



# Wastewater Treatment Project

Treated for a cleaner future

## CRD Wastewater Treatment Project

### Quarterly Report

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Reporting Period: October - December 2017

# CONTENTS

- 1. Executive Summary .....4**
- 1.1. Introduction .....4**
- 1.2. Dashboard .....6**
- 2. Wastewater Treatment Project Progress.....8**
- 2.1. Safety .....8**
- 2.2. Environment and Regulatory Management .....11**
  - 2.2.1. Environment.....11
  - 2.2.2. Regulatory Management .....12
- 2.3. First Nations.....16**
- 2.4. Stakeholder Engagement.....16**
- 2.5. Resolutions from Other Governments.....19**
- 2.6. Update on Progress on Previous Resolutions of the Core Area Liquid Waste Management Committee and City of Victoria related to Dallas Road Waterfront Geotechnical Monitoring.....20**
- 2.7. Schedule .....24**
- 2.8. 30 day and 60 day lookahead.....26**
- 2.9. Cost Management and Forecast.....29**
  - 2.9.1. Commitments.....30
  - 2.9.2. Expenses and invoicing .....30
  - 2.9.3. Contingency .....30
  - 2.9.3. Project Funding .....31
- 2.10. Key Risks and Issues .....33**
- 2.11. Status (Engineering, Procurement and Construction).....38**
  - 2.11.1. WWTP .....38
  - 2.11.2. RTF.....43
  - 2.11.3. Conveyance System .....43
    - 2.11.3.1. Clover Point Pump Station .....43
    - 2.11.3.1. Macaulay Point Pump Station and Forcemain .....43
    - 2.11.3.2. Clover Forcemain .....43
    - 2.11.3.3. Residual Solids Conveyance Line.....44
    - 2.11.3.4. Arbutus Attenuation Tank.....45
- Appendix A: Blasting Schedule- week commencing December 18, 2017..... 46**
- Appendix B: Arbutus Attenuation Tank – Saanich Information Sheet ..... 47**
- Appendix C: Construction Schedule Information Sheet October 2017 ..... 49**
- Appendix D: Residual Solids Conveyance Line Information Sheet ..... 50**
- Appendix E: Construction Notice Clover Forcemain & Pump Station ..... 52**
- Appendix F: Information Bulletin November 22, 2017..... 54**
- Appendix G: Project Update #4, November 2017 ..... 56**

***Appendix H: Media Release December 12, 2017 ..... 60***  
***Appendix I: Media Release December 15, 2017 ..... 62***  
***Appendix J: Information Sheet December 2017 ..... 63***  
***Appendix K: Quarterly Cost Report ..... 65***  
***Appendix L: Monthly Cost Report..... 66***

## 1. Executive Summary

### 1.1. Introduction

This quarterly report covers the reporting period of October - December 2017, and outlines the progress made on the Wastewater Treatment Project over this time.

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

Overall the Wastewater Treatment Project progressed as planned with no changes to the construction/commissioning start and completion dates.

Construction was underway during the reporting period at McLoughlin Point and Ogden Point; and pre-construction geotechnical work and archaeological surveying was undertaken for the Clover Forcemain and the Clover Point Pump Station.

The WWTP continued in the construction phase during the reporting period. The design and construction of WWTP progressed in-line with the schedule, with HRP furthering design and completing the removal of the majority of the contaminated material excavated. Construction of the planter and tsunami walls continued, along with installation of new power lines on Victoria View Road. The harbour crossing horizontal directional drilling (HDD) pilot hole was completed and progressed to the first (34”) reaming pass.

The RTF Project Component was in the procurement phase throughout the reporting period and progressed as planned. The evaluation of technical submissions from the three shortlisted proponents was completed in October 2017, and financial submissions were received and evaluated in November 2017. In December Hartland Resource Management Group were selected as the preferred proponent to design, build, partially finance, operate and maintain the Residuals Treatment Facility. The contract is expected to be awarded in February 2018.

