



# Wastewater Treatment Project

Treated for a cleaner future

## CRD Wastewater Treatment Project

### Monthly Report

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Reporting Period: January 2019

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## 1 Executive Summary

### 1.1 Introduction

This monthly report covers the reporting period of January 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 and tertiary building; beginning concrete pours for the operations and maintenance building foundations; and preparing for drilling the first section of the outfall.

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: continuing work on the 90% design submittal; vendor selection progression; receipt of permits; pouring concrete foundations, installation of underground piping; and installation of underslab drain water supply piping.

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: participating in a design review workshop; continued development of the final design submission; pouring and stripping first level wet well walls; and removal of waterproofing from existing exterior.
- 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 continued development of the final (100%) design submission; completion of blasting activities and rock excavation for the facility and pouring the concrete base slab for the west half of the facility; ongoing drilling and crushing of excess granular material; and digging test pits along the forcemain alignment to confirm existing 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 preconstruction activities and commenced 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 commenced forcemain installation (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 RSCL100) continued preconstruction activities including: submitting construction work plans and shop drawings, submitting permit applications, continuing to perform utility pre-locates and potholing, and initial soil assessment survey;
  - 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 responding to inquiries and issuing addenda, as required, and received proposals from proponents and commenced the evaluation; and
  - 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 Q1 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, including responding to inquiries and issuing addenda, as required, and received submissions and commenced evaluation; and 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.

The KPI for the Project overall cost has changed from yellow to orange as a result of receiving proposals during the reporting period for the Residual Solids Pump Stations and the Arbutus Attenuation Tank. The proposals received were greater than estimated as a result of cost escalation due to inflationary pressures in the Victoria area construction market and material supply. As outlined in section 2.7, the Project Team are currently undertaking activities to evaluate the sufficiency of the remaining contingency and program reserve to deliver the Project within the 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 medical aid incident occurred over January: a worker injured their hand and was placed on modified duties during the healing period.
Environment	Protect the environment by meeting all legislated environmental requirements and optimizing opportunities for resource recovery and greenhouse gas reduction.					Two minor environmental incidents occurred in January, both involving a small volume of vehicle hydraulic fluid leaks. No hydraulic fluid entered the sewer system or environment in either incident.
Regulatory Requirements	Deliver the Project such that the Core Area complies with provincial and federal wastewater regulations.					No regulatory issues.
Stakeholders	Continue to build and maintain positive relationships with First Nations, local governments, communities, and other stakeholders.					Engagement activities were ongoing in the reporting period. Significant efforts were made to provide accurate and timely information to stakeholders.
Schedule	Deliver the Project by December 31, 2020.					No schedule issues.
Cost	Deliver the Project within the Control Budget (\$765 million).					Project expenditures within Control Budget but cost pressures experienced on multiple Conveyance procurements as a result of inflation in the Vancouver Island construction market. Corrective action has been identified and is being implemented (see Section 2.7 for details), but further action is anticipated to be required to maintain the Control Budget.

\* 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).

Over the reporting period there was a significant increase in safety incidents at the existing active work sites, as well as a number of safety incidents at the RSCL sites that construction activities have recently commenced at. Thirteen incidents occurred during the month of January 2019: two near miss, five report only, five minor first aid, and one medical aid (modified duty) incident, which is the Project’s second 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 the corrective actions taken.

*Table 2- Incident Summary Table*

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
January 3, 2019	RTF	First Aid	Worker struck by pipe while lifting pipe.	Assessed by first aider, returned to work	Toolbox talk – emphasized proper lifting technique.
January 4, 2019	McLoughlin Point WWTP	First Aid	Back injury while passing rebar to a coworker.	Assessed by first aider, returned to work on light duty for the remainder of the day.	Toolbox talk – emphasized proper lifting techniques.
January 4, 2019	Clover Point Pump Station	First Aid	Foot injury resulting from brace dropped by coworker.	Assessed by first aider, returned to work.	Toolbox talk – emphasized control of tools and materials at all times.
January 4, 2019	RSCL (Interurban Road)	Report Only	Utility strike – communication cable contacted with boom of hydro-vac truck while performing utility locates.	Service remained intact and Telus was notified to repair the lines.	Safety practice reviewed: <ul style="list-style-type: none"> <li>boom must be completely seated prior to vehicle moving; and</li> <li>a spotter is needed when a vehicle is operating in close proximity to overhead lines.</li> </ul>
January 9, 2019	Macaulay Point Pump Station	Recordable Medical Aid	Hand injury while rigging rebar bundles.	Assessed by first aider, and referred to medical aid. X-ray confirmed a fracture in the finger/knuckle area. Worker placed on modified duties with no lost time.	Toolbox talk – emphasized proper lifting and rigging techniques and the dangers of pinch points and how they can be prevented.



Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
January 10, 2019	McLoughlin Point WWTP	Report Only	A worker tripped and fell on uneven ground, causing minor back discomfort.	Assessed by first aider, returned to work afterwards.	Toolbox talk – emphasized the importance of staying focused on surroundings while working.
January 14, 2019	RSCL	Report Only	Utility contact resulting in watermain break.	The roadway was flooded and two nearby adjacent residences were impacted.	Toolbox talk – emphasized the use of effective communication methods between machine operators and ground-workers when digging in close proximity to underground hazards. Revision to safe work practice.
January 14, 2019	RSCL (near Lyall and Lampson Streets)	Near Miss	A supervisor noted road plates had shifted position over the weekend due to ground sluffing and heavy rain.	Reduced ground overlap under the road plates: no injuries or damage occurred.	The road plates were rotated from their original position to provide more coverage underneath the sides. Inspections will be conducted at the end of each work day to check for cracking and/or ground sloughing.
January 19, 2019	Macaulay Point Pump Station	Near Miss	Proximity of offload to worker.	Load swung while being lowered: no injuries or damage occurred.	Toolbox talk – safety stand down was held to go over the rigging plan and to ensure all rigging components are used in all rigging activities.
January 23, 2019	Clover Forcemain	Report Only	Worker reversing a vehicle made contact with another vehicle.	The incident caused vehicle damage.	Toolbox talk – emphasized vehicle safety and backing up practices.
January 28, 2019	McLoughlin Point WWTP	First Aid	Worker’s chain slipped, causing worker to make contact with construction structure.	Assessed by first aider, returned to work.	Toolbox talk – emphasized proper use of safety equipment with respect to positioning devices and proper tie-off points.
January 28, 2019	RTF	First Aid	Worker sustained a hand injury while stripping forms.	Assessed by first aider, returned to work.	Toolbox talk – emphasized proper body positioning while stripping forms.
January 30, 2019	McLoughlin Point WWTP	Report Only	A worker stumbled backwards and then tripped over a pipe, causing minor discomfort.	Assessed by first aider, returned to work.	Toolbox talk – emphasized awareness to one’s surroundings.

