



# Wastewater Treatment Project

Treated for a cleaner future

## CRD Wastewater Treatment Project

### Monthly Report

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Reporting Period: April 2019

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# 1 Executive Summary

## 1.1 Introduction

This monthly report covers the reporting period of April 2019 and outlines the progress made on the Wastewater Treatment Project over 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 Wastewater Treatment Project progressed 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 construction at McLoughlin Point, including: continuing concrete pours for the process building, tertiary building, and operations and maintenance building; completing drilling of the first outfall section; continuing assembly of the outfall pipe in Nanoose Bay; and continuing off-site utility work on Peters Street.

The RTF Project Component is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing: engineering including development of the overall 100% design, and submission of issued for construction (IFC) early works packages; and construction at the RTF, including: placing formwork, reinforcing steel and concrete for the foundations and floor slabs of residual solids tanks #1 and #2, digester #2, and the operations and maintenance building, and erecting the bolted steel tank for digester #1.

The Conveyance System is anticipated to be delivered through eight construction contracts: two design-build contracts and six design-bid-build contracts.

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, design and construction activities over the reporting period, including: continued development of the overall final (100%) design; placing reinforced concrete for the transformer room suspended slab and the odour control and screening room suspended slab as well as placing reinforcing steel for the exterior walls of the facility.
- Macaulay Point Pump Station and Forcemain: Kenaidan Contracting Ltd. (“Kenaidan” as the Design-Build Contractor) progressed design, and construction activities over the reporting period, including: continued development of the overall final (100%) design; completed placing reinforced concrete for the first lift of all exterior walls, ongoing placement of formwork and reinforcing steel and pouring concrete for interior walls, and delivery of HDPE pipe for the Macaulay Forcemain.

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

- Clover Forcemain: Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued construction activities including: utility relocates, installation of 430m of forcemain (from Pilot Street to San Jose Avenue and from Cook Street to east of Camas Circle, and pavement and sidewalk restoration along Dallas Road (from Ogden Point to Dock Street).
- Residual Solids Conveyance Line (“RSCL”): The RSCL is being delivered through three construction contracts, with work progressing as follows:
  - RSCL 100 Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for the Residual Solids Pipes) continued construction activities including: submitting construction work plans, shop drawings, and permit applications, continuing to perform utility pre-locates and potholing, soil assessment survey and installation of approximately 1791m of RSCL pipeline.
  - RSCL 200 Residual Solids Pump Stations: Knappett Project Inc. (“Knappett” as the Construction Contractor for Residual Solids Pump Stations) commenced preconstruction activities including preparation and submission of work plans, shop drawings and permit applications.
  - RSCL 300 Saanich Infrastructure Improvements: the Project Team is arranging for Parsons (as the design consultant) to complete a preliminary conceptual design for the infrastructure improvements, which include sidewalks along the east side of Grange Road and the west side of Esson Road and a traffic circle at the intersection of Vincent and Bodega Streets.
- Arbutus Attenuation Tank (“AAT”): following an initiation to tender process the Project Team executed the construction contract with North American Constructors Ltd.
- Trent Forcemain: preliminary design of the Trent Forcemain was commenced.

## 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 KPIs over the reporting period. The safety KPI for the Project overall and the conveyance system remains yellow. Over the reporting period 18 safety incidents occurred and the total recordable incident frequency increased to 1.4. The Project Team continues to work with, and ensure that all of the prime contract partners maintain safety as their number one priority. As part of an overall review of the Project, the Project Board engaged an independent safety management firm. The firm found that the systems that the Project has in place meet or exceed industry health and safety standards and regulatory requirements, and provided recommendations which the Project Team have now implemented.





The cost KPI for the Project overall and the conveyance system remained red over the reporting period. Project expenditures are within the Control Budget but cost pressures have been experienced on multiple Conveyance procurements, primarily as a result of inflation in the Vancouver Island construction market. Based on the value of the contracts awarded to-date and the refreshed cost estimate for the scope remaining to be procured, the Project Team has forecast the cost to complete the Project at \$775M, or \$10M over the Project’s budget.

The Project Board are seeking the CRD Board’s approval to increase the Project’s budget by \$10M to \$775M.

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*.					One recordable lost time incident occurred in April. Site inspections are ongoing and recommendations from the independent review of safety management have been implemented.
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 (\$775 million).					<p>Project expenditures are within the Control Budget but cost pressures experienced on multiple Conveyance procurements, primarily as a result of inflation in the Vancouver Island construction market.</p> <p>Based on the value of the contracts awarded to-date and a refreshed cost estimate for the scope remaining to be procured, the Project Team has forecast the cost to complete the Project at \$775M, or \$10M over the Project's budget.</p> <p>The Project Board are seeking the CRD Board's approval to increase the Project's budget by \$10M, to \$775M.</p>

\* 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 3.

Site safety tours and weekly safety inspections were carried out by Project Management Office (“PMO”) construction and safety personnel over the reporting period at all active worksites: Macaulay Point Pump Station, Clover Point Pump Station, Mcloughlin Point WWTP, RTF, Clover Forcemain and RSCL.

As part of an overall review of the Project the Project Board engaged an independent safety management firm. The safety review was conducted by Allman Safety Consulting Corp. (Allman Safety). Jim Allman of Allman Safety reported his findings directly to the Project Board, which concluded that the Project Team’s safety management system meets or exceeds industry health and safety standards and regulatory requirements. The report also made eight recommendations that the Project Team has implemented.

Eighteen safety incidents occurred during the month of April: one lost time recordable incident, three near miss incidents, three first aid incidents and eleven report only incidents.

*Table 2- Safety Incidents over the Reporting Period*

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
April 2, 2019	RSCL	Report Only	Road plates set up on the corner of Wilson Street and Hereward Road was knocked out of alignment.	Supervisor notified and road plate repositioned.	Toolbox talk discussion was held, all plates will be inspected prior to leaving the site at the end of the day.
April 3, 2019	RSCL	Report Only	Minor damage to a residents fence caused by backhoe.	Homeowner was notified and damaged section of fence was repaired.	Tool-box talk was held to ensure that any work in close proximity to any homes, fencing or structures have a spotter available to the operator.
April 4, 2019	RSCL	Near Miss	Excavator bucket came in close proximity to a worker in the trench.	No injuries occurred.	Toolbox talk to remind employees to have eye or verbal contact with operator/spotter before using equipment.
April 5, 2019	RSCL	Lost Time Recordable	Workers foot was caught under the rubber track of a	First Aid assessment was	Tool-box talk was held in regards to the incident and the procedure



Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
			small excavator.	performed on the workers foot. X-ray showed a small hairline fracture. Worker returned to his duties after 3 days.	to follow when moving near mobile equipment or having to communicate with operators in the cab of their equipment.
April 5, 2019	McLoughlin Point WWTP	First Aid	Foreign object in workers eye.	Minor first Aid treatment was provided to remove object.	While worker was wearing safety eyewear for their task a Tool-box talk discussed proper body positioning when cutting if the conditions are windy.
April 9, 2019	RSCL	Near Miss	Excavator bucket came in close proximity to a worker in the trench.	No injuries occurred.	Tool-box talk with the crew reviewing working in close proximity to machinery and awareness to surroundings provided.
April 10, 2019	RSCL	Report Only	Utility strike not clearly located on locate drawings	Line was repaired within 20 minutes.	Waterline was noted on utility locates diagram for future reference.
April 10, 2019	McLoughlin Point WWTP	Report Only	A worker stuck their leg on a piece of wood.	No first aid treatment was rendered.	Tool-box talk was held in regards to situational awareness and knowing what is in close proximity to you at all times.
April 10, 2019	RSCL	Report Only	Jackhammer came in contact with a workers steel toe cap.	No first aid was required.	Tool-box talk was held with crew on having good control of tools and equipment and to pay attention to movement of machines if having to stand in close proximity.
April 10, 2019	RSCL	Report Only	Worker struck their hand on a pipe that was in close proximity.	No first aid was required.	Worker was reminder of proper body positioning when working in a restricted area.
April 15, 2019	RTF	Report Only	Pipe damaged while conducting backfilling activities	No injuries occurred.	Discussion with the worker was held regarding paying more attention to task at hand.
April 16, 2019	McLoughlin Point WWTP	First Aid	Worker hit left thumb with hammer receiving a small laceration.	Worker was wearing gloves at the time of incident.	Tool-box talk held with crew in regards to incident and to discuss good hand positioning when using small tools.
April 16, 2019	RSCL	Report Only	Workers knee was stuck by material which fell into the excavation from above.	The worker did not report incident until next day.	Tool-box talk was held in regards to inspecting work areas and keeping area above excavations free from debris and reporting incidents in a timely manner.
April 19, 2019	McLoughlin Point WWTP	Report Only	Worker tripped while walking on uneven surface.	No First Aid was rendered.	Workers reminded to take extra precaution in areas that pose a slip/trip hazard.

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
April 22, 2019	McLoughlin Point WWTP	First Aid	Worker was stripping forms and pinched their finger.	Workers finger showed signs of bruising and minor swelling.	Tool-box talk reminder in regards to pinch points and to keep hands and body parts out of the “bite”.
April 23, 2019	RSCL	Report Only	Excavator struck overhead communication lines while moving road plates.	Lines were repaired.	A Tool-box talk was held to remind operators to have a spotter at all times when working near overhead lines.
April 26, 2019	RSCL	Report Only	A water service was struck that was not identified on the utility locates plan.	City of Victoria responded and repaired the service.	Water service line was added to the Utility locates plan for future reference.
April 26, 2019	McLoughlin Point WWTP	Near Miss-High Potential For Harm	Gas line on Peters street was struck. Fortis was notified of the emergency and residents were evacuated from the area.	Job was suspended pending an investigation.	WorkSafeBC was notified as required for a Serious Incident. Sub-Contractor was issued an order for striking the gas line. Protocol was not followed as the company’s policy states that no work is to be done near a gas line without a spotter present. Operator was suspended following the investigation.

Key safety activities conducted during April included:

- CRD prime contractor safety quality assurance audit of RSCL 100(Residual Solids pipes) Contractor.
- Post audit close out meeting with Allman Safety Consulting corp (the independent safety management firm engaged by the Project Board to conduct a safety review)
- training records review of Sub-Contractor and CRD WTP Compliance personnel;
- bi-weekly project update meetings with prime contractors: Kenaidan, Windley, Don Mann and HRP;
- weekly project update meetings with prime contractors: HRMG;
- Incident Investigations review;
- safety notice issued to Prime Contractors in regards to recent increase in incidents
- host prime contractor monthly safety meeting with CRD;
- reviewed site specific safety plans and high risk tasks; and
- WTP Safety Manager and/or Construction Manager conducted regular site inspections at all active Project work sites.



Table 3 – WTP Safety Information

	Reporting Period April 2019)	Project Total to-Date (from January 1, 2017)
<b>Person Hours</b>		
PMO	3,277	98,789
Project Contractor	71,245	630,703
<b>Total Person Hours</b>	<b>74,523</b>	<b>729,492</b>
<b>Total Number Of Employees</b>		
PMO	30	
Project Contractors (and Project Consultants) working on Project sites	458	
<b>Total Number Of Employees</b>	<b>488</b>	
<b>Near Miss Reports</b>		
Near Miss Reports	2	20
High Potential Near Miss Reports	1	4
Report Only	11	44
First Aid	3	19
Medical Aid	0	0
Medical Aid (Modified Duty)	0	2
Lost Time	1	3
<b>Total Recordable Incidents</b>	<b>1</b>	<b>5</b>
		<b>Project Frequency (from January 1, 2017)</b>
First Aid Frequency		5.2
Medical Aid Frequency		0.5
Lost Time Frequency		0.8
<b>Total Recordable Incident Rate</b>		<b>1.4</b>

## 2.2 Environment and Regulatory Management

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

### 2.2.1 Environment

Environmental work progressed as planned over the reporting period.

Key environmental management activities completed in April included:

- HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) continued to develop their air dispersion modelling and Technical Assessment Report in support of an application for an Operational Certificate for the RTF; and
- the CRD, City of Victoria, KWL (the Design Consultant for the Clover Forcemain) and Windley (the construction contractors for the Clover Forcemain) met on site to discuss the management of invasive species and salvage of native vegetation (camas bulbs) along the forcemain alignment. The City shared their local knowledge and identified areas for special treatment.

### 2.2.2 Regulatory Management

In April, 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 April included:

- the CRD received a tree cutting permit amendment from the District of Saanich to remove five trees at the Arbutus Attenuation Tank site; and
- HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) received the remaining phased Building Permits for the RTF.

The status of key Project permits are summarized in Table 4. The table is not a list of all required Project permits, but rather a summary of the status of key Project permits.

Updates to Table 4 from the Project’s Q1 2019 Quarterly Report are bolded in the table and are as follows:

- Arbutus Attenuation Tank: removed the District of Saanich Building Permit, as it was obtained in February.
- Residuals Treatment Facility: updated the status of District of Saanich Phased Building Permits, as the final permits were received.

*Table 4 - Key Permits Status*

Permit / Licence	Anticipated Date	Status	Party Responsible for Obtaining Permit
<i>McLoughlin Point WWTP</i>			
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>			
Transport Canada Lease	Following completion of construction	On track	HRP
<i>ECI/Trent Twinning</i>			
Notice from the Director to Construct under Section 40 (b) of the MWR	Q2 2019	On track	Design engineer
<i>Residuals Treatment Facility</i>			
Operational Certificate	Prior to start of RTF operations	On track	HRMG
District of Saanich Phased Building Permits	April 2019	<b>Received</b>	HRMG

## 2.3 First Nations

First Nations communication and engagement was ongoing over the reporting period. Meetings with the Esquimalt and Songhees Liaisons continued, with a focus on the development of interpretive signage for installation at several locations and procurement of Indigenous art for installation at Clover Point and Macaulay Point.

