.1.1 SharePoint

The SharePoint database has been structured with folders for each of the project components (for files specific to that Project component), and for the project management office (for files applicable to more than one Project component).

The main folders are:

- CP100 Wastewater Treatment Plant;
- CP210 Residuals Treatment Facility;
- CP300 Conveyance System:
    - CP310 Macaulay Point Pump Station and Forcemain;
    - CP320 Craigflower Pump Station;
    - CP330 Clover Point Pump Station;
    - CP350 Arbutus Attenuation Tank;
    - CP360 Clover Forcemain;
    - CP370 Trent Forcemain;
    - CP380 Residual Solids Conveyance Line;
    - CP385 Residual Solids Pump Stations & Bridge Crossings & Hartland Water System Improvement – Design;
- CP400 BC Hydro; and
- CP900 Project Management Office (PMO).

Within each main folder, libraries have been created as required for different categories of project documentation, in accordance with the CRD's Records Classification System.

- CP100 Wastewater Treatment Plant;
    - 0110 Administration;

- 0220 General Correspondence;
- 0640 Reports, Studies & Statistics;
- 3000 Land Administration;
- 3060 Development Permits;
- 4500 Licenses & Permits;
- 5220 Contracts;
- 5220 Correspondence;
- 5220 Procurement.

- CP210 Residuals Treatment Facility;
  - 0110 Administration;
  - 0400 Cooperation & Liaison;
  - 0640 Reports, Studies & Statistics;
  - 4500 Licenses & Permits;
  - 5220 Contracts;
  - 5220 Correspondence;
  - 5220 Procurement.

- CP300 Conveyance System;

  - CP310 Macaulay Point Pump Station and Forcemain;
    - 0110 Administration;
    - 0400 Cooperation & Liaison;
    - 0640 Reports, Studies & Statistics;
    - 3060 Development Permits;
    - 4500 Licenses & Permits;
    - 5220 Contracts;
    - 5220 Correspondence;
    - 5220 Procurement.

  - CP320 Craigflower Pump Station;
    - 5220 Contracts;

  - CP330 Clover Point Pump Station;
    - 0110 Administration;
    - 0400 Cooperation & Liaison;
    - 0640 Reports, Studies & Statistics;
    - 4500 Licenses & Permits;
    - 5220 Contracts;
    - 5220 Correspondence;
    - 5220 Procurement;
    - 5220 Zoning.

- CP350 Arbutus Attenuation Tank;
  - 0110 Administration;
  - 0400 Cooperation & Liaison;
  - 0640 Reports, Studies & Statistics;
  - 4500 Licenses & Permits;
  - 5220 Contracts;
  - 5220 Correspondence;
  - 5220 Procurement.

- CP360 Clover Forcemain;
  - 0110 Administration;
  - 0400 Cooperation & Liaison;
  - 0640 Reports, Studies & Statistics;
  - 4500 Licenses & Permits;
  - 5220 Contracts;
  - 5220 Correspondence;
  - 5220 Procurement.

- CP370 Trent Forcemain;
  - 0110 Administration;
  - 0640 Reports, Studies & Statistics;
  - 4500 Licenses & Permits;
  - 5220 Contracts;
  - 5220 Correspondence;
  - 5220 Procurement.

- CP380 Residual Solids Conveyance Line;
  - 0110 Administration;
  - 0400 Cooperation & Liaison;
  - 0640 Reports, Studies & Statistics;
  - 4500 Licenses & Permits;
  - 5220 Contracts;
  - 5220 Correspondence;
  - 5220 Procurement.

- CP385 Residual Solids Pump Stations & Bridge Crossings & Hartland Water System Improvement – Design;
  - 0110 Administration;
  - 0400 Cooperation & Liaison;
  - 0640 Reports, Studies & Statistics;
  - 4500 Licenses & Permits;

    - 5220 Contracts;
    - 5220 Correspondence;
    - 5220 Procurement.

- CP400 BC Hydro;
    - 5220 Contracts;
    - 5220 Correspondence.