Key safety activities conducted during January included:

- bi-weekly project update meetings with prime contractors: Kenaidan, Windley and Don Mann;
- weekly project update meetings with prime contractors: HRP and HRMG;
- incident reporting review with prime contractors at active work locations;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- prime contractor monthly safety meeting with CRD;
- 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;
- prime contractor annual safety orientations for CRD Project Team;
- CRD corporate occupational health and safety coordination committee meeting;
- work plan review of safe confined space entry for McLoughlin WWTP site;
- developed prime contractor auditing tool;
- issued Project safety notices to prime contractors;
- updated Project management office first aid assessment for 2019; and
- updated Project management office site specific 2019 safe work plan.



Table 3 – WTP Safety Information

	Reporting Period (January 2019)	Project Total to-Date (from January 1, 2017)
<b>Person Hours</b>		
PMO	3,552	88,931
Project Contractor	55,251	423,982
<b>Total Person Hours</b>	<b>58,803</b>	<b>512,913</b>
<b>Total Number of Employees</b>		
PMO	30	
Project Contractors (and Project Consultants) working on Project sites	314	
<b>Total Number Of Employees</b>	<b>344</b>	
<b>Incident Statistics</b>		
Near Miss Reports	2	14
High Potential Near Miss Reports	0	3
Report Only	5	12
First Aid	5	15
Medical Aid	0	0
Medical Aid (Modified Duty)	1	2
Lost Time	0	0
<b>Total Recordable Incidents</b>	<b>1</b>	<b>2</b>
		<b>Project Frequency (from January 1, 2017)</b>
First Aid Frequency		5.8
Medical Aid Frequency		0.7
Lost Time Frequency		0
<b>Total Recordable Incident Rate</b>		<b>0.7</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 January included:

- Millennia Resources (the Project's Archaeological Advisor) oversaw the screening of archaeological sediments excavated during Clover Forcemain construction. The purpose of the screening is to recover any artifacts that may be present in the sediments; and
- McElhanney Consulting Services (as the Qualified Environmental Professional for Don Mann Excavating, the RSCL100 Construction Contractor) presented the results of their pre-construction environmental investigations to the Project Team. The purpose of the investigations was to characterize soils along the RSCL.

There were two minor environmental incidents in January:

- On January 11, 2019, Windley Contracting (the Construction Contractor for the Clover Forcemain) experienced a hydraulic fluid leak from a dump truck. The volume released was approximately 20 litres, and was therefore not a high enough volume to be reportable to authorities. The hydraulic fluid was contained to the pavement on Dallas Road and was immediately removed from site for disposal at an approved facility. No hydraulic fluid entered the sewer system or environment; and
- On January 22, 2019, HRMG (Design-Build-Finance-Operate-Maintain Contractor for the RTF) experienced a hydraulic fluid leak from a soil compacting roller. The volume released was approximately 40 litres, and was therefore not a high enough volume to be reportable to authorities. The spill was contained to the work area, and spill pads and contaminated soils were removed from site for disposal at an approved facility. No hydraulic fluid entered the sewer system or environment.

## 2.2.2 Regulatory Management

In January, 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 January include:

- HRMG (Design-Build-Finance-Operate-Maintain Contractor for the RTF) and the CRD met with the Ministry of Environment and Climate Change Strategy (MOE) to discuss HRMG's Dispersion Modelling Plan. The MOE's approval of the Dispersion Modelling Plan is the first step in the application for an Operational Certificate for the RTF.; and
- Millennia Research (the Project's Archaeological Advisor) submitted a Site Alteration Permit amendment to the Archaeology Branch. The amendment was submitted to reflect new archaeological conditions along the Clover Forcemain alignment, specifically the identification of a new archaeological site. The new archaeological site reflects 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 Q4 October – December 2018 Quarterly Report as follows:

- McLoughlin Point Outfall – the following permits were removed from the table as they were received in October 2018:
  - Fisheries and Oceans Canada (DFO) *Fisheries Act* Authorization;
  - Transport Canada Facility Alteration Permit; and
  - Transport Canada License (works access).
- Arbutus Attenuation Tank:

- deleted Notice from the Director to Construct under Section 40 (b) of the MWR as it was received in December, 2018.
- Residuals Treatment Facility:
  - deleted District of Saanich Development and Building Permits as they were received in Q4 2018.

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
<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	On track	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. Ongoing meetings with the Esquimalt and Songhees Liaisons continued.

In January, Millennia (as the Project’s Archaeological Advisor) completed archaeological monitoring of excavations along the Clover Forcemain 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. The pre-construction data recovery will be completed with members of the Tsartlip Nation.

### 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

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

- Residual Solids Conveyance Line: Utility Locating (January 2019) (Appendix A);
- Clover Forcemain Installation (January 4, 2019) (Appendix B);
- Residual Solids Conveyance Line: Utility Locating (Grange Road) (January 18, 2019) (Appendix C); and
- Macaulay Point Forcemain Installation: Utility Locating (January 28, 2019) (Appendix D).

The Clover Forcemain Installation construction notice was widely circulated to residents in close proximity to the route: more than 600 notices were hand delivered to residents in James Bay and Fairfield. It was also sent by email to more than 450 residents and stakeholders who have signed up to receive Project updates.

With work on the Clover Forcemain beginning near Clover Point, signage (Appendix E) was posted on the fence of the construction laydown area located at Clover Point, and posted at the intersection of Cook Street and Dallas Road, describing the overall work to be undertaken, including work hours and anticipated impacts to the public.

**Project Website**

Over the reporting period, the Project website, wastewaterproject.ca, was updated with information about the Project. Three construction notices were posted and the photo gallery section was updated with four new images.

The CRD’s Twitter account, was used to provide Project updates on construction activities, including blasting notices and pipe installation activities.

**Community Meetings**

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

- BC Transit;
- City of Victoria Mayor;
- Conway-Hector Loop Neighbourhood Association;
- District of Saanich Technical Working Group;
- Grange Road representatives;
- James Bay Neighbourhood Association;
- Times Colonist 10km Run representative;
- Township of Esquimalt Liaison Committee; and
- Township of Esquimalt Mayor.

**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 – January 2019*

Inquiry Source	Contacts for January
Information phone line inquiries	31
Email inquiries responded to	6

Key themes of the public inquiries were as follows:

- inquiries about timing of construction of the RSCL and the alignment; and
- questions about work that is happening on Dallas Road.

