



# Wastewater Treatment Project

Treated for a cleaner future

## CRD Wastewater Treatment Project

### Monthly Report

---

Reporting Period: February 2019

**Contents**

<b>1</b>	<b><i>Executive Summary</i></b> .....	<b>2</b>
1.1	<b>Introduction</b> .....	2
1.2	<b>Dashboard</b> .....	3
<b>2</b>	<b><i>Wastewater Treatment Project Progress</i></b> .....	<b>6</b>
2.1	<b>Safety</b> .....	6
2.2	<b>Environment and Regulatory Management</b> .....	9
2.2.1	Environment .....	9
2.2.2	Regulatory Management .....	10
2.3	<b>First Nations</b> .....	11
2.4	<b>Stakeholder Engagement</b> .....	11
2.5	<b>Resolutions from Other Governments</b> .....	12
2.6	<b>Schedule</b> .....	13
2.6.1	30 and 60 day lookahead.....	15
2.7	<b>Cost Management and Forecast</b> .....	19
2.7.1	Commitments .....	21
2.7.2	Expenses and invoicing .....	21
2.7.3	Contingency and Program Reserves .....	21
2.7.4	Project Funding.....	22
2.8	<b>Key Risks and Issues</b> .....	23
2.9	<b>Status (Engineering, Procurement and Construction)</b> .....	29
2.9.1	Wastewater Treatment Plant (WWTP) .....	29
2.9.2	Residuals Treatment Facility (RTF).....	33
2.9.3	Conveyance System .....	36
2.9.3.1	Clover Point Pump Station .....	36
2.9.3.2	Macaulay Point Pump Station and Forcemain .....	39
2.9.3.3	Clover Forcemain (CFM) .....	41
2.9.3.4	Residuals Solids Conveyance Line (RSCL).....	43
2.9.3.5	Arbutus Attenuation Tank.....	44
2.9.3.6	Remainder of Conveyance Component .....	44
	<b><i>Appendix A – McLoughlin Point: Peters Street Work (February 1, 2019)</i></b> .....	<b>45</b>
	<b><i>Appendix B – Residual Solids Conveyance Line: Pipe Installation (February 2019)</i></b> .....	<b>47</b>
	<b><i>Appendix C – Residual Solids Conveyance Line: Blasting Information (February 2019)</i></b> .....	<b>49</b>
	<b><i>Appendix D – Clover Forcemain: Utility Relocates (February 2019)</i></b> .....	<b>50</b>
	<b><i>Appendix E – Construction of the Arbutus Attenuation Tank (February 20, 2019)</i></b> .....	<b>51</b>
	<b><i>Appendix F – Project Update #6 (February 2019)</i></b> .....	<b>53</b>
	<b><i>Appendix G – Clover Forcemain Construction Timing and Tracking</i></b> .....	<b>57</b>
	<b><i>Appendix F – Monthly February Cost Report</i></b> .....	<b>58</b>

## 1 Executive Summary

### 1.1 Introduction

This monthly report covers the reporting period of February 2019 and outlines the progress made on the Wastewater Treatment Project during 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 & maintenance building; commencing drilling of the first outfall section; and commencing 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 design engineering and construction activities including: submission of the overall 90% design; issued for construction (IFC) early works packages; and installation of each of the following: reinforcing steel in the other municipal solids receiving facility building; sanitary drain and manhole on north and west sides of residual solids tanks; onsite water system, water supply piping, and hydrants located north and east of centrifuge building; condensate line between gas burner and the other municipal solids receiving facility; and process piping at the north side of the centrifuge building.

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 engineering, procurement, design and construction activities over the reporting period, including: resubmission of the overall 100% design; completion of pump room walls and wet well columns; commencing installation of walls connecting the new structure to the existing pump station and work on the new inlet channel; and the removal of the first row of temporary caisson wall anchors.
- Macaulay Point Pump Station and Forcemain: Kenaidan Contracting Ltd. (“Kenaidan” as the Design-Build Contractor) progressed design, engineering and construction activities over the reporting period, including: submission of the final (100%) design; completion of the southeast corner base slab; ongoing formwork and reinforcing steel installation for the northeast base slab and west side perimeter walls; continued crushing of granular material in the north laydown; and completed digging of test pits to confirm utility elevations.

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 submission of work plans, shop drawings and permits, completed the geotechnical and soil assessment survey, continued utility relocates and rock blasting, and installation of forcemain (from Ogden Point south and easterly, and from Clover Point westerly).
- 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 RSCL 100) continued preconstruction activities and commenced 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 commenced installation of the RSCL pipeline;
  - RSCL 200 Residual Solids Pump Stations: Parsons (as the design consultant for the RSCL) and the Project Team progressed the request for proposals procurement process, including selecting the preferred proponent; and
  - RSCL 300 Saanich Infrastructure Improvements: the Project Team will be arranging a detailed design kick-off meeting with Parsons (as the design consultant for the RSCL) and the District of Saanich in March / April 2019.
- Arbutus Attenuation Tank (“AAT”): Kerr Wood Leidal Ltd. (as the design consultant for the AAT) and the Project Team progressed the invitation to tender procurement process by: evaluating the tenders and providing notice of award to the selected contractor. The Project Team also continued activities to secure the building permit from the District of Saanich.
- Remainder of Conveyance Component: the Project Team is undertaking preliminary engineering activities including scope review, in preparation to commence detailed design in Q2 2019.

## 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.

Over the reporting period the cost KPI for the Project overall was changed from orange to red, as a result of ongoing and increasing cost pressures (reported since September 2017, primarily as a result of escalation experienced on the conveyance components of the Project) and the receipt in the reporting period of a refreshed estimate for the four conveyance components remaining to be procured.

The Project Team have undertaken activities to evaluate the sufficiency of the remaining contingency and program reserve to deliver the Project within the Control Budget. The outcome of that evaluation is outlined in section 2.7 of this report and summarized below, inclusive of work undertaken by the Project Team in March 2019 (after the end of the reporting period for this report), given the importance of the findings.

Based on the value of the contracts awarded to-date and the refreshed cost estimate, the Project Team has estimated the cost to complete the Project. The Project Team forecasts that, if the

Project were to be constructed with the scope as defined in the Project Board’s September 2016 business case, the total cost of the Project would be \$795M, or \$30M over the Project’s budget.

The Project Team have engaged Kerr Wood Leidal to develop an updated model of the core area’s wastewater system in order to allow the CRD to make informed decisions regarding capital investments required to meet future demands.

As a result of that work, in a separate report the Project team are seeking the Project Board’s approval to refine the Project’s scope and remove three components of the conveyance system as they do not provide a benefit to the CRD’s residents and businesses, and are not required to meet the Project’s goals.

If the Project Board approve the Project Team’s recommendation to refine the scope of the Project, the Project Team forecast that the Project could be completed at a total cost of \$775M, or \$10M over the Project’s control budget.

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*.					Site inspections are ongoing. One recordable lost time incident occurred in February: a worker fell 18 feet from the access/egress site of a platform, resulting in a broken arm and shoulder.
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.

Key Performance Indicators		Project Overall	WWTP	RTF	Conveyance System	Comments
Cost	Deliver the Project within the Control Budget (\$765 million).					<p>Project expenditures within 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 the refreshed cost estimate, the Project Team has forecast the cost to complete the Project at \$795M, or \$30M over the Project's budget.</p> <p>The Project Team have engaged Kerr Wood Leidal to develop an updated model of the core area's wastewater system in order to allow the CRD to make informed decisions regarding capital investments required to meet future demands.</p> <p>As a result of that work, in a separate report the Project team are seeking the Project Board's approval to refine the Project's scope and remove three components of the conveyance system as they do not provide a benefit to the CRD's residents and businesses, and are not required to meet the Project's goals.</p> <p>If the Project Board approve the Project Team's recommendation to refine the scope of the Project, the Project Team forecast that the Project could be completed at a total cost of \$775M, or \$10M over the Project's control budget.</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 (multiple sites) and RSCL (multiple sites).

Nine safety incidents occurred during the month of February: seven report only, one near miss and one recordable lost time incident, which is the Project’s third recordable incident since the commencement of works in January of 2017. Each of the incidents that occurred over the reporting period is summarized in Table 2, with a description of the corrective actions taken.