- CP900 Project Management Office (PMO)
    - 0110 Administration; (Doc Control documentation, Governance Transition Plan Files, Templates)
    - 0220 General Correspondence;(Correspondence with Local/Provincial/Federal Government and Stakeholders)
    - 0340 Policies, Procedures & Manuals; (User guide for Prolog, SharePoint, CAD Standards)
    - 0360 Committees & Commissions OPEN; (Agenda's, Minutes from Open Project Board Meetings)
    - 0360 Committees & Commissions CLOSED;(Agenda's, Minutes from Closed Project Board Meetings)
    - 0400 Cooperation & Liaison; (Working group and liaison committee documents)
    - 0550 CRD Board; (Info sent to CRD Board in 2016: pre Project Team)
    - 0550 CRD Board CLOSED; (Info sent to Closed CRD Board in 2016: pre Project Team)
    - 0640 Reports, Studies & Statistics;
    - 1475 Communications; (Communications Team files)
    - 1615 Accounting General (EX. RPT); (Expense Claims- Employees and Board Members)
    - 1880 Finance (Open);
    - 1880 Finance (Secure); (Finance Documents)
    - 2320 Contracts and Agreements; (Funding, Commitment, Art and Signage, Data use agreements and documentation)
    - 2360 Easements & Rights of Way; (Mcloughlin Point SRW)
    - 2640 Health and Safety; (Health and Safety Manager Documentation)
    - 3000 Land Administration;
    - 4500 Licenses & Permits;
    - 4500 E.F.R; (Environmental and First Nations Relation Documentation)
    - 5220 Contracts;
    - 5220 Procurement;
    - 5220 Project Charter;
    - 5220 Project Controls;
    - 5220 PMP- Including subsidiary Plans;
    - 5220 Projects; (WTP Project Monthly/Quarterly Reports);
    - 5220 Quality Management; (Quality Manager Documentation).

Project files have been stored within these libraries.

4.1.2 Prolog

Prolog has been structured with modules for each of the Project's major design and construction Project contracts (for files specific to a Project contract), and for the project management office (for files applicable to more than one Project contract).

The main modules are:

- CP100 Wastewater Treatment Plant;
- CP210 Residuals Treatment Facility;
- CP.230D Hartland Water System Improvement – Design;
- CP310 Macaulay Pump Station and Forcemain;
- CP320 Craigflower Pump Station;
- CP330 Clover Point Pump Station;
- CP350 Arbutus Attenuation Tank;
- CP350D Arbutus Attenuation Tank – Design;
- CP360 Clover Forcemain;
- CP360D Clover Forcemain – Design;
- CP370 Trent Forcemain;
- CP370D Trent Forcemain – Design;
- CP380 Residual Solids Conveyance Line;
- CP380D Residual Solids Conveyance Line, Pump Stations & Bridge Crossings- Design;
- CP385 Residual Solids Pump Stations & Bridge Crossings / Hartland Water System Improvement;
- CP400 BC Hydro; and
- CP900 Project Management Office.

Sub-sections include but are not limited to:

- Cost Control:
    - Contract Management;
    - Budget Management;
    - Contracts;
    - Potential Change Orders;
    - Change Orders;
    - Contract Invoices.
- Document Control:
    - Correspondence;
    - Drawings and Specs;
    - Submittal Packages;
    - Submittal Registers;
    - Requests For Information;

- Meeting Minutes;
- Project Files.

- Field Administration:
  - Daily Reports;
  - Inspections & Tests.

Project files and/or data have been stored within these sub-sections.

4.2 Project Hardcopies

Through a series of meetings held over the course of Project delivery with representatives from the CRD's Integrated Water Services Department and CRD's Information Services Manager, it was decided that hard copies of key Project deliverables will be located as summarised in Table 11. At May 2021, the majority of these hard copies are still to be finalised by Project contractors and submitted to the CRD.

Table 11 – Hard Copy Locations of key Project Deliverables

Component/Asset	Storage Location	Hard Copies		
		O&M Manual	Record Drawings	Project Binder
CP100 Wastewater Treatment Plant	WasteWater Treatment Plant library	1	1	
	CRD Storage Facility (Access Storage)	1	1	
CP210 Residuals Treatment Facility (RTF)	WasteWater Treatment Plant library	1	1	
	CRD Storage Facility (Access Storage)	1	1	
CP310 Macaulay Pump Station and Forcemain	WasteWater Treatment Plant library	1	1	1
	CRD Storage Facility (Access Storage)	1	1	1
	Macaulay Pump Station	1	1	
CP330 Clover Point Pump Station	WasteWater Treatment Plant library	1	1	1
	CRD Storage Facility (Access Storage)	1	1	1
	Clover Point Pump Station	1	1	
CP385 Residual Solids Pump Stations & Bridge Crossings CP385 Hartland Water System Improvement (HWSI)	WasteWater Treatment Plant library	1	1	1
	CRD Storage Facility (Access Storage)	1	1	1
	Pump Station #2	1	1	
	Pump Station #3	1	1	
	Pump Station #4	1	1	
	Hartland Water Booster Station	1	1	
CP360 Clover Forcemain CP370 Trent Forcemain CP380 Residual Solids Conveyance Line	WasteWater Treatment Plant library	1	1	1
	CRD Storage Facility (Access Storage)	1	1	1
CP350 Arbutus Attenuation Tank	WasteWater Treatment Plant library	1	1	1
	CRD Storage Facility (Access Storage)	1	1	1
	Arbutus Attenuation Tank	1	1	

