



Wastewater Treatment Project

Treated for a cleaner future

CRD Wastewater Treatment Project

Monthly Report

Reporting Period: July 2018

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1 Executive Summary

1.1 Introduction

This monthly report covers the reporting period of July 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 is being 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 McLoughlin Point WWTP 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, concrete pours for the tsunami and planter walls and installation of underground piping.

The RTF is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing planning and permitting, design engineering activities, and vendor selection. Construction activities over the reporting period included excavation of overburden, drilling and rock blasting.

The Conveyance System is anticipated to be delivered through eight construction contracts: two design-build contracts and six design-bid-build contracts. The Project Team had previously anticipated delivering the conveyance system through two design-build contracts and five design-bid-build contracts, but determined, in June 2018, that it would be beneficial to procure the scope of one of the design-bid-build contracts through three contracts in order to preserve schedule.

The two design-build Conveyance System contracts progressed over the reporting period, as follows:

- Clover Point Pump Station: Kenaidan Contracting Limited (“Kenaidan”, as the Design-Build Contractor) progressed planning, design and construction activities over the reporting period, including completing the design of several components and progressed construction activities including: complete installation of secant piles, demobilize secant pile contractor, and excavation in preparation for tie-back installation.
- Macaulay Point Pump Station and Forcemain: Kenaidan Contracting Ltd. (“Kenaidan” as the Design-Build Contractor) progressed planning, design and construction activities over the reporting period, including demolition of the existing workshop, utility relocations and other temporary works that are required for construction of the new pump station.

The design-bid-build Conveyance System progressed over the reporting period, as follows:

- Clover Forcemain: The Request for Proposals closed and the Project Team evaluated the proposals.
- Residual Solids Conveyance Line (“RSCL”): The Project Team originally planned to deliver the RSCL through a single design-bid-build contract, but determined that it would

be beneficial to procure the scope of the RSCL in three contracts in order to preserve schedule, summarized as follows:

- Residual Solids Pipes (RSCL 100): Parsons (as the Design Consultant) completed the final (Request for Proposal ready) design deliverable. The CRD WTP issued the RFP to pre-qualified contractors and held an all-proponents meeting to outline key aspects of the contract to the proponents;
- Residual Solids Pump Stations (RSCL 200): Parsons (as the Design Consultant) held a 50% design workshop with the CRD, and progressed development of the 90% design deliverable. The CRD WTP issued the RFQ to pre-qualify contractors for construction of the Residual Solids Pump Stations; and
- Saanich Infrastructure Improvements (RSCL300): Parsons (as the Design Consultant) progressed the 50% design. The District of Saanich is planning to consult with members of the public affected by the proposed sidewalk improvements prior to the CRD progressing the 90% design deliverable.
- Arbutus Attenuation Tank (“ART”): Kerr Wood Leidal (as the Design Consultant) progressed the final (tender ready) design deliverable as well as certain pre-requisites for the building permit, including the tree survey and re-vegetation plan and the Environmental Management Plan.

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 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 summarized 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, McLoughlin Point WWTP, RTF, and Macaulay Point Pump Station.

With ongoing construction activities on the Project these inspections continued and site inspections were performed weekly with the relevant prime contractor and CRD representative. Office and site orientations were delivered as required. Over the reporting period there was one report only incident which happened at the RTF site.

On July 26, 2018 an excavator operator for a subcontractor to HRMG (Scansa Construction Ltd.) was clearing a blast area at the RTF site. While moving blasted materials with the excavator, the operator heard a loud bang under his excavator bucket. The operator stopped the task, shut off the machine and reported to the site office. A visual check was performed by the blasting company which determined that one of the blasting caps used for the earlier blasting activity had not detonated. The detonator involved had been intended to operate as a secondary safety measure to ensure the actual charges were fully detonated. This is considered a very rare occurrence and the potential for damage or harm is low.

Corrective action with respect to the incident was taken; after a blast occurs and the area has been inspected and cleared to be safe, the blasting contractor will conduct a walkthrough of the area to see if any blasting caps are visible within the blast rubble. If any caps appear to be intact the blasting contractor will follow their approved procedures to ensure the cap is detonated safely.

Key safety activities conducted during July included:

- regular site tours performed at all active sites;
- daily site visits at Macaulay site to confirm all site safe work plans are being reviewed and followed;
- bi-weekly HRP and CRD management site safety tour at McLoughlin Point site;
- 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;
- office safety orientation for new staff;
- safety orientation for CRD WTP staff and hazard assessment review for Macaulay site;
- review safety expectations with new safety representative for HRMG at RTF site;
- demolition activity reviews at Macaulay site;
- HRMG Site Safety Plan, Emergency Response Plan and first aid assessment reviews;
- periodic blasting and rock crushing safety reviews at RTF;
- prime contractor three week lookahead reviews to ensure safety compliance is being addressed with upcoming activities;
- review of HRP's new blasting plan;
- attended HRMG site blasting plan review with the Hartland Landfill's blasting contractor;
- equipment inspection document review;

- incident reporting review with prime contractors at active work locations; and
- inspections, toolbox talk and safe work procedures document review at each active worksite.