*Table 2- Incident Summary Table*

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
01-Feb-19	McLoughlin Point WWTP	Report Only	Hand injury when worker tried to catch a scaffolding pin dropped from above.	Worker refused first aid when asked to provide a drug and alcohol test sample per company policy.	Toolbox talk – emphasized proper passing techniques when working at heights.
06-Feb-19	McLoughlin Point WWTP	Report Only	Sawdust blew into worker’s eye.	Worker flushed eye with an onsite portable eyewash bottle and was able to remove the foreign body. No further treatment was needed.	Toolbox talk – emphasized awareness of the possibility of increase of debris in the air on windy days and wearing the correct safety glasses appropriate for the work conditions.
08-Feb-19	RSCL	Report Only	Worker rolled ankle on snow-covered uneven ground when stepping up onto the deck of a truck.	No first aid rendered and worker continued regular tasks.	Toolbox talk – emphasized three-point contact when stepping up onto higher ground. A review was given of safe work practices when stepping up onto equipment.
19-Feb-19	RSCL (Newbury and Colquitz)	Near Miss	A pedestrian walking past the work zone entered the swing radius of an excavator in motion.	A crew member spotted the pedestrian and notified the operator to stop work immediately.	<ul style="list-style-type: none"> <li>Traffic control personnel were briefed on correct eye and verbal contact with the excavation crew while escorting pedestrians through the work zone;</li> <li>Delineators were reset closer to the east of the road to allow a safer walkway for pedestrians; and</li> <li>Toolbox talk was held with site crew – a review of the incident.</li> </ul>

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
21-Feb-19	RTF	Report Only	A delivery driver failed to access the site safely.	Truck load struck the box of a nearby parked vehicle.	An orientation was held with the truck driver to ensure compliance with site safety rules.
22-Feb-19	McLoughlin Point WWTP	Lost Time Recordable	While opening the access/egress safety gate of the ladder the worker lost their footing and fell from the platform.	The worker fell from a height onto a concrete slab, breaking their arm and shoulder blade in the fall.	WorkSafeBC was notified of the incident under the critical incident reporting requirement and a written order was put in place to install portable scaffold stair systems. The following actions were also taken: <ul style="list-style-type: none"> <li>Any ladders that could not be replaced with a scaffold stair system had the safety gates moved further from the edge of the structure;</li> <li>Tripping hazards near access/egress areas were removed; and</li> <li>Site: was immediately shut down in order to review incident and corrective actions.</li> </ul>
22-Feb-19	McLoughlin Point WWTP (offsite utilities work)	Report Only	Prime contractor received a complaint call from a member of the public of damage to their vehicle.	The undercarriage of the person's vehicle was scratched while driving over a plate covering an excavation.	Bridging material that had been protecting the temporary waterline was widened to create a more gradual slope for vehicles to drive over.
27-Feb-19	RSCL	Report Only	A worker while descending from the box of their pick-up truck fell backwards onto the ground.	A worker that witnessed the incident recommended the employee be examined by first aider but the employee refused and continued regular duties the rest of the day.	Three-point contact practices were reviewed with the worker. The use of a step stool was recommended to help access/egress from the back of the truck to reduce the distance to the ground.
28-Feb-19	RSCL	Report Only	Delivery driver in training struck a metal post and chain gate.	Truck and post sustained minor damage.	Contact was made with the delivery company to review the incident and the root cause. The safe work practice was reviewed with the new driver for 360 degree vehicle inspections prior to moving a vehicle on an active worksite.

Key safety activities conducted during February included:

- CRD prime contractor safety quality assurance audits;
- bi-weekly project update meetings with prime contractors: Kenaidan, Windley, HRP and Don Mann;



- weekly project update meetings with prime contractor, HRMG;
- safety notices were issued to prime contractors regarding site incidents;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- prime contractor monthly safety meeting with CRD;
- submitted monthly safety report to CRD Corporate;
- reviewed site specific safety plans and high risk tasks;
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites;
- site safety tour with CRD Corporate at McLoughlin WWTP site after occurrence of serious incident;
- CRD corporate occupational health and safety coordination committee meeting; and
- issued Project safety notices to prime contractors.

Table 3 – WTP Safety Information

	Reporting Period (February 2019)	Project Total to-Date (from January 1, 2017)
<b>Person Hours</b>		
PMO	3,090	92,021
Project Contractor	53,085	477,068
<b>Total Person Hours</b>	<b>56,175</b>	<b>569,088</b>
<b>Total Number Of Employees</b>		
PMO	30	
Project Contractors (and Project Consultants) working on Project sites	346	
<b>Total Number Of Employees</b>	<b>376</b>	
<b>Incident Statistics</b>		
Near Miss Reports	1	15
High Potential Near Miss Reports	0	3
Report Only	7	19
First Aid	0	15
Medical Aid	0	0
Medical Aid (Modified Duty)	0	2
Lost Time	1	1
<b>Total Recordable Incidents</b>	<b>1</b>	<b>3</b>
		<b>Project Frequency (from January 1, 2017)</b>
First Aid Frequency		5.3
Medical Aid Frequency		0.7
Lost Time Frequency		0.4
<b>Total Recordable Incident Rate</b>		<b>1.1</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 February included:

- McElhanney Consulting Services (as the qualified environmental professional for Don Mann Excavating, the Arbutus Attenuation Tank clearing contractor) completed pre-

clearing searches for great horned owls. The purpose of the searches was to determine the presence or absence of critical owl habitat and nests in proximity to the work site. The searches located a number of roost trees that were far enough away from the site such that there would be no effects on them, and did not locate any nests. Environmental monitoring at the site will continue during construction;

- the CRD and Kenaidan (as the design-build contractor for Macaulay Point Pump Station and Forcemain) met with staff from the Department of National Defence (DND) and members of the DND Garden Club to discuss forcemain construction impacts on the Anson Street Community Garden. The group agreed on a plan to temporarily relocate affected garden plots and planned post-construction reinstatement of the affected plots. Kenaidan provided wood chips from nearby tree clearing to the Garden Club; and
- the CRD made a presentation to the Colquitz Coalition at their Annual General Meeting. The Colquitz Coalition is a diverse collection of groups, societies and associations who care about environmental restoration, conservation and stewardship in the Colquitz Watershed. The presentation was focused on the water course crossings associated with the RSCL. The presentation was well received, and the CRD was appreciative of the opportunity to provide information to the Coalition.

### 2.2.2 Regulatory Management

In February, 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 February included:

- the CRD received a building permit and a tree cutting permit from the District of Saanich for work at the Arbutus Attenuation Tank site; and
- Millennia Research (as the Project's archaeological advisor) and the CRD received a Site Alteration Permit amendment from the Archaeology Branch. The amendment reflects new archaeological conditions along the Clover Forcemain alignment, specifically the identification of a new archaeological site, through the discovery of archaeological sediments and artifacts during watermain relocation activities.

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 4 has been updated since the Project's January 2019 Monthly Report as follows:

- Arbutus Attenuation Tank: received the District of Saanich Building permit.

*Table 4 - Key Permits Status*

Permit / Licence	Anticipated Date	Status	Responsible Party to Obtain 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

Permit / Licence	Anticipated Date	Status	Responsible Party to Obtain Permit
<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>Arbutus Attenuation Tank</i>			
District of Saanich Building Permit	Q1 2019	<b>Received</b>	Kerr Wood Leidal
<i>Residuals Treatment Facility</i>			
Operational Certificate	Prior to start of RTF operations	On track	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 procurement of Indigenous art for installation at Clover Point and Macaulay Point.

In February, Millennia Research (as the Project's archaeological advisor) completed archaeological monitoring of excavations along the Clover Forcemain route and RSCL route with members of the Esquimalt and Songhees Nations. Millennia also planned archaeological pre-construction digs at the location of Pump Station 2 along the RSCL alignment.

## 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

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

- McLoughlin Point: Peters Street Work (February 1, 2019) (Appendix A);
- Residual Solids Conveyance Line: Pipe Installation (February 2019) (Appendix B);
- Residual Solids Conveyance Line: Blasting Information (February 2019) (Appendix C);
- Clover Forcemain: Utility Relocates (February 2019) (Appendix D);and
- Construction of the Arbutus Attenuation Tank (February 20, 2019) (Appendix E).

The Residual Solids Conveyance Line Pipe Installation construction notice was circulated to residents in proximity to the route: 7,972 notices were mailed via Canada Post. It was also sent by email to more than 300 residents and stakeholders who have signed up to receive Project updates.

As well, Project Update #6 was distributed (Appendix F). This newsletter-style document outlines the six components of the Project now under construction and the progress made in 2018. It also outlines upcoming construction activities and ways to find out more about the Project. The update

was mailed via Canada Post to 53,718 residents in Victoria, Esquimalt and Saanich, posted to the Project website, and distributed to stakeholders, including municipal Mayors and Councillors, and MLAs.

### **Project Website**

Over the reporting period, the Project website, wastewaterproject.ca, was updated with information about the Project. Five construction notices and Project Update #6 were posted and the photo gallery section was updated with eight new images. A map showing the progress of construction along the Clover Forcemain is 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 Technical Working Group;
- Colquitz Coalition;
- Dallas Road residents;
- District of Saanich Technical Working Group;
- Greater Victoria Harbour Authority;
- PMI-Vancouver Island Chapter & Engineers and Geoscientists BC;
- Township of Esquimalt Liaison Committee;
- Victoria West Community Association; and
- Work Point Garden Club.

### **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 – February 2019*

<b>Inquiry Source</b>	<b>Contacts for February</b>
Information phone line inquiries	41
Email inquiries responded to	19

Key themes of the public inquiries were as follows:

- inquiries about timing and impacts of construction of the RSCL;
- questions about work that is happening on Dallas Road; and
- inquiries about work on Peters Street in Esquimalt involving vehicles and parking options.