In April, Millennia Research (as the Project's archaeological advisor) continued archaeological monitoring of excavations along the Clover Forcemain route with members of the Esquimalt and Songhees Nations.

## 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, and notifications of construction through notices and a public inquiry program, among other methods.

### **Construction Communications**

Two Information Bulletins and one Construction Update were issued to stakeholders in the reporting period:

- Dallas Road Construction Update (April 2019) (Appendix A);
- Wastewater Treatment Project Board Requests Additional Funding (April 12, 2019) (Appendix B); and
- Residual Solids Pump Stations Contract Awarded (April 26, 2019) (Appendix C).

The Dallas Road Construction Update provided a summary of progress along Dallas Road and information about pipe installation and construction impacts. It was mailed via Canada Post to more than 3,000 residents that live close to the pipe route in Fairfield and James Bay, posted to the Project website, and distributed to stakeholders.

### **Project Website**

Over the reporting period, the Project website, wastewaterproject.ca, was updated with information about the Project. Two Information Bulletins, and one Construction Update were posted and the photo gallery section was updated with the addition of photos. Maps showing the progress of construction along the Clover Forcemain and the Residual Solids Conveyance Line were updated weekly.

The CRD's Twitter account was used to provide Project updates on construction activities.

### **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;
- James Bay Neighbourhood Association;
- Times Colonist 10km Run representatives; 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 5.

*Table 5 - Project Inquiries – April 2019*

Inquiry Source	Contacts for April
Information phone line inquiries	12
Email inquiries responded to	26

Key themes of the public inquiries were as follows:

- Inquiries about timing of construction for the RSCL and questions about the work including noise impacts and restoration;
- Inquiries about hiring for the Wastewater Treatment Plant; and
- Questions about restoration/repaving timing for RSCL and Clover Forcemain.

**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**

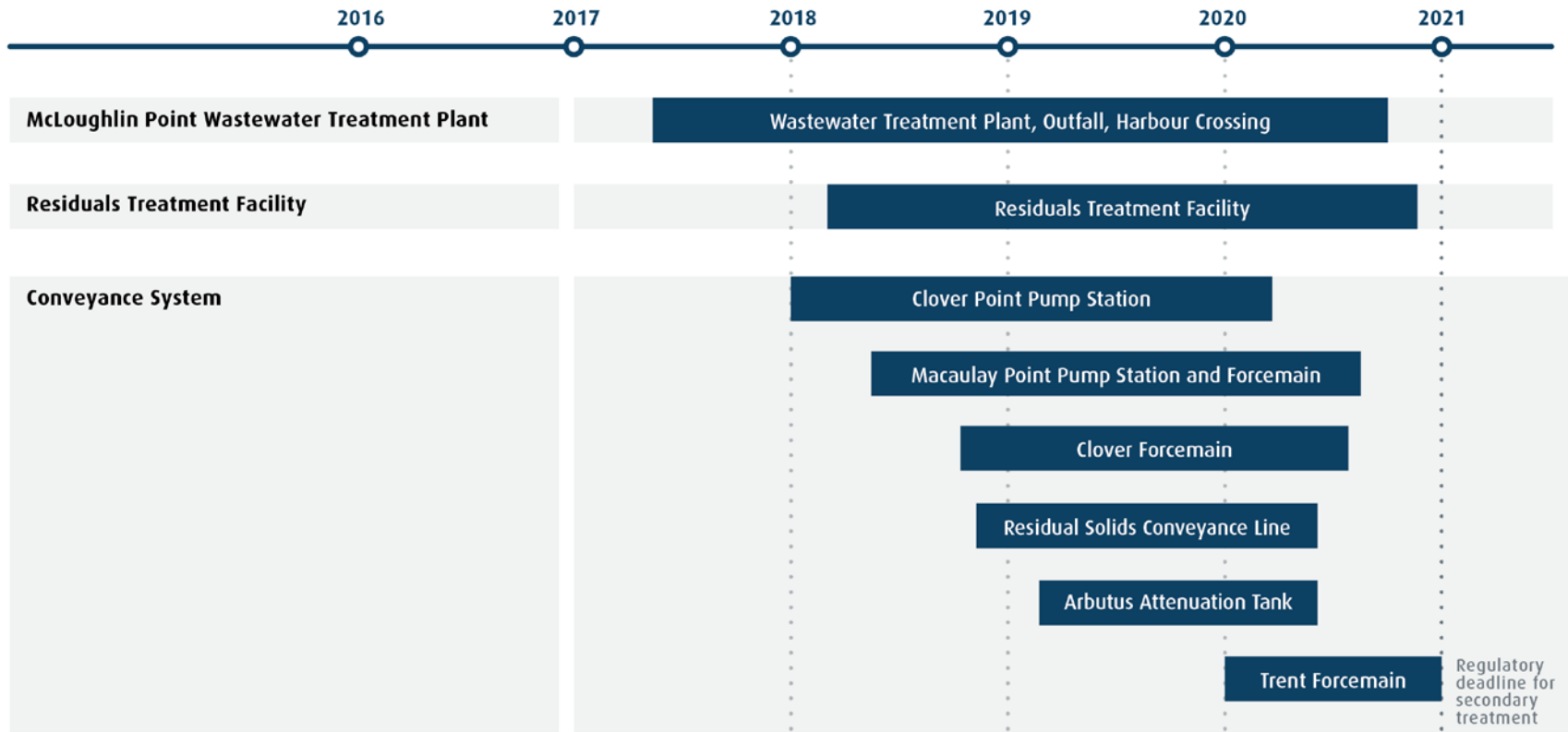
Overall the Project’s scheduled activities progressed as planned during April. All major and key interface milestones were on target to be completed as per the schedule. Progress over the reporting period is summarised in section 2.9.

Figure 1 shows the high-level Project schedule. The schedule remains subject to optimization as the Project and planning progresses, and has been revised from that included in the Project’s Q1 2019 Quarterly Report: construction of the Trent Forcemain is now scheduled to start in 2020 and is anticipated to take approximately 12 months to complete. Construction of the Trent Forcemain was rescheduled in order to allow the updated model of the core area’s wastewater system to be completed before commencing detailed design of the Trent Forcemain.

The Project remains on-schedule to meet the provincial and federal regulations for treatment of the Core Area’s wastewater by December 31, 2020.

### Wastewater Treatment Project Schedule\*

Construction + Commissioning



\*Schedule subject to updates as Project planning progresses.

Figure 1 - High-Level Project Schedule<sup>1</sup>

<sup>1</sup> The schedule remains subject to optimization.