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

The procurement of the two design-build Conveyance System contracts progressed over the reporting period:

- Clover Point Pump Station:
  - Kenaidan Contracting Ltd. was selected as the preferred proponent for the Clover Point Pump Station, and a Letter of Intent was issued to allow the design to be progressed (the contract is expected to be awarded in January 2018).
  - In November Kenaidan and the Project Team held a 30% design workshop with City of Victoria staff and Lekwungen representatives for the Clover Point Pump Station public realm improvements.

- In December Kenaidan and the Project Team presented the 30% design for the Clover Point Pump Station public space improvements to the City of Victoria Council. Based upon feedback received at the Council Meeting, Kenaidan is refining elements of their design associated with the Public Realm Improvements; and
- Macaulay Point Pump Station and Forcemain: proposals were received and evaluated. The contract is expected to be awarded in January, 2018.

The five design-bid-build Conveyance System contracts were in the engineering phase. Progress over the reporting period included:

- Clover Forcemain:
  - Kerr Wood Leidal reviewed the indicative design and the results of the geotechnical investigations undertaken to-date, as well as previous studies and technical reports, and completed a geotechnical assessment;
  - a report outlining the results of the geotechnical investigations to-date and the geotechnical assessment of the alignment was posted on the Project website in November. The report noted that the KWL team (as Design Consultant for the Clover Forcemain) concluded that with refinement of the indicative design, the Dallas road alignment is suitable for construction of the Clover Forcemain from a geotechnical perspective and that the forcemain can be constructed and operated without an adverse effect on the Dallas Road Bluffs and James Bay Seawall;
  - a 30% Design Workshop was held with KWL, City of Victoria staff and Lekwungen representatives, to present the Design Proposals for the Clover Forcemain alignment and the Cycle Track alignment along Dallas Road; and
  - In December KWL and the Project Team presented the 30% design for the Clover Forcemain alignment and the Cycle Track alignment along Dallas Road to the City of Victoria Council. Based upon feedback received at the Council meeting, KWL is exploring options to adjust the cycle path alignment to mitigate impacts to parking on Dallas Road, along the seawall at the east end of the cycle path.
- Residual Solids Conveyance Line:
  - Following evaluation of the RFP proposals, Parsons was selected as the successful proponent to provide design consulting services for the Residual Solids Conveyance Line;
  - the indicative design was reviewed in a workshop with CRD, Stantec (Owner's Engineer) and Parsons (Design Consultant for the Residual Solids Conveyance Line);
  - the alignment of the Residual Solids Conveyance Line was confirmed: while the route was close to final, it is still subject to input from communities and feedback received during the November community information meetings will be considered, along with other technical and financial considerations, in finalizing the design;
  - the alignment was presented to the public at a series of community information open houses in Saanich, Esquimalt and Victoria; and
  - Parsons accelerated their detail design for work in the vicinity of the MacKenzie Interchange, to enable coordination of works with the Ministry of Transportation and Infrastructure (MOTI)'s construction of the MacKenzie Interchange project.

## 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 (“KPI”) that were defined within the Project Charter.

Table 1- Executive Summary Dashboard

Key Performance Indicators		Project Overall	WWTP	RTF	Conveyance System	Comments
Safety	Deliver the Project safely with zero fatalities and a total recordable incident frequency (TRIF) of no more than 1*.					No recordable incidents; site inspections ongoing.
Environment	Protect the environment by meeting all legislated environmental requirements and optimizing opportunities for resource recovery and greenhouse gas reduction					No environmental issues.
Regulatory Requirements	Deliver the Project such that the Core Area complies with provincial and federal wastewater regulations.					No regulatory issues.
Stakeholders	Continue to build and maintain positive relationships with First Nations, local governments, communities, and other stakeholders.					Engagement activities were ongoing in the reporting period with four community information open houses held in Saanich, Esquimalt and Victoria. Significant efforts will continue to be made to provide accurate and timely information to stakeholders.
Schedule	Deliver the Project by December 31, 2020.					No schedule issues
Cost	Deliver the Project within the Control Budget (\$765 million).					Project expenditures within Control Budget but cost pressures identified. Corrective action has been identified and is being implemented (see section 2.9 for details).