## **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

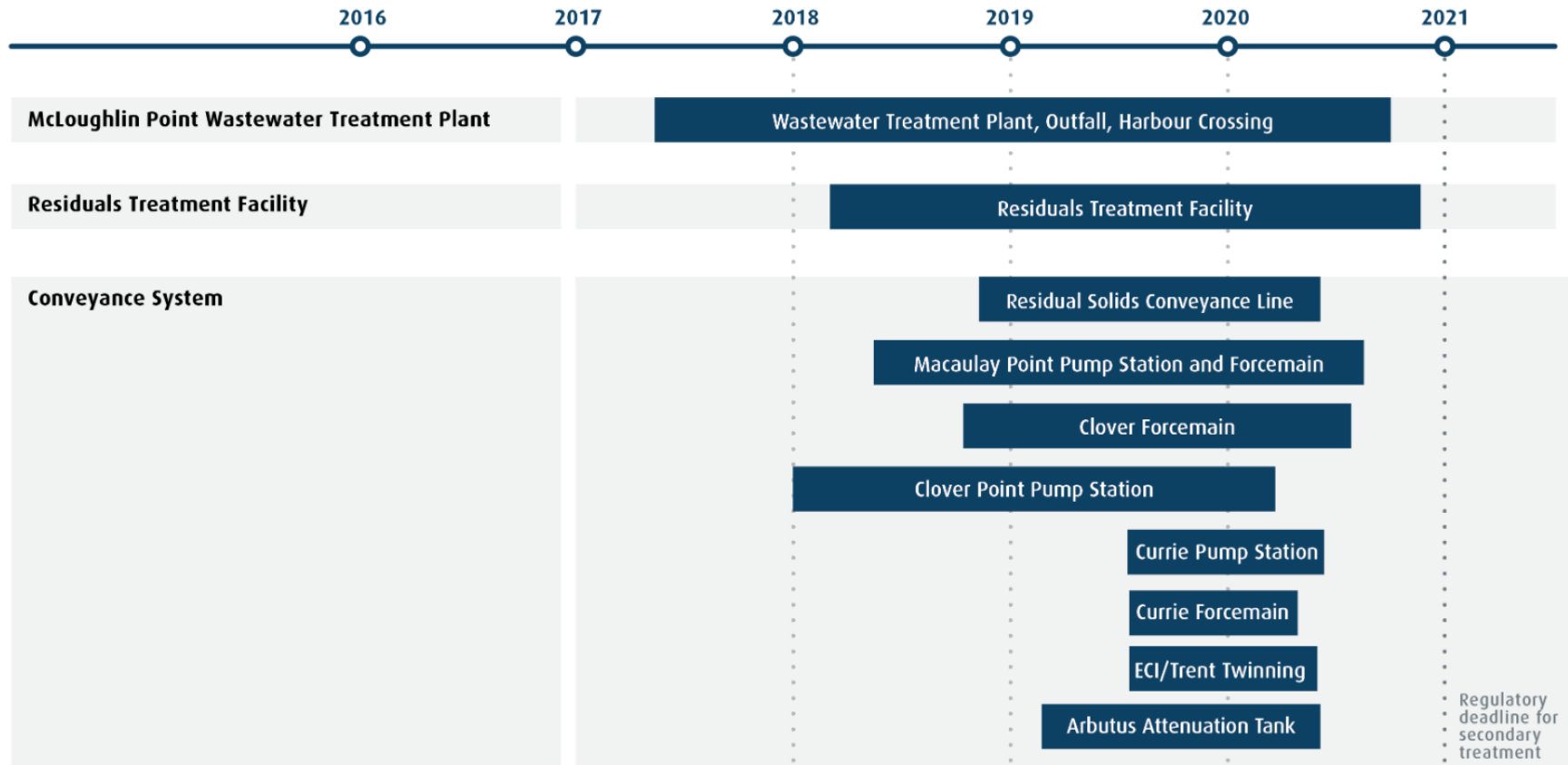
Overall the Project's scheduled activities progressed as planned during February. All major and key interface milestones were on target to be completed as per the schedule. Progress over the reporting period is summarised in section 2.9.

Figure 1 shows the high-level Project schedule. This schedule remains the same as that shown in the January 2019 Monthly Report, however the schedule remains subject to optimization as the Project and planning progresses.

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

### Wastewater Treatment Project Schedule\*

**Construction + Commissioning**



\*Schedule subject to updates as Project planning progresses.

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

### 2.6.1 30 and 60 day lookahead

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

##### **Safety**

- independent safety management review;
- attendance at CRD traffic management course;
- prime contractor safety personnel orientation;
- 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**

- MWR Registration activities, including updating marine dispersion models and revising Environmental Impact Studies; and
- HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) to complete dispersion modelling and a Technical Assessment Report in support of an application for an Operational Certificate for the RTF.

##### **First Nations**

- planning for the procurement of First Nations art for installation at Clover Point and McLoughlin Point; and
- ongoing consultation and engagement with the WSÁNEĆ Leadership Council.

##### **Stakeholder Engagement**

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

##### **Cost Management and Forecast**

- CRD financial statement audit (inclusive of Wastewater Treatment Project);
- CRD budget approval (inclusive of Wastewater Treatment Project);
- prepare cost reports; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).



## Construction

### McLoughlin Point

- continue to form and pour biological aerated filter (BAF) walls, columns and suspended slabs, dirty back wash and sludge storage area walls and suspended slabs;
- continue surface runoff/groundwater treatment and discharge;
- continue to install underslab piping;
- continue to form and pour walls, columns and slabs in the operations and maintenance building;
- continue tunneling of the marine outfall; and
- continue installation of off-site utilities on Peter Street.

### Clover Point Pump Station

- continue to form and pour walls and columns;
- form and pour form and pour suspended slabs; and
- commence welding of upper reinforcing steel to king piles.

### Macaulay Point Pump Station

- form and pour final base slab;
- form and pour external walls; and
- commence preparation work for installation of the forcemain.

### Residuals Treatment Facility

- continue to form and pour walls for the other municipal solids receiving facility;
- install bottom ring of steel tank;
- form and pour digester #1 concrete slab;
- install formwork and rebar for digester #2 perimeter thickening ring;
- install underground drainage piping for digester; and
- install process drain piping from flare to the other municipal solids receiving facility.

### Clover Forcemain

- continue with utility relocates on Dallas Road;
- continue to install forcemain; and
- continue to perform archaeological screening of excavated soil as required.

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

- no work planned on the highway crossing in March.

### Residual Solids Conveyance Line (RSCL100):

- continue installation of RSCL;
- continue locates for existing utilities using ground penetrating radar;
- continue “potholing” to verify and record existing utility locations; and
- commence pavement restoration on completed areas.

### Arbutus Attenuation Tank:

- commence and complete clearing and grubbing at the project site.

## **Engineering**

### **McLoughlin Point WWTP:**

- computerized maintenance management plan (CMMP): final submission;
- training plan: final submission; and
- Residual Solids Pumping Station: 90% design deliverable.

### **Residuals Treatment Facility:**

- overall design: 90% review of design submission and review workshop; and
- early works package 8 (dryer building foundation): resubmit final (100% and issued for construction [IFC]) design.

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

- CRD to complete review of the overall design resubmission (100%);
- early works package #2 (civil and structural): finalize issue for construction (IFC); and
- public realm improvements: progress final (100%) design submission.

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

- CRD to complete review of the overall design submission (100%).

### **Residuals Solids Conveyance Line:**

- RSCL 200: Residual Solids Pumps: finalize issue for construction (IFC) submission.

### **Arbutus Attenuation Tank:**

- revise off-site (Road Frontage Improvements) design to accommodate District of Saanich review comments.

## **Procurement**

### **Residual Solids Conveyance Line:**

- RSCL 200: Residual Solids Pumps: finalize contract with preferred proponent.

### **Arbutus Attenuation Tank:**

- finalize contract with selected tenderer.

## **Key activities and milestones for the next 60 days (April) 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**

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

### **First Nations**

- ongoing consultation and engagement with the WSÁNEĆ Leadership Council; and
- ongoing meetings with the Esquimalt and Songhees Liaisons.

### **Stakeholder Engagement**

- ongoing construction communications with stakeholders; 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;
- complete tunneling of outfall tunnel; and
- continue installation of off-site utilities on Peter Street.

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

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

### Macaulay Point Pump Station

- continue to form and pour internal walls combined with all reinforcing steel, penetrations, electrical conduit and sleeves;
- waterproof and backfill external walls; and
- commence installation of sanitary forcemain at Anson Street.

### Residuals Treatment Facility

- slab on grade prep for sludge storage facility and residuals handling building;
- pour starter ring and set tank starter panel at digested sludge storage area;
- strip wall forms and backfill at other municipal solids receiving building;
- 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; and
- continue to perform archaeological screening of excavated soil as required.

### Residual Solids Conveyance Line (RSCL)

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

### Arbutus Attenuation Tank (AAT)

- mobilization of contractor to site

## **Engineering**

- McLoughlin WWTP: Residuals Solids Pumping Station: 100% design deliverable;
- Clover Point Pump Station: Kenaidan and CRD to hold follow up design meeting to discuss last remaining outstanding design comments. Kenaidan to then progress overall issue for construction (IFC) deliverable;
- Macaulay Point Pump Station: Kenaidan to incorporate 100% design comments and progress overall issue for construction (IFC) deliverable;
- Residuals Treatment Facility: progress overall final (100%) design deliverable;
- Residual Solids Conveyance Line: RSCL300 Saanich Infrastructure Improvements: hold design kick-off meeting; and
- Arbutus Attenuation Tank: review contractor construction documentation required to commence construction.

## 2.7 Cost Management and Forecast

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

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. Over the reporting period the cost KPI for the overall Project was changed from orange to red as a result of receiving a refreshed cost estimate for the four conveyance components remaining to be procured.

Given the continued cost pressures, in the first quarter of 2019 the Project Team undertook activities to evaluate the sufficiency of the remaining contingency and program reserve to deliver the Project within the Control Budget. The outcome of that evaluation is summarized in this section, inclusive of work undertaken by the Project Team in March 2019 (after the end of the reporting period for this report), given the importance of the findings.