## 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

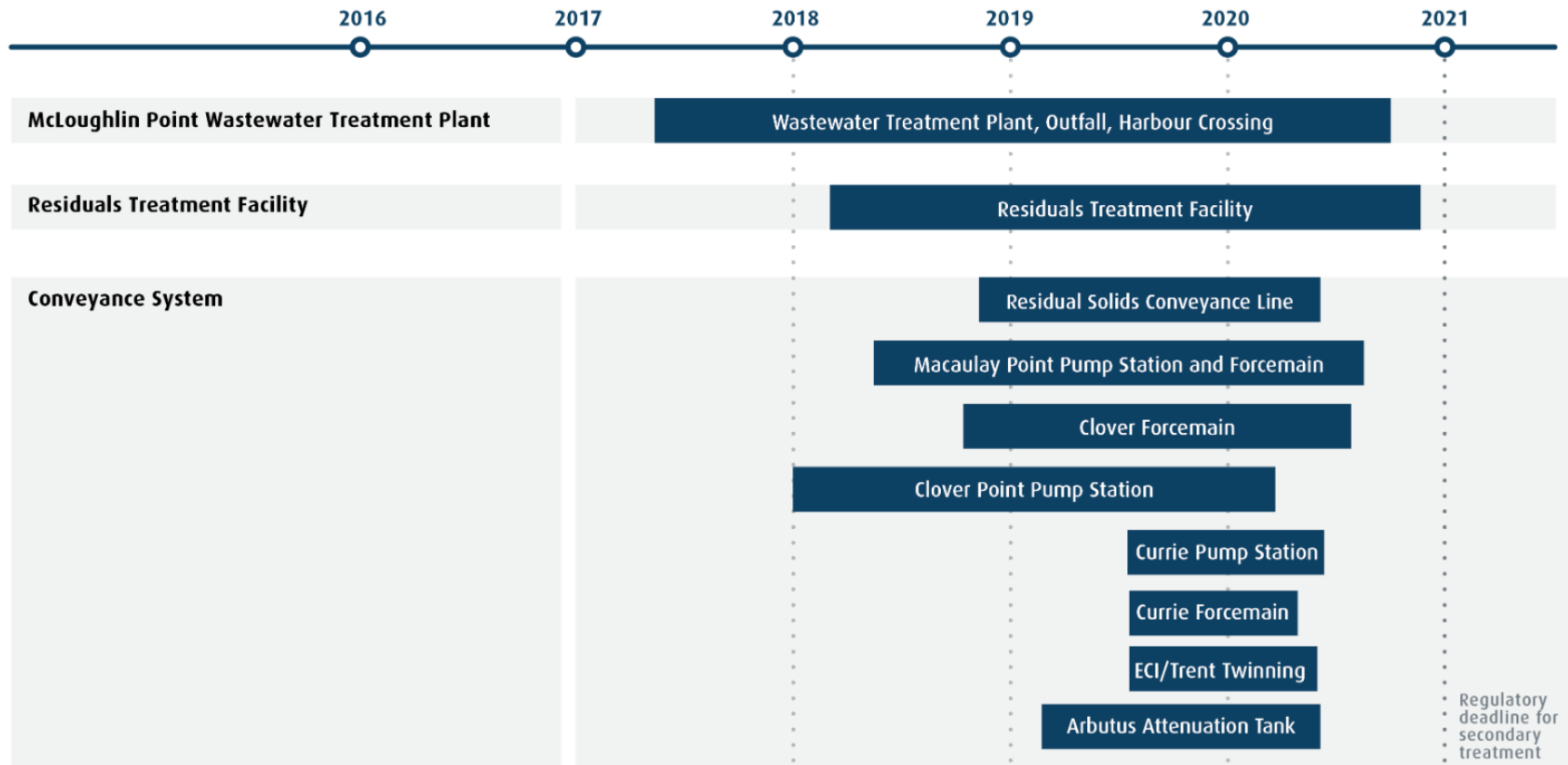
Overall the Project's scheduled activities progressed as planned during January. All major and key interface milestones were on target to be completed as per the schedule. Progress over the reporting period is summarised in section 2.9.

Figure 1 shows the high-level Project schedule. This schedule remains the same as that shown in the Q4 Quarterly October – December 2018 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 (February) 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 anticipates receiving a Site Alteration Permit from the province's Archaeology Branch for construction in a newly identified archaeological site on Dallas Road.

##### **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;
- CRD to make a stream crossing presentation to the Colquitz Coalition, a local stewardship group; and
- ongoing community liaison meetings.

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

- fiscal year end preparation;
- CRD final 2019 budget preparation;
- prepare cost reports;
- submit application to Federation of Canadian (FCM), Green Municipal Fund for McLoughlin Point WWTP Capital Projects loan/grant; 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 (O&M) building;
- commence drilling of the marine outfall ; and
- begin installation of off-site utilities on Peter Street.

#### Clover Point Pump Station

- form and pour pump room walls;
- form and pour sanitary wet well walls;
- form and pour wet well channel slab; and
- form and pour wet well/pump room common wall.

#### Macaulay Point Pump Station

- conduct utility pre-locates at forcemain alignment;
- form and pour base slab gridlines; and
- install vortex degritter base slab reinforcing steel.

#### Residuals Treatment Facility

- form and pour walls for the other municipal solids receiving facility;
- prepare slab on grade for residuals handling and administration building;
- installation of high-density polyethylene (HDPE) pipe RSCL within the RTF site;
- pour digester concrete slab;
- form, rebar and pour digester perimeter thickening ring; and
- form and pour dryer building base slab.

#### Clover Forcemain

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

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

- no work planned on the highway crossing in February.

#### Residual Solids Conveyance Line (RSCL100):

- commence 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 Joffre and Lyall Streets.

#### Arbutus Attenuation Tank:

- commence clearing and grubbing at the project site.

### **Engineering**

#### McLoughlin Point WWTP:

- overall design submission: issued for construction (IFC);



- construction package 8 – pig receiver: issued for construction (IFC);
- computerized maintenance management plan (CMMP): final submission; and
- training plan: final submission.

Residuals Treatment Facility:

- overall design: 90% design submission; and
- early works package 8 (dryer building foundation): resubmit final (100%) design.

Clover Point Pump Station:

- overall design submission: resubmit final (100%) design;
- 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:

- overall design submission: submission of the final (100%) design.

Residuals Solids Conveyance Line:

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

Arbutus Attenuation Tank:

- finalize issue for construction (IFC) submission.

**Procurement**

Residual Solids Conveyance Line:

- RSCL 200: Residual Solids Pumps:
  - complete evaluation of proposals, and select preferred proponent; and
  - commence negotiations with preferred proponent leading to contract execution.

Arbutus Attenuation Tank:

- complete evaluation of tenders, and issue notice of award to prospective contractor.

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

Lorax Environmental Services (CRD's Environmental Consultant) to develop a marine dispersion model 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;
- 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

- install second phase piles at north apron slab;
- install biological aerated filter (BAF) backwash waste piping;
- continue surface runoff/groundwater treatment and discharge;
- form and pour second level dirty backwash walls;
- continue to form and pour biological aerated filter (BAF) walls and columns;
- hydro test dirty backwash tank;
- construct levelling pads for footings and column in the operations and maintenance (O&M) building;
- continue installation of off-site utilities at Peter Street; and
- complete tunneling of marine outfall and remove micro tunnel boring machine (MTBM).

### Clover Point Pump Station

- continue to form and pour sanitary and storm wet well and pump room walls; and
- commence forming and pouring pump room suspended slab.

### Macaulay Point Pump Station

- continue to form and pour external and internal walls combined with all reinforcing steel, penetrations, electrical conduit and sleeves.

### Residuals Treatment Facility

- install access road lighting;
- install grounding loop around digesters;

- form and pour foundation for digester 2;
- strip exterior forms at other municipal solids receiving facility and backfill walls;
- form and pour other municipal solids receiving facility suspended slab; and
- form and pour slab at residuals handling building.

