



Wastewater Treatment Project

Treated for a cleaner future

CRD Wastewater Treatment Project

Monthly Report

Reporting Period: May 2018

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1 Executive Summary

1.1 Introduction

This monthly report covers the reporting period of May 2018 and outlines the progress made on the Wastewater Treatment Project during this time.

The Wastewater Treatment Project (the “Project”) includes three main Project components (the “Project Components”): the McLoughlin Point Wastewater Treatment Plant (the “McLoughlin Point WWTP”), the Residuals Treatment Facility (the “RTF”) and the Conveyance System (which includes upgrades to the conveyance network, including the construction of pump stations and pipes). The Project scope will be delivered through a number of contracts with a variety of contracting strategies.

Overall the Project is progressing as planned with no changes to the construction/commissioning start and completion dates.

The WWTP Project Component is continuing with Harbour Resource Partners (“HRP” as the Design-Build Contractor for the McLoughlin Point WWTP) progressing: engineering of the WWTP and outfall; and construction at McLoughlin Point including continuing installation of the foundation piles, continuing concrete pours for the tsunami and planter walls and starting installation of underground piping. HRP also progressed planning and design activities over the reporting period, including:

- construction package 3 under slab pipe: 100% design deliverable submission;
- construction package 4 yard pipe: 100% design deliverable submission;
- construction package 5 biological aerated filter (BAF) slabs: 90% design deliverable submission;
- 90% design workshop; and
- 90% hazard and operability workshop.

The RTF Project Component is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing pre-construction planning and permitting, and design engineering activities over the reporting period, including:

- planning: prepared and submitted various project plans and submittals, including the baseline schedule;
- permitting: submitted ‘Preliminary Application for New Authorization’ to the Ministry of Environment, and working with District of Saanich on permitting requirements; and
- procurement: evaluated Independent Certifier proposals, and progressing vendor selection.

The Conveyance System is being delivered through seven contracts, including two design-build contracts and five design-bid-build contracts.

Progress on the two design-build contracts over the reporting period included:

- Clover Point Pump Station: Kenaidan Contracting Limited (“Kenaidan”, as the Design-Build Contractor) progressed planning and design activities over the reporting period, including:
 - construction package no. 1 caisson foundation: 100% design deliverable;
 - geotechnical design report: 100% design deliverable; and
 - overall final (100%) design deliverable.

- Macaulay Point Pump Station and Forcemain: Kenaidan Contracting Ltd. (“Kenaidan” as the Design-Build Contractor) progressed pre-construction planning and design activities over the reporting period, including:
 - planning: design management plan and baseline schedule (update);
 - construction package no. 1 demolition and temporary works: 90% design; and
 - overall 90% design deliverable.

Two of the five design-bid-build Conveyance System contracts are in the procurement phase. Progress over the period included:

- Clover Forcemain: the Request for Proposals (RFP) was issued to pre-qualified contractors and an all-proponents meeting was held to outline key aspects of the contract to the proponents; and
- Residual Solids Conveyance Line (the “RSCL”): preparation of the draft contract was progressed.

1.2 Dashboard

Table 1 indicates the high level status of the Project and each Project Component with regards to the six Key Performance Indicators (“KPIs”) that were defined within the Project Charter.

There were no changes were made to the dashboard during the reporting period.

Table 1- Executive Summary Dashboard

Key Performance Indicators		Project Overall	WWTP	RTF	Conveyance System	Comments
Safety	Deliver the Project safely with zero fatalities and a total recordable incident frequency (TRIF) of no more than 1*.					No recordable incidents; site inspections ongoing.
Environment	Protect the environment by meeting all legislated environmental requirements and optimizing opportunities for resource recovery and greenhouse gas reduction					No environmental issues.
Regulatory Requirements	Deliver the Project such that the Core Area complies with provincial and federal wastewater regulations.					No regulatory issues.
Stakeholders	Continue to build and maintain positive relationships with First Nations, local governments, communities, and other stakeholders.					Engagement activities were ongoing in the reporting period. Significant efforts were made to provide accurate and timely information to stakeholders.
Schedule	Deliver the Project by December 31, 2020.					No schedule issues.
Cost	Deliver the Project within the Control Budget (\$765 million).					Project expenditures within Control Budget but cost pressures identified. Corrective action has been identified and is being implemented (see section 2.7 for details).

* A TRIF of no more than 1 means that there is 1 or fewer recordable incidents (being a work-related injury or illness that requires medical treatment beyond first aid or causes death, days away from work, restricted work or transfer to another job, or loss of consciousness) for every 200,000 person-hours of work.

Status	Description
	KPI unlikely to be met
	KPI at risk unless correction action is taken
	KPI at risk but corrective action has been identified/is being implemented
	Good progress against KPI

2 Wastewater Treatment Project Progress

2.1 Safety

Safety information for the reporting period and cumulative for the Project from January 1, 2017 is summarised in Table 2. The total recordable incident frequency (TRIF) for the reporting period, inclusive of Project Contractors and Project Management Office (PMO) staff was zero.

Site safety tours and weekly safety inspections were carried out by PMO construction and safety personnel over the reporting period at all active worksites: Clover Point Pump Station, Ogden Point Harbour Crossing, and the McLoughlin Point WWTP.

The McLoughlin Point WWTP Project Safety Advisory Group was established by HRP in consultation with the Project Team and the kick-off meeting was held on May 1, 2018. The group includes one senior representative from the CRD, and one senior representative from each of the HRP joint-venture partners: Graham and AECOM. The purpose of the group is to provide oversight regarding HRP's safety program and make recommendations for improvements based on industry best practices. The group will meet quarterly and HRP will advise on actions they will take to address the group's recommendations.

Over the reporting period there was one first aid and two-near miss incidents at the McLoughlin Point WWTP site:

- a first aid incident occurred on May 2 and involved an employee walking towards the work area when they stepped on a large rock, causing the employee to slightly roll their ankle. The on-site first aid attendant evaluated, elevated, and applied ice to the employee's injured ankle. The employee returned to work after treatment on modified duties for the rest of the day and the following two days, before returning to regular duty. HRP reviewed the incident and took corrective action by removing larger rocks from the work area to prevent possible trip hazards and included awareness of surroundings and trip hazards as a toolbox meeting topic;
- a near-miss incident occurred on May 1 which involved a drone that was being used to take aerial photos of the Project site. A company specializing in aerial video had been hired to take the aerial photos of the site. A permit had been obtained from Nav Canada to fly the drone. Pictures of the site were successfully taken but when the drone was landing it made contact with Tower Crane B, approximately 30 feet from the ground and fell to the ground. The drone being used was new and equipped with a built-in GPS for the purpose of preventing it from contacting any objects. Nav Canada and the crane operator were notified that an incident had occurred. The tower crane operator performed an inspection of the tower crane and noted there was no damage to the crane. No personnel were in the area when the drone fell. Corrective action included having the new drone sent back to the manufacturer to be inspected for possible internal UAV guidance/control systems malfunction. It was confirmed that a good radio controller signal to the aircraft and GPS coverage were maintained but the root cause of the un-demanded flight track could not be positively determined. Following a technical analysis, the UAV manufacturer did not identify an internal UAV guidance/control system malfunction and concluded that some external factor must have caused it; a suggestion was a possible small bird strike; and
- a second near-miss incident occurred on May 1 which involved a subcontractor worker on-site being identified by an HRP Safety Representative to be under the age of HRP's site requirement.

Corrective action taken with respect to the near-miss incident included reminding the subcontractor of HRP's policy for new/young workers and their noncompliance to this policy. The worker was removed by HRP's subcontractor. HRP is going to confirm the age of all workers to ensure that new and young workers are identified and all are of the adequate site age.

The CRD received a letter during the reporting period (dated May 10, 2018) regarding the safety incident that occurred on April 10 at the intersection of Niagara Street and Oswego Street in Victoria. The safety incident was reported in the Project's April 2018 Monthly Report, and involved a member of the public that was using the temporary stairs that had been installed by HRP to allow pedestrian access across the intersection during the pipe pull activities. A young child under the supervision of his father accidentally fell while utilizing the temporary stairs. The letter was sent to the CRD and the City of Victoria by counsel acting for the child's father, and provided notice in order to preserve the right for a potential claim for damages.