Other safety activities conducted over the reporting period included:

- CRD WTP safety orientation provided to Kenaidan at Macaulay site;
- emergency response review with Kenaidan at Macaulay site;
- silica exposure control plan review at Macaulay site; and
- CRD WTP Safety Manager attended CRD Corporate Joint Occupational Health and Safety Committee Meeting to give an overview of safety on active Project sites.

Table 2 – WTP Safety Information

	Reporting Period (July 2018)	Project Total to-Date (from January 1, 2017)
Person Hours		
PMO	4,568	65,514
Project Contractor	17,980	219,540
Total Person Hours	22548	285,053
Employees		
PMO	37	
Project Contractors working on Project sites	93	
Total Number Of Employees	130	
Incidents		
Near Miss Reports	0	8
High Potential Near Miss Reports	0	2
Report Only	1	3
First Aid	0	2
Medical Aid	0	0
Medical Aid (Modified Duty)	0	0
Lost Time	0	0
Total Recordable Incidents	0	0
Incident Frequency		
	2018 Frequency (from January 1, 2018)	Project Frequency (from January 1, 2017)
First Aid Frequency		1.5
Medical Aid Frequency		0
Lost Time Frequency		0
Total Recordable Incident Rate		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 July progressed as planned.

Key environmental management activities completed in July included:

- HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) completed soil tests in support of soil disposal documentation requirements. Preliminary test results indicate that there may be some heavy metal contamination (due to bedrock qualities, rather than anthropogenic causes). CRD, HRMG and Stantec are working to prepare a plan to characterize soils at the RTF site and mitigate costs associated with disposal of any contaminated material; and
- members of the PMO team accompanied CRD staff to observe marine water quality monitoring activities.

2.2.2 Regulatory Management

In July, 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 federal and provincial regulators 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. HRP (as the Design Build Contractor for the McLoughlin Point WWTP), Stantec and the CRD continued advancing the MWR Registration. The focus of that work is on updating the Marine Environmental Impact Study (EIS) to address BC Ministry of Environment and Climate Change Strategy (ENV) comments.

Key permitting activities for July included:

- HRP received a Notice from the Director to Construct under Section 40 (b) of the MWR authorizing construction of the McLoughlin Outfall;
- HRMG met with District of Saanich to discuss municipal permitting requirements; and
- HRP continued working with federal regulators to obtain outfall-related construction permits, approvals and authorizations.

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 June Q2 2018 Quarterly Report as follows:

- The status of the following permits have been updated:
 - McLoughlin Point Outfall: Notice from the Director to Construct under section 40(b) of the MWR has been received.
 - Macaulay Point Pump Station:

- Removed Notice from the Director to Construct under section 40(b) of the MWR as it was received in the last reporting period; and
- removed Township of Esquimalt Development Permit as it was received in the last reporting period.
- Clover Forcemain: Removed Notice from the Director to Construct under section 40(b) of the MWR as it was received in the last reporting period.
- Residual Solids Conveyance Line: Removed Notice from the Director to Construct under section 40(b) of the MWR as it has been received in the last reporting period.

Table 3 - Key Permits Status

Permit / Licence	Anticipated Date	Status	Party Responsible for Obtaining Permit
<i>McLoughlin Point WWTP</i>			
Township of Esquimalt Phased Building Permits (Phase 1 obtained; Phase 2 submitted and anticipated in Q3 2018)	Q3 2018	Phase 2 submitted: under review by Township of Esquimalt On Track	HRP
Municipal Wastewater Regulation ("MWR") Registration	Q4 2019	On track	CRD
<i>McLoughlin Point Harbour Crossing</i>			
Transport Canada Lease	Following completion of construction	On track	HRP
<i>McLoughlin Point Outfall</i>			
Fisheries and Oceans Canada (DFO) Fisheries Act Authorization	Q3 2018	Submitted: under review by DFO	HRP
Transport Canada Facility Alteration Permit	Q3 2018	Submitted: under review by Transport Canada	HRP
Transport Canada Licence (works access)	Q3 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	Q3 2018	Received	HRP
<i>Macaulay Point Pump Station Upgrade</i>			
Township of Esquimalt Building Permit	Q3 2018	On track	Kenaidan
<i>ECI/Trent Twinning</i>			
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
<i>Arbutus Attenuation Tank</i>			
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
<i>Residuals Treatment Facility</i>			
Operational Certificate	Prior to start of RTF operations	On track	HRMG
District of Saanich Development and Building Permits	Q3 2018	On track	HRMG

2.3 First Nations

First Nations communication and engagement was ongoing in July.