#### Clover Forcemain

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

#### Residual Solids Conveyance Line (RSCL)

RSCL 100: Residual Solids Conveyance Line:

- continue utility locates and verification, all segments;
- continue installation of residuals solids conveyance line in segment 1;
- start installation of residuals solids conveyance line in segment 2; and
- continue installation of residuals solids conveyance line in segments 3 and 4.

#### Arbutus Attenuation Tank (AAT)

- complete site clearing and grubbing; and
- contractor site mobilization.

### **Engineering**

- McLoughlin WWTP: Residuals Solids Pumping Station: 90% design deliverable;
- Clover Point Pump Station: progress overall issue for construction (IFC) deliverable;
- Macaulay Point Pump Station: 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: revise Arbutus Road frontage improvement design to address District of Saanich review comments.

### **Procurement**

- RSCL 200: execute contract.
- Arbutus Attenuation Tank: execute contract.

## 2.7 Cost Management and Forecast

The monthly cost report for January 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.

Project expenditures are within the Control Budget but cost pressures continue to be significant on the conveyance components of the Project. In January 2019 the Project Team received proposals for the Residual Solids Pump Stations and the Arbutus Attenuation Tank. The Project Team held competitive procurements for each of these components of the Project and was successful in engaging qualified experienced contractors that submitted proposals under competitive conditions. However, the proposal prices received were greater than estimated as a

result of cost escalation due to inflationary pressures in the Victoria area construction market and material supply.

The Project Team has now procured (and secured pricing) for all components of the Project that are critical to meeting provincial and federal regulations for treatment of the core area's wastewater. The Project has contingency in-place to manage risks such as escalation, but to offset the escalation the Project Team continues to look for cost saving measures. In order to address the cost pressures on the Conveyance component of the Project the Project Team has implemented value engineering and is reviewing the scope of work for the remainder of the contracts.

Given the continued cost pressures, in the first quarter of 2019 the Project Team will undertake the following activities to evaluate the sufficiency of the remaining contingency and program reserve to deliver the Project within the Control Budget:

- KWL will refresh the cost estimates for the Conveyance components that have not yet been procured, being the Currie Pump Station upgrades and Forcemain, the East Coast Interceptor and Trent Siphon;
- KWL will undertake a system-wide study to comprehensively update the CRD core area sanitary sewer computer model, so as to allow the CRD to make informed decisions regarding capital investments required to make future demands. This model will also allow the Project Team to make an assessment of the utility value of the Conveyance components of the Project that are yet to be procured, based on updated parameters; and
- Ernst and Young will undertake an independent project review of the key cost drivers and indicators, and report their findings directly to the Project Board.

### 2.7.1 Commitments

Commitments were made over the reporting period in furtherance of delivering the Project. The commitments made during the reporting period resulted in an increase in committed costs of \$1.9M, primarily associated with contract change orders.

### 2.7.2 Expenses and invoicing

The Project expenditures for the reporting period were as expected and were within the budget allocations for each of the budget areas. The main Project expenditures incurred over the reporting period were associated with 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 \$91.7k of contingency draws were made over the reporting period associated with the following:

- a contingency draw was made for the design and construction of a truck pullout on Patricia Way in order to allow BC Hydro to install and maintain power poles and conductors at the corner of Peters Street and Patricia Way; and
- a contingency draw was made for the installation of BC Hydro power to the Saanich Water Improvement reservoir, which is being built to improve the level of water service to the Hartland Landfill site and other properties in the area.

As outlined in section 2.7 the Project Team will undertake several activities in the first quarter of 2019 to evaluate the sufficiency of the remaining contingency and program reserve to deliver the Project within the Control Budget.

*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 December 31, 2018		\$ (29,856,158)
<b>Contingency and Program Reserve balance as at December 31, 2018</b>		<b>\$ 39,461,893</b>
BCHydro Truck Pullout	Jan-19	\$ (56,546)
<b>WWTP Total Draw</b>		<b>\$ (56,546)</b>
BCHydro power connection to Saanich Water Improvement reservoir	Jan-19	(35,181)
<b>RTF Total Draw</b>		<b>\$ (35,181)</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>\$ (91,727)</b>
<b>Total Contingency and Program Reserve draws to January 31, 2019</b>		<b>\$ (29,947,885)</b>
<b>Contingency and Program Reserve balance as at January 31, 2019</b>		<b>\$ 39,370,166</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	-	\$10.6M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
<b>TOTAL</b>	<b>\$459M</b>	-	<b>\$51.0M</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.	M	No change
Misalignment between Project objectives/scope and stakeholder expectations.	The assessed risk level reflects the Project Team's priority of establishing strong and effective community stakeholder engagement.	Community engagement activities were ongoing over the reporting period (see section 2.4 for further details).	M	No change
Lack of integration between Project Components.	Planning challenges and system integration between the WWTP, RTF and Conveyance System components of the Project results in schedule delays and/or additional Project costs.	Physical and schedule interfaces are clearly delineated in all construction contracts along with the requirement for commissioning and control plans. The Project Team is using a single Owner's engineer (Stantec) to develop the indicative design for all critical project components with significant interfaces.	M	No change

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Senior government funds issue delayed.	The assessed risk level reflects the Project Team’s priority of ensuring Project funding commitments are honoured.	Responsibility for meeting funding commitments have been assigned and are being monitored.	M	No change
Downstream works delays.	Delay from conveyance projects delay delivery of wastewater to WWTP.	Schedule has sufficient time allowance to ensure conveyance elements complete prior to requirement. Contractor agreements will include terms that require the contractor to recover schedule delays and/or allow for CRD acceleration.	M	No change
Downstream works delays.	Delay of the delivery of residual solids to the RTF.	Contract with HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) includes terms that require the contractor to recover schedule delays and/or allow for CRD acceleration. Liquidated damages for late delivery in HRP contract.	M	No change
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.	M	No change
Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted.	Cost of conveyance contracts higher than estimated and budgeted.	Conveyance contracts will be competitively-procured. The Project Team are reviewing the scope and construction cost estimates for the contracts that haven't yet been awarded in order to identify opportunities where savings could be realized to offset escalation.	H	No change
Engineering design development results in increases to the estimated construction cost.	Conveyance contract amounts higher than budget due to design development (through indicative and detailed design phases).	Reconfirm construction cost estimates at each stage of the design process. The Project Team 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.	H	No change

## 2.9 Status (Engineering, Procurement and Construction)

### 2.9.1 Wastewater Treatment Plant (WWTP)

The WWTP Project Component is continuing with Harbour Resource Partners (“HRP” as the Design-Build Contractor for the McLoughlin Point WWTP) progressing in January: engineering of the WWTP; and construction at McLoughlin Point including: continuing concrete pours for the process building and tertiary building, beginning concrete pours for the operations & maintenance (O&M) building foundations, and preparing for drilling the first section of the outfall.

#### **Engineering**

HRP progressed planning and design activities including responding to CRD comments on the overall design as issued for construction (IFC), submittal of Construction Package 8 (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 January were as follows:

- seven of 35 biological aerated filter (BAF) walls were poured;
- four dirty backwash walls, three sludge storage tank walls and six walls of the tertiary building were poured;
- continued surface runoff/groundwater treatment and discharge;
- formed and poured columns and walls in the operations and maintenance (O&M) building lab area;
- second phase piling continued in the west Densadeg;
- primary influent piping was installed and hydro tested; and
- mobilized the micro tunnel boring machine (MTBM).