Key safety activities conducted over the reporting period included:

- regular site tours performed at all active sites;
- monthly office/site inspections with contractors and CRD Corporate at all active sites;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- final hazard and operability report safety review for McLoughlin site;
- HRMG safety plan review;
- traffic management reviews related to Clover Point road closure (duct bank repairs);
- equipment inspection document review;
- blasting plan review with HRMG (the Design-Build-Finance-Operate-Maintain Contractor for the RTF);
- incident reporting review with prime contractors at active work locations; and
- emergency response review with prime contractors.

Table 2 – WTP Safety Information

	Reporting Period (May 2018)	Project Total to-Date (from January 1, 2017)
Person Hours		
PMO	5,041	55,842
Project Contractor	17,629	184,383
Total Person Hours	22,670	240,225
Total Number Of Employees		
PMO	29	
Project Contractors working on Project sites	99	
Total Number Of Employees	128	
Near Miss Reports		
Near Miss Reports	2	7
High Potential Near Miss Reports	0	2
Report Only	0	1
First Aid	1	2
Medical Aid	0	0
Medical Aid (Modified Duty)	0	0
Lost Time	0	0
Total Recordable Incidents	0	0
	2018 Frequency (from January 1, 2018)	Project Frequency (from January 1, 2017)
First Aid Frequency	1.7	1.5
Medical Aid Frequency	0	0
Lost Time Frequency	0	0
Total Recordable Incident Rate	0	0

2.2 Environment and Regulatory Management

Environmental and regulatory activities continued over the reporting period related to both the planning and permitting of upcoming work and the execution of current work.

2.2.1 Environment

Environmental work in May progressed as planned.

Key environmental management activities completed in May included:

- HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) submitted the Marine Environmental Impact Study (EIS) to the BC Ministry of Environment and Climate Change Strategy (ENV) for the McLoughlin Point Outfall; and
- the PMO, CRD source control staff and Kenaidan (as the Design-Build Contractor for the Clover Point Pump Station) met to discuss water quality monitoring requirements associated with Kenaidan's CRD-issued Waste Discharge Permit. The Waste Discharge Permit authorizes Kenaidan to dispose of construction water (from excavation de-watering) in the sanitary sewer system.

HRP experienced an environmental incident during the reporting period. On May 15 there was a release of approximately 1,000 litres of freshwater from the Cross Harbour Forcemain at the Ogden Point end of the alignment. The release was the result of a valve being opened during the cleaning of the pipe. The water flooded the site, picking up soil and sediment, and then flowed down the nearby boat ramp into Victoria Harbour. A sediment plume was visible for two days following the release, however there was no visual evidence that the sediment had covered the ocean floor or marine vegetation. Crews notified federal and provincial authorities, as well as nearby stakeholders (e.g. Greater Victoria Harbour Authority). Following receipt of laboratory testing results, HRP concluded that although marine ambient water quality guidelines for turbidity were exceeded for up to 48 hours, the release had no long term adverse environmental effects.

2.2.2 Regulatory Management

In May the Project Team continued to monitor the advancement of construction-related regulatory approvals and supported or led the advancement of permit applications. Key permitting activities for the reporting period involved supporting HRP (as the Design-Build Contractor for the McLoughlin Point WWTP), Kenaidan (as the Design-Build Contractor for the Macaulay Point Pump Station and Forcemain), and HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) in the development of permit applications; engaging with the provincial government in support of obtaining key permits (summarized in Table 3); and continuing to advance the Municipal Wastewater Regulation (MWR) Registration and planning for future permit applications.

Key permitting activities for May included:

- the CRD received a Notice from the Director to Construct under Section 40 (b) of the MWR to authorize construction of the Clover Forcemain;
- HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) submitted environmental effects assessment information to Transport Canada in support of the McLoughlin Outfall permitting process;

- HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) re-submitted an application to Fisheries and Oceans Canada (DFO) for a Fisheries Act Authorization to construct the McLoughlin Outfall. The re-submission was to address information gaps identified by DFO in their initial review of the application; and
- the CRD, Stantec, and HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) continued to advance the MWR Registration application. This included holding bi-weekly coordination meetings with ENV.

The status of key Project permits are summarized in Table 3. The table is not a list of all required Project permits, but rather a summary of the status of key Project permits.

Table 3 has been updated since the Project's April 2018 Monthly Report as follows:

- The status of the following permits have been updated:
 - McLoughlin Point WWTP: Additional building permits beyond phase 2 are not required from Township of Esquimalt, therefore the future phases have been removed from the table.
 - Macaulay Point Pump Station:
 - added Township of Esquimalt Building Permit; and
 - removed Township of Esquimalt Development Permit as it was received in the last reporting period.
 - Clover Forcemain: Notice from the Director to Construct under section 40(b) of the MWR has been received.
 - Arbutus Attenuation Tank: Added District of Saanich Building Permit.

Table 3 - Key Permits Status

Permit / Licence	Anticipated Date	Status	Party Responsible for Obtaining Permit
McLoughlin Point WWTP			
Township of Esquimalt Phased Building Permits (Phase 1 obtained; Phase 2 submitted and anticipated in Q2 2018)	Q2 2018	Phase 2 submitted: under review by Township of Esquimalt On Track	HRP
Municipal Wastewater Regulation ("MWR") Registration	Q4 2019	On track	CRD
McLoughlin Point Harbour Crossing			
Transport Canada Lease	Following completion of construction	On track	HRP
McLoughlin Point Outfall			
Fisheries and Oceans Canada (DFO) Fisheries Act Authorization	Q3 2018	Submitted: under review by DFO	HRP
Transport Canada Facility Alteration Permit	Q2 2018	Submitted: under review by Transport Canada	HRP
Transport Canada Licence (works access)	Q2 2018	Submitted: under review by Transport Canada	HRP
Transport Canada Lease	Following completion of construction	On track	HRP
Notice from the Director to Construct under Section 40 (b) of the MWR	Q2 2018	On track	HRP
Macaulay Point Pump Station Upgrade			
Township of Esquimalt Building Permit	Q3 2018	On track	Kenaidan
Notice from the Director to Construct under Section 40 (b) of the MWR	Q2 2018	On track	Kenaidan
Clover Forcemain			
Notice from the Director to Construct under Section 40 (b) of the MWR	Q2 2018	Received	Kerr Wood Leidal
ECI/Trent Twinning			
Notice from the Director to Construct under Section 40 (b) of the MWR	Q4 2018	On track	Design engineer
City of Victoria Licence (works access)	Q1 2019	On track	Design engineer
Arbutus Attenuation Tank			
Notice from the Director to Construct under Section 40 (b) of the MWR	Q3 2018	On track	Kerr Wood Leidal
District of Saanich Building Permit	Q3 2018	On track	Kerr Wood Leidal
Residual Solids Conveyance Line			
Notice from the Director to Construct under Section 40 (b) of the MWR	Q2 2018	On track	Parsons
Residuals Treatment Facility			
Operational Certificate	Prior to start of RTF operations	On track	HRMG
District of Saanich Development and Building Permits	Q2 2018	On track	HRMG

2.3 First Nations

First Nations communication and engagement was ongoing in May.

The Project Team is waiting for Esquimalt Nation to appoint a replacement Liaison, as the current Liaison is now Hereditary Chief of the Nation.

Biweekly meetings have continued with the Songhees Nation Liaison.

Members of the PMO attended a cultural training session (Blanket Exercise) facilitated by the CRD Indigenous Relations department and the Songhees Nation Liaison. The Blanket Exercise provided attendees with a deeper understanding of the history of colonization in Canada so that they can better understand the perspectives of Indigenous people today.

Following the Project Board Chair's April 27, 2018 letter to Chief Don Tom of the Tsartlip First Nation, the Project Team continued to consider how to continue to engage the W̱SÁNEĆ Nations in meaningful ways. The Project Team anticipates sharing the RSCL Environmental Impact Statement with the W̱SÁNEĆ Leadership Committee at the next meeting.

2.4 Stakeholder Engagement

The Project maintained its ongoing two-way Communications and Engagement Plan to provide Project information to stakeholders, communities and the public and to respond to public inquiries. The key focus of the communications and engagement activities over the reporting period was to keep residents and stakeholders informed of Project plans, progress and construction information, and to receive and respond to questions and concerns raised by the community. A variety of communications tools and engagement activities were utilized to support the implementation of the Plan, including stakeholder meetings, Project website updates, notifications of construction through notices, and a public inquiry program, among other methods.