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

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

## 2. Wastewater Treatment Project Progress

### 2.1. Safety

Safety information for the reporting period and cumulative for the Project from January 1, 2017 is summarised in Table 2. The total recordable incident frequency (TRIF) for the reporting period, inclusive of Project Contractors and Project Management Office (PMO) staff was zero. HRP continued construction at the WWTP work sites over the reporting period. At the end of the reporting period there were 70 HRP staff working on the Project.

A minor first aid event was recorded at the McLoughlin Point site in October. An environmental monitor lost his footing and in catching himself, he popped a pre-existing blister under his work glove and required a Band-Aid. The first aid event was recorded and the environmental monitor returned to work.

In December a near miss incident occurred at Ogden Point with a leak in a high pressure hose fitting causing a small amount of 3% bentonite slurry mixture to spray over the noise attenuation wall onto the grassy area by the CRD planters. The slurry mixture was cleaned up immediately and the public was not affected by the incident. HRP's corrective actions include a rigorous daily equipment inspection prior to work commencing to identify any damaged or faulty equipment and immediate repairs as required.

In addition to HRP's work, over the reporting period KWL undertook geotechnical investigations to gather information for future construction of the Clover Forcemain and Kenaidan performed utility locates at the Clover Point Pump Station in preparation for their construction temporary power requirements.

Daily site safety tours and weekly safety inspections were carried out by Project Team construction and safety personnel over the reporting period. With ongoing construction activities on the Project these inspections continued and documented site inspections were performed weekly with an HRP and CRD representative. Office and site orientations were delivered as required.

In October, key safety activities included:

- PMO staff participated in "The Great British Columbia ShakeOut" held on October 19th at 10:19 a.m., with over 890,000 other participants province-wide. PMO staff practiced how to "Drop, Cover and Hold On" in response to an earthquake. A participant attendance list was taken and a corrective action form was developed based on the outcome of the drill. The earthquake drill was a success with full participation of 26 PMO Team members and visitors following the correct earthquake emergency response protocols;
- revision 2 of HRP's Silica Exposure Plan for the McLoughlin Point site was reviewed to ensure continual compliance with silica safety precautions;
- CRD WTP Safety Manager completed a contractor safety evaluation for the Clover Point Pump Station project; and
- the WTP Safety Manager and CRD corporate safety representatives performed a monthly site inspection at Ogden Point and McLoughlin Point which focused on rigging practices used for lifting heavy loads with cranes and other hoisting



equipment. Rigging activities were safe and no additional safety actions were required.

In November, key safety activities included:

- the WTP Safety Manager and CRD corporate safety representatives performed a monthly site inspection with HRP safety representatives at Ogden Point and McLoughlin Point with a focus on proper personal protective equipment for tasks and rigging inspections. No additional safety actions were required as a result of the inspection;

In December key safety activities included:

- the WTP Safety Manager arranged a contractor orientation with Kenaidan and Kerr Wood Leidal related to the Clover Point Pump Station and Clover Point Foremain on Dallas Road and associated geotechnical investigations. The orientation covered the following topics:
  - safety;
  - environmental;
  - archeological; and
  - communications.
- Project Team Floor Wardens completed the Tenant Warden training for the CRD PMO for “Floor Warden Introduction to Fire and Multi-hazard Plan Training”. Upon course completion an annual fire evacuation test was held with all Building offices reporting to their designated muster point. A head count was performed and an evaluation sheet completed by each office Warden with no corrective actions identified from the test; and
- review of Kenaidan’s and Thurber Engineering’s Traffic Control and Site Specific Safety Plans for site mobilization and Geotechnical Surveys; and
- CRD Safety Manager participated in an inspection tour at McLoughlin Point and Ogden Point with the HRP Safety Manager and their Corporate Safety Manager. There were no outstanding concerns at the time of tour.