Figure 2 – McLoughlin Point Wastewater Treatment Plant: columns in operations and maintenance (O&M) building area in various stages of progress.

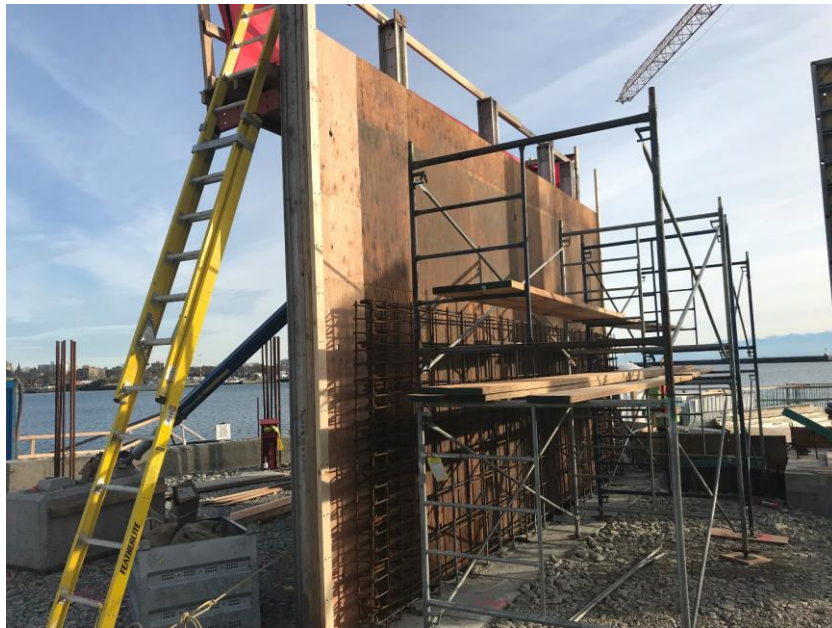


*Figure 3 - McLoughlin Point Wastewater Treatment Plant: components of the micro tunnel boring machine being assembled.*



*Figure 4 – McLoughlin Point Wastewater Treatment Plant: placing concrete in sludge storage tank wall.*





*Figure 5 – McLoughlin Point Wastewater Treatment Plant: installing formwork and scaffolding for operation and maintenance (O&M) walls.*



*Figure 6 – McLoughlin Point Wastewater Treatment Plant: installing reinforcing steel for biological aerated filter (BAF) suspended slab.*



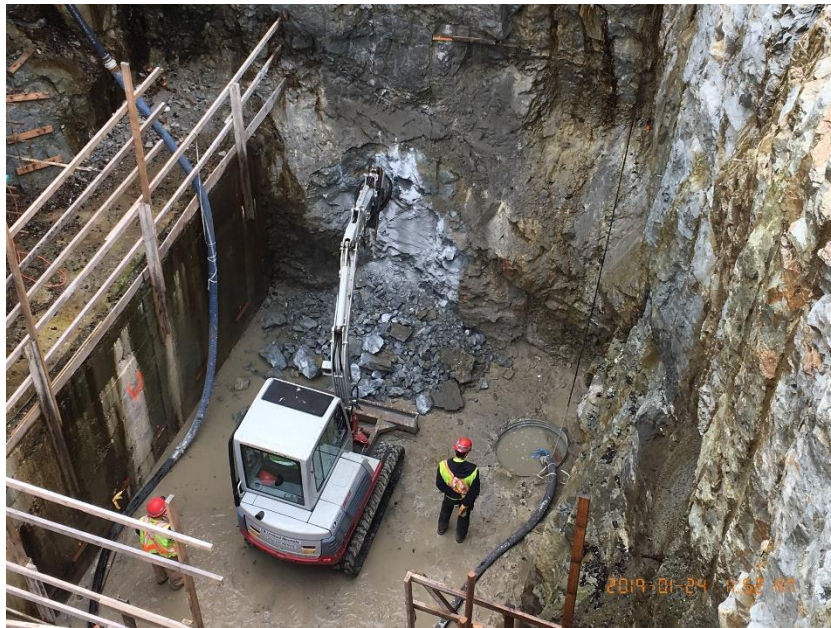


Figure 7 – McLoughlin Point Wastewater Treatment Plant: chipping rock face at micro tunnel boring machine (MTBM) entry point.



Figure 8 – McLoughlin Point Wastewater Treatment Plant: excavating for Densadeg sludge lines.

## 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 January, including:

- continued work on overall 90% design submittal;
- held monthly progress meeting with independent certifier;
- progressed with vendor selection;
- received foundation permits from the District of Saanich;
- worked with BC Hydro to confirm power requirements to the site; and
- worked with the Ministry of Environment on permitting requirements.

### **Construction**

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

Activities on site included:

- digester #1 perimeter slab was poured and the leveling ring installed and levelled;
- electrical cables pulled between onsite transformer and poles at Willis Point Road;
- installation of RSCL pipes on main access road within the RTF site;
- onsite watermain installed to the dryer building, centrifuge building, administration building, water pump station and water storage tower areas;
- other municipal solids receiving facility slab was poured;
- digester #2 finished base gravels were shaped, compacted and graded in preparation for formwork and reinforcing steel; and
- dryer building underslab drain piping and water service were installed and tested.





Figure 9 – Residuals Treatment Facility: digester #1 and #2 perimeter slab and base gravels.



Figure 10 – Residuals Treatment Facility: dryer building base gravels, ready for formwork.





Figure 11 – Residuals Treatment Facility: overall site layout including other municipal receiving facility building slab and formwork.



Figure 12 – Residuals Treatment Facility: installing levelling ring in digester #1.

## 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:

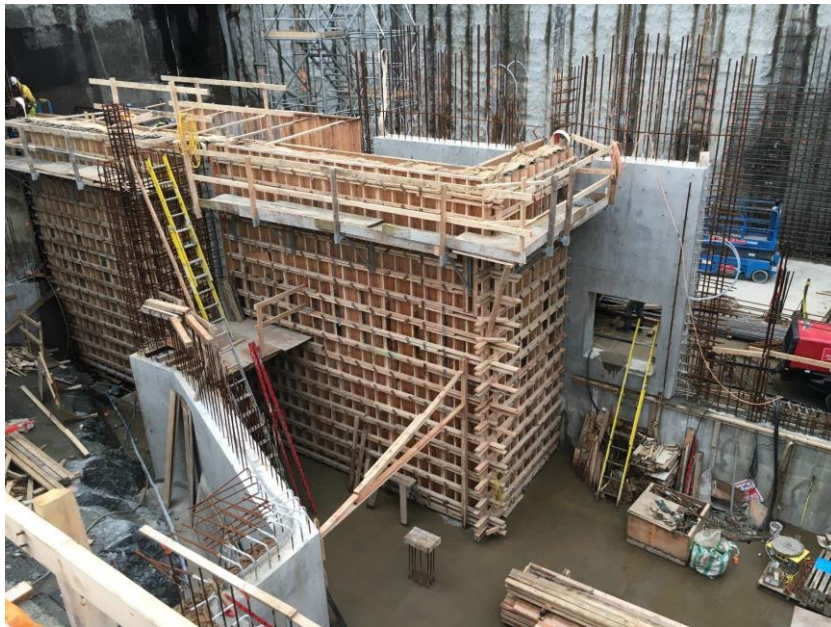
#### **Engineering**

Kenaidan continued development of the overall final (100%) design submission in preparation for submission in February 2019.