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 has experienced cost pressures on every conveyance contract awarded, primarily as a result of escalation in the Vancouver Island construction market, and budget pressures have been reported through the Project's monthly reports since September 2017. The Project Team has awarded seven conveyance contracts to-date. Each contract has been subject to a competitive procurement, with qualified and experienced contractors submitting competitive proposals for the work. However, the total cost of the conveyance contracts awarded to-date has exceeded the amount within the Project's control budget by \$56.5M. Each contract award has therefore required a draw to be made from the Project's contingency, to offset the overages.

The primary reason for the overages is that escalation in the BC construction market has exceeded expectations: there has been a significant increase in the cost of both labour and materials, including high-density polyethylene piping, steel and aluminum. Other factors that have contributed to budget pressures include:

- Design development to incorporate stakeholder input;
- Geotechnical considerations including removal and disposal of contaminated material; and
- Schedule constraints associated with the requirement to provide wastewater treatment by the regulatory deadline of December 31, 2020.

While the need to treat wastewater by the regulatory deadline of December 31, 2020 has always been known, it has constrained management's ability to mitigate cost pressures. The Project is on-track to meet the regulatory deadline, but additional costs have been incurred in order to maintain progress against schedule.

Given the cost pressures to-date the Project Team engaged Kerr Wood Leidal to refresh the cost estimate for the four conveyance components remaining to be procured. Based on the value of the contracts awarded to-date and the refreshed cost estimate, the Project Team has estimated the cost to complete the Project. The Project Team forecasts that, if the Project were to be constructed with the scope as defined in the Project Board's September 2016 business case, the total cost of the Project would be \$795M, or \$30M (3.9%) over the Project's budget.

The Project Team also engaged Kerr Wood Leidal to develop an updated model of the core area's

wastewater system in order to allow the CRD to make informed decisions regarding capital investments required to meet future demands.

As a result of that work, in a separate report the Project team are seeking the Project Board's approval to refine the Project's scope and remove three components of the conveyance system as they do not provide a benefit to the CRD's residents and businesses, and are not required to meet the Project's goals.

If the Project Board approve the Project Team's recommendation to refine the scope of the Project, the Project Team forecast that the Project could be completed at a total cost of \$775M, or \$10M (1.3%) over the Project's control budget.

The Project Board have engaged Ernst & Young to make an independent assessment of the sufficiency of the control budget to complete the Project. Ernst & Young will report their findings directly to the Project Board.

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 minimising 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 Team (in a separate report) have recommended that the Project Board seek the CRD Board's approval to increase the Project's budget.

### 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 a decrease in committed costs of \$1.3M, primarily associated with value engineering and recalibrating resource commitments for the Project Team.

### 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 over the reporting period are itemized in Table 6 and outlined herein. In total \$22.9 million of contingency draws were made over the reporting period associated with the following:

- a contingency draw of \$10.5 million was made in anticipation of awarding the Arbutus Attenuation Tank Construction Contract;
- contingency draws totaling \$11.5 million were made in anticipation of awarding \ the Residual Solids Pump Stations and Bridge Crossing Construction Contract; and
- a contingency draw of \$300k was made for the scale house foundation and scale pits at Hartland Landfill, to be used in part for the operation of the RTF; and

- a contingency draw of \$610k was made for costs associated with permits and a construction agreement with the District of Saanich.

*Table 6 - Contingency and Program Reserve Draw-Down Table*

<b>WTP Contingency and Program Reserve Draws and Reallocations</b>	<b>Draw Date</b>	<b>\$ Amount</b>
<b>Contingency and Program Reserve (in Control Budget)</b>		<b>\$ 69,318,051</b>
Contingency and Program Reserve Draws to January 31, 2019		\$ (29,947,885)
<b>Contingency and Program Reserve balance as at January 31, 2019</b>		<b>\$ 39,370,166</b>
Award the Residual Solids Pump Stations and Bridge Crossing Construction Contract	Feb-19	\$ (2,000,000)
<b>WWTP Total Draw</b>		<b>\$ (2,000,000)</b>
Scale House Foundation and Scale Pits	Feb-19	(300,000)
Award the Residual Solids Pump Stations and Bridge Crossing Construction Contract	Feb-19	(3,000,000)
<b>RTF Total Draw</b>		<b>\$ (3,300,000)</b>
Award the Arbutus Road Attenuation Tank Construction Contract	Feb-19	\$ (10,470,424)
RSCL Permits and Plans	Feb-19	\$ (610,000)
<b>Conveyance Total Draw</b>		<b>\$ (11,080,424)</b>
<b>PMO Total Draw</b>		<b>\$ -</b>
<b>BC Hydro Total Draw</b>		<b>\$ -</b>
Award the Residual Solids Pump Stations and Bridge Crossing Construction Contract	Feb-19	\$ (6,500,000)
<b>WTP Program Reserve Draw</b>		<b>\$ (6,500,000)</b>
<b>Contingency and Program Reserve draws in the reporting period</b>		<b>\$ (22,880,424)</b>
<b>Total Contingency and Program Reserve draws to February 28, 2019</b>		<b>\$ (52,828,309)</b>
<b>Contingency and Program Reserve balance as at February 28, 2019</b>		<b>\$ 16,489,742</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 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 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	-	\$40.4M
Government of Canada (Green Infrastructure Fund)	\$50M	\$1.3M	\$11.9M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
<b>TOTAL</b>	<b>\$459M</b>	<b>\$1.3M</b>	<b>\$53.4M</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.

The risk ranking of several risks was reduced over the reporting period given the significant progress on the Project, including that all components key to meeting regulatory requirements have been procured or are in the final stages of procurement, and only one contract remains to be procured.

<b>Risk Level Key - Assessed risk level</b> (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	Reduced from Medium
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	Reduced from Medium
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	Reduced from Medium

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.	L	Reduced from Medium
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, contractor orientation.	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
<b>McLoughlin Point Wastewater Treatment Plant</b>				
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
<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 are to be undertaken for all remaining conveyance components.	L	Reduced from Medium
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 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.	M	Reduced from High (as only one contract remaining to procure)

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 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 cost estimates at discrete design points.	M	Reduced from High (as only one contract remaining to procure)

## 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; commencing drilling of the first outfall section; and commencing off-site utility work on Peters Street.

#### **Engineering**

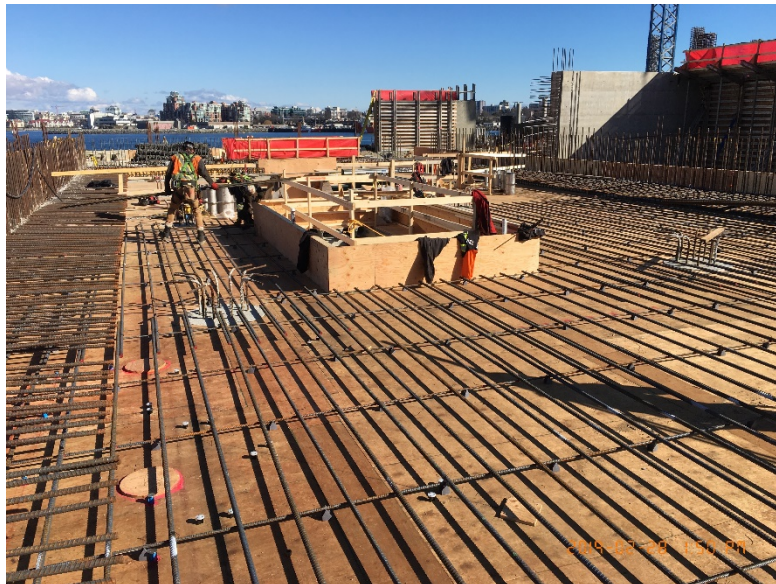
HRP progressed planning and design activities in February including completion of the overall design as issued for construction (IFC), and completion of construction package 8 issued for construction (IFC) – pig receiving station.

#### **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 February were as follows:

- continued second phase structural piles;
- ongoing biological aerated filter walls and suspended slab work;
- continued surface runoff/groundwater treatment and discharge;
- completed biological aerated filter rock anchors and slab;
- operations and maintenance building walls and columns poured;
- installed and partially encased primary influent piping;
- commenced Peter Street utility work; and
- commenced tunneling with the micro tunnel boring machine.



*Figure 2 – McLoughlin Point Wastewater Treatment Plant: installing reinforcing steel at dirty backwash suspended slab.*



Figure 3 - McLoughlin Point Wastewater Treatment Plant: forming biological aerated filter cell gallery boxes.



Figure 4 – McLoughlin Point Wastewater Treatment Plant: installing stainless steel risers for moving bed biofilm reactor drains.



Figure 5 – McLoughlin Point Wastewater Treatment Plant: placing micro tunnel boring machine into launch pit.