### 2.6.1 30 day look ahead

#### **Key activities and milestones for the next 30 days (May) are:**

##### **Safety**

- CRD prime contractor safety quality assurance audit closeout with Residuals Solids Forcemain Prime Contractor;
- CRD prime contractor safety quality assurance audit on McLoughlin Point Wastewater Treatment Plant Prime Contractor.
- attend CRD corporate occupational health and safety coordination committee meeting;
- attend weekly and bi-weekly prime contractor progress meetings;
- office/site inspections with contractors and CRD corporate at all active sites;
- prime contractor project safety meeting with Project safety representatives;
- attend pre-construction kickoff meeting for Arbutus Attenuation Tank;
- attend Prime Contractor NAOSH Safety Week activities;
- Prime Contractor CRD WTP Safety Orientation;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites; and
- incident reporting review with prime contractors at active work locations.

##### **Environment and Regulatory Management**

Continue marine dispersion modelling to be used for environment impact studies required for the MWR Registration.

##### **First Nations**

- ongoing meetings with the Esquimalt and Songhees Liaisons; and
- Procurement of Indigenous art for placement at Clover Point and Macaulay Point.

##### **Stakeholder Engagement**

- ongoing construction communications with stakeholders;
- donation of three planters in the James Bay community;
- participation in CRD biosolids open houses;
- social media updates; 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**

- commence biological aerated filter (BAF) third level suspended slab;
- install process piping in biological aerated filter (BAF) gallery;

- continue surface runoff/groundwater treatment and discharge;
- commence slab and wall work in primary area;
- form and pour walls and suspended slabs for second floor of operations and maintenance building;
- continue concrete work in the tertiary area;
- commence walls and second level suspended slab in dirty backwash;
- commence third phase piling;
- continue assembly of marine outfall pipe in Nanoose Bay;
- complete de-mobilization of outfall tunnel area; and
- continue installation of off-site utilities on Peter Street.

#### Clover Point Pump Station

- form and pour odour control screening room suspended slab;
- place concrete for suspended slab in transformer room;
- form and pour walls of inlet storm channels; and
- install waterproofing to underside of transformer room.

#### Macaulay Point Pump Station

- continue to form and pour internal walls of pump station;
- waterproof and backfill external walls; and
- prepare for installation of Macaulay forcemain (starting at Anson Street).

#### Residuals Treatment Facility

- slab on grade prep for digested sludge storage tank and dryer building;
- pour starter ring and set tank starter panel for digested sludge storage tank;
- strip wall forms and backfill at other municipal solids receiving building;
- commence erection of Digester #1 bolted steel tank;
- form and pour suspended slab at other municipal solids receiving building;
- install formwork for residual solids handling tank and pour starter ring slab; and
- survey and set columns at residuals drying facility.

#### Clover Forcemain

- continue with utility relocates on Dallas Road;
- continue to install forcemain;
- complete restoration of asphalt pavement and curb, gutter and sidewalks; and
- continue to perform archaeological screening of excavated soil as required.

#### Residual Solids Conveyance Line (RSCL) – Trans Canada Highway Crossing

- no work anticipated this period.

#### Residual Solids Conveyance Line (RSCL100)

- continue utility locates and verification, all segments;
- continue installation of first, third and fourth RSCL segments; and
- commence installation of second segment of RSCL.

Residual Solids Pump Stations (RSCL200)

- mobilization of contractor;
- set up sites and install construction fencing;
- commence removal of trees at pump station #4 site; and
- establish and secure laydown areas

Arbutus Attenuation Tank:

- mobilization of contractor to site

**Engineering**

McLoughlin Point WWTP:

- Residuals Solids Pumping Station: 100% design deliverable; and
- Control System Programming Plan: design deliverable.

Residuals Treatment Facility:

- progress overall final (100%) design deliverable;

Clover Point Pump Station:

- progress overall final (100%) design deliverable.

Macaulay Point Pump Station and Forcemain:

- progress overall final (100%) design deliverable.

Residuals Solids Conveyance Line:

- RSCL300 Saanich Infrastructure Improvements: initiate preliminary conceptual design

**Procurement**

- No procurement activities expected over the next 30 days

2.6.2 60 day look ahead

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

**Safety**

- CRD prime contractor safety quality assurance audits;
- attend CRD corporate occupational health and safety coordination committee meeting;
- attend weekly and bi-weekly prime contractor progress meetings;
- office/site inspections with contractors and CRD corporate at all active sites;
- prime contractor project safety meeting with Project safety representatives;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites; and
- incident reporting review with prime contractors at active work locations.

**Environment and Regulatory Management**



CRD, Stantec, KWL, Lorax Environmental and HRP to meet with the BC Ministry of Environment to present findings of KWL's flow modelling and Lorax Environmental's dispersion modelling.

### **First Nations**

- ongoing meetings with the Esquimalt and Songhees Liaisons; and
- Procurement of Indigenous art for placement at Clover Point and Macaulay Point.

### **Stakeholder Engagement**

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

### **Cost Management and Forecast**

- prepare cost reports;
- 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**

- continue with phase 3 piling in West Densadeg, West entrance and raw sewage valve locations;
- install raw sewage bypass to outfall chamber;
- continue surface runoff/groundwater treatment and discharge;
- construct tsunami wall segment #6;
- continue primary treatment area concrete walls and slabs;
- complete BAF lower channel walls and boxes;
- construct walls and influent channel suspended slabs in Moving Bed Biofilm reactor(MBBR) #1 and #2;
- conduct hydrostatic test on BAF tanks 7 & 9 and MBBR #1 and #2;
- continue concrete walls in tertiary area;
- install Ferric Chloride Storage Tanks in tertiary pump room;
- install structural steel and decking in electrical room; and
- continue with walls, columns and slabs in operations and maintenance building.

#### **Clover Point Pump Station**

- continue with concrete walls, corbels and suspended slabs;
- construct concrete ring beams to underside of precast roof;
- install 7.5 ton bridge crane rails;
- install 1.5 ton monorail support beam and rails;
- hoist large process pipes into pump station; and
- commence installation of electrical equipment.

#### **Macaulay Point Pump Station**

- continue with walls and suspended slabs;
- commence installation of steel wet well maintenance platforms;
- commence installation of steel pump room platforms and walkways;
- install cast-in-place suction headers; and
- commence installation of sanitary forcemain at Vaughn Street and Anson Street.

#### Residuals Treatment Facility

- slab-on-grade prep for digester building and residuals effluent storage areas;
- continue with concrete placement at residual solids tanks;
- continue installation of underground storm water, sanitary and electrical distribution;
- install process piping at digester and residuals effluent storage areas;
- commence steel erection residuals drying facility building;
- complete erection of steel bolted digester tank 1; and
- commence erection of steel bolted digester tank 2.

#### Clover Forcemain

- continue with forcemain installation from Douglas Street to Government Street and from Menzies Street to Government Street;
- continue with utility relocates;
- continue with temporary restoration of pavement and curb, gutter and sidewalks; and
- continue to perform archaeological screening of excavated soil as required.