4.2.1 Infolinx

Infolinx is a web-based software system that the CRD uses to track the location of all CRD corporate records and print labels for filing folders. All physical copies of Project records stored in Access Storage (the CRD's storage facility for physical copies of documentation) will have Infolinx labels for ease of tracking the location of the documentation.

4.3 Project Risk Registers

Project and Project component risk registers for the Project were used to aid in the identification and management of Project-phase risks (i.e. those related to planning, construction or commissioning). The risk registers also captured a small number of operating period risks, but were not intended to be comprehensive with respect to operating period risks.

The following four risk registers were updated over the course of the Project:

- Project (to capture risks that impacted more than one Project component);
- McLoughlin Point Wastewater Treatment Plant;
- Residuals Treatment Facility; and
- Conveyance System.

All four risk registers were updated monthly, and changes were reported to the Project Board.

The status of the risk registers as at April 20, 2021 are as follows:

- In the Project risk register: the only Project-phase (as opposed to operating period) risk remaining open is: senior government funds issue delayed. The Project Team are currently completing the documentation required to apply for the remaining government funding;
- In the McLoughlin Point Wastewater Treatment Plant risk register: no Project-phase risks remained open (the only risks remaining open are operating period risks);
- In the Residuals Treatment Facility risk register: no Project-phase risks remained open (the only risks remaining open are operating period risks);
- In the conveyance risk register: a small number of Project-phase risks remain open, and contingency (of $1.74 million) has been included in the Project budget to cover:
    - the inlet channel debris removal at Clover Point Pump Station; and
    - the risks associated with the work remaining on the conveyance component, which is anticipated to be more than sufficient given the nature of the remaining works.

5 Knowledge Transfer

Project knowledge transfer has been achieved through:

- The support and integration of the CRD throughout the planning, design, procurement and construction of the Project – including through the secondment of CRD resources, and CRD resource review of Project submittals;
- Handover meetings between Project Team members and CRD staff;
- The use of a common SCADA system integrator (QCA), who is now familiar with all of the pre-existing and new components of the core area's SCADA system;
- The commitment of Project funds to allow for the continued involvement of the Project's owner's engineer (Stantec);
- The continuity of personnel through the transfer of resources from the Project Team to CRD positions; and
- The retention of Project records.

Appendix A - Source of Project Commitments

Construction Contracts:

- Arbutus Attenuation Tank;
- Clover Forcemain;
- Clover Point Pump Station;
- Macaulay Point Pump Station and Forcemain;
- McLoughlin Point Wastewater Treatment Plant;
- Residual Solids Forcemain and Centrate Return Line;
- Residual Solids Pump Stations and Bridge Crossings;
- Residuals Treatment Facility; and
- Trent Forcemain.

Funding Agreements:

- Infrastructure Canada:
  - Building Canada Fund;
  - Green Infrastructure Fund; and
  - P3 Canada Fund;
- Province of BC; and
- Federation of Canadian Municipalities:
  - GMF 16576;
  - GMF 15822; and
  - GMF 16342.

First Nation Agreements:

- Esquimalt First Nation Support Agreement;
- Songhees First Nation Support Agreement; and
- WSANEC Leadership Council Memorandum of Understanding.

Land Access Agreements:

- Transport Canada Licences:
  - McLoughlin Point Harbour Crossing;
  - McLoughlin Point Outfall;
- Township of Esquimalt Amenity Agreements:
  - Host Community Impact 5-Year Agreement;
  - Community Impact Mitigation and Operating Agreement; and
  - Amenity Reserve Fund Administration Agreement;
- City of Victoria Licences of Occupation:
  - Dallas Road; and
  - Clover Point Pump Station;
- Greater Victoria Harbour Authority (GVHA) Agreements:

    - Compensation Agreement; and
    - Right to Enter Agreement.
- DND Licence Agreement for Access to Federal Real Property;
- Minister of Transportation and Infrastructure RSCL Highway Crossing Agreement;
- District of Saanich Residuals Conveyance System and Infrastructure Improvements Design, Construction, Access Agreement; and
- Rock Bay Lease Agreement.