In July, the PMO, CRD First Nations Relations Division and the Songhees and Esquimalt Liaisons continued meeting and advancing work in areas of shared interest. This included planning around signage for various Project components and management of archaeological materials during and after construction.

The Esquimalt and Songhees Liaisons sought approval from their respective leadership groups for the movement of archaeological soils from the construction of Clover Forcemain to Clover Point Park. This relocation would require the City of Victoria's approval. Additionally, work to schedule and plan a presentation to Songhees Chief and Council began in July. The presentation will include a Project update and a summary of issues that have been worked on at the biweekly Esquimalt and Songhees Liaison meetings.

On July 19 Project Team members attended an archaeological dig at a property unrelated to the Project but in close proximity to the Clover Forcemain alignment. The archaeological dig was being completed by Millennia Research (the Project's archaeological consultant), and the purpose of the visit was for the PMO team to learn from the dig before archaeological materials are encountered during construction of the Clover Forcemain.

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.

Construction Communications

Construction Notices and Updates:

One construction notice update was issued to stakeholders in the reporting period: Residuals Treatment Facility Update: Blasting Schedule (July 4, 2018) (Appendix A).

As well, signage noting the federal and provincial government funding for the Project was displayed at the Macaulay Point Pump Station and Forcemain site.

Project Website

Throughout the month of July, the Project website, wastewaterproject.ca, was updated with information about the Project. The following items were posted:

- one construction notice;
- an updated Communications and Engagement Plan: The Plan was first developed and then approved in April 2017 to address the stage of the Project at that time, which was at the start of construction. The updated version accounts for progress made on the Project in the fifteen months since the original Communications and Engagement Plan was approved. The Project Team has implemented the Communications and Engagement Plan in support of achieving its stakeholder-related key performance indicator: continue to build and maintain positive relationships with First Nations, local governments, communities and other stakeholders; and
- a new section, Photo Gallery, was created to share photos of construction on the Project sites. The link is located on the main page of the website and the Project Team will continue to add photos over the construction period of the Project.

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;
- City of Victoria Technical Working Group;
- Department of National Defence;
- District of Saanich Technical Working Group;
- Greater Victoria Harbour Authority; and
- Township of Esquimalt Liaison Committee.

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 – July 2018

Inquiry Source	Contacts for July
Information phone line inquiries	12
Email inquiries responded to	3

Key themes of the public inquiries were as follows:

- information about construction at the Clover Point Pump Station; and
- requests for contractor contact information regarding employment.

2.5 Resolutions from Other Governments

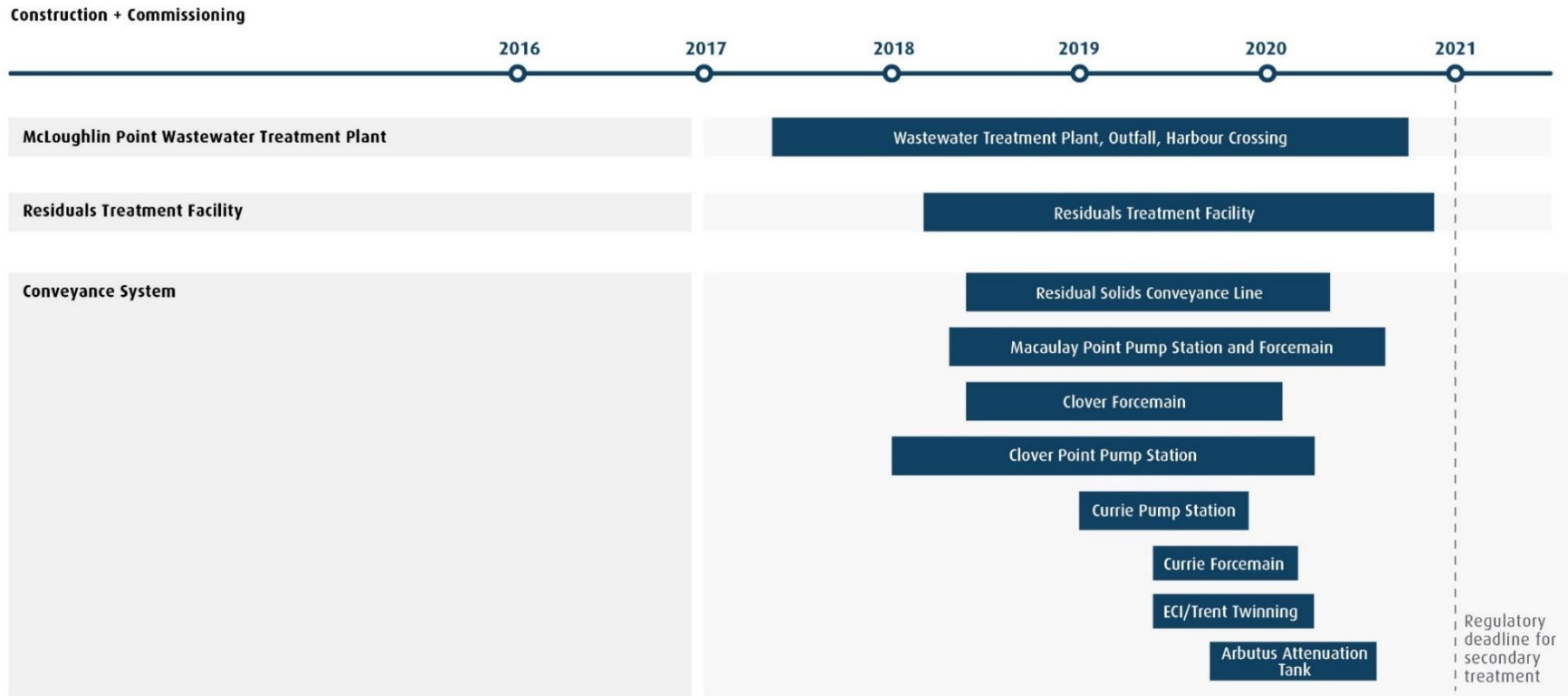
There were no resolutions related to the Project passed by other Governments during the reporting period.