A highlight during the month of May was the community celebration of the completion of the pipe assembly and pipe pull on Niagara Street. HRP and the Wastewater Treatment Project Team invited residents of Niagara Street and the surrounding streets to a community BBQ on May 1, 2018 at the Victoria Edelweiss Club. Over 750 residents attended the BBQ. Florence Dick, the Songhees Nation Liaison opened a short period of presentations by outlining the importance of the area to the Songhees Nation. The following Project representatives and special guests then spoke, acknowledging the Project milestone and commending the community for their attitude throughout the construction: Dave Clancy (Project Director); Don Fairbairn (Project Board Chair); Ernie Maschner (HRP's Project Director); Hon. Carole James (MLA Victoria-Beacon Hill); and Mayor Lisa Helps (City of Victoria).

Construction Communications

Construction Notices and Updates:

Three construction notices and updates were issued to stakeholders in the reporting period:

- Clover Point Pump Station: Road Closure (May 2, 2018) (Appendix A);
- McLoughlin Point Wastewater Treatment Plant: Concrete Works (May 9, 2018) (Appendix B); and
- Residuals Treatment Facility–Construction Works (May 22, 2018) (Appendix C).

As well, two large signs of the Clover Point Pump Station: Road Closure Construction Notice were posted on site at Clover Point.

Information Sheets

An information sheet outlining why and how the Project will treat wastewater was posted to the Project website. It also outlines in a two-page graphic the multi-stage treatment process starting from the initial collection of wastewater moving through the conveyance system and the primary, secondary and tertiary levels of treatment, including the purpose of the Residuals Treatment Facility and the Residual Solids Conveyance Line.

- About the Wastewater Treatment Process (May 18, 2018) (Appendix D)

As well, Project Update #5 was distributed (Appendix E). This newsletter-style document highlights construction updates across various components of the Project, and also includes a feature article on Florence Dick, who works as the Songhees Nation Liaison to the Project. The Update was posted to the website, distributed to stakeholders, including municipal Mayors and Councillors, MLAs, and hand delivered to community centres.

Project Website

Throughout the month of May, the Project website, wastewaterproject.ca, was updated with information about the Project. The following items were posted: construction notices, an information sheet outlining the wastewater treatment process, and Project Update #5. As well, the Community Questions section was updated.

Community Meetings

Over the reporting period the Project Team held meetings with the following community groups and representatives, and municipality representatives:

- City of Victoria staff;
- District of Saanich staff;
- District of Saanich Technical Working Group;
- Township of Esquimalt Liaison Committee;
- Victoria West Community Association; and
- Willis Point residents.

Public Inquiries

Public inquiry numbers from the Project email address and 24/7 information phone line (1-844-815-6132) are noted in Table 4.

Table 4- Project Inquiries – May 2018

Inquiry Source	Contacts for May
Information phone line inquiries	15
Email inquiries responded to	14

Key themes of the public inquiries were as follows:

- inquiries about Dallas Road/Clover Forcemain construction schedule;
- feedback about the community BBQ in James Bay;
- requests to be added to distribution list for construction notices; and
- inquiries about Niagara Street remediation.

2.5 Resolutions from Other Governments

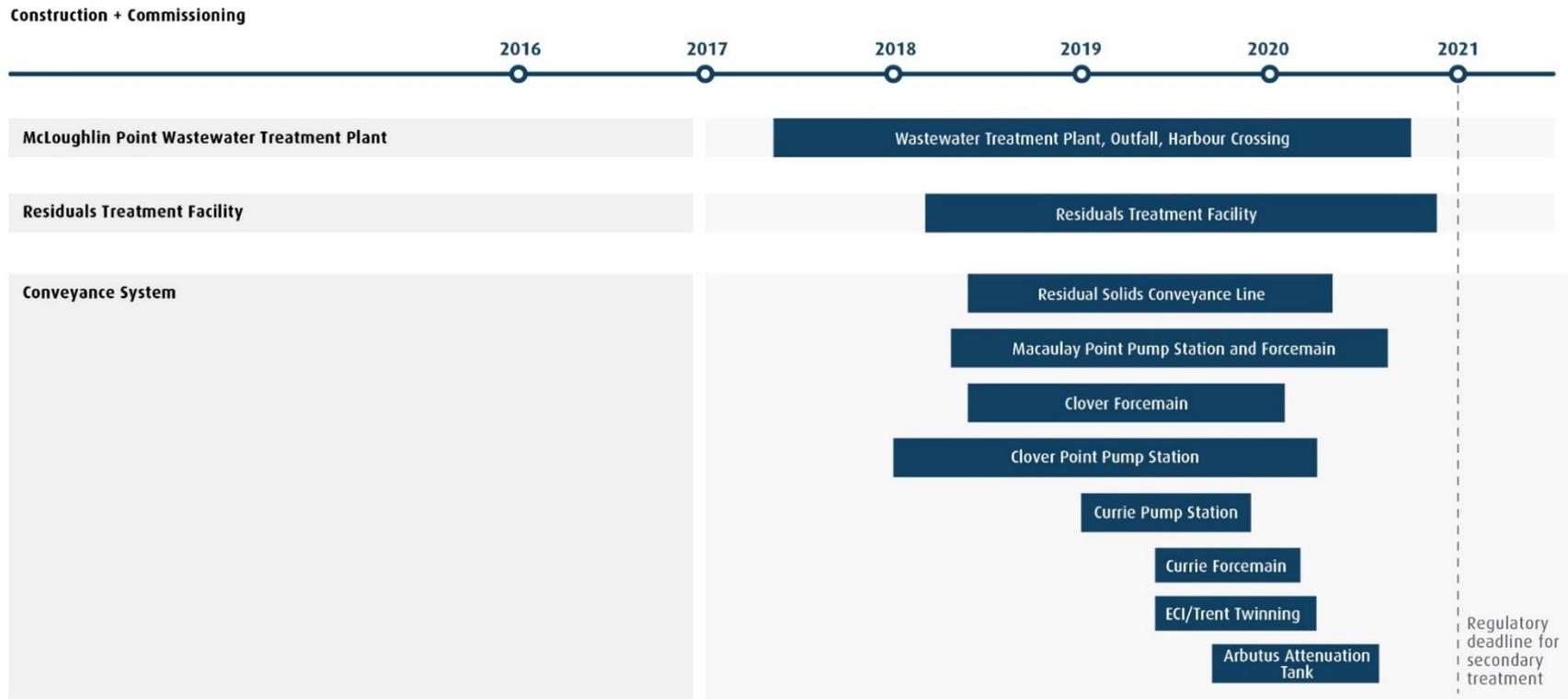
There were no resolutions related to the Project passed by other Governments during the reporting period.

2.6 Schedule

Overall the Project’s scheduled activities progressed as planned during May. All major and key interface milestones were on target to be completed as per the schedule. Progress over the reporting period is summarised in section 2.9.

Figure 1 shows the high-level Project schedule. This schedule is unchanged from that shown in the previous Project report, however it remains subject to optimization as the Project and planning progresses.

Figure 1-High-Level Project Schedule¹



**Schedule subject to updates as project planning progresses.*

¹ The schedule remains subject to optimization.

2.6.1 30 and 60 day lookahead

Key activities and milestones for the next 30 days (June) are:

Safety

- review of any site specific safety plans or high risk tasks;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites;
- develop monthly project summary for CRD Corporate Safety Manager in regards to Project activities;
- site tours performed at all active sites;
- monthly office/site Inspections with contractors and CRD Corporate at all active sites;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- weekly HRP and CRD management site safety tour;
- quarterly McLoughlin WWTP Project Safety Advisory Committee meeting;
- traffic management reviews; and
- incident reporting review with prime contractors at active work locations.

Environment and Regulatory Management

- PMO anticipates receipt of the Notice from the Director to Construct under Section 40(b) of the MWR authorizing construction of the RSCL; and
- HRP, Stantec and the CRD to continue advancing the MWR Registration.

First Nations

- continue working with Songhees and Esquimalt Liaisons on topics of shared interest, including management of archaeological resources, identification of employment opportunities, and the development of plans for the installation of signage, artwork and use of native plants in landscaping for Clover Forcemain, Clover Point Pump Station, Macaulay Point Pump Station and McLoughlin Point WWTP.

Stakeholder Engagement

- construction communications with stakeholders; and
- ongoing community liaison meetings.

Cost Management and Forecast

- prepare cost reports;
- finance modelling;
- prepare CRD WTP annual budget; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).