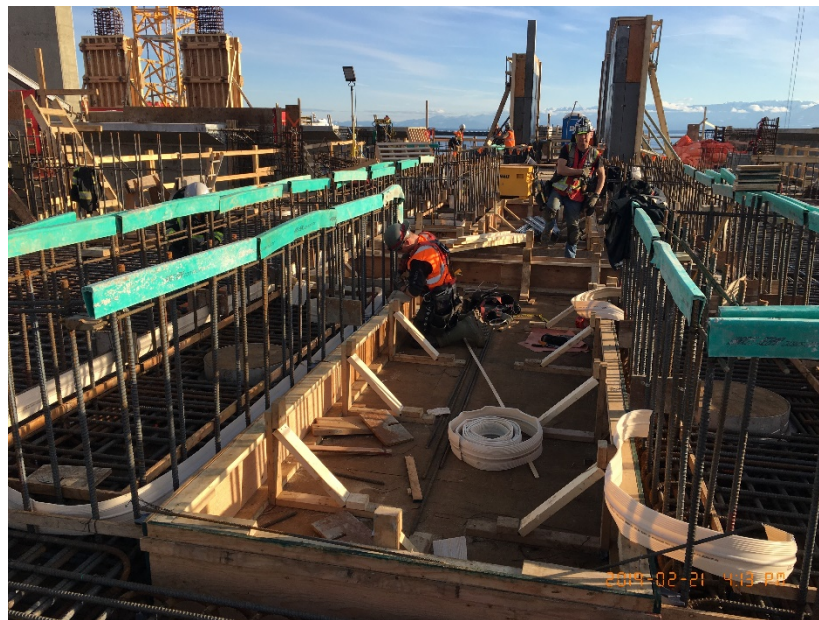


Figure 6 – McLoughlin Point Wastewater Treatment Plant: pouring of pipe encasement primary influent.





*Figure 7 – McLoughlin Point Wastewater Treatment Plant: dirty backwash second topping pour.*



*Figure 8 – McLoughlin Point Wastewater Treatment Plant: view looking south at snow-covered site.*

### 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 engineering activities and construction activities over the reporting period.

#### **Engineering**

HRMG progressed planning and design activities in February, including:

- submission of overall 90% design;
- monthly progress meeting with independent certifier;
- progressed with vendor selection;
- issued for construction (IFC) early works packages for the digester facility, other municipal solids receiving facility, water pump house, operations building, and the residuals handling building foundations; and
- worked with the Ministry of Environment on permitting requirements.

#### **Construction**

Photographs of construction progress in February at the RTF are shown in Figures 9 to 12.

Activities on site included:

- continued with installation of reinforcing steel in the other municipal solids receiving facility building;
- installed sanitary drain and manhole on north and west sides of residual solids tanks;
- onsite water system, water supply piping, and hydrants installed north and east of centrifuge building;
- installed and leveled digester #1 bottom row of bolted steel tank;
- process piping installed at north side of centrifuge building; and
- installed condensate line between waste gas burner and other municipal solids receiving facility.



*Figure 9 – Residuals Treatment Facility: installation of top angle on bottom row of tank wall plates for digester #1.*



*Figure 10 – Residuals Treatment Facility: installation of fire hydrants ongoing.*



Figure 11 – Residuals Treatment Facility: backfilling process piping north of centrifuge building.



Figure 12 – Residuals Treatment Facility: heaters and tarps being used to expedite snow melting in utility trench.

## 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**

Kenaidan resubmitted the overall final (100%) design submission.

#### **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 February were as follows:

- completed installation of pump room walls;
- commenced installation of walls connecting the new structure to the existing pump station;
- commenced work on the new inlet channel;
- removed the first row of temporary caisson wall anchors; and
- completed pump room and wet well columns.



*Figure 13 – Clover Point Pump Station: pump room column forms being completed.*

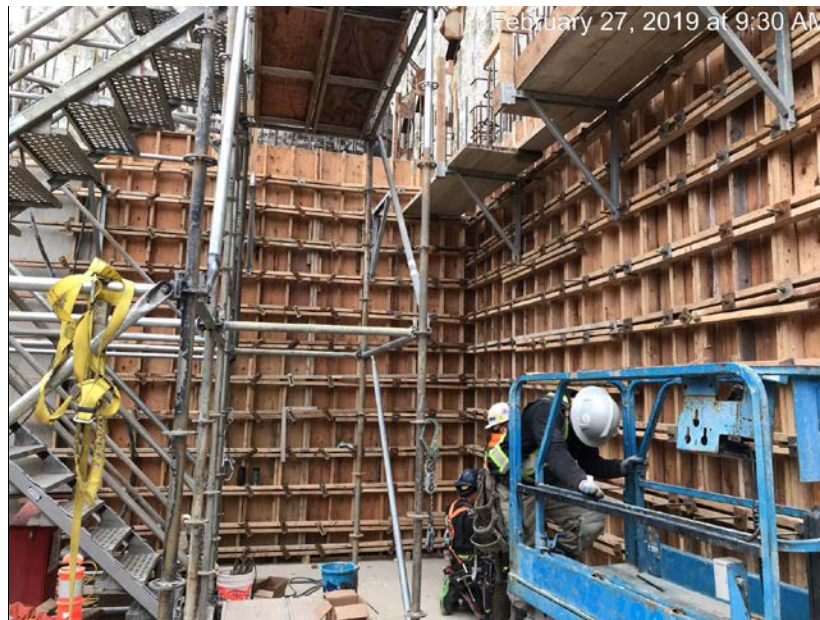


Figure 14 – Clover Point Pump Station: pump room wall 4 formwork being completed.

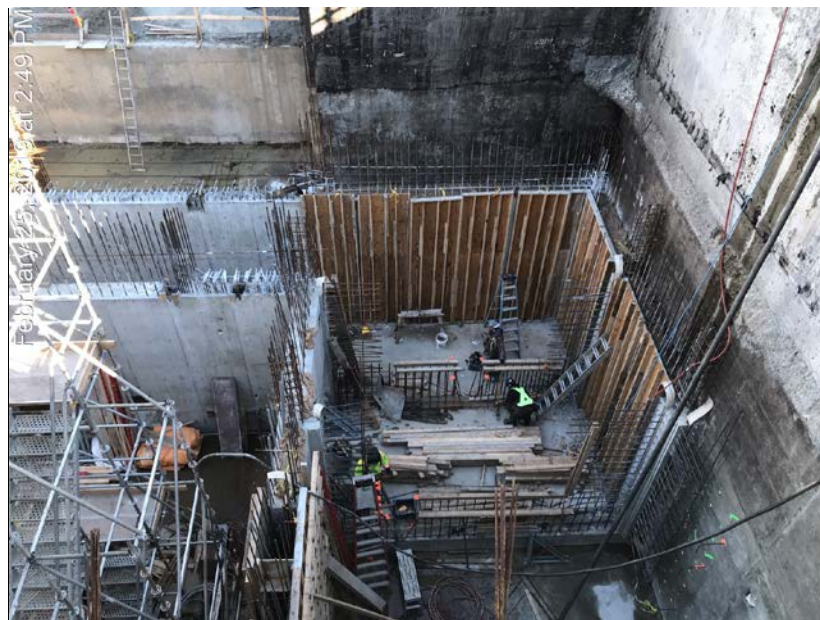


Figure 15 – Clover Point Pump Station: wall 13 forms stripped.

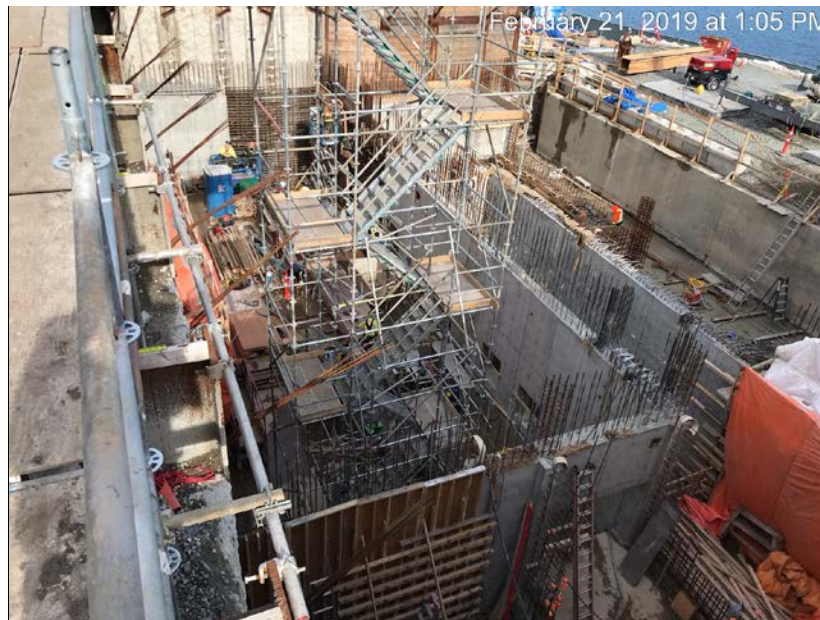


Figure 16 – Clover Point Pump Station: formwork ongoing – site overview.



Figure 17 – Clover Point Pump Station: electrical conduit and form ties being installed.

### 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**

Kenaidan submitted the overall final (100%) design submission in February 2019.

#### **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 February were as follows:

- completed the southeast corner base slab;
- formwork and reinforcing steel installation for the northeast base slab is ongoing;
- formwork and reinforcing steel installation is ongoing for the west side perimeter walls is ongoing;
- digging of test pits along the forcemain alignment to confirm existing utility elevations is complete; and
- continued crushing of granular material in the north laydown.



*Figure 18 – Macaulay Point Pump Station: exterior wall formwork installed at west wall.*





Figure 19 – Macaulay Point Pump Station: formwork and rebar for last base slab pour.