2.6 Schedule

Overall the Project’s scheduled activities progressed as planned during July. 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 (August) are:

Safety

- review document submissions from prime contractors;
- 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;
- development of any required safety documentation;
- monthly office/site inspections with prime contractors and CRD Corporate at all active sites;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- traffic management plan reviews for Clover Point Pump Station;
- incident reporting review with prime contractors at active work locations; and
- organize prime contractor monthly safety meetings with CRD.

Environment and Regulatory Management

- HRP anticipates receiving federal outfall related permits, approvals and authorizations; and
- HRMG and CRD to meet to discuss planning of HRMG's Operational Certificate application.

First Nations

- continue advancing the planning of archaeological soils relocation from the construction of the Clover Forcemain.

Stakeholder Engagement

- ongoing construction communications with stakeholders;
- planning and preparations for fall community information meetings; and
- ongoing community liaison meetings.

Cost Management and Forecast

- prepare cost reports;
- monitor schedule; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).

Construction

McLoughlin Point

- continue installation of underground process piping in primary and secondary treatment areas;
- place tertiary concrete base slabs #1 and #2;
- continue with tsunami and planter walls; and
- continue surface runoff/groundwater treatment and discharge.

Clover Point Pump Station

- drill and tension top row of tie back and weld king piles; and
- excavate to bottom row of tie back.

Macaulay Point Pump Station

- install temporary duct bank and generator;
- shut down power to plant and switch to temporary power;
- relocate transformer and existing generator;
- excavate for temporary bin room;
- place concrete slab for temporary bin room; and
- commence construction of temporary bin room.

Residuals Treatment Facility

- excavation, drilling and blasting;
- crushing of blast rock and haul to stockpile; and
- load and haul material.

Engineering

McLoughlin Point WWTP:

- construction package 2 deep foundations: 100% and IFC design deliverables;
- construction package 4 yard pipe: IFC design deliverable;
- construction package 5 process building slabs: 100% and IFC design deliverables;
- construction package 6 operations and maintenance (O&M) slabs: IFC design deliverable;
- construction package 7 tertiary area foundation: complete IFC design;
- overall design: 100% design deliverable;
- outfall design: IFC design deliverable;

Residuals Treatment Facility:

- early works package 1 site access road: 100% and IFC design deliverables;
- early works package 2 digester area foundation: 100% and IFC design deliverables;
- early works package 3 municipal receiving solids structural; 100% and IFC design;
- early works package 4 residuals handling foundation: 100% and IFC design;
- early works package 5 water pump house and water tank foundation; 100% and IFC design;
- early works package 6 admin building foundation: 100% and IFC design, and
- overall design: 60% design deliverable.

Clover Point Pump Station:

- early works package 2 – civil/structural: 100% and IFC design submission.
- public realm improvements package: final design submission to City of Victoria.

Macaulay Point Pump Station:

- early works package 1 – demolition, relocations and temporary works: Address remaining CRD comments; and
- early works package 2 – blasting, excavation and foundation: 100% design.

Clover Forcemain: complete and issue IFC submission.

Residuals Solids Conveyance Line:

- RSCL100: Residuals Solids Pipes: commence IFC design deliverable;
- RSCL200: Residual Solids Pumps: progress 90% design deliverable;

Arbutus Attenuation Tank: progress final (100%) design deliverable.

Procurement

Clover Forcemain: meet with preferred proponent.

Residuals Solids Conveyance Line:

- RSCL100: Residuals Solid Pipes:
 - respond to RFP inquiries from proponents and issue addenda, as needed; and
 - receive and evaluate responses to RFP.
- RSCL200: Residuals Solids Pumps:
 - issue Request For Qualifications (RFQ) to pre-qualify construction contractors; and
 - respond to inquiries from respondents, as needed.