#### Residual Solids Conveyance Line (RSCL)

- continue utility locates and verification, all segments;
- continue RSCL installation along Tillicum Road of segment 1, Grange Road of Segment 2, Interurban Road and Interurban Trail of segment 3 and Wallace Drive of Segment 4; and
- continue with restoration of asphalt pavement and concrete curb, gutters and sidewalks.

#### Residual Solids Pump Stations and Bridge Crossings (RSCL200)

- pump station 4 survey layout and recording;
- pump station 4 site clearing and excavation; and
- commence utility pre-locates for RSCL at Willis Point Road.

#### Arbutus Attenuation Tank (AAT)

- mobilize office and crew facilities;
- install site perimeter fencing; and
- commence site preparation and establish erosion and sediment control.

### **Engineering**

- Residuals Treatment Facility: submit overall final (100%) design deliverable;
- Clover Point Pump Station: progress overall final (100%) design deliverable;
- Macaulay Point Pump Station: submit issue for construction (IFC) for overall design; and
- RSCL300 Saanich Infrastructure Improvements: hold design kick-off meeting.

### **Procurement**

- No procurement activities expected over the next 60 days.

## 2.7 Cost Management and Forecast

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

Significant progress has been made on the Wastewater Treatment Project: the vast majority of the Project is under construction, with only one contract remaining to be procured. The Project is on schedule to 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, by the regulatory deadline of December 31, 2020.

The Project Team has been reporting budget pressures through its monthly reports to the Project Board (and CRD Board) since September 2017, and these pressures have steadily increased as each conveyance contract has been awarded. The Project Team forecast that the Project can be completed at a total cost of \$775M, or \$10M (1.3%) over the Project's control budget. Appendix D includes this forecast overage.

The Project Team have undertaken value engineering from the start of the Project, and will continue with that approach for the remainder of the Project, with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money. The Project Team will also continue to work with CRD staff to review and appropriately-allocate costs between the capital and operating budgets.

As the Project Team forecast that the Project's cost will exceed the budget available, the Project Board are seeking the CRD Board's approval to increase the Project's budget by \$10M to \$775M.

### 2.7.1 Commitments

Commitments were made over the reporting period in furtherance of delivering the Project. The net commitments made during the reporting period resulted in an increase in committed costs of \$17.1M, primarily associated with the award of the Arbutus Attenuation Tank contract and 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 construction activities and PMO-related costs.

### 2.7.3 Contingency and Program Reserves

Contingency draws of \$106K were made over the reporting period, as itemized in Table 6. The draws to-date and remaining contingency and program reserve balance are summarized in Table 6.

Table 6 - Contingency and Program Reserve Draw-Down Table

WTP Contingency and Program Reserve Draws and Reallocations	Draw Date	\$ Amount
<b>Contingency and Program Reserve (in Control Budget)</b>		<b>\$ 69,318,051</b>
Contingency and Program Reserve Draws to March 31, 2019		\$ (52,841,307)
<b>Contingency and Program Reserve balance as at March 31, 2019</b>		<b>\$ 16,476,744</b>
Revision to the design of Macaulay Forcemain	Apr-19	\$ (83,692)
McLoughlin Point Site Remediation: excavation and disposal of contaminated soil (chlorides).	Apr-19	\$ (22,870)
<b>WWTP Total Draw</b>		<b>\$ (106,562)</b>
<b>RTF Total Draw</b>		<b>\$ -</b>
<b>Conveyance Total Draw</b>		<b>\$ -</b>
<b>PMO Total Draw</b>		<b>\$ -</b>
<b>BC Hydro Total Draw</b>		<b>\$ -</b>
<b>WTP Program Reserve Draw</b>		<b>\$ -</b>
<b>Contingency and Program Reserve draws in the reporting period</b>		<b>\$ (106,562)</b>
<b>Total Contingency and Program Reserve draws to April 30, 2019</b>		<b>\$ (52,947,869)</b>
<b>Contingency and Program Reserve balance as at April 30, 2019</b>		<b>\$ 16,370,182</b>

#### 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 \$248 million towards the three components of the project, while the Government of Canada is contributing:

- \$120 million through the Building Canada Fund – Major Infrastructure Component towards the McLoughlin Point WWTP;
- \$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 Project Team has applied to the Federation of Canadian Municipalities (FCM) for additional funding, and has executed a grant agreement for a contribution of up to \$346,900 towards the delineation of contamination and remediation and risk assessment for the McLoughlin Point Wastewater Treatment Plant.

The status of funding claims is summarised in Table 7. 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 7 – Grant Funding Status*

Funding Source	Maximum Contribution	Funding Received in the Reporting Period	Funding Received to Date
Government of Canada (Building Canada Fund)	\$120M	\$9.2M	\$52.0M
Government of Canada (Green Infrastructure Fund)	\$50M	-	\$18.1M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
Federation of Canadian Municipalities	\$346K	-	-
<b>TOTAL</b>	<b>\$459.3M</b>	<b>\$9.2M</b>	<b>\$70.1M</b>

## 2.8 Key Risks and Issues

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

Table 8 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.

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

Table 8- 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
<b>Project</b>				
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.	L	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).	L	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.	L	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 has been assigned and is being monitored.	L	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
Upstream 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.	L	No change
Municipal Wastewater Regulation (MWR) Registration is not achieved or is delayed.	A delay to achieving MWR Registration of the wastewater treatment system would mean that the CRD could not discharge treated effluent, and therefore would not be able to commission the WWTP or RTF.	The Project Team (with HRP and Stantec representatives) have been meeting regularly with Ministry of Environment representatives since September 2017 to review the MWR Registration application requirements and the Project’s schedule, in order to mitigate the risk of an incomplete application and/or schedule delays in the registration. A workplan and schedule have been developed and the Project Team, MOE and relevant contractors will continue to meet regularly to track progress and discuss issues.	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
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 and coverage of communications in contractor orientations.	M	No change
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; and/or 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
Disagreement on contractual obligations of the construction contractors.	There is a disagreement between the Project Team and a contractor regarding the performance of their contractual obligations.	The Project Team takes a proactive management approach to the resolution of any changes, claims and disputes that arise, working expeditiously to achieve resolution with the goal of minimizing any impacts to budget and schedule while ensuring adherence to the terms of the construction contracts.	M	No change
<b>McLoughlin Point Wastewater Treatment Plant</b>				



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
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
<b>Conveyance</b>				
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 will be undertaken for the Trent Forcemain as part of the detailed design process.	L	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
<p>Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted.</p>	<p>Cost of conveyance contracts higher than estimated and budgeted.</p>	<p>There is only one conveyance contract remaining to be procured (the Trent Forcemain). It will be competitively-procured, as has been done for all of the construction contracts. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money, and in order to identify any opportunities where savings could be realized to partially-offset escalation.</p>	<p>M</p>	<p>No Change</p>
<p>Engineering design development results in increases to the estimated construction cost.</p>	<p>Conveyance contract amounts higher than budget due to design development (through indicative and detailed design phases).</p>	<p>There is only one conveyance contract remaining to be procured (the Trent Forcemain), for which the Project Team recently refreshed the cost estimate. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money.</p>	<p>M</p>	<p>No change</p>

## 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 construction at McLoughlin Point, including: continuing concrete pours for the process building, tertiary building and operations maintenance building; completing drilling of the first outfall section; continuing assembly of the outfall pipe in Nanoose Bay; and continuing off-site utility work on Peters Street.