Table 2 – WTP Safety Information

	Reporting Period (Q4 2017)	Project Total to-Date (from January 1, 2017)
<b>Person Hours</b>		
PMO	11,215	32,875
Project Contractor	37,084	92,252
Total Person Hours	48,299	125,127
<b>Number Of Employees</b>		
PMO	27	
Project Contractors working on Project site	75	
Total Number Of Employees	102	
<b>Number Of Occurrences</b>		
Near Miss Reports	1	3
High Potential near Miss Reports	0	1
Report Only	0	0
First Aid	1	1
Medical Aid	0	0
Medical Aid (Modified Duty)	0	0
Lost Time	0	0
Total Recordable Incidents	0	0
<b>Frequency Rates</b>		
First Aid Frequency	4.1	1.5
Medical Aid Frequency	0	0
Lost Time Frequency	0	0
Total Recordable Incident Rate	0	0

## 2.2. Environment and Regulatory Management

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

### 2.2.1. Environment

Environmental work progressed as planned over the reporting period. Work focused on management of contaminated soils at McLoughlin Point, archaeological studies and environmental studies.

Key environmental management activities completed in October included:

- HRP continued characterizing and delineating contaminated soils at the McLoughlin Point site. CRD, Stantec and HRP met with Department of National Defence (DND) staff to discuss potential migration of contamination from the McLoughlin Point site to adjacent DND property. Investigations to determine the extent of this contamination are expected to take place in November;
- Millennia (the Project's archaeological advisor) continued field investigations in support of the archaeological impact assessment. Investigation sites included the Arbutus Attenuation Tank area, Macaulay Pump Station area and Macaulay Forcemain route;
- CRD, Stantec and HRP completed an on-site assessment of environmental controls at the McLoughlin Site. The purpose of the assessment was to identify areas that posed a higher risk to the environment (e.g. parts of the site that slope towards the ocean) and review controls at those locations. The site visit was successful, with all parties agreeing that suitable controls are in-place, and identifying some improvements to processes to ensure that suitable controls are maintained.

Key environmental management activities completed in November included:

- HRP continued characterizing and delineating contaminated soils at the McLoughlin Point site and on adjacent DND property. On November 8<sup>th</sup>, HRP's environmental consultant submitted an Annual Status Update letter to the BC Ministry of Environment (ENV) providing an update on investigations and remediation activities at McLoughlin Point. This was a requirement of the 2014 Approval in Principle that the ENV issued to the CRD;
- HRP completed marine baseline studies in proximity to the McLoughlin outfall. The studies were completed to support an application to Fisheries and Oceans Canada (DFO) for a *Fisheries Act* Authorization;
- the Project Team defined a scope of work for Parsons (as Design Consultant) to complete a terrestrial EIS for the Residual Solids Conveyance Line, that will be used to support the MWR Registration package, as well as being used to develop mitigation measures for construction; and
- CRD and Stantec developed a scope of work for Kerr Wood Leidel to complete an Environmental Assessment Report for the Clover Forcemain, that will be used to develop mitigation measures for construction.

Key environmental management activities completed in December included:

- HRP continued characterizing and delineating contaminated materials at the McLoughlin Point site, and continued planning the risk-assessment and reporting required to receive a Certificate of Compliance for the site; and
- Millennia (the Project's Archaeological Advisor) completed studies in support of Site Alteration Permit applications for Project works with the potential to impact

Registered Archaeological Sites. The studies were focused on the Clover Point and Dallas Road areas. The permit applications are discussed below in the Regulatory Management section (Section 2.2.2).

HRP experienced two environmental incidents at Ogden Point during the reporting period:

- on November 6, 2017 HRP reported a hydraulic fluid leak from a hydro-vac truck at Ogden Point. After containing the leak and repairing the truck, a second hydro-vac truck was brought in to remove any potentially contaminated soils. Soil samples from the area were sent for laboratory testing and confirmed that no soils contaminated with hydraulic fluid remained at the site.
- in December HRP's drilling sub-contractor had a leak in a high pressure hose fitting causing a small amount of 3% bentonite slurry mixture to spray over the noise attenuation wall onto the grassy area by the CRD planters. The slurry mixture was cleaned up immediately and there are no residual environmental effects. HRP's corrective actions include a rigorous daily equipment inspection prior to work commencing to identify any damaged or faulty equipment and immediate repairs as required (also noted in section 2.1 of this report).