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

Safety

- review of any site specific safety plans or high risk tasks;
- document reviews as required;
- attend CRD joint occupational health and safety meeting;
- 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;
- 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;
- periodic blasting safety/silica exposure plan reviews at RTF site;
- traffic management reviews; and
- incident reporting review with prime contractors at active work locations (if applicable).

Environment and Regulatory Management

- HRMG and CRD to meet with ENV to discuss terms of reference for HRMG Operational Certificate application; and
- HRP, Stantec and the CRD to continue advancing the MWR Registration.

First Nations

- PMO to make a presentation to Songhees Chief and Council; and
- Project Board Chair to meet with the WSÁNEĆ Leadership Council.

Stakeholder Engagement

- ongoing construction communications with stakeholders;
- community information meeting to provide residents with information about upcoming construction activities and timing for the Clover Forcemain; and
- ongoing community liaison meetings.

Cost Management and Forecast

- 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;
- install underground utilities and drains in operations and maintenance area;
- install underground process piping in primary and secondary treatment areas;
- construct base slab 3 at dirty backwash tank;
- construction base slab at moving bed biofilm reactor (MBBR);
- tertiary wall pours #1 and #2; and
- continue surface runoff/groundwater treatment and discharge.

Clover Point Pump Station

- install tower crane;
- excavate for new pump room area;
- place concrete for base slab in pump room; and
- excavate new storm/sanitary wet well.

Macaulay Point Pump Station

- complete construction of temporary bin room;
- excavate new pump station; and
- drill and blast bedrock at pump station footprint.

Residuals Treatment Facility

- continue excavation, rock crushing and haul to stockpile;
- excavate and install storm water system at area 1;
- excavate potable and firewater lines at area 1; and
- test and backfill potable and firewater lines.

Engineering

- McLoughlin Point WWTP: submit IFC design for the overall WWTP;
- Residuals Treatment Facility: review early works packages and progress 90% design;
- Clover Point Pump Station: submit final (100%) design deliverable for the overall CPS;
- Macaulay Point Pump Station: submit final (100%) design deliverable;
- Residual Solids Conveyance Line:
 - RSCL100: Residual Solids Pipes: finalize IFC design deliverable; and
 - RSCL200: Residual Solids Pumps: submit final (100%) design deliverable.
- Arbutus Attenuation Tank: progress final (100%) design deliverable.

Procurement

Clover Forcemain: negotiate and award contract to preferred proponent.

Residual Solids Conveyance Line:

- RSCL100: Residual Solids Pipes: meet with preferred proponent.
- RSCL200: Residual Solids Pumps:
 - respond to inquiries RSCL package 2 RFQ as needed;
 - received and evaluate RFQ responses and select proponents; and
 - issue request for proposals (RFP) to proponents.

2.7 Cost Management and Forecast

The monthly cost report for July is attached as Appendix B. 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 \$120,556 primarily associated with contract change orders.

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, conveyance construction and PMO-related costs.

2.7.3 Contingency and Program Reserves

Contingency draws of \$115,278 were made over the reporting period, as itemized in Table 5. 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
Contingency and Program Reserve balance as at July 1, 2018		\$ 69,183,656
McLoughlin Point Site Remediation: excavation and disposal of contaminated soil (chlorides).	Jul-18	\$ (115,278)
WWTP Total Draw		\$ (115,278)
RTF Total Draw		\$ -
Conveyance Total (Draw)/Reallocation		\$ -
PMO Total Draw		\$ -
BC Hydro Total Draw		\$ -
WTP Program Reserve Draw		\$ -
Contingency and Program Reserve balance as at July 31, 2018		\$ 69,068,378

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	\$1.7M	\$23.2M
Government of Canada (Green Infrastructure Fund)	\$50M	-	-
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
TOTAL	\$459M	\$1.7M	\$23.2M

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.

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

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

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
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

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, concrete pours for the tsunami and planter walls and installation of underground piping.

Engineering

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

- construction package 4 yard pipe: 100% design deliverable;
- construction package 5 process building slabs: 90% design deliverable;
- construction package 6 operation and maintenance (O&M) slabs: 100% design deliverable; and
- outfall design: 100% design deliverable.

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 July were as follows:

McLoughlin Point

- continued construction of tsunami and planter walls;
- completed phase 1 pile installation;
- drill and blast in tertiary area for biological aerated filter (BAF) effluent chamber;
- erect concrete placing boom for use on operations and maintenance (O&M) building;
- prefabricate wall gang forms and tertiary slab bulkheads;
- prefabricate formwork for Densadeg cones;
- demobilize pile rig and crane; and
- continued surface runoff/groundwater treatment and discharge.



Figure 2 – Preparing foundation for concrete placing boom.



Figure 3- Preparing dirty back wash area for mud slab.



Figure 4 – Prefab Densadeg cones.



Figure 5 – Prefab wall gang forms for biological aerated filter (BAF) walls.