Wastewater Treatment Project Works Remaining Status Report (July 2021)

Project Component	Current Prime Contractor	Summary of Works Remaining at May 2021	Summary of Works Remaining at July 2021	Updated Anticipated Completion Date	Amount included within Project Budget Forecast to Complete
McLoughlin Point Wastewater Treatment Plant	CRD	• Providing advice and guidance to optimize plant performance over the remainder of the two-year performance period (to January 12, 2023); • Complete warm weather odour test; and • DFO authorization reporting.	• As Plant deficiencies arise, HRP and/or CRD undertaking corrective action as per Project Agreement • Tertiary Disk Filters – HRP conducting replacement of backwash valves in August • HRP planning second BAF media augmentation in Aug/Sept and – expected to improve secondary treatment • CRD planning MBBR media addition in July – expected to improve secondary treatment • Completion/Handover documents - Awaiting final HRP record drawings, O&M manuals, commissioning documentation • Plant optimization	Performance Period Ends December 2022	$2.22M (to cover performance period commitments)

Residuals Treatment Facility	HRMG	• Complete activities required to achieve Completion, primarily being:
		  ○ Residual effluent line modifications; and
		  ○ Address residual effluent quality (including demonstrating compliance to the CRD's satisfaction for the purposes of the second 15-day acceptance test);
		• Complete change orders related to:
		  ○ Modifications at ring road connector;
		  ○ Changes to biosolids loadout chute;
		  ○ Down payment of sprung structure lease;
		• Minor deficiency items; and
			• Address effluent quality
			• Address Class A Biosolids particle size through screening
					$127M (to cover capital cost)
					
					$0.25M (to cover completion of change orders)

		• Record drawing submission.			
Macaulay Point Pump Station and Forcemain	KCL	• Landscaping; • Minor deficiency items; and • Record drawing submission.	• Inlet screen optimization – address ragging issue • Site cleanup and landscaping • Record drawing submission	September 2021	$0.34M
Clover Point Pump Station	KCL	• Generator ventilation rectification; • Inlet channel debris removal; • Final acceptance testing (note that final acceptance testing has had to be deferred until after the inlet channel debris removal is completed); • Completion of landscaping (this will complete the public realm improvements and is expected to be complete at the end of Q2, 2021) • Minor deficiency items; and • Record drawing submission.	• Generator ventilation rectification and removal of temporary generator • Inlet channel debris removal by KCL – planned late August/Sept • Final acceptance testing following inlet channel debris removal • Completion of landscaping and public realm improvements and site cleanup • Inlet screen optimization – address ragging issue • Record drawing submission	November 2021	$1.19M
Clover Forcemain	CRD	• Landscaping; and • Quarterly post-construction stability surveys over the warranty period	• Grass/tree planting/establishment	October 2021	$0.16M
Residual Solids Conveyance Line	KPI	• Minor restoration on the BC Hydro access road to be completed once BC Hydro has completed the pole relocation (gate, tree replacement, final road surface); and • Peers Creek survey; and • DND roadway tie-in	• Peers Creek – ongoing discussions with Saanich regarding resolution of drainage design/construction	October 2021	$0.03M
Residual Solids Pump Stations	KPI	• Removal of low floats and upgrade programming; • Supply and installation of automated valve actuators; • Landscaping; • Minor deficiency items; and	• Resolution of solids concentration/build up and pumpout requirement associated with MPWWTP residuals discharge • Pumpstation access hatch opening mechanism replacement • Ladder rung testing/replacement	October 2021	$0.43M

		• Record drawing submission	• Wet well alarm float adjustment • Final landscaping and maintenance		
Trent Forcemain	CRD	• Restoration; • Minor deficiency items; and • Record drawing submission	• Record drawings including Saanich comments and O&M manual submission	August 2021	$1.58M
Arbutus Attenuation Tank	NAC	• Final commissioning activities; • Site grading and landscaping; • Minor deficiency items; and • Record drawing submission	• Tank fill/testing operation week of July 19 – currently not under CRD operation • Site grading and landscaping • Record drawing submission	October 2021	$1.71M
		Conveyance Subtotal			**$5.44M**
		Total			**$134.91M**