### 2.2.2. Regulatory Management

Regulatory management work progressed as planned over the reporting period. The focus was on work in support of the MWR Registration and permitting related to the McLoughlin Point outfall and Clover Point pump station.

The Project Team continued engagement with provincial and federal government agencies throughout the reporting period.

In October, key regulatory activities included:

- HRP submitted an application to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNR) for Provincial Tenure Crown Grant for the McLoughlin Point outfall. The Provincial Tenure Crown Grant is made up of a licence for construction and a permanent tenure following construction completion;
- the CRD in conjunction with the Project Team advanced an application with FLNR for a licence and tenure for a parcel of Provincial Crown land at Clover Point that is required for access to construct and operate and maintain the expanded pump station;
- the Project Team, CRD, Stantec and HRP continued to advance the MWR Registration application. Bi-weekly meetings with the Ministry of Environment and Climate Change Strategy to share information and resolve potential issues continued; and
- HRP submitted an Environmental Effects Determination to the DND as part of the approval process to allow contamination investigations to proceed on DND property adjacent to the McLoughlin Point site.

In November, key regulatory activities included:

- HRP began preparing applications to Transport Canada and ENV to allow the discharge of treated excavation water to Victoria Harbour;
- the CRD met with Kenaidan to discuss the application deliverables for a Notice from the Director to Construct under Section 40 (b) of the MWR application to begin construction at the Clover Point Pump Station;

- the CRD, Stantec and HRP continued to advance the MWR Registration application. Bi-weekly meetings with the Ministry of Environment and Climate Change Strategy to share information and resolve potential issues continued; and
- HRP continued to work on an application for a *Fisheries Act* Authorization. The Authorization is required for McLoughlin outfall construction.

In December, key regulatory activities included:

- Kenaidan submitted an application to the City of Victoria for a Delegated Development Permit to authorize construction of their lay-down area and submitted an application for a Notice from the Director to Construct under Section 40 (b) of the MWR. This was ahead of the schedule shown in the November Monthly Report 60 day look ahead;
- HRP submitted an application to ENV to allow the discharge of treated excavation water to Victoria Harbour;
- the CRD received a Licence of Occupation from the Province for work at Clover Point;
- Millennia submitted a Site Alteration Permit to the Province for the Clover Point area to allow construction in the nearby Registered Archaeological Site;
- the Project team, CRD, Stantec and HRP met with ENV to plan the post-construction marine environmental monitoring program and to review the scope of HRP's Marine Environmental Impact Study; and
- the Project team, CRD and Millennia met with the Archaeology Branch of the Ministry of Forests, Lands, Natural Resource Operations and Rural Development to discuss the Project and associated archaeological permitting.

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.

Updates to Table 3 from that presented in the Project's Q3 2017 Quarterly Report are bolded in Table 3 and are as follows:

- i) related to the McLoughlin Point WWTP:
  - the anticipated date for the McLoughlin Point WWTP Notice from the Director to Construct under Section 40 (b) of the MWR was updated to 'obtained' to reflect the receipt of the notice;
  - the anticipated date of the Township of Esquimalt Development Permit Amendment was updated from Q4 2017 to Q1 2018 to reflect a delay in HRP's submission of the Amendment to the Township of Esquimalt. It is anticipated that the application will be submitted in January and that the Development Permit Amendment will be issued within the first quarter of 2018; this isn't expected to have an impact on the overall schedule;
  - the anticipated date for receipt of the MWR Registration was changed to Q4 2019 to reflect on-going schedule discussions with ENV.
- ii) related to the McLoughlin Point Outfall:
  - the *Fisheries Act* Authorization was added as DFO confirmed that it is required;
  - the anticipated date for the McLoughlin Point Outfall Notice from the Director to Construct under Section 40 (b) of the MWR was deferred to Q2 2018 to reflect the need for the *Fisheries Act* Authorization to be complete as a requirement of this notice;
  - the anticipated dates of the following were deferred as they are conditional on receipt of the *Fisheries Act* Authorization – as noted earlier in this section of

the report, HRP have advised that this will not result in a delay to the overall project schedule:

- the receipt of the Transport Canada Facility Alteration Permit and Works Access Licence,
- the anticipated receipt of the Provincial Tenure Crown Grant; and
- the anticipated receipt of the Notice from a Director.