Figure 6 – Concrete finishing of planter wall #10.

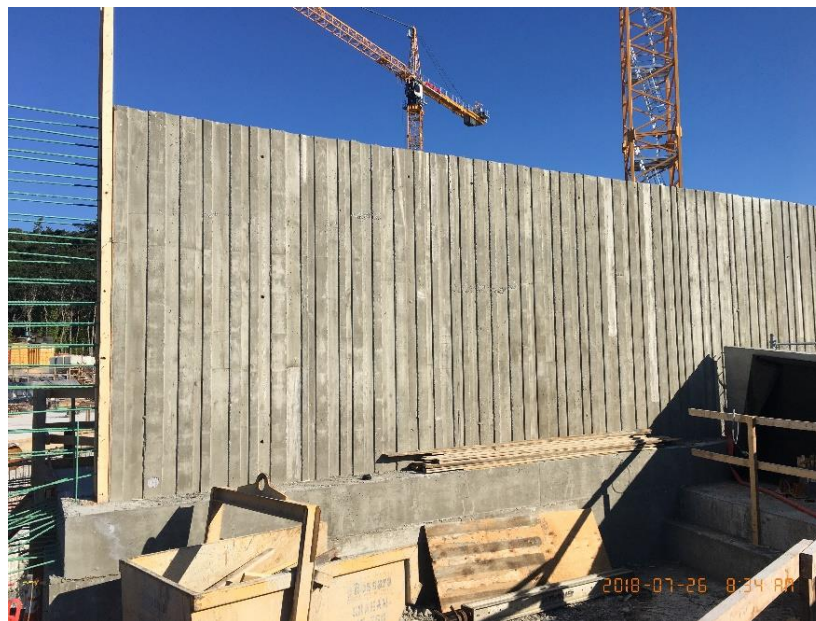


Figure 7 – Tsunami wall stripped surface.



Figure 8 – Installing bulkheads in tertiary slab pour.

2.9.2 Residuals Treatment Facility (RTF)

The RTF Project Component is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing planning and permitting, design engineering activities, and vendor selection. Construction activities over the reporting period included drilling and rock blasting.

Engineering

HRMG progressed planning and design activities in July, including:

- continued design development and working toward 60% design submission in August;
- prepared and submitted various project plans and submittals;
- submitted final baseline schedule;
- progressed with vendor selection;
- finalized independent certifier contract;
- worked with BC Hydro to confirm power requirements to the site; and
- worked with District of Saanich on permitting requirements.

Construction

Photographs of construction progress at the Residuals Treatment Facility are shown in Figures 9 to 12. Activities on site include:

- drilling, rock blasting and excavation;
- classifying and stockpiling excavated material;
- coordinated blasting activities with Hartland Landfill blasting contractors and operations staff;
- crush aggregate and stockpile;
- set up and complete the HRMG office complex;
- place crushed 50mm minus aggregate around the site office complex and laydown area to assist with dust control; and
- excavate upper Hartland access road and stockpile material for future use.

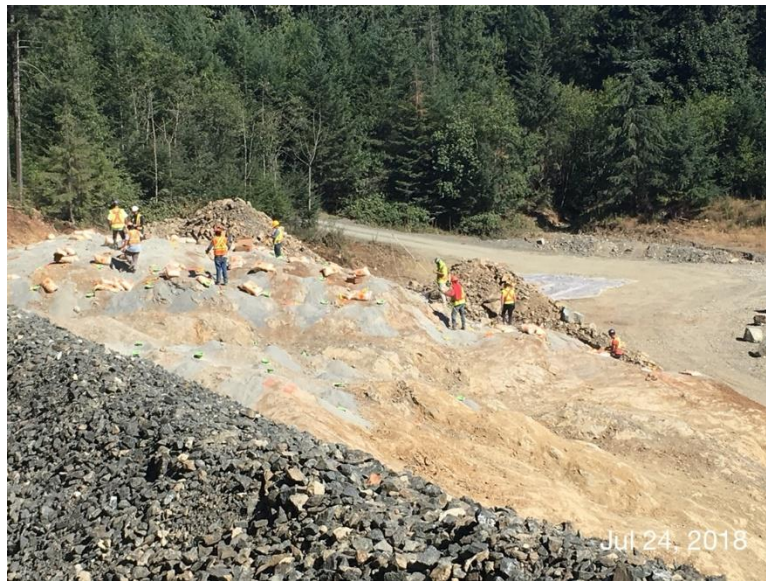


Figure 9 – Loading drill holes for a blast.



Figure 10 – Drilling holes for a blast



Figure 11 – Excavating and loading blast rock.



Figure 12 – Stripping and hauling at upper Hartland access road.

2.9.3 Conveyance System

Clover Point Pump Station

Kenaidan Contracting Limited (“Kenaidan”, as the Design-Build Contractor) progressed planning, design and construction activities over the reporting period, as follows:

Engineering

Kenaidan progressed planning and design activities in July, including Caisson Work Package (100%) – revision 3 submitted.