#### **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 January were as follows:

- first level wet well walls poured and stripped;
- ongoing removal of waterproofing from the existing pump station exterior;
- welding dowels to caisson wall king pile beams is ongoing;
- two pump room wall sections poured; and
- wall reinforcing steel and form work complete.



*Figure 13 – Clover Point Pump Station: sanitary wet well wall pour completed.*





Figure 14– Clover Point Pump Station: pump room wall reinforcing complete.

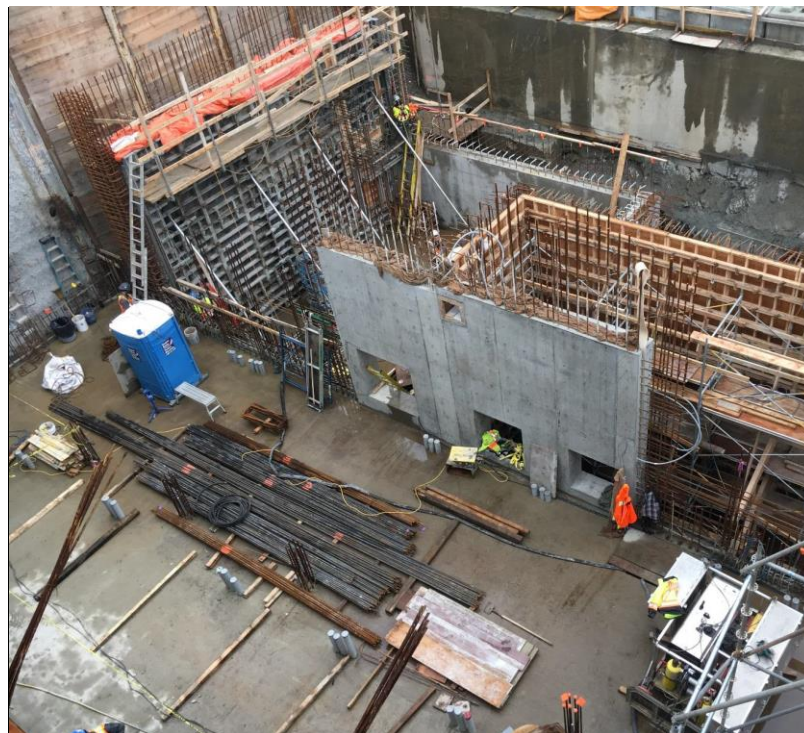


Figure 15– Clover Point Pump Station: wet well/pump room wall stripped.



Figure 16 – Clover Point Pump Station: formwork ongoing – sanitary wet well wall.

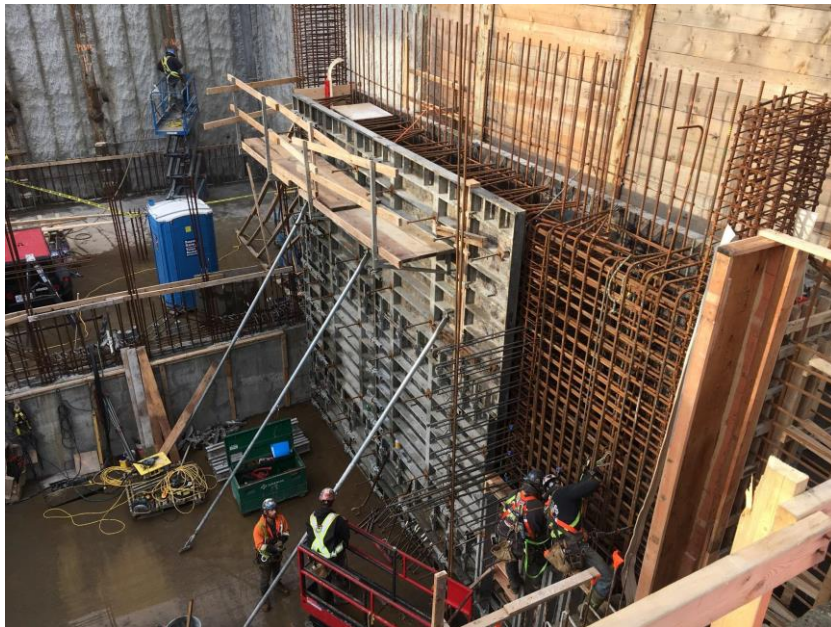


Figure 17 – Clover Point Pump Station: closing forms on storm wet well wall.



### 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 continued development of final (100%) design submission in preparation of 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 January were as follows:

- completed blasting activities for the facility excavation;
- removal of rock from the excavation to the north laydown is complete;
- ongoing drilling, blasting, rock removal, and continue crushing excess granular material;
- completed concrete pour of the base slab for the west half of the facility; and
- digging test pits along the forcemain alignment to confirm existing utility elevations.



*Figure 18 – Macaulay Point Pump Station: view from the tower crane looking east.*



Figure 19 – Macaulay Point Pump Station: progression of south east quadrant base slab.



Figure 20 – Macaulay Point Pump Station: commencement of base slab pour.



### 2.9.3.3 Clover Forcemain (CFM)

Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued preconstruction activities and commenced construction activities including: continued submission of work plans, shop drawings and permits, completed the geotechnical and soil assessment survey, continued utility relocations and rock blasting, and commenced forcemain installation (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 January were as follows:

- installed 145 metres of forcemain between St. Lawrence and Montreal Streets;
- installed 350 metres of forcemain between Clover Point and Cambridge Street;
- utility relocations ongoing;
- drilling and blasting between Montreal and Dock Streets completed; and
- screening of archaeological soils ongoing at Rock Bay.



*Figure 21 – Clover Forcemain: backfilling and compacting forcemain at Ogden Point end.*



Figure 22 – Clover Forcemain: forcemain trench excavation in progress.