Figure 20 – Macaulay Point Pump Station: overview of pump station progression facing east.

### 2.9.3.3 Clover Forcemain (CFM)

Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued construction activities including: continued submission of work plans, shop drawings and permits, completed the geotechnical and soil assessment survey, continued utility relocates and rock blasting, and installation of forcemain (from Ogden Point south and easterly, and from Clover Point westerly).

#### **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 February were as follows:

- installed 92 metres of forcemain between St. Lawrence and Montreal Streets for a total of 237 metres;
- installed 270 metres of forcemain between Clover Point and Cook Street for a total of 620 metres;
- utility relocations ongoing; and
- screening of archaeological soils ongoing at Rock Bay.



*Figure 21 – Clover Forcemain: looking west at backfill and compaction between Marlborough and Cook Streets.*



Figure 22 – Clover Forcemain: utility relocates for water between Government Street and Paddon Avenue



Figure 23 – Clover Forcemain: Dallas Road reinforced concrete cover slab complete.

### 2.9.3.4 Residuals Solids Conveyance Line (RSCL)

#### **Engineering**

- **RSCL 100 Residual Solids Pipes:** Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for RSCL100) continued preconstruction activities and commenced 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 commenced installation of the RSCL pipeline.
- **RSCL 200 Residual Solids Pump Stations:** Parsons (as the Design Consultant for the RSCL) and the Project Team progressed the Request for Proposals procurement process, including updating design as required, and selecting the preferred proponent.
- **RSCL 300 Saanich Infrastructure Improvements:** the Project Team will be arranging a detailed design kick-off meeting with Parsons (as the Design Consultant) and the District of Saanich in March / April 2019.

#### **Construction**

Photographs of construction progress along the RSCL are shown in Figures 24-25. Key construction activities in progress or completed by Don Mann Excavating in February were as follows:

- Segment #1 – commenced installation of the Residual Solids Forcemain at Wollaston St./Dunsmuir Rd. and Colquitz Ave./Newbury Street;
- 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.

#### 2.9.3.5 Arbutus Attenuation Tank

Kerr Wood Leidal Ltd. (as the design consultant for the AAT) and the Project Team progressed the invitation to tender procurement process by: evaluating the tenders and providing notice of award to the selected contractor. The Project Team also continued activities to secure the building permit from the District of Saanich.

#### 2.9.3.6 Remainder of Conveyance Component

The Project Team is undertaking preliminary engineering activities including scope review, in preparation to commence detailed design in Q2 2019.

## Appendix A – McLoughlin Point: Peters Street Work (February 1, 2019)



February 1, 2019

### McLoughlin Point: Peters Street Work

As part of the construction of the McLoughlin Point Wastewater Treatment Plant, the contractor, Harbour Resource Partners, will be conducting utility work on Peters Street beginning the week of February 4, 2019. This utility work includes installation of two pipes for the Residual Solids Conveyance Line, a new water main and concrete duct banks and vaults for BC Hydro services.

The work will be done in three sections with each section of the road closed while construction is completed. Each section is expected to be closed for approximately three weeks starting with Section 1.

#### What to Expect

- A trench will be excavated, pipes will be lowered into the trench and then backfilled.
- One concrete duct bank and three underground service vaults will be installed.
- The road will be paved and curbs repaired once all three sections are complete.
- Blasting may be required if rock is encountered in the trench.
- Garbage and recycling will be picked up as usual.
- Emergency services will have access at all times.

#### Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.

#### Traffic Impacts

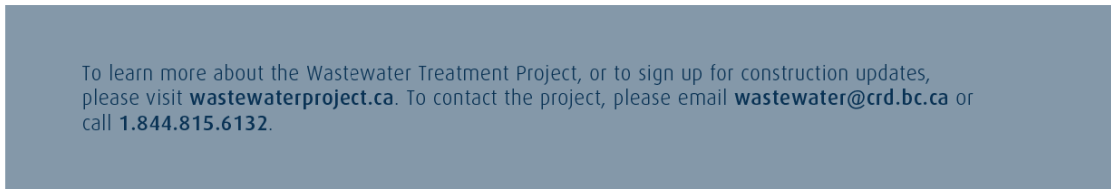
- Detours will be in place as Peters Street will be closed in sections.
  - During Section 1, the detour will be Gault Crescent.
  - During Section 2 and 3, the detour will be Macaulay Street. Trucks to McLoughlin Point will use Malvern Street and Victoria View Road. Trucks to Macaulay Point will follow the Macaulay Street detour.
- Driveway access will be blocked within each closed section (expected to be approximately 3 weeks). Parking will be available on side streets.
- Pedestrian access to houses will be maintained at all times. Please contact us if you have mobility needs.

#### About the Wastewater Treatment Project

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

For more information, please visit [wastewaterproject.ca](http://wastewaterproject.ca) or call our 24/7 phone line 1.844.815.6132.

(Continued on next page)



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

**Sections of Work**



**Detour Routes**



To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call 1.844.815.6132.

## Appendix B – Residual Solids Conveyance Line: Pipe Installation (February 2019)

Wastewater  
Treatment Project  
Treated for a cleaner future

Construction Notice

February 2019

### Residual Solids Conveyance Line: Pipe Installation

Pipe installation for the Residual Solids Conveyance Line is anticipated to begin in February and be complete in spring 2020. The contractor, Don Mann Excavating, will have crews working in four different sections.

#### What to Expect

- The pipe will be installed in segments.
- A trench will be excavated, the pipes will be lowered and the trench will be backfilled. The surface will be temporarily restored at the end of each work day.
- Final restoration will take place after each section has been tested and completed.
- Rock encountered in the trench will be removed by blasting or mechanical means.
- Noise associated with this work includes excavation machinery and truck back-up beepers, and will not exceed the municipal noise bylaws.

#### Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.
- Occasional Saturday work may be required and hours will fall within each municipality's bylaws.
- Night work may be done at busy intersections to limit impacts to traffic.

#### Traffic Impacts

- There will be single lane alternating traffic in the work zones.
- Two-way traffic will be maintained at busy intersections during rush hour.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.
- There will be temporary parking impacts when work is being completed. Parking signs will be posted in advance.

#### Access

- Access to residents and businesses will be reinstated at the end of each work day. Residents will be notified of temporary closures in advance.
- Bus stops may be temporarily impacted. BC Transit will post notifications at the bus stops.
- Emergency services will have access at all times.

#### Timing

- The construction schedule is dependent on progress and is subject to change. Please visit our website for updated information.
- Construction on the Interurban Rail Trail will take place in summer 2019.

Thank you for your patience as this work is completed.

(Continued on next page)

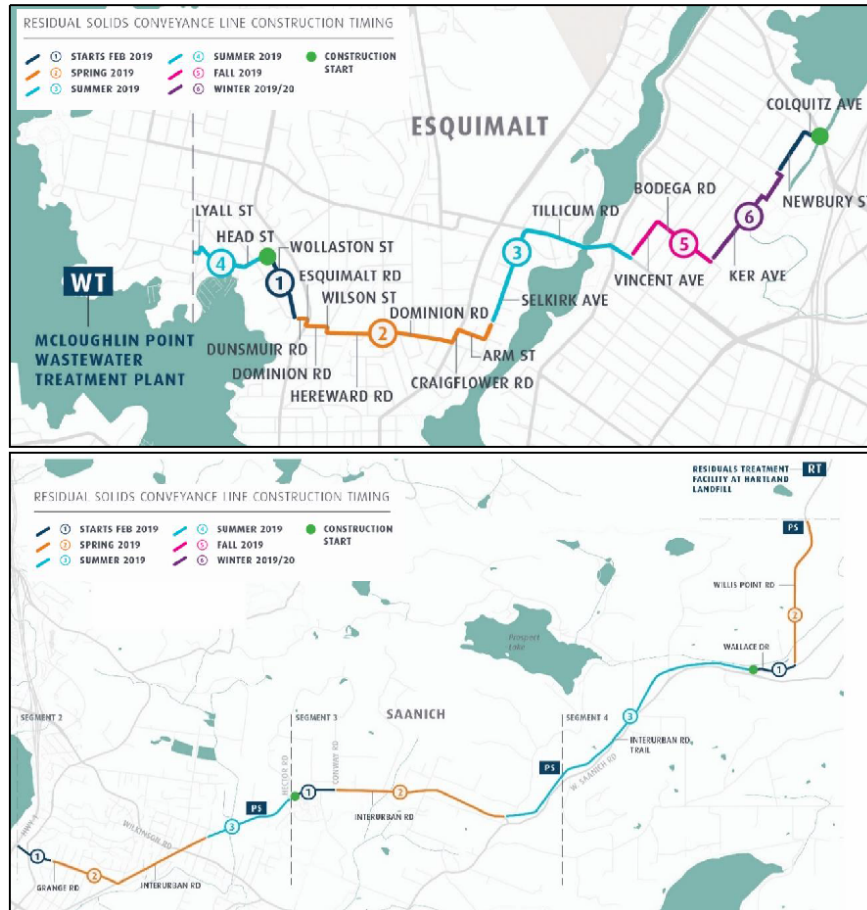
To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call 1.844.815.6132.