Construction

Photographs of construction progress at Clover Point Pump Station are shown in Figures 13 to 17. Key construction activities in progress or completed by Kenaidan in July were as follows:

- completed installation of secant piles;
- demobilized secant pile contractor;
- install flagging on powerlines feeding the office complex to alert paragliders of hazard;
- stockpile construction debris encountered while excavating for the tie-back installation;
- excavate to elevation seven meters in preparation for tie back installation;
- mobilize tie back contractor;
- commenced installation of tie backs; and
- conduct performance test on tie-back 1-A.

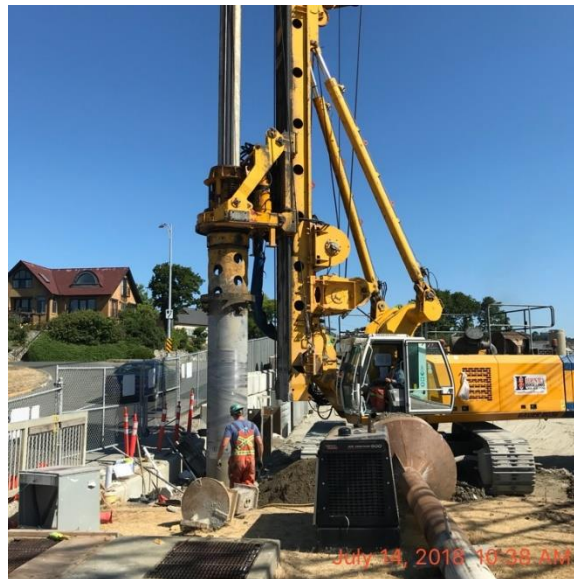


Figure 13 – Drilling pile #28.



Figure 14 – Flagging and signage place on overhead power lines.

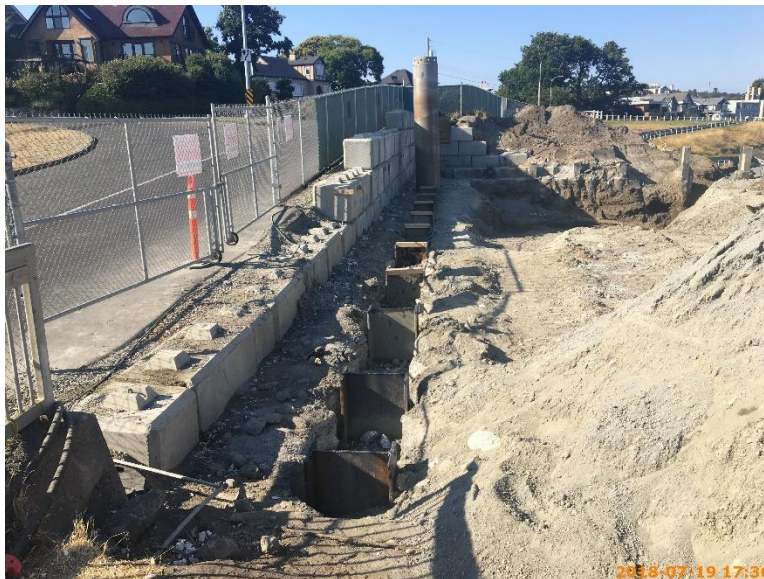


Figure 15 – Installation of dewatering and filtration system.



Figure 16 – Demobilizing crawler crane.

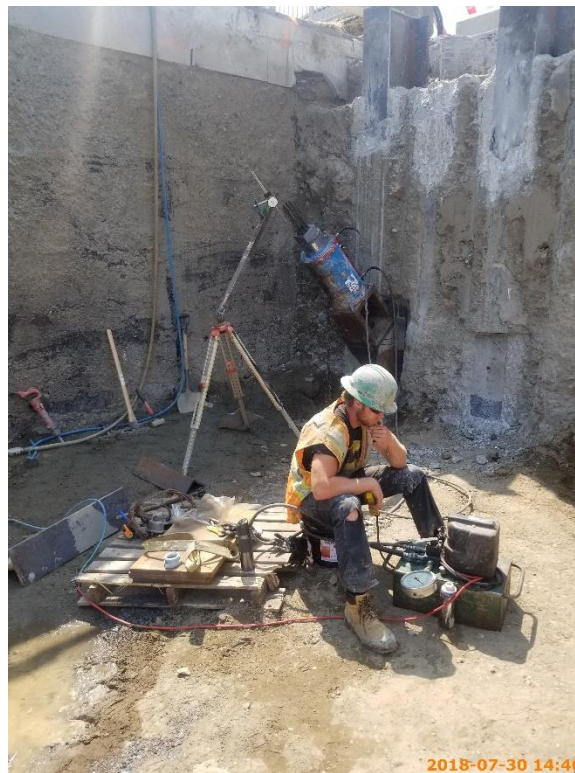


Figure 17 – Conducting performance test on tie back 1-A.