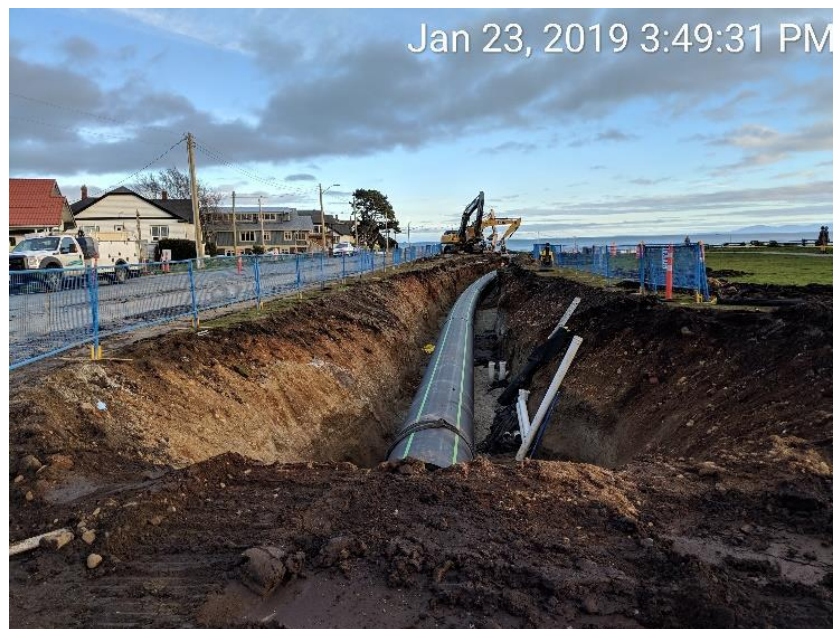


Figure 23 – Clover Forcemain: forcemain trench installed at Clover Point end.



#### 2.9.3.4 Residuals Solids Conveyance Line (RSCL)

- RSCL 100 Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for RSCL100) continued preconstruction activities including: submitting construction work plans and shop drawings, submitting permit applications, continuing to perform utility pre-locates and potholing, and initial soil assessment survey.
- 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 responding to inquiries and issuing addenda, as required, and received proposals from proponents and commenced the evaluation.
- 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 Q1 2019.

#### 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, including responding to inquiries and issuing addenda, as required, and received submissions and commenced evaluation of tenders; and 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 – RSCL: Utility Locating (January 2019)****Wastewater  
Treatment Project**  
Treated for a cleaner future**Construction Notice**

January 2019

**Residual Solids Conveyance Line: Utility Locating**

As part of construction of the Residual Solids Conveyance Line for the Wastewater Treatment Project, the contractor, Don Mann Excavating, is locating existing utilities along the alignment. This work is being done prior to pipe installation that is expected to begin in February 2019.

**What to Expect**

Existing underground utilities will be exposed to record their location and depth. This work involves using a mini excavator and hydrovac truck to expose the buried utility (sewer, storm drain, water, gas, etc.) and measure the depth of the pipe. The exposed area will then be backfilled and patched with asphalt. The work will advance quickly down the road and access to driveways will be maintained by personnel on site.

**Work Hours**

- Monday to Friday from 7:00 a.m. to 5:00 p.m.

**Traffic Impacts**

- Expect single lane alternating traffic during work hours.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.

**Background**

The Residual Solids Conveyance Line consists of two pipes and three small pump stations. The first pipe will be 19.3km and will transport residual solids from the McLoughlin 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 McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

**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).

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 – Clover Forcemain Installation (January 4, 2019)****Wastewater  
Treatment Project**  
Treated for a cleaner future**Construction Notice****January 4, 2019****Clover Forcemain Installation**

The installation of the pipe along Dallas Road is anticipated to begin January 7, 2019. The contractor, Windley Contracting Ltd., will begin work at each end of the pipe: Niagara Street to Dock Street (Section 1) and Clover Point to Cook Street (Section 7).

**What to Expect**

- The pipe will be installed in segments.
- A 100m-long trench will be excavated and a 100m-long laydown area will be used to fuse the pipe together.
- The pipe will be lowered into the trench, the trench will be backfilled and the surface restored.
- 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.
- Saturday from 10:00 a.m. to 7:00 p.m.

**Traffic Impacts**

- There will be single lane alternating traffic in the work zones of both sections during work hours.
- The section between Niagara and Dock streets will have single lane alternating traffic in the work zone overnight as required.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.
- A portion of Dallas Road between Niagara and Dock streets will be temporarily closed for one or two days a week during work hours as the pipe is moved into the trench. Detours will be implemented.
- There will be parking impacts on Dallas Road.

**Access**

- Vehicle access to residents and businesses may be temporarily restricted due to the presence of equipment. Residents will be notified in advance.
- One entrance to Ogden Point will remain available at all times.
- Bus stops may be temporarily impacted on Dallas Road between Niagara and Montreal streets. BC Transit will post notifications at the stop.
- Emergency services will have access at all times.

Thank you for your patience as this work is completed.

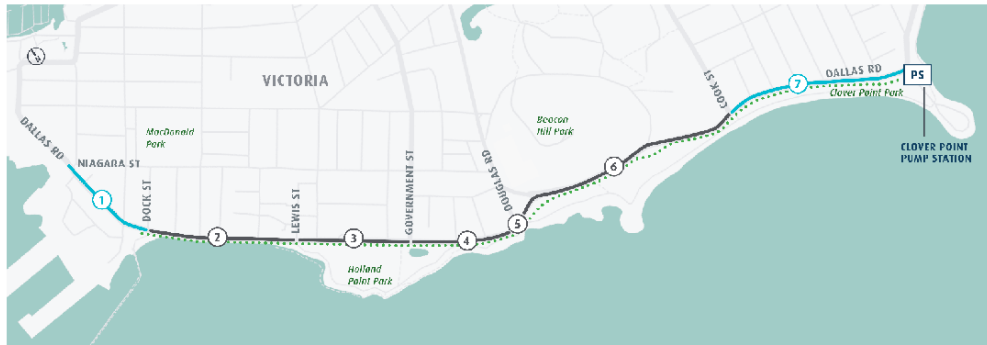
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To learn more about the Wastewater Treatment Project, or to sign up for construction updates, please visit [wastewaterproject.ca](http://wastewaterproject.ca). To contact the project, please email [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca)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

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

Construction Notice

**Sequence of Construction Map**



- |  |   |   |   |
|--|---|---|---|
| <p>① NIAGARA TO DOCK<br/>Winter 2018-2019</p> <p>② DOCK TO LEWIS<br/>Winter 2019</p> | <p>③ LEWIS TO GOVERNMENT<br/>Spring 2019</p> <p>④ GOVERNMENT TO DOUGLAS<br/>Summer 2019</p> | <p>⑤ DOUGLAS STREET INTERSECTION<br/>Summer 2019</p> <p>⑥ DOUGLAS TO COOK<br/>Summer 2019</p> | <p>⑦ COOK TO CLOVER<br/>Winter 2019</p> <p>--- CYCLE PATH<br/>2019-2020</p> |
|--|---|---|---|

**Background**

The Wastewater Treatment Project includes construction of a pipe which will transport wastewater from the upgraded Clover Point Pump Station to the McLaughlin 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.

Construction of the Clover Forcemain, including the cycle path, is anticipated to be complete in summer 2020.

**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.

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 – RSCL: Utility Locating (Grange Road) January 18, 2019****Wastewater  
Treatment Project**  
Treated for a cleaner future**Construction Notice**

January 2019

**Residual Solids Conveyance Line: Utility Locating**

As part of construction of the Residual Solids Conveyance Line for the Wastewater Treatment Project, the contractor, Don Mann Excavating, is locating existing utilities along the alignment. This work needs to be done prior to pipe installation. The Project Team will provide more information on the modified alignment on Grange Road and construction activities prior to pipe installation beginning.