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

**Sequence of Construction Map**

*\*Anticipated timing subject to updates based on progress. Please check our website for updates.*



Map available at [wastewaterproject.ca](http://wastewaterproject.ca)

**Background**

The Residual Solids Conveyance Line consists of two pipes and three small pump stations. The first pipe will be 19.3km long and will transport residual solids from the McLaughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill for treatment. The second pipe will be 12.4km long and will return the liquid removed during the treatment process to the Marigold Pump Station, from where it will be returned to the McLaughlin Point Wastewater Treatment Plant through the existing conveyance system.

To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call 1.844.815.6132.

## Appendix C – Residual Solids Conveyance Line: Blasting Information (February 2019)



Wastewater  
Treatment Project  
Treated for a cleaner future

Construction Notice

February 2019

### Residual Solids Conveyance Line: Blasting Information

Construction for the Residual Solids Conveyance Line is currently underway. As part of this work, a trench is excavated to install the pipes. When rock is encountered in the trench, rock hammering or blasting will be required.

#### What to Expect

- Pre- and post-blast surveys will be conducted when blasting is required. Notification will be provided to residences directly.
- Noise and vibrations are expected during this work.
- The energy of the blasts are controlled and monitored.

#### Blasting Procedure

- All blasts will be covered with blasting mats.
- Blasting signs and personnel will be posted at access points on the construction site boundary to prevent entry into the blast area.
- Warning signals will be used as follows:
  - 12 short whistles at one second intervals followed by a two minute pause
  - Blast will be detonated
  - One long whistle signals all is clear
- Each blast is monitored for vibration with a seismic device.
- If you have any questions or concerns about blasting or the Project, please contact the Project Team at [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or 1.844.815.6132.

#### Work Hours

- Monday to Friday, 7:00 a.m. to 7:00 p.m.

#### Traffic Impacts

- Single lane alternating traffic during work hours.
  - Both lanes will be closed for short periods for each blast.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.

For more information about construction of the Residual Solids Conveyance Line, please visit Current Construction Activities on our website [wastewaterproject.ca](http://wastewaterproject.ca).

#### About the Wastewater Treatment Project

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

To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call 1.844.815.6132.

## Appendix D – Clover Forcemain: Utility Relocates (February 2019)



February 2019

### Clover Forcemain: Utility Relocates

The Wastewater Treatment Project includes construction of a pipe which will transport wastewater from the upgraded Clover Point Pump Station to the McLoughlin Point Wastewater Treatment Plant. This pipe, the Clover Forcemain, will run along Dallas Road from Clover Point to Ogden Point, where it will connect to the cross-harbour undersea pipe.

The contractor, Windley Contracting Ltd., is conducting utility relocations on Dallas Road from Government Street to Douglas Street and the Douglas Street intersection and will continue for approximately four months. This work is being completed prior to forcemain installation.

#### What to Expect

- Work includes excavation and relocation of storm, sewer and water pipes. The trench will be backfilled as the pipes are installed.
- Blasting will occur if rock is encountered in the trench.
- Noise associated with this work includes excavation machinery and truck back-up beepers and will not exceed the City of Victoria's noise bylaws.

#### Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.

#### Traffic Impacts

- At times, Dallas Road will be temporarily closed between Government and Douglas during work hours.
- Single lane alternating traffic will generally be maintained during work hours with road plates installed overnight to allow two-way traffic.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.
- There will be parking impacts on Dallas Road.

#### About the Wastewater Treatment Project

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

Thank you for your patience as this work is completed.

To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call 1.844.815.6132.

## Appendix E – Construction of the Arbutus Attenuation Tank (February 20, 2019)

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

**Construction Notice**

February 20, 2019

### Construction of the Arbutus Attenuation Tank

The Wastewater Treatment Project includes construction of the Arbutus Attenuation Tank, an underground concrete tank that will temporarily store wastewater flows during high volume storm events to reduce the number of sewage outflows. Site clearing is anticipated to begin February 21 and take approximately three weeks. This work is taking place now before the bird nesting season begins. Construction of the tank is anticipated to begin later in the spring and will take approximately 14 months to complete.

The Arbutus Attenuation Tank will be located on CRD-owned land in Haro Woods that is already partially cleared and has been previously disturbed during the construction of existing sewers. This site was chosen to minimize impacts to trees. Once construction is complete, the site will be planted with vegetation appropriate for the local woodland setting.

#### What to Expect

- Removal of trees and brush within the construction site and laydown area will be completed by arborists.
- Construction of a temporary laydown area with site offices and facilities that includes the installation of geotextile cloth and clean crushed drained rock to protect the area.
- Excavation and concrete works for the underground tank.
- Connection to the existing conveyance system.
- Temporary construction fencing will be erected around the site during construction. Public access will be restored once construction is complete.

#### Work Hours

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

#### Traffic Impacts

- Work will be contained to the site and there may be minimal traffic impacts.
- Pedestrian access to the trails within the site will be restricted for public safety during construction and restored upon completion.

#### About the Wastewater Treatment Project

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

Thank you for your patience as this work is completed.

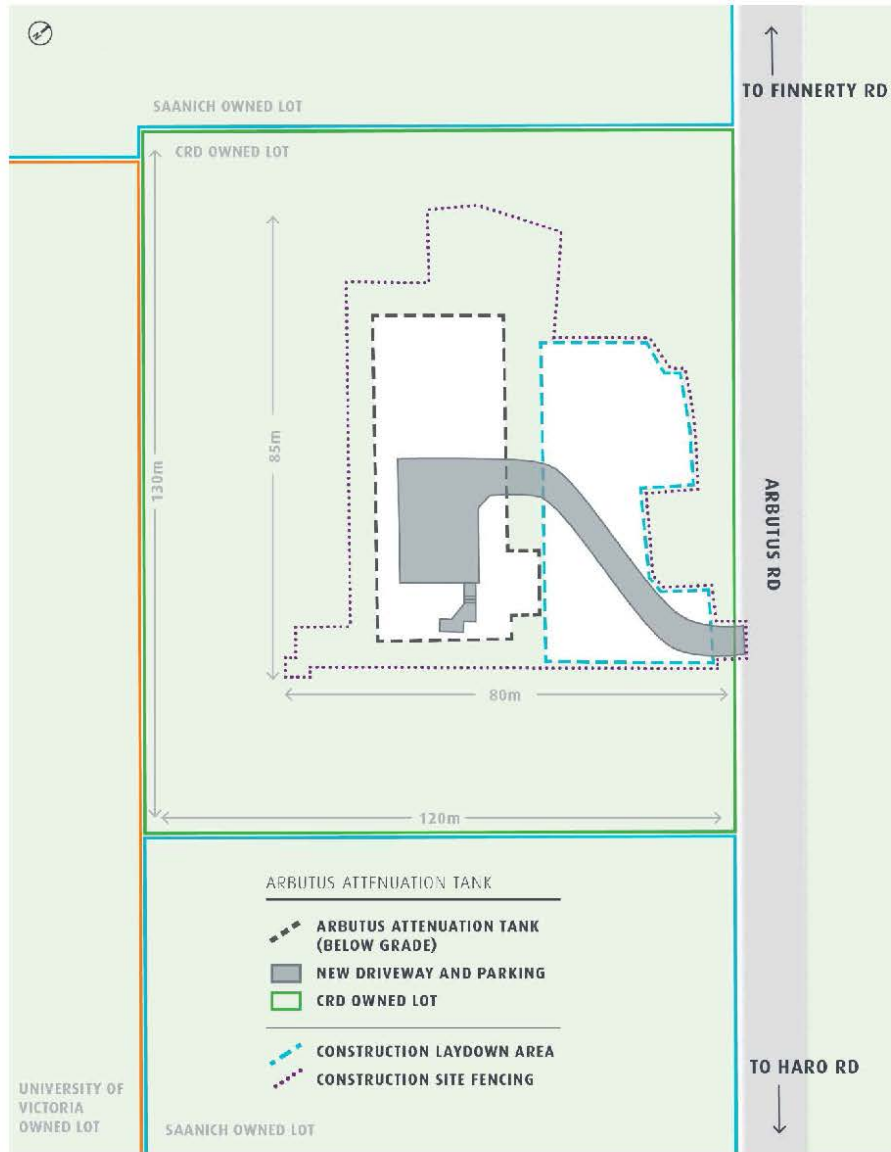


To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call 1.844.815.6132.

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

**Construction Notice**

Site Map



To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call 1.844.815.6132.

**Appendix F – Project Update #6 (February 2019)**



## Wastewater Treatment Project

With six components of the Wastewater Treatment Project now under construction, we made significant progress towards our goals in 2018 and are well on track to meet federal and provincial regulations for treatment by the end of 2020. Significant construction activity throughout the region continues in 2019 including pipe installation continuing along Dallas Road for the Clover Forcemain and the beginning of work on the Residual Solids Conveyance Line in Esquimalt, Victoria and Saanich. Our website will be updated throughout construction so that you can find the latest construction updates in the “Current Construction Activities” section.

### Construction Updates

#### DALLAS ROAD CONSTRUCTION

The Project includes the construction of a pipe which will transport wastewater from the Clover Point Pump Station to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment. This pipe (called the Clover Forcemain) will run along Dallas Road from Clover Point to Ogden Point, where it will connect to the recently completed Victoria cross-harbour undersea pipe.

The contract for the Clover Forcemain was awarded to Windley Contracting Ltd., a Vancouver Island-based company. Construction activities on Dallas Road began in October 2018 with archaeological work and utility relocations. The installation of the pipe began in January 2019 at both the Ogden Point and Clover Point ends of the pipe. The pipe is being installed in 100m segments to minimize impacts to residents and the many users of Dallas Road.