Construction

McLoughlin Point

- continue construction of tsunami and planter walls;
- continue installing foundation piles in Densadegs, plate settlers, dirty backwash and north apron areas;
- construction of base/mud slabs at biological aerated filters (BAF), tertiary treatment and odour control area; and
- continue surface runoff/groundwater treatment and discharge.

Clover Point Pump Station

- drill and cast perimeter caissons; and
- align and weld king piles.

Macaulay Point Pump Station

- establish construction power and trailer complex; and
- commence demolition of workshop and laboratory.

Residuals Treatment Facility

- mobilize remainder of trailer complex to site; and
- commence drilling, blasting and excavation.

Engineering

McLoughlin WWTP:

- construction package 2 deep foundations: final (100%) design deliverable;
- construction package 4 yard pipe: final (100%) design deliverable;
- construction package 5 biological aerated filters (BAF) slabs: 90% design deliverable;
- construction package 6 operations and maintenance building and utilities: final (100%) design deliverable;
- construction package 7 tertiary area foundation: final (100%) design deliverable; and
- 100% design report deliverable.

Clover Point Pump Station:

- construction package no. 1 caisson foundation: issued for construction deliverable; and
- final (100%) design report deliverable.

Macaulay Point Pump Station and Forcemain:

- construction package no. 1 demolition and temporary work: 100% design deliverable;
- construction package no. 2 excavation and foundations: 90% design deliverable; and
- overall 90% design report deliverable.

Residual Solids Conveyance Line:

- package no. 1 residuals solids pipes: final RFP document; and
- package no. 2 residuals solids pump stations: ongoing development.

Residuals Treatment Facility

- construction package no. 1 site access road: 90% design deliverable;
- construction package no. 2 foundations: 90% design deliverable; and
- overall 60% design deliverable: ongoing development.

Arbutus Attenuation Tank

- final (100%) design deliverable and building permit application.

Procurement

Clover Forcemain:

- respond to inquiries from pre-qualified contractors and issue addenda, as necessary.

Residuals Solids Conveyance Line:

- issue RFP the pre-qualified contractors.

Key activities and milestones for the next 60 days (July) are:

Safety

- review of any site specific safety plans or high risk tasks;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites;
- develop monthly project summary for CRD Corporate Safety Manager in regards to Project activities;
- site tours performed at all active sites;
- monthly office/site inspections with contractors and CRD Corporate at all active sites;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- weekly HRP and CRD management site safety tour;
- periodic blasting safety reviews at Hartland;
- traffic management reviews; and
- incident reporting review with prime contractors at active work locations (if applicable).

Environment and Regulatory Management

- HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) with CRD support to coordinate a meeting of Victoria Harbour stakeholders and regulators to begin planning the pipe lay portion of McLoughlin outfall construction; and
- HRP, Stantec and the CRD to continue advancing the MWR Registration.

First Nations

- the CRD, Millennia (as the Project's archaeologist) and Songhees and Esquimalt Nations to develop an archaeological training program for Songhees and Esquimalt Nation community members; and
- continue working with Songhees and Esquimalt Liaisons on topics of shared interest, including management of archaeological resources, identification of employment opportunities, and the development of plans for the installation of signage, artwork and

use of native plants in landscaping for Clover Forcemain, Clover Point Pump Station, Macaulay Point Pump Station and McLoughlin Point WWTP.

Stakeholder Engagement

- construction communications with stakeholders; and
- ongoing community liaison meetings.

Cost Management and Forecast

- assign WBS codes to new contracts;
- prepare cost reports;
- finance modelling;
- monitor schedule;
- prepare CRD WTP annual budget; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).

Construction

McLoughlin Point

- complete construction of tsunami and planter walls;
- continue installing foundation piles in west Densadegs and north apron areas;
- install underground process piping in primary and secondary treatment areas;
- construction of base/mud slabs at tertiary treatment, moving bed biofilm reactor (MBBR) system and odour control area;
- commence interior and gallery walls in biological aerated filters (BAF); and
- continue surface runoff/groundwater treatment and discharge.

Clover Point Pump Station

- drill and cast perimeter caissons; and
- align and weld king piles.

Macaulay Point Pump Station

- continue demolition of workshop and laboratory.

Residuals Treatment Facility

- continue drilling, rock blasting and excavation; and
- commence widening of site access road.

Engineering

- complete construction package 5 biological aerated filter (BAF) slabs: final (100%) design deliverable;
- complete 100% design of the McLoughlin Point WWTP;
- review early works packages and continue development of 60% design for the RTF;
- complete the 90% design for the Macaulay Point Pump Station and Forcemain;
- complete final design for the Clover Point Pump Station;
- complete design of RSCL package 1 (residual solids pipes);

- advance design of RSCL package 2 (residual solids pump stations); and
- continue development of detailed design for the Arbutus Attenuation Tank.

Procurement

Clover Forcemain:

- respond to inquiries from pre-qualified contractors and issue addenda, as needed; and
- receive and evaluate proposals (closing date July 10), and select preferred proponent.

Residuals Solids Conveyance Line:

- respond to inquiries and issue addenda, as needed.

2.7 Cost Management and Forecast

The monthly cost report for May is attached as Appendix F. The cost report summarizes Project expenditures and commitments by the three Project Components and the major cost centres common to the Project Components.

We have held constant the status of the cost key performance indicator as yellow, as a result of cost pressures identified in the Project's Q4 2017 Quarterly Report. In order to address these pressures the Project Team in concert with Stantec (as the Owner's Engineer providing technical support for the CRD WTP), are reviewing the scope and construction cost estimates for the remainder of the contracts and identifying opportunities where savings could be realized. With this corrective action our confidence level is still high that we will be able to deliver the Project within the Control Budget.

2.7.1 Commitments

Commitments were made over the reporting period in furtherance of delivering the Project. The commitments made during the reporting period resulted in an increase in committed costs of \$221,000.

2.7.2 Expenses and invoicing

The Project expenditures for the reporting period were as expected and were within the budget allocations for each of the budget areas. The main Project expenditures incurred over the reporting period were associated with WWTP construction activities and PMO-related costs.

2.7.3 Contingency and Program Reserves

There were no contingency or program reserve draws over the reporting period. The draws to-date and remaining contingency and program reserve balance are summarized in Table 5. The remaining contingency and program reserve is anticipated to be sufficient to deliver the Project within the Control Budget.

Table 5 - Contingency and Program Reserve Draw-Down Table

WTP Contingency and Program Reserve Draws and Reallocations	Draw Date	\$ Amount
Total Contingency and Program Reserve Draw as at April 30, 2018		\$1,903,456
Total Contingency and Program Reserve Draw/Reallocation over the Reporting Period		\$ 0
Total Contingency and Program Reserve Draw/Reallocation as at May 30, 2018		\$ 1,903,456
Total Contingency and Program Reserve Remaining		\$ 71,221,507

2.7.4 Project Funding

The federal and provincial governments are assisting the Capital Regional District in funding the Project.

The Government of British Columbia will provide up to \$248 million towards the three components of the project, while the Government of Canada is contributing:

- up to \$120 million through the Building Canada Fund – Major Infrastructure Component towards the McLoughlin Point WWTP;
- up to \$50 million through the Green Infrastructure Fund towards the conveyance system project; and
- up to \$41 million towards the RTF through the P3 Canada Fund.

The status of funding claims is summarised in Table 6. Note that the timing for the provision of the Government of British Columbia and Government of Canada’s funding differs by funding source. The Project Team will submit claims to the funding partners in accordance with the relevant funding agreements. In accordance with the funding agreements, funding from the P3 Canada Fund and Government of British Columbia cannot be claimed until the relevant Project components are substantially complete, which is scheduled to occur in 2020.

Table 6 – Grant Funding Status

Funding Source	Maximum Contribution	Funding Received in the Reporting Period	Funding Received to Date
Government of Canada (Building Canada Fund)	\$120M	\$2.1M	\$19.6M
Government of Canada (Green Infrastructure Fund)	\$50M	-	-
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
TOTAL	\$459M	\$2.1M	\$19.6M

2.8 Key Risks and Issues

The Project Team actively identified and managed Project risks over the reporting period.

Table 7 summarizes the highest-level risks that were actively managed over the reporting period, as well as the mitigation steps identified and/or undertaken over the reporting period.

There were no changes to the active risks summary during the reporting period.