Table 3- Key Permits Status

Permit / Licence	Anticipated Date	Status	Responsible Party
<i>McLoughlin Point WWTP</i>			
Rezoning within the Township of Esquimalt	Obtained	Complete	CRD
Township of Esquimalt Development Permit	Obtained	Complete	HRP/CRD
Township of Esquimalt Development Permit Amendment	<b>Q1 2018</b>	On track	HRP
Township of Esquimalt Phased Building Permits <ul style="list-style-type: none"> <li>• Phase 1: Early Works</li> </ul>	Obtained	Complete	HRP
Township of Esquimalt Phased Building Permits <ul style="list-style-type: none"> <li>• Future phases to be determined with Township of Esquimalt</li> </ul>	TBD	TBD	HRP
Department of National Defence Licence (facility siting, works access and laydown, including for Macaulay Point)	Obtained	Complete	CRD
Municipal Wastewater Regulation (“MWR”) Registration	<b>Q4 2019</b>	On track	CRD
Notice from the Director to Construct under Section 40 (b) of the MWR	<b>Obtained</b>	Complete	HRP
<i>McLoughlin Point Harbour Crossing</i>			
Greater Victoria Harbour Authority Licence (works access)	Obtained	Complete	CRD
Transport Canada Licence (works access)	Obtained	Complete	HRP
Transport Canada Facility Alteration Permits (horizontal directional drilling and installation of the casing and pipe)	Obtained	Complete	HRP
Transport Canada lease	Following completion of construction	On track	HRP
<i>McLoughlin Point Outfall</i>			
<b>Fisheries and Oceans Canada (DFO) Fisheries Act Authorization</b>	<b>Q2 2018</b>	<b>On Track</b>	<b>HRP</b>
Transport Canada Facility Alteration Permit	<b>Q2 2018</b>	Submitted: under review by Transport Canada	HRP

Permit / Licence	Anticipated Date	Status	Responsible Party
Transport Canada Licence (works access)	<b>Q2 2018</b>	Submitted: under review by Transport Canada	HRP
Provincial Tenure Crown Grant	<b>Q2 2018</b>	Submitted: under review by Ministry of Forests, Lands, Natural Resource Operations and Rural Development	HRP
Transport Canada Lease	Following completion of construction	On track	HRP
Notice from the Director to Construct under Section 40 (b) of the MWR	<b>Q2 2018</b>	On track	HRP
<i>Macaulay Point Pump Station Upgrade</i>			
Township of Esquimalt Development Permit	Q1 2018	On track	DB Contractor
<i>Clover Foremain</i>			
City of Victoria Licence (works access)	Obtained	Complete	CRD
<i>Clover Point Pump Station</i>			
Rezoning within the City of Victoria	Obtained	Complete	CRD
City of Victoria Licence (facility siting)	Obtained	Complete	CRD
<i>ECI/Trent Twinning</i>			
City of Victoria Licence (works access)	Q1 2019	On track	Design Consultant
<i>Arbutus Attenuation Tank</i>			
Vancouver Island Health Authority Licence (works laydown)	Q2 2019	On track	CRD
<i>Residual Solids Conveyance Line</i>			
Ministry of Transportation and Infrastructure permits (works access)	Q1 2018	On track	Design Consultant
<i>Residuals Treatment Facility</i>			
Operational Certificate	Prior to start of RTF operations	On track	RTF Project Co
District of Saanich Development Permits	Q2 2018	On track	RTF Project Co

### 2.3. First Nations

First Nations communication and engagement were ongoing and progressed as planned over the reporting period. The CRD First Nations Relations Division worked with the Environmental, First Nations and Regulatory Manager to advance consultation and reporting in support of federal and provincial permit applications. Additionally, members of the Songhees and Esquimalt First Nations supported Millennia staff during archaeological field investigations throughout the reporting period.