#### **Engineering**

HRP progressed planning and design activities during the reporting period including submission of the Control System Programming Plan.

#### **Construction**

##### McLoughlin Point WWTP

Photographs of construction progress at McLoughlin Point are shown in Figures 2 – 8. Key construction activities in progress or completed by HRP in April were as follows:

- slab and wall work commenced in the primary treatment area;
- scaffolding erected for electrical room suspended slab;
- continued surface runoff/groundwater treatment and discharge;
- south slabs poured in the operations and maintenance building and second storey suspended slab work commenced;
- Micro Tunnel Boring Machine work completed;
- segment 1 of the Peter Street utility work completed;
- Upper channel BAF slab and wall work commenced;
- Hydrostatic testing of the dirty backwash completed and testing of BAF tanks commenced;
- commenced installation of the BAF gallery piping; and
- continued assembly of the marine outfall pipe in Nanoose Bay.



*Figure 2 – McLoughlin Point Wastewater Treatment Plant: Forming BAF wall 10 columns*



*Figure 3 - McLoughlin Point Wastewater Treatment Plant: Assembly of marine outfall pipe in Nanoose Bay.*



*Figure 4 – McLoughlin Point Wastewater Treatment Plant: green cutting of control joints*



Figure 5 – McLoughlin Point Wastewater Treatment Plant: installing scaffolding for suspended slab #1.

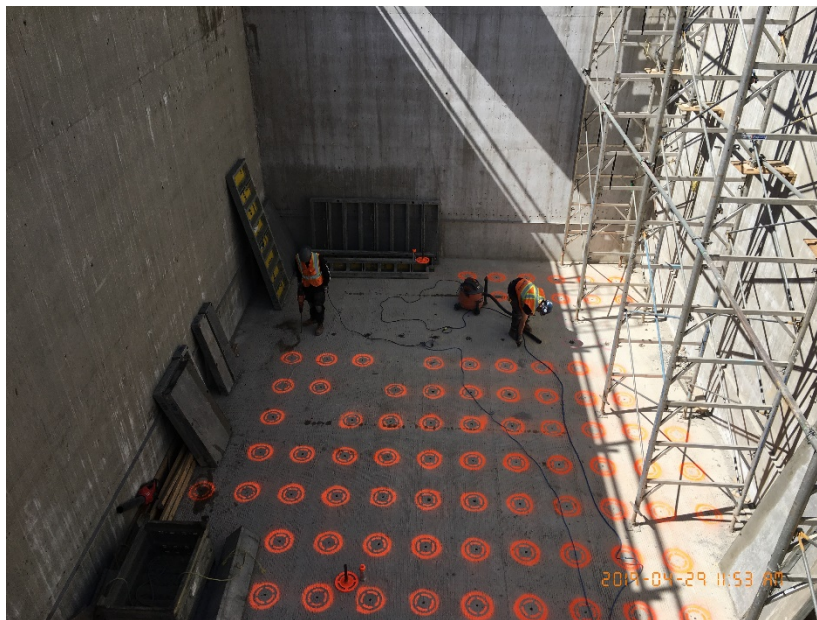


Figure 6 – McLoughlin Point Wastewater Treatment Plant: drilling of holes for BAF mono floor.



Figure 7 – McLoughlin Point Wastewater Treatment Plant: rigging 42" Header into position..



Figure 8 – McLoughlin Point Wastewater Treatment Plant: pouring slab.

## 2.9.2 Residuals Treatment Facility (RTF)

The RTF Project Component is continuing with HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing design and construction activities over the reporting period.

### Engineering

HRMG progressed planning and design activities in April, including:

- working on overall 100% design submission;
- progressed with resolution of outstanding comments on previous design submittals;
- monthly progress meeting with independent certifier;
- progressed with vendor selection;
- received building permits (6) from District of Saanich;
- worked with CRD Source Control to obtain Waste Discharge Authorization; and
- worked with the Ministry of Environment on permitting requirements.

### Construction

Photographs of construction progress in April at the RTF are shown in Figures 9 to 12. Activities on site included:

- placed concrete in digester #2 thickening slab and floor slab;
- installed leveling ring for digester #2 bolted steel tank;
- set up of hydraulic jacks for digester #1 tank erection;
- installed first row of bolted steel tank panels for digester #1;
- continued with backfill and concrete slabs in the OMSRF building;
- commenced assembly of digester #1 roof structure; and
- continued with forms, reinforcing steel and concrete placement in the residual solids tanks #1 and 2.



Figure 9 – Residuals Treatment Facility: hydraulic jacks set up around central roof support column.

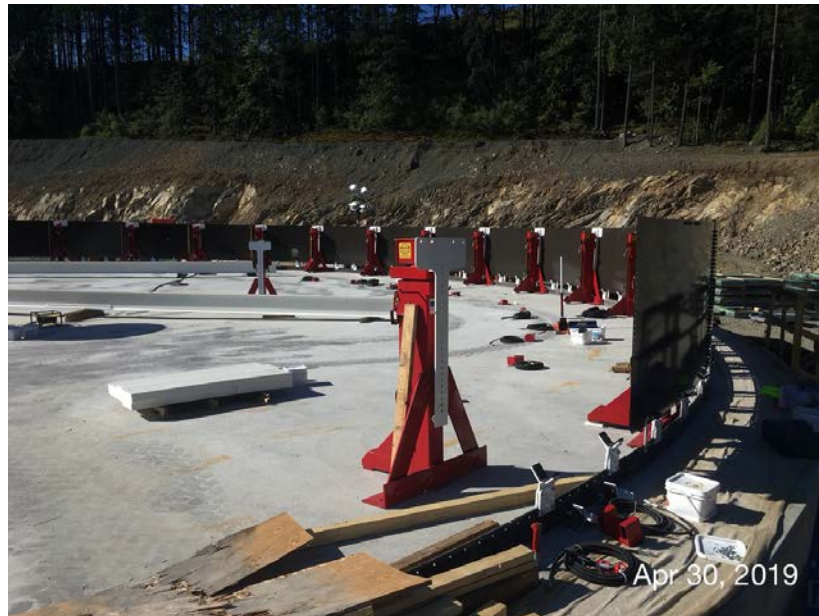


Figure 10 – Residuals Treatment Facility: assembly of first ring of bolted steel tank in Digester #1.



Figure 11 – Residuals Treatment Facility: concrete being placed in digester #2 floor slab and erection of bolted steel tank wall in the background.