Table 7- Project Active Risks Summary

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Project				
Misalignment between First Nations' interests and the implementation of the Project.	The assessed risk level reflects the Project Team's priority of establishing strong and effective relationships with First Nations interfacing with, or interested in, the Project.	First Nations engagement activities remained ongoing over the reporting period (see section 2.3 for further details).	M	No change
Divergent interests between multiple parties and governance bodies whose co-operation is required to successfully deliver the Project.	The assessed risk level reflects the Project Team's priority of establishing strong and effective relationships with municipal, provincial and federal government departments.	The Project Team continued engagement with municipal, provincial and federal government departments throughout the reporting period.	M	No change
Misalignment between Project objectives/scope and stakeholder expectations.	The assessed risk level reflects the Project Team's priority of establishing strong and effective community stakeholder engagement.	Community engagement activities were ongoing over the reporting period (see section 2.4 for further details).	M	No change
Lack of integration between Project Components.	Planning challenges and system integration between the WWTP, RTF and Conveyance System components of the Project results in schedule delays and/or additional Project costs.	Physical and schedule interfaces are clearly delineated in all construction contracts along with the requirement for commissioning and control plans. The Project Team is using a single Owner's engineer (Stantec) to develop the indicative design for all critical project components with significant interfaces.	M	No change

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Senior government funds issue delayed.	The assessed risk level reflects the Project Team's priority of ensuring Project funding commitments are honoured.	Responsibility for meeting funding commitments have been assigned and are being monitored.	M	No change
Downstream works delays.	Delay from conveyance projects delay delivery of wastewater to WWTP.	Schedule has sufficient time allowance to ensure conveyance elements complete prior to requirement. Contractor agreements will include terms that require the contractor to recover schedule delays and/or allow for CRD acceleration.	M	No change
Downstream works delays.	Delay of the delivery of residual solids to the RTF.	Contract with HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) includes terms that require the contractor to recover schedule delays and/or allow for CRD acceleration. Liquidated damages for late delivery in HRP contract.	M	No change
Provincial or Federal government/agency permit requirements not met.	Project Component required Provincial or Federal permit conditions are not met by Project contractors resulting in delays or work stoppage.	The Project Team maintain a centralized permit compliance register to monitor and manage Project permit condition compliance by Project contractors. Meetings held with Federal and Provincial agencies to fully understand and meet requirements in a timely fashion.	M	No change
Public directly contacting contractors at sites.	Direct contact between the public and contractors could expose both parties to worksite hazards and potential injuries.	Communications and engagement plan, contractor orientation.	M	No change

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Change in Law.	A change in law impacts the scope, cost or schedule of the Project.	Keep apprised of proposed modifications to relevant regulations so as to do the following as appropriate: submit comments on proposed modifications; consider including anticipated modifications in contracts.	M	No change
Labour - Availability and/or cost escalation.	There is insufficient labour available to construct the Project, and/or there is significant labour cost.	The Project Team will, through the use of competitive selection processes for all construction contracts, ensure that all Project Contractors have appropriate experience and therefore understand labour risk.	M	No change
McLoughlin Point Wastewater Treatment Plant				
Unexpected contaminated soil conditions during excavation.	Site has more contaminated soils than initial assessment.	CRD and HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) are working collaboratively to minimize the costs associated with remediating the McLoughlin Point site while ensuring that contaminated materials are removed and disposed of in accordance with all applicable legislation.	H	No change

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Conveyance				
Unexpected geotechnical conditions results in higher procurement and/or construction costs.	Geotechnical conditions result in redesign and/or higher construction cost than budgeted.	Ensure adequate investigations to manage the risk of unexpected geotechnical conditions: comprehensive geotechnical investigations have been undertaken for the Clover Forcemain, Macaulay Point Pump Station and Forcemain, and RSCL. This geotechnical information has been provided to procurement participants. Geotechnical investigations are to be undertaken for ECI and Currie Forcemain.	M	No change
Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted.	Cost of conveyance contracts higher than estimated and budgeted.	Conveyance contracts will be competitively-procured. The Project Team in concert with Stantec are reviewing the scope and construction cost estimates for the contracts that haven't yet been awarded in order to identify opportunities where savings could be realized to offset escalation.	H	No change
Engineering design development results in increases to the estimated construction cost.	Conveyance contract amounts higher than budget due to design development (through indicative and detailed design phases).	Reconfirm construction cost estimates at each stage of the design process. The Project Team in concert with Stantec are reviewing the scope in order to identify opportunities where savings could be realized to offset any increases during design development. Application of Value Engineering during design development and associated updated costs estimates at discrete design points.	H	No change

Risk Level Key - Assessed risk level (based on likelihood and potential impact)	
L	Low
M	Medium
H	High

2.9 Status (Engineering, Procurement and Construction)

2.9.1 Wastewater Treatment Plant (WWTP)

The WWTP Project Component is continuing with Harbour Resource Partners (“HRP” as the Design-Build Contractor for the McLoughlin Point WWTP) progressing: engineering of the WWTP and outfall; and site work at McLoughlin Point including continuing installation of the foundation piles, continuing concrete pours for the tsunami and planter walls and continued installation of underground piping.

Engineering

HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) progressed planning and design activities in May, including:

- construction package 3 under slab pipe: 100% design deliverable;
- construction package 4 yard pipe: 100% design deliverable;
- construction package 5 biological aerated filters (BAF) slabs: 90% design deliverable;
- 90% design workshop; and
- 90% hazard and operability workshop.

Construction

Photographs of construction progress at McLoughlin Point are shown in Figures 2 – 8. Key construction activities in progress or completed by HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) in May were as follows:

McLoughlin Point

- installed piles in the following areas: odour control; plate settlers; and dirty backwash;
- placed mud slab and gravel mattress at biological aerated filters (BAF) area;
- installed Hobas drainage pipe in the biological aerated filters (BAF) area;
- installation and alignment of stainless steel risers on Hobas piping; and
- continued construction of tsunami and planter walls.

Ogden Point

- backfilled HDD area;
- demobilization of office and crew facilities and reinstatement of the Ogden Point site to its pre-construction condition;
- reinstated permanent power to Niagara Street residents; and
- reinstated Niagara Street to pre-construction condition.



Figure 2 – Staging of under slab BAF piping



Figure 3- Installation of under slab pipe



Figure 4 – Installation of foundation piles in odour control area



Figure 5 – Cleaning of pile tops and bending pile rebar in West BAF



Figure 6 – Placing concrete mud slab in odour control area



Figure 7 – Reinstating Ogden Point to its pre-construction condition



Figure 8 – Install & align stainless steel risers in West BAF drain

2.9.2 Residuals Treatment Facility (RTF)

The RTF Project Component continued scheduled activities with HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing: pre-construction planning, design engineering and vendor selection activities. HRMG began site mobilization on May 31.

HRMG progressed planning and design activities in May, including:

- continued design development and working toward 60% design submission in August;
- prepared and submitted various project plans and submittals;
- submitted its baseline schedule;
- progressed with vendor selection;
- evaluated Independent Certifier proposals;
- coordinated upcoming blasting activities with Hartland Landfill blasting contractors and operations staff;
- worked with BC Hydro to confirm power requirements to the site; and
- worked with District of Saanich on permitting requirements.

2.9.3 Conveyance System

Clover Point Pump Station

Kenaidan (as the Design-Build Contractor) completed the following engineering activities:

- construction package no. 1 caisson foundation: 100% design deliverable;
- geotechnical design report: 100% design deliverable; and
- overall final (100%) design deliverable.

Photographs of construction progress at Clover Point Pump Station are shown in Figures 9 to 11. Key construction activities in progress or completed by Kenaidan in May were as follows:

- installed new BC Hydro service feed;
- removed and disposed of existing duct bank;
- installed dewatering and filtration system;
- installed concrete lock block shoring system; and
- installed concrete guide wall for secant installation.

Macaulay Point Pump Station and Forcemain

Kenaidan (as the Design-Build Contractor) completed the following engineering activities:

- planning: design management plan and baseline schedule (update);
- construction package no. 1 demolition and temporary works: 90% design; and
- overall 90% design deliverable.

Photographs of construction progress at Macaulay Point Pump Station & Forcemain are shown in Figures 12 to 13. Key construction activities in progress or completed by Kenaidan in May were as follows:

- prepared laydown at Area “E”;
- prepared office and parking area at Vaughn and View Point Roads;
- installed temporary fencing at office and laydown area; and
- performed a topographical survey of the Macaulay Forcemain alignment.

Clover Forcemain (CFM)

Kerr Wood Leidal (as the Design Consultant) completed the final (Request for Proposal ready) design deliverable.