#### CLOVER POINT PUMP STATION

The expansion of the Clover Point Pump Station has been under construction since February 2018. Excavation was completed in 2018 with concrete pouring now underway and will continue in 2019 along with installation of pumping equipment.



*The 1.2m diameter Clover Forcemain is being lowered into the trench near Clover Point. There will be single lane alternating traffic on Dallas Road during construction.*



**McLOUGHLIN POINT WASTEWATER TREATMENT PLANT**

Construction at McLoughlin Point began in June 2017. Excavation was completed in 2018 and the site changes daily as concrete pouring continues in 2019 and walls rise above the ground.

**MACAULAY POINT PUMP STATION**

Site preparation for the Macaulay Point Pump Station is complete, and a crane has been erected on site. Concrete pouring will continue for six months and the installation of the forcemain connecting the pump station to the McLoughlin Point Wastewater Treatment Plant will begin this spring.

**RESIDUALS TREATMENT FACILITY**

Site preparation at the Residuals Treatment Facility, including excavation, backfilling and compacting started in 2018. Next steps in 2019 will include pouring concrete for the foundations and work on the structures, as well as procurement of major equipment.

**RESIDUAL SOLIDS CONVEYANCE LINE**

The contract for the Residual Solids Conveyance Line was awarded to local company Don Mann Excavating in November 2018.

Utility location is underway and installation of the pipes began in February with multiple crews working in different locations along the route to complete the work within approximately 18 months. The pipes will be installed in segments, with each segment requiring excavation of the trench, laying the pipe, backfilling, and restoring the surface. There will be single lane alternating traffic in each work zone.



*Construction of concrete walls at the McLoughlin Point 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. The Project is being built to meet federal and provincial regulations for treatment by December 31, 2020 and is being funded by the Government of Canada, the Government of British Columbia and the CRD.



## Engagement Summary

The key focus of communication and engagement activities is to keep residents and stakeholders informed of Project plans, progress, and construction information, as well as to receive and respond to questions raised by the community.

In 2018, the Project Team held nine open houses in Saanich, Esquimalt and Victoria to provide information about construction plans, impacts, and timing and to provide an opportunity for people to meet and ask questions of the Project Team. Construction notices were also hand delivered, emailed and posted to the Project website.

We will continue to update our website. Please check the "Current Construction Activities" section for the latest construction updates. Construction photos are posted at [flickr.com/photos/crdwastewaterproject](https://www.flickr.com/photos/crdwastewaterproject)

We appreciate hearing from you. Please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca) or call us on our 24-7 project information line, **1.844.815.6132**.

### 2018 COMMUNITY ENGAGEMENT SUMMARY



**394**

responses to phone inquiries



**195**

responses to email inquiries



**80**

meetings with community associations, municipalities and stakeholders



**9**

public open houses



**47**

construction notices



Public Open House at Cook Street Village Activity Centre.



Construction of a digester at the Residuals Treatment Facility.





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

**Project Update #6**  
February 2019

## Meet a Member of the Project Team

### KELLY OLSEN, SAFETY MANAGER

Kelly Olsen is the Safety Manager for the Wastewater Treatment Project and she reviews the safety plans and practices of the prime contractors at all of the project sites. Conducting site visits and weekly safety inspections is just one aspect of her daily tasks as Kelly also organizes coordination meetings to bring all the teams together.

Safety is the number one priority for the Project. Each meeting for the Project begins with a safety moment, keeping safety at the forefront of everything we do and providing an opportunity to be mindful about the importance of safety. Each site holds Toolbox Talks to review the hazards of the day and the control measures and actions in place to ensure safety is at the top of everyone's mind. Site conditions change daily so this is an important part of each day.

Kelly brings to the Project 30 years of experience in the construction industry as a safety consultant. She also performs external audits for the BC Construction

Safety Association for the Certification of Recognition Program. In her time off, Kelly enjoys her farm and raises and shows Quarter Horses on a competitive level in Canada and the United States. She is also the proud grandmother of two.



*Aerial view of construction progress at the Macaulay Point Pump Station.*

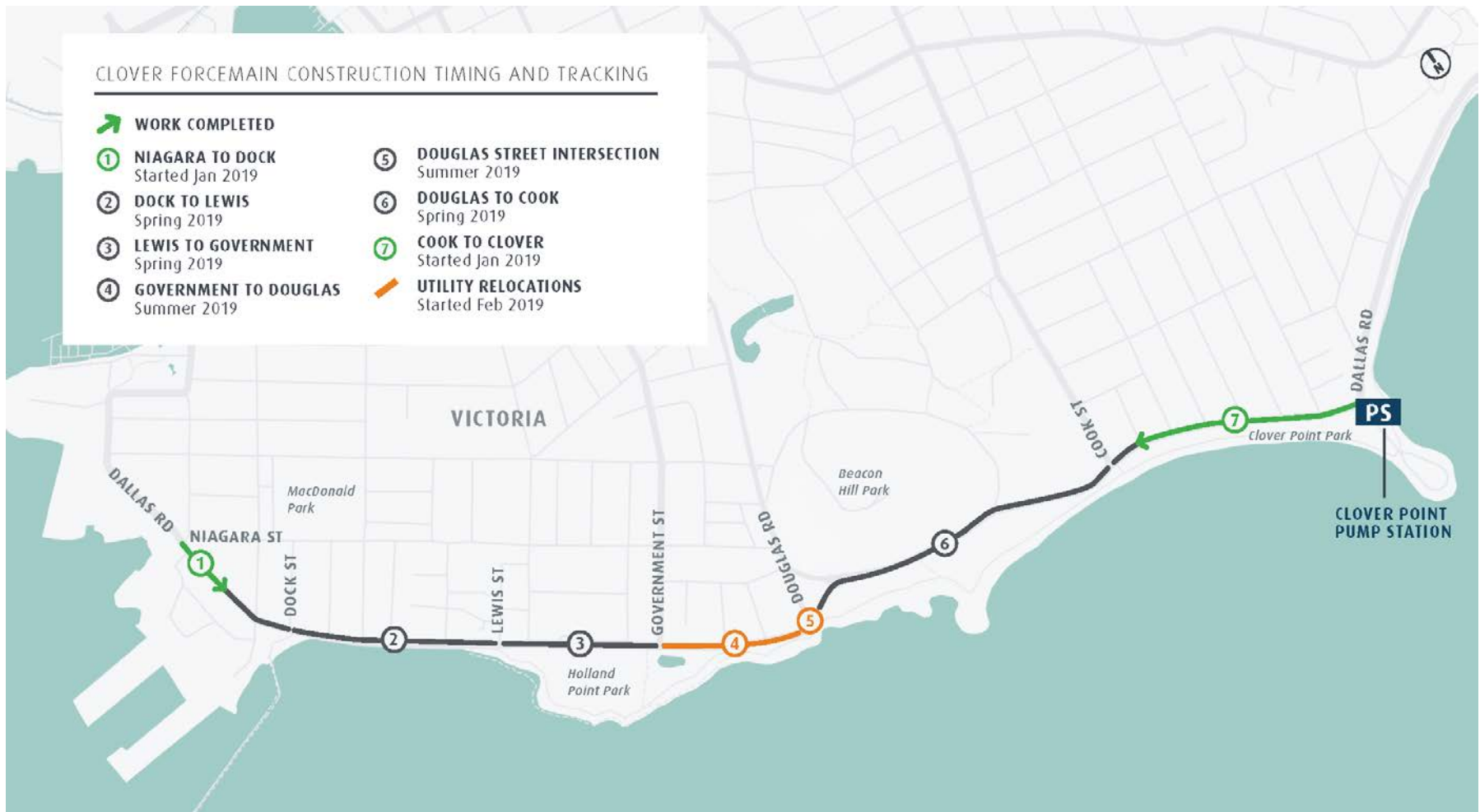
### For More Information

**Website:** [wastewaterproject.ca](http://wastewaterproject.ca)

**Email:** [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca)

**24-7 Project Information Line:** 1.844.815.6132

### Appendix G – Clover Forcemain Construction Timing and Tracking





**Appendix F – Monthly February Cost Report**

ASSET MANAGEMENT COST REPORT as at February 28, 2019														
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
			Expended to January 31, 2019	Expended over reporting period (February 2019)	Expended to February 28, 2019	Expended to February 28, 2019 as a % of Budget	Remaining (Unexpended) Budget at February 28, 2019	Total Commitment at February 28, 2019	Unexpended Commitment at February 28, 2019	Uncommitted Budget at February 28, 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	364.6	182.1	7.8	189.9	52%	174.6	343.2	153.2	21.3	174.6	364.6	-	0%
Residuals Treatment Facility <sup>A</sup>	195.0	158.3	16.7	0.2	16.9	11%	141.4	150.1	133.2	8.2	141.4	158.3	-	0%
Conveyance System <sup>A</sup>	192.0	242.1	63.0	7.8	70.8	29%	171.3	173.1	102.3	69.0	171.3	242.1	-	0%
<b>Total Costs</b>	<b>765.0</b>	<b>765.0</b>	<b>261.8</b>	<b>15.8</b>	<b>277.6</b>	<b>36%</b>	<b>487.3</b>	<b>666.4</b>	<b>388.7</b>	<b>98.5</b>	<b>487.3</b>	<b>765.0</b>	<b>-</b>	<b>0%</b>

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