Figure 12 – Residuals Treatment Facility: placing, grading, compaction and shaping of base gravels beneath Residuals Handling Building.

### 2.9.3 Conveyance System

#### 2.9.3.1 Clover Point Pump Station

Kenaidan (as the Design-Build Contractor for the Clover Point Pump Station) progressed design and construction activities over the reporting period, as follows:

#### **Engineering**

- Provided response to comments for the overall final (100%) design deliverable.

#### **Construction**

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

- completed transformer room suspended slab;
- progressed work on the suspended slab for the odour control and screening rooms;
- progressed work on reinforcement and formwork of the upper section of exterior walls along the west caisson wall; and
- continued with finishing of concrete walls.



*Figure 13 – Clover Point Pump Station rebar, electrical and block outs for wall 33A and 35A.*



*Figure 14 – Clover Point Pump Station: pump room (view from south).*



Figure 15 – Clover Point Pump Station: general progress (view from south east)



Figure 16 – Clover Point Pump Station general progress (view from north west).



Figure 17 – Clover Point Pump Station: installing formwork for suspended slab.

### **2.9.3.2 Macaulay Point Pump Station and Forcemain**

Kenaidan (as the Design-Build Contractor for the Macaulay Point Pump Station and Forcemain) progressed design, engineering and construction activities over the reporting period, as follows:

#### **Engineering**

- submitted a response to the outstanding final (100%) design comments.

#### **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 April were as follows:

- completed the first lift of all exterior walls;
- formwork, reinforcing steel and concrete for the interior walls is ongoing;
- formwork, reinforcing steel installation and concrete is complete for the topping slab in the inlet channel; and
- initial delivery of HDPE pipe delivered to site for Macaulay forcemain.



*Figure 18 – Macaulay Point Forcemain digging test pits on Vaughan Street.*



*Figure 19 – Macaulay Point Pump Station: installing rebar, electrical conduits and formwork for interior wall along gridline C.*



Figure 20 – Macaulay Point Pump Station: concrete pour of the topping slab in the inlet channel.

### 2.9.3.1 Clover Forcemain (CFM)

Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued construction activities including: installation of 430m of forcemain (from Pilot Street to San Jose Avenue and from Cook Street to east of Camas Circle in Beacon Hill Park) including pavement and sidewalk restoration along Dallas Road (between Ogden Point and Dock Street).

#### **Construction**

Photographs of construction progress at Clover Forcemain are shown in Figures 21 to 23. Key construction activities in progress or completed by Windley in April were as follows:

- installed 219 metres of forcemain between Pilot Street and San Jose Ave;
- installed 209 metres of forcemain between Cook Street and Camas Circle (through Beacon Hill Park);
- utility relocations ongoing; and
- restored pavement, curb and gutter and sidewalks from Ogden Point to Dock Street.



*Figure 21 – Clover Forcemain: Dallas Road topsoil placed behind new sidewalk at Ogden Point.*



*Figure 22 – Clover Forcemain: Bus shelter restored after sidewalk restoration*



Figure 23 – Clover Forcemain: Dallas Road Island slip form placing concrete in sidewalks.

### 2.9.3.2 Residuals Solids Conveyance Line (RSCL)

The RSCL is being delivered through three construction contracts, with work progressing as follows:

- RSCL 100 Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for the Residual Solids Pipes) continued construction activities including: submitting construction work plans and shop drawings, submitting permit applications, continuing to perform utility pre-locates and potholing, soil assessment survey and installation of the RSCL pipeline.
- RSCL 200 Residual Solids Pump Stations: Knappett Projects Inc. (“Knappett” as the Construction Contractor for Residual Solids Pump Stations) commenced preconstruction activities including preparation and submission of work plans, and shop drawings and permit applications.
- RSCL 300 Saanich Infrastructure Improvements: the Project Team is arranging for Parsons (as the design consultant) to complete a preliminary conceptual design for the infrastructure improvements, which include sidewalks along the east side of Grange Road and the west side of Esson Road and a traffic circle at the intersection of Vincent and Bodega Streets.

### **Construction**

RSCL100 Residual Solids Pipes: Photographs of construction progress along the RSCL are shown in Figures 24-25. Key construction activities by Don Mann Excavating in April were the installation of 1791 Meters of pipes at the following locations:



- Segment #1 – continued installation of the Residual Solids Forcemain at Dunsmuir Rd., Esquimalt Road, Dominion Road and Hereward Road.
- Segment #1 – continued installation of Residual Solids Forcemain at Vincent Avenue, Bodega Road and Ker Avenue;
- Segment #3 – commenced installation of the Residual Solids Forcemain and the Centrate Return Line at Interurban Road; and
- Segment #4 – commenced installation of the Residual Solids Forcemain and the Centrate Return Line at Willis Point Road.



*Figure 24 – RSCL: Segment 4 - installation of residual solids forcemain and centrate return line at Willis Point Road.*



*Figure 25 – RSCL: Segment 3 - installation of residual solids forcemain and centrate return line at Interurban Road.*

### 2.9.3.3 Arbutus Attenuation Tank

Following an initiation to tender process the Project Team executed the construction contract with North American Constructors Ltd.

### 2.9.3.4 Trent Forcemain

Preliminary design of the Trent Forcemain has commenced.

## Appendix A –Dallas Road Construction Update (April 2019)



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

**Construction Update**  
April 2019

### Dallas Road Construction

The Wastewater Treatment Project is making significant progress on Dallas Road. With over 50% (1.6km) of the Clover Forcemain installed, construction is progressing well at each end of the pipe. All construction activities for the Clover Forcemain are anticipated to be complete by summer 2020. Once complete, the Clover Forcemain will convey wastewater from the Clover Point Pump Station to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment.



#### CONSTRUCTION IMPACTS



**Work Hours**

Monday to Friday 7 a.m. to 7 p.m.  
Saturday 10 a.m. to 7 p.m.



**Road Closures**

In section 4 between Government and Douglas streets for approximately 8 weeks, Dallas Road will be closed 24 hours a day from Monday morning to Friday afternoon for pipe installation with local traffic only. A detour will be in place and the road will reopen on the weekends. This work is currently anticipated to start late spring/early summer.



**Restoration**

Following pipe installation, the road will be paved. Clover Point Park has been re-seeded.



**Traffic**

Single lane alternating traffic is required at each work zone due to the excavation. Please follow directions from the traffic control personnel.



**Parking**

"No parking zones" are required for construction to be completed. We recognize parking can be limited in the area.



**Cycle Path**

Construction of the cycle path is anticipated to begin in summer 2019.

Thank you for your patience as this work is completed.