The Request for Proposals (RFP) was issued to pre-qualified contractors and an all-proponents meeting was held to outline key aspects of the contract to the proponents.

Residuals Solids Conveyance Line (RSCL)

Parsons (as the Engineer of Record) progressed and/or completed the following engineering activities:

- package no. 1 residual solids pipes: 90% design;
- package no. 1 residual solids pipes: 90% workshop;
- package no. 1 residual solids pipes: final (100%) design; and
- package no. 2 residual solids pump stations: develop 90% design.



Figure 9 – Installation of guide wall and preparation of drill pad and retaining walls



Figure 10 – Re-install asphalt and fencing along Clover Point Road



Figure 11 – Installation of dewatering and filtration system



Figure 12 – Fencing installed at office / parking compound



Figure 13 – Preparation of laydown at Area “E”

Appendix A: Clover Point Pump Station: Road Closure



May 2, 2018

Clover Point Pump Station: Road Closure

Clover Point Road will be closed to vehicle traffic and parking from May 7 - 18, 2018. Pedestrian access to the seawall and Dallas Road walkway will remain open.

The Clover Point Pump Station is being upgraded and expanded as part of the Wastewater Treatment Project. The current pump station pumps sewage directly into the ocean. The expanded pump station will pump wastewater to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment and provide bypass pumping to the existing outfall during extreme storm events.

What to Expect

A new electrical service feed has been constructed for the expanded pump station. The pre-existing electrical service infrastructure now needs to be removed. This work will include:

- Excavation and disposal of the previous concrete-encased electrical service. This work will take up the majority of Clover Point Road due to the depth of the service.
- Concrete removal including hauling away of materials by truck.
- Once work is complete, the road will be restored to the original condition and reopened.

Work Hours

- Monday to Friday 7:00 a.m. to 5:00 p.m.
- Saturday 7:00 a.m. to 4:00 p.m.
- Construction noise will be within the City of Victoria bylaw allowances.

Traffic Impacts

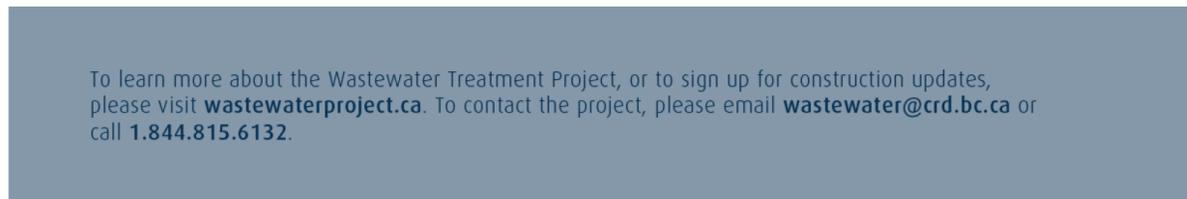
- Clover Point Road will be closed to vehicle traffic and parking to facilitate construction activities. Fencing and signage will be posted.
- Dallas Road will remain open to vehicle and pedestrian traffic.
- Pedestrian access to the seawall and Dallas Road walkway will remain open.

About the Wastewater Treatment Project

The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees Nations and will be complete by the end of 2020.

Thank you for your patience as this work is completed. For more information, please visit wastewaterproject.ca.

See map on page 2



To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit wastewaterproject.ca. To contact the project, please email wastewater@crd.bc.ca or call 1.844.815.6132.

Wastewater Treatment Project
Treated for a cleaner future

Construction Notice

Clover Point Map



To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit wastewaterproject.ca. To contact the project, please email wastewater@crd.bc.ca or call 1.844.815.6132.

Appendix B: McLoughlin Point Wastewater Treatment Plant: Concrete Works



**Wastewater
Treatment Project**
Treated for a cleaner future

Construction Notice

May 9, 2018

McLoughlin Point Wastewater Treatment Plant: Concrete Works

As part of the Wastewater Treatment Project, construction activities for the McLoughlin Point Wastewater Treatment Plant are underway. The contractor, Harbour Resource Partners, will soon begin concrete pours to build the foundations of the Plant. This work is anticipated to begin mid-May and continue for 12 to 16 months.

What to Expect

- Concrete pours are anticipated to occur daily.
- Concrete mixing transport trucks will be used to supply and install concrete to the site.

Work Hours

- Monday to Friday 7:00 a.m. to 7:00 p.m.
- Saturday 9:00 a.m. to 5:00 p.m.
- When required, work may begin earlier than 7:00 a.m. or extend later than 7:00 p.m.

Traffic Impacts

- No street closures will be required.
- Local access to businesses and residences will be maintained at all times.
- Concrete mixing trucks will follow the Traffic Management Plan approved by the Township of Esquimalt.

About the Wastewater Treatment Plant

The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees Nations and will be complete by the end of 2020.

Thank you for your patience as this work is completed. For more information, please visit wastewaterproject.ca.

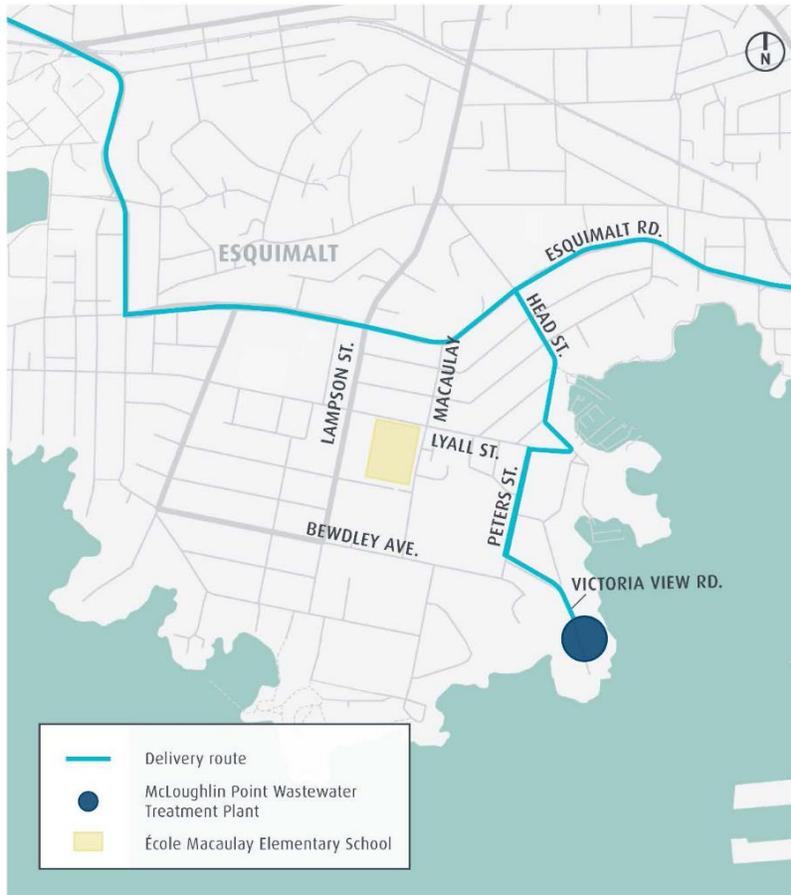
See map on page 2

To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit wastewaterproject.ca. To contact the project, please email wastewater@crd.bc.ca or call 1.844.815.6132.

Wastewater Treatment Project
Treated for a cleaner future

Construction Notice

CURRENT ROUTE



To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit wastewaterproject.ca. To contact the project, please email wastewater@crd.bc.ca or call 1.844.815.6132.

Appendix C: Residuals Treatment Facility–Construction Works



**Wastewater
Treatment Project**
Treated for a cleaner future

Construction Notice

May 22, 2018

Residuals Treatment Facility: Construction Works

The Residuals Treatment Facility (RTF) is being built as part of the Wastewater Treatment Project. Residual solids from the McLoughlin Point Wastewater Treatment Plant will be piped to the Residuals Treatment Facility at the Hartland Landfill, where they will be processed into what are known as Class A biosolids. These biosolids are a high-quality product safe for beneficial use.

The contractor for this part of the Wastewater Treatment Project, Hartland Resource Management Group, has initiated site surveying and mobilization in preparation for construction. Construction is anticipated to begin late spring 2018 and take approximately 2.5 years to complete.

What to Expect

- Blasting and excavation at the site.
- Site and concrete works to construct the foundations of the facility.
- Construction of the residuals treatment facility components including enclosed digester tanks, system-wide odour control and an operations building.