In October, the Project Team and CRD finalised Project Component-specific First Nations Consultation Reports for the McLoughlin Point outfall and the Clover Point Pump Station. The Consultation reports were used to support Provincial and Federal permit applications.

In November, the Songhees Nation Liaison attended the 30% design workshop for the Clover Forcemain and Clover Point Pump Station. The purpose of their attendance was to provide input on the final design of the exterior of the pump station and the Public Realm Improvements.

In December, members of the Project team attended the quarterly W̱SÁNEĆ Leadership Committee meeting with the CRD and four W̱SÁNEĆ Nations. The W̱SÁNEĆ Leadership Committee is the forum for the CRD and the four W̱SÁNEĆ Nations to meet and share information on CRD related activities and projects in W̱SÁNEĆ traditional territory; identify areas of common interest; and work towards developing future agreements. The Project team presented information on the Project and along with CRD staff, discussed W̱SÁNEĆ concerns about the Project and the Hartland Landfill. The Project team and CRD provided additional information to the W̱SÁNEĆ Nations following the meeting, and the Project team and CRD plan to continue consultation and engagement activities with the W̱SÁNEĆ Nations.

### 2.4. Stakeholder Engagement

The Project maintained its ongoing two-way Communications and Engagement program 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 were 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 materials and methods supported the implementation of the Communications and Engagement Plan, including a public inquiry program, Project website updates, construction notifications, community and stakeholder meetings and door-to-door notifications.

The Project website, [wastewaterproject.ca](http://wastewaterproject.ca), was updated throughout the reporting period. The site includes construction notices, media releases, information boards from the Community Information Open Houses, relevant reports, and updates to the “Community Questions” webpage to provide stakeholders with answers to commonly-asked questions. In addition, weekly McLoughlin Point blasting schedules (please see an example in Appendix A) were posted to the website to ensure the public is aware of what to expect in the upcoming week.



In the reporting period, there were 16,025 page views of the Project website, of which 10,918 were unique page views.

## **October Overview**

On October 16, 2017 the Project Board Chair, supported by Project Team members, attended a District of Saanich Council meeting in order to:

- i) present an overview of the Wastewater Treatment Project and provide information on the project components that will be located within the District of Saanich; and
- ii) seek approval to extend the water service boundary (see section 3.3.2 for further information).

Two information sheets were uploaded to the information materials section of the Project website in October: the Arbutus Attenuation Tank Information Sheet (Appendix B) and an updated Construction Schedule Information Sheet (Appendix C).

In October, the Project Team held meetings with the following community groups and representatives, and municipality representatives:

- City of Victoria staff;
- Department of National Defense;
- District of Saanich Council meeting;
- District of Saanich staff;
- Greater Victoria Harbour Authority;
- James Bay Neighbourhood Association;
- Township of Esquimalt Liaison Committee;
- Township of Esquimalt Technical Working Group; and
- Willis Point Community Association representatives.

## **November Overview**

The following information documents were emailed to stakeholders and posted to the Project website in November: one information sheet regarding the Residual Solids Conveyance Line (Appendix D); one construction notice outlining geotechnical work in Victoria along the Clover Forcemain route and around the Clover Point Pump Station (Appendix E); and, one Information Bulletin: "Clover Point Pump Station Contractor Selected" (Appendix F). Project Update #4 (Appendix G) was widely distributed.

The Project Team held four community information open houses in November in Saanich, Victoria and Esquimalt. The purpose of the community information open houses was to provide members of the public with an update on the project, with a focus on those project components that will begin construction in 2018. The open houses were formatted as drop-in sessions to provide flexibility for busy schedules: members of the public could attend at any time during the meeting times to review updated project information, find out about upcoming construction activities