**What to Expect**

Existing underground utilities will be exposed to record their location and depth. This work involves using a mini excavator and hydrovac truck to expose the buried utility (sewer, storm drain, water, gas, etc.) and measure the depth of the pipe. The exposed area will then be backfilled and patched with asphalt. The work will advance quickly down the road and access to driveways will be maintained by personnel on site.

**Work Hours**

- Monday to Friday from 7:00 a.m. to 5:00 p.m.

**Traffic Impacts**

- Expect single lane alternating traffic during work hours.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.

**Background**

The Residual Solids Conveyance Line consists of two pipes and three small pump stations. The first pipe will be 19.3km and will transport residual solids from the McLoughlin 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 McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

**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).

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 – Macaulay Point Forcemain Installation: Utility Locating (January 28, 2019)****Wastewater  
Treatment Project**  
Treated for a cleaner future**Construction Notice**

January 28, 2019

**Macaulay Point Forcemain Installation: Utility Locating**

The construction of the Macaulay Point Pump Station and Forcemain includes the installation of a pipe that will convey wastewater from the Macaulay Point Pump Station to the McLoughlin Point Wastewater Treatment Plant for treatment. As part of this work, the contractor is locating existing utilities along the alignment for approximately three weeks. This work is being done prior to pipe installation that is expected to begin in March 2019.

**What to Expect**

Existing underground utilities will be exposed to record their location and depth. This work involves using a mini excavator and hydrovac truck to expose the buried utility (sewer, storm drain, water, gas, etc.) and measure the depth of the pipe. The exposed area will then be backfilled and patched with asphalt. The work will advance quickly down the road and access to driveways will be maintained by personnel on site.

**Work Hours**

- Monday to Friday from 7:00 a.m. to 7:00 p.m.
- Saturday from 9:00 a.m. to 5:00 p.m.

**Traffic Impacts**

- Expect single lane alternating traffic during work hours.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.

**Background**

The new Macaulay Point Pump Station and Forcemain is being built as part of the Wastewater Treatment Project. The existing pump station will be demolished and a new pump station will be constructed to convey wastewater from Colwood, Langford, View Royal, Esquimalt, Saanich and Victoria to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment. The new Macaulay Point Pump Station will continue to provide bypass pumping to the existing outfall during heavy storm events.

**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.

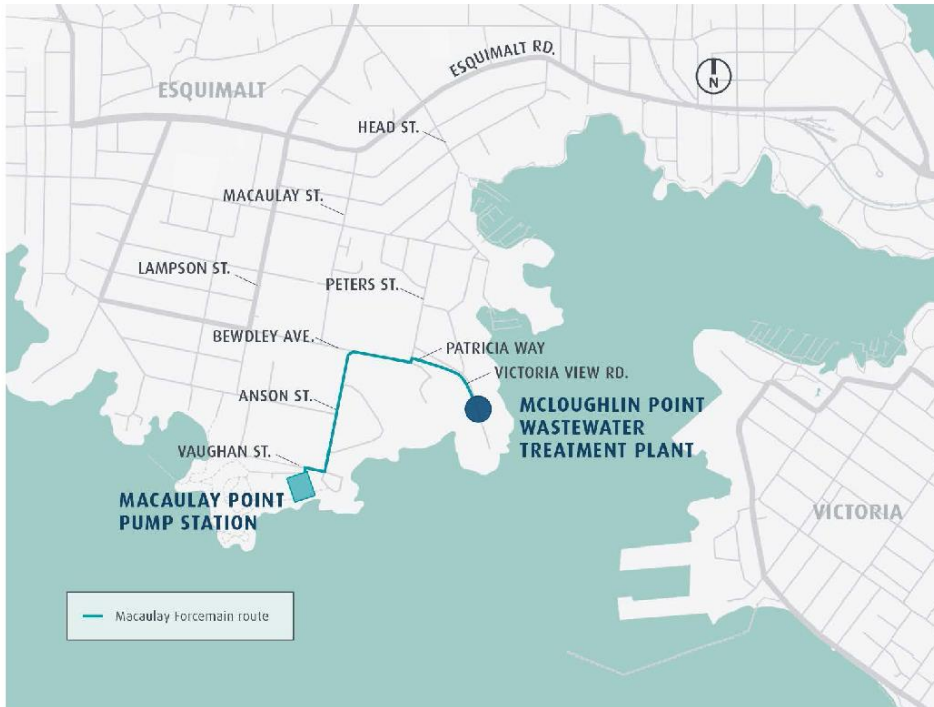
For more information, please visit [wastewaterproject.ca](http://wastewaterproject.ca).

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**



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 – Clover Forcemain Construction Signage



### Construction of the Clover Forcemain

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, which was completed in April 2018.

#### Work to be Completed

- Archaeological work.
- Relocating existing underground utilities.
- Forcemain installation including excavation of 100m-long trench sections, lowering the fused pipe into the trench, backfilling, and surface restoration.
- Some blasting is expected to be required when rock is encountered in the trench.
- Some trees will need to be removed to accommodate the forcemain and cycle path alignment.
- Public space improvements including a cycle path, new crosswalks, benches, bike racks, wayfinding signage and parking lines.

#### Work Hours

- 7:00 a.m. to 7:00 p.m. Monday to Friday
- 10:00 a.m. to 7:00 p.m. Saturday
- No work is currently planned for Sundays or holidays, but may be required on limited occasions.

#### Traffic Impacts

- Work will be done in segments to minimize impacts to residents.
- There will be single lane alternating traffic.
- There will be parking impacts on Dallas Road.
- Driveway access may be temporarily restricted due to the presence of equipment. Residents will be notified in advance.

Access to Clover Point Park and the pathway along Dallas Road will remain open during construction.

Construction of the Clover Forcemain, including the cycle path, is anticipated to be complete in summer 2020.

#### 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. The Wastewater Treatment Project is being funded by the Government of Canada, the Government of British Columbia and the Capital Regional District.

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 – Monthly January Cost Report**

ASSET MANAGEMENT COST REPORT as at January 31, 2019														
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
			Expended to December 31, 2018	Expended over reporting period (January 2019)	Expended to January 31, 2019	Expended to January 31, 2019 as a % of Budget	Remaining (Unexpended) Budget at January 31, 2019	Total Commitment at January 31, 2019	Unexpended Commitment at January 31, 2019	Uncommitted Budget at January 31, 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	368.5	175.9	6.2	182.1	49%	186.4	343.9	161.8	24.6	186.4	368.5	-	0%
Residuals Treatment Facility <sup>A</sup>	195.0	165.6	16.4	0.3	16.7	10%	148.9	150.6	133.9	15.0	148.9	165.6	-	0%
Conveyance System <sup>A</sup>	192.0	230.9	57.6	5.4	63.0	27%	167.9	173.2	110.2	57.6	167.9	230.9	-	0%
<b>Total Costs</b>	<b>765.0</b>	<b>765.0</b>	<b>249.9</b>	<b>11.9</b>	<b>261.8</b>	<b>34%</b>	<b>503.2</b>	<b>667.7</b>	<b>405.9</b>	<b>97.2</b>	<b>503.2</b>	<b>765.0</b>	<b>-</b>	<b>0%</b>

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