Work Hours

- Monday to Saturday 7:00 a.m. to 9:00 p.m.

Traffic Impacts

- Traffic impacts are expected to be minimal as volumes are not expected to be significant.
- Truck traffic and work vehicles will access the site from the north access on Willis Point Road.

About the Wastewater Treatment Project

The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees Nations and will be complete by the end of 2020.

For more information, please visit wastewaterproject.ca

To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit wastewaterproject.ca. To contact the project, please email wastewater@crd.bc.ca or call 1.844.815.6132.

Appendix D: About the Wastewater Treatment Process

Wastewater Treatment Project

Treated for a cleaner future

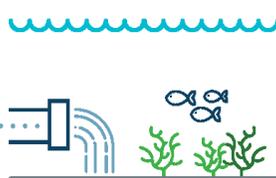
What is wastewater?

- Wastewater is used water from human activities such as washing dishes, doing laundry, and flushing the toilet.
- Some pollutants in wastewater include industrial and commercial waste, detergents, cooking fats, and prescription drugs.



Why we treat wastewater

- To reduce contaminants prior to releasing the effluent into the environment, helping to protect and maintain healthy waterways.
- If pollutants in wastewater are not removed, they flow directly into the ocean. This can threaten fisheries, wildlife habitat, recreation, quality of life, and public health.



About the system

- Wastewater flows from residences and businesses into a sewer pipe that connects to larger pipes under our streets, which ultimately connect to either the Clover Point Pump Station or the Macaulay Point Pump Station.
- At present, wastewater is screened at these pump stations and then discharged into the Strait of Juan de Fuca without treatment.
- The Wastewater Treatment Project will connect these two pump stations to the McLoughlin Point Wastewater Treatment Plant so that wastewater can be treated to a tertiary level prior to discharge.

Did you know?

In the Core Area:

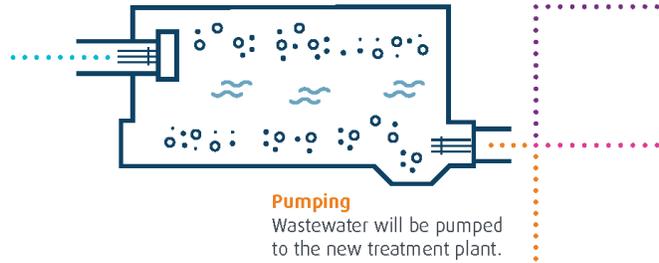
- There are **seven municipalities** (Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford, and Colwood) and the Esquimalt and Songhees Nations.
- The population is approximately **320,000 people** covering **215km²**.
- There are over **175 pump stations** and **110km** of existing sanitary sewer pipes.
- The McLoughlin Point Wastewater Treatment Plant will treat up to **108,000,000 litres** of wastewater per day, providing capacity to accommodate future population growth.
- Every person produces an average of **185–200 litres** of wastewater per day.
- Wastewater flows are greater on rainy days.

1 CONVEYANCE SYSTEM

Collects wastewater from across the core area and conveys it to the Clover Point and Macaulay Point pump stations.

Screening
Wastewater is screened (6mm) to remove stones, paper, cloth, plastics and other debris.

Grit Removal
A vortex system uses centrifugal force to keep the organic material suspended while grit settles and is removed.



Pumping
Wastewater will be pumped to the new treatment plant.

2 M'CLOUGHLIN POINT WASTEWATER TREATMENT PLANT

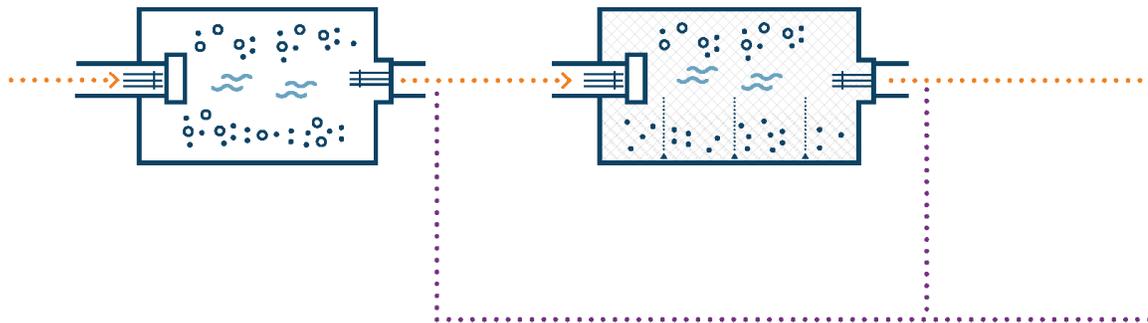
PRIMARY TREATMENT
Is the physical separation of solids from wastewater.

Removing Solids
Heavier solids settle to the bottom and lighter 'scum' floats to the top.

SECONDARY TREATMENT
Is a biological process that removes dissolved and suspended organic compounds in the wastewater.

Fine Screening
Primary effluent will be finely screened (2mm) to remove smaller debris.

Biological Reactors
Wastewater flows through tanks where microorganisms grow. The microorganisms consume organic compounds in the wastewater and reproduce to form cells that result in residual biological solids. Solids are removed and sent to the Residuals Treatment Facility for further treatment. Treated secondary effluent is sent to tertiary treatment.



Treatment Process

.....> The grit and screenings are compacted and trucked to an approved landfill.

.....> **Storm Outfalls**

Currently, untreated wastewater is discharged out of the Clover Point and Macaulay Point outfalls. Once the Project is built, these outfalls will only be used to discharge storm flows associated with heavy-rain events. To reduce the need to discharge storm flows, a buried underground concrete tank (the Arbutus Attenuation Tank) will be built in Saanich to temporarily store flows during high volume storm events. In addition, core area municipalities have committed to an inflow and infiltration program that will reduce the volume of storm flows that need to be discharged.

TERTIARY TREATMENT

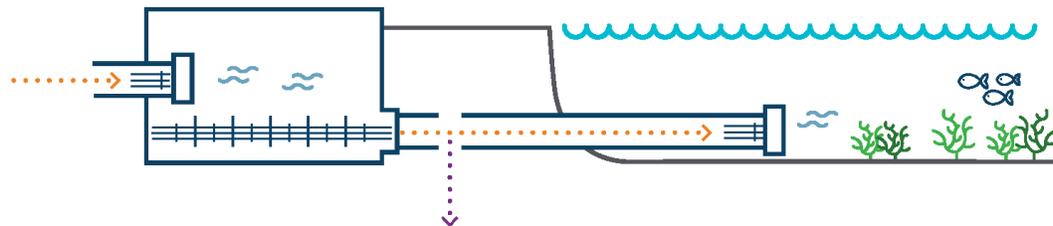
Is one of the highest levels of treatment, reducing contaminants that remain after the secondary treatment process.

Disc Filter

Wastewater will pass through a fabric disc filter (5-micron), reducing many pharmaceuticals, hormones, microplastics and other contaminants.

OUTFALL

The tertiary-treated effluent will flow to the outfall to be discharged into the ocean approximately 2km from shore and 60m deep.



.....> **3**  **RESIDUALS TREATMENT FACILITY**

As wastewater moves through the treatment process, residual solids are removed. These solids will be pumped to the Residuals Treatment Facility for further treatment.

Residual Solids Conveyance Line

Will consist of two pipes and four small pump stations to transport all residual solids to the Residuals Treatment Facility. Liquid removed from the residual solids during the treatment process will be returned to the McLoughlin Point Wastewater Treatment Plant through the conveyance system.

Residuals Treatment Facility

The Residuals Treatment Facility will be built at the Hartland Landfill, to process residual solids produced by the McLoughlin Point Wastewater Treatment Plant into Class A biosolids – the highest level product suitable for beneficial use.

Appendix E: Project Update #5



Wastewater Treatment Project

The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood and the Esquimalt and Songhees Nations. The Project will be built to comply with federal regulations by December 31, 2020.

Construction Updates

NIAGARA STREET PIPE ASSEMBLY AND PIPE PULL

The Wastewater Treatment Project reached a key milestone with the installation of the undersea cross-harbour pipe from Ogden Point to McLoughlin Point, ahead of schedule. The pipe will transport wastewater from the Clover Point Pump Station to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment.