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

**Construction Update**  
April 2019

**CONSTRUCTION PROGRESS**



- |  |   |   |  |
|--|---|---|--|
| <p><b>WORK COMPLETED</b></p> <ul style="list-style-type: none"> <li><b>1 NIAGARA TO DOCK</b><br/>Complete</li> <li><b>2 DOCK TO LEWIS</b><br/>Started April 1, 2019</li> </ul> | <ul style="list-style-type: none"> <li><b>3 LEWIS TO GOVERNMENT</b><br/>Late spring 2019</li> <li><b>4 GOVERNMENT TO DOUGLAS</b><br/>Late spring/Early summer 2019</li> </ul> | <ul style="list-style-type: none"> <li><b>5 DOUGLAS STREET INTERSECTION</b><br/>Late spring 2019</li> <li><b>6 DOUGLAS TO COOK</b><br/>Started March 1, 2019</li> </ul> | <ul style="list-style-type: none"> <li><b>7 COOK TO CLOVER</b><br/>Complete</li> </ul> |
|--|---|---|--|
- THE PROGRESS MAP IS UPDATED WEEKLY ON THE PROJECT WEBSITE.

**PIPE INSTALLATION**  
The weekly schedule for pipe installation typically follows this sequence: Monday and Tuesday - Excavation, Wednesday - Pipe Installation, Thursday and Friday - Backfilling.

**UTILITY RELOCATION**  
Utility relocation work at the Douglas Street Intersection will take place in April. This work must be completed prior to forcemain installation. At times, Dallas Road will be closed to accommodate the work. Detours will be in place.

Please visit our dedicated **Dallas Road Construction** page under **Current Construction Activities**.

**Any questions about the work, please contact the Project Team.**

- |  |  |  |
|--|--|--|
| <p><b>24/7 Phone Line</b><br/>1.844.815.6132</p> | <p><b>Email</b><br/>wastewater@crd.bc.ca</p> | <p><b>Website</b><br/>wastewaterproject.ca</p> |
|--|--|--|



## **Appendix B – Wastewater Treatment Project Board Requests Additional Funding (April 12, 2019)**

**Wastewater  
Treatment Project**

## Information Bulletin

For Immediate Release

April 12, 2019

### Wastewater Treatment Project Board Requests Additional Funding

Victoria, BC – The Wastewater Treatment Project has made significant progress with the majority of the Project under construction. To complete the Project by the regulatory deadline of December 31, 2020, the Project Board is seeking approval from the Capital Regional District (CRD) Board for an additional \$10 million of funding.

Cost pressures, primarily due to escalation in material costs and the Vancouver Island construction market, were first identified in September 2017 and have been reported in the monthly reports. These pressures have steadily increased as each conveyance contract has been awarded.

The Project Team has undertaken value engineering and reviewed the scope of each component before procuring contracts. Consulting engineering firm Kerr Wood Leidal (KWL) developed an updated model of the core area's wastewater system to conduct an assessment of the remaining Project components. Based on extensive flow monitoring data and future wastewater flow estimates, KWL determined that only one of the remaining components (the extension of the Trent Forcemain) has any benefit and is required to meet federal and provincial regulations. Three components (upgrades to the Currie Pump Station, twinning of the Currie Forcemain, and twinning of the East Coast Interceptor) will not provide any benefit now, or in the future. Based on KWL's work, the Project Board has refined the Project's scope to remove the three components that would provide no benefit to CRD residents.

"With more data collected, we were able to refine the Project scope to match future demand in the CRD," said Project Board Chair Don Fairbairn. "With a significant reduction in water use thanks to conservation efforts of residents and the increase in low-flow appliances, three of the remaining components will not provide any benefit and would result in unnecessary expenditures and construction impacts if built."

Ernst and Young independently reviewed the forecast costs to complete the Project and the schedule, and agree with the Project Team's forecast that the Wastewater Treatment Project can be built for \$775 million and be completed on time. The key factors driving budget pressures are escalation in the cost of labour and materials, design changes from stakeholder input, and the constrained timeline.



## **Appendix C – Residual Solids Pump Stations Contract Awarded (April 26, 2019)**



## Information Bulletin

For Immediate Release

April 26, 2019

### Residual Solids Pump Stations Contract Awarded

**Victoria, BC-** The Capital Regional District (CRD) has awarded a \$15.9-million contract to Knappett Projects Inc. to construct three pump stations and bridge crossings along the Residual Solids Conveyance Line for the Wastewater Treatment Project. Knappett is a Victoria-based general contractor with over 35 years of experience working on institutional, commercial, civil and industrial projects.

Construction of the pump stations is anticipated to begin in May 2019 and take approximately 14 months to complete. Pump stations are used to move wastewater from a lower elevation to a higher elevation. They are being built within the road right-of-way and will be located at:

- Interurban Road (Courtland Ave and Interurban Road)
- West Saanich Road (near West Saanich Road and Observatory Road)
- 280 Willis Point Road

The pump stations will be equipped with state-of-the-art odour control systems that contain and suppress odour so there will be no discernible smell in the community. Operating noise will be minimal and comply with District of Saanich standard practice. Landscaping features include a variety of trees, shrubs and ground coverings that will be planted and maintained.

The Residual Solids Conveyance Line consists of two pipes and three small pump stations and will convey the residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill where they will be treated and processed into Class A biosolids. The second pipe will return the liquid removed during the treatment process to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system. Installation of the pipes began in February 2019 and will take approximately 18 months to complete.

The Wastewater Treatment Project is being funded by the Government of Canada, the Government of British Columbia and the CRD.

For more information on the Residual Solids Conveyance Line, please visit:

<https://www.crd.bc.ca/project/capital-projects/residual-solids-conveyance-line>





## Appendix D – Monthly April Cost Report

ASSET MANAGEMENT COST REPORT as at April 30, 2019														
Project Component	BUDGET		COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
	Control Budget	Allocated Budget	Expended to March 31, 2019	Expended over reporting period (April 2019)	Expended to April 30, 2019	Expended to April 30, 2019 as a % of Budget	Remaining (Unexpended) Budget at April 30, 2019	Total Commitment at April 30, 2019	Unexpended Commitment at April 30, 2019	Uncommitted Budget at April 30, 2019	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Budget
McLoughlin Point Wastewater Treatment Plant <sup>A</sup>	378.0	364.5	198.7	8.8	207.5	57%	157.0	343.4	135.9	21.0	157.1	364.5	-	0%
Residuals Treatment Facility <sup>A</sup>	195.0	158.3	17.0	0.4	17.4	11%	140.9	150.5	133.1	7.8	140.8	158.3	-	0%
Conveyance System <sup>A</sup>	192.0	242.2	78.3	7.0	85.4	35%	156.8	208.6	123.3	33.5	166.8	252.2	10.0	4%
<b>Total Costs</b>	<b>765.0</b>	<b>765.0</b>	<b>294.0</b>	<b>16.2</b>	<b>310.3</b>	<b>41%</b>	<b>454.7</b>	<b>702.5</b>	<b>392.3</b>	<b>62.3</b>	<b>464.7</b>	<b>775.0</b>	<b>10.0</b>	<b>1%</b>

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