Macaulay Point Pump Station and Forcemain

Kenaidan Contracting Ltd. (“Kenaidan” as the Design-Build Contractor) progressed planning, design and construction activities over the reporting period, as follows:

Engineering

Kenaidan completed the following engineering activities:

- 90% early works 2 design submission;
- 90% complete design deliverable and workshop; and
- 90% HAZOP review meeting.

Construction

Photographs of construction progress at Macaulay Point Pump Station and Forcemain are shown in Figures 18 to 20. Key construction activities in progress or completed by Kenaidan in July were as follows:

- demolition of workshop, laboratory and exterior concrete walls in phase 1A and 1B demo;
- removal of gantry crane; and
- installation of new duct bank for relocation of transformer and generator.



Figure 18 – demolition of interior walls.



Figure 19 – Removal of gantry crane.



Figure 20 – Demolition of exterior concrete walls and metal roof, sorting material for salvage.

Clover Forcemain (CFM)

The RFP issued May 15 closed on July 11 and proposals were received and evaluated.

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.

Appendix A – Construction Blasting Notice – July 4, 2018



**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

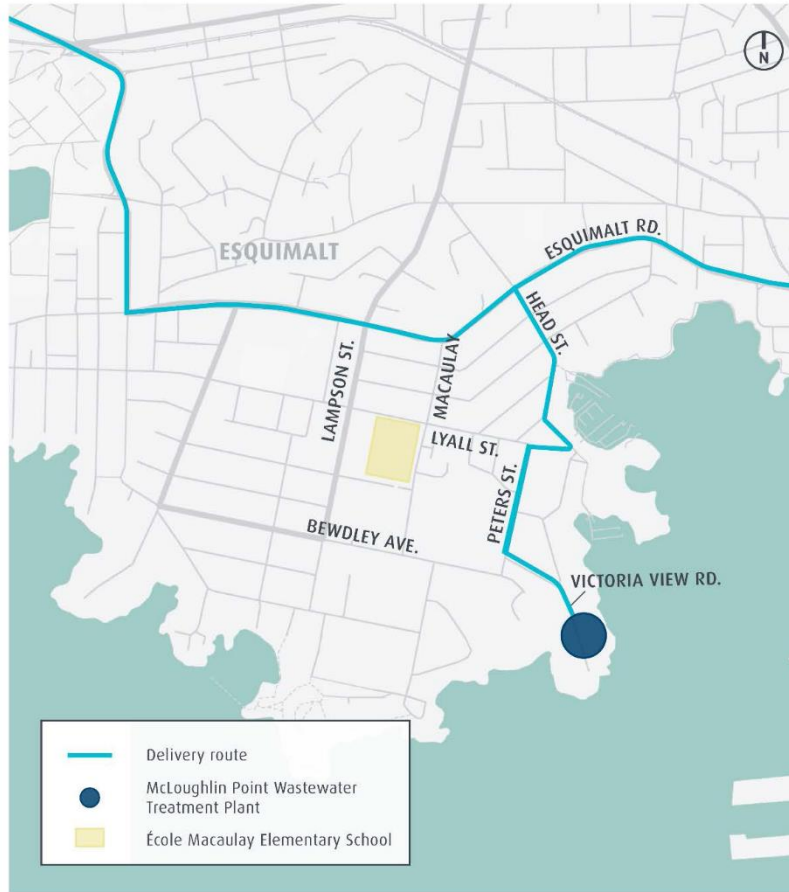
To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit wastewaterproject.ca. To contact the project, please email wastewater@crd.bc.ca or call 1.844.815.6132.



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 B – Monthly July Cost Report

ASSET MANAGEMENT COST REPORT as at July 31, 2018														
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
			Expended to June 30, 2018	Expended over reporting period (July 2018)	Expended to July 31, 2018	Expended to July 31, 2018 as a % of Budget	Remaining (Unexpended) Budget at July 31, 2018	Total Commitment at July 31, 2018	Unexpended Commitment at July 31, 2018	Uncommitted Budget at July 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	375.3	110.3	13.8	124.1	33%	251.2	340.8	216.7	34.6	251.2	375.3	-	0%
Residuals Treatment Facility ^A	195.0	176.5	14.7	0.2	14.9	8%	161.6	149.6	134.7	26.9	161.6	176.5	-	0%
Conveyance System ^A	192.0	213.2	37.3	1.7	39.0	18%	174.2	105.2	66.2	108.0	174.2	213.2	-	0%
Total Costs	765.0	765.0	162.3	15.7	178.0	23%	587.0	595.6	417.6	169.5	587.0	765.0	-	0%

A - Including PMO and Common Costs
^{*} Values presented in \$millions, results in minor rounding differences
^{**} Cost report presents approved expenditures