For a six-week period Niagara Street in James Bay was closed to vehicle traffic and used as a staging area for the assembly of a 940-metre-long pipe before it was pulled through a tunnel under the harbour to McLoughlin Point in Esquimalt. The tunnel under the harbour was drilled using a process called horizontal directional drilling, which began in July 2017.

Beginning the first week of March 2018, 78 sections of 12-metre-long pipe were welded together and moved into place along five blocks of Niagara Street from South Turner Street to St. Lawrence Street. Once the pipe was assembled, the pipe pull took place over three days. It took six cranes and four sidebooms to lift the pipe to thread it into the tunnel at Ogden Point. The pipe reached the McLoughlin Point side on April 19, 2018.

The Project Team thanks the residents of Niagara Street and James Bay for their patience during the construction work at Ogden Point and on Niagara Street.



Niagara Street Engagement

1881

help tent visits

28

emails

105

phone calls

2

community meetings



McLOUGHLIN POINT WASTEWATER TREATMENT PLANT

The McLoughlin Point Wastewater Treatment Plant has been under construction since June 2017. Site preparation, blasting and excavation are now complete, and construction of the tsunami and planter walls and installation of the foundation piles is ongoing. Pouring concrete for the building structures is now underway.

MACAULAY POINT PUMP STATION AND FORCEMAIN

Construction of the new Macaulay Point Pump Station and Forcemain is anticipated to begin in late spring 2018. The pump station will pump wastewater to the McLoughlin Point Wastewater Treatment Plant through the Forcemain, which is the pipe that will connect this pump station to the treatment plant. The Forcemain will be installed in segments along existing roadways to minimize impacts to residents. The waterfront trail will remain open during construction and operations. A community meeting was held in March 2018 to provide information about construction activities and timing.

CLOVER POINT PUMP STATION

The Clover Point Pump Station is being upgraded and expanded to pump wastewater to the McLoughlin Point Wastewater Treatment Plant. Construction at the Clover Point Pump Station began in February 2018. There are two fenced-in areas for construction activities. Access to the parking and seawall will remain open during construction and operations.

CLOVER FORCEMAIN

The Clover Forcemain is a pipe that will run from the Clover Point Pump Station to Ogden Point where it will connect with the recently completed cross-harbour pipe. It will allow wastewater collected at Clover Point Pump Station to be pumped to the McLoughlin Point Wastewater Treatment Plant for treatment. Construction is anticipated to begin in late summer 2018. A community meeting will be held before construction starts to provide information about construction activities and timing.

CRD **Wastewater Treatment Project**
Treated for a cleaner future

Project Update #5
May 2018

RESIDUALS TREATMENT FACILITY

The Residuals Treatment Facility will be located at the Hartland Landfill in Saanich. It will treat residual solids produced at the McLoughlin Point Wastewater Treatment Plant, and turn them into Class A biosolids suitable for beneficial use. Early work has begun on the facility, including site survey and layout, installation of site office trailers and facilities, on-site geotechnical investigations, and coordination with utility agencies. Construction is anticipated to begin in late spring 2018.

RESIDUAL SOLIDS CONVEYANCE LINE

The Residual Solids Conveyance Line includes two pipes and up to four small pump stations that will connect the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility to be constructed at Hartland Landfill. Construction is anticipated to begin in late summer 2018. Community meetings will be held before construction starts to provide information about construction activities and timing.

Community Engagement Summary

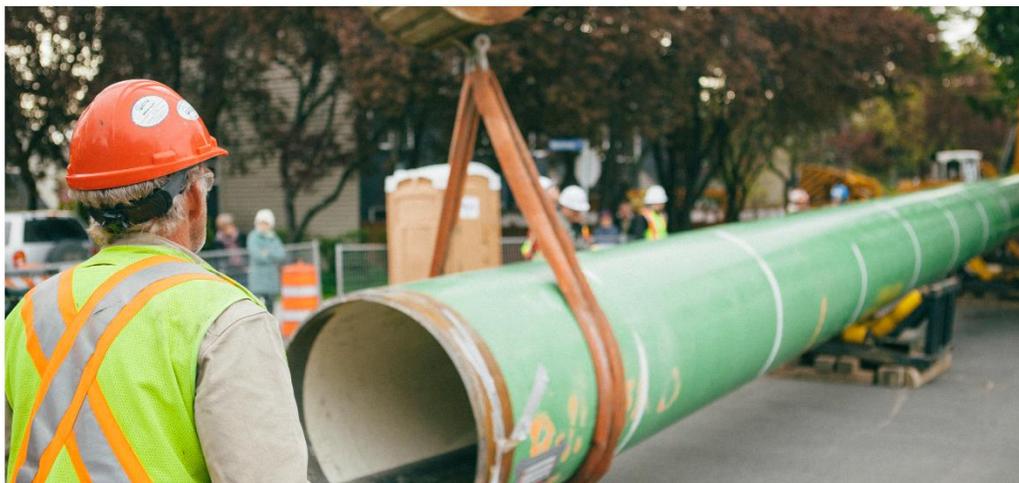
OCTOBER 2017 – APRIL 2018

286
responses to phone inquiries

88
responses to email inquiries

59
meetings with community associations, municipalities, and stakeholders

7
public open houses





Meet a Member of Our Team

The Esquimalt and Songhees Nations are partners with the CRD for the Wastewater Treatment Project. In this update, we are pleased to introduce you to Florence.

FLORENCE DICK, SONGHEES NATION LIAISON



Florence works as the Songhees Nation Liaison to the Wastewater Treatment Project.

ABOUT FLORENCE

Florence is passionate about her Nation. She describes herself as a “People Mover” and focuses her work on the betterment of people. To her it’s not about just doing something, but making sure it is something that is better for the next generation. She has worked on projects with the Greater Victoria Harbour Authority and was part of the group that organized the building of the Songhees Wellness Centre.

The best part of the job for Florence is building her office skills and learning more about the Project. For Florence, it’s an honour to be chosen by the Chief for this job as it shows she has the skills and confidence of her Nation.

STORIES OF THE LANDS

Some of the lands the Wastewater Treatment Project is being built on (McLoughlin Point, Macaulay Point, Clover Point, and Ogden Point) are significant to the Songhees Nation and each has a different meaning. These are their ancestors’ lands and each area contained important resources.

For example, the land from Clover Point to Ogden Point was a defensive location and a lookout to watch for tribes coming from the north to attack. The bluffs used to extend all the way between the two points, so there was no spot to land. Today, elders go to this area to maintain their cultural connection to the land where their ancestors have already walked.

It is important to the Songhees that people know what’s behind the lands and the importance of the cultural connection to the lands. Every four years, the Songhees acknowledge their ancestors and the lands in a Burning Ceremony.

STAY INFORMED

PROJECT WEBSITE wastewaterproject.ca.

The Project website is regularly updated with new information, including construction notifications, and answers to frequently-asked questions.

24-7 PROJECT INFORMATION LINE

1.844.815.6132

Residents can call the information line 24/7 to receive information or report a concern.

EMAIL ADDRESS wastewater@crd.bc.ca.

Please send us an email if you have a question or would like to receive Project updates and construction notices.

For More Information

Website: wastewaterproject.ca

Email: wastewater@crd.bc.ca

24-7 Project Information Line: 1.844.815.6132



Appendix F: May Monthly Cost Report

ASSET MANAGEMENT COST REPORT as at May 31, 2018														
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
			Expended to April 30, 2018	Expended over reporting period (May 2018)	Expended to May 31, 2018	Expended to May 31, 2018 as a % of Budget	Remaining (Unexpended) Budget at May 31, 2018	Total Commitment at May 31, 2018	Unexpended Commitment at May 31, 2018	Uncommitted Budget at May 31, 2018	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Budget
McLoughlin Point Wastewater Treatment Plant ^A	378.0	375.2	101.9	4.9	106.8	28%	268.4	339.7	232.9	35.5	268.4	375.2	-	0%
Residuals Treatment Facility ^A	195.0	176.7	14.3	0.1	14.4	8%	162.2	149.4	135.0	27.2	162.2	176.7	-	0%
Conveyance System ^A	192.0	213.1	35.8	0.4	36.2	17%	176.9	104.8	68.6	108.3	176.9	213.1	-	0%
Total Costs	765.0	765.0	152.0	5.4	157.4	21%	607.5	593.9	436.5	171.0	607.5	765.0	-	0%

^A - Including PMO and Common Costs

* Values presented in \$millions, results in minor rounding differences

** Cost report presents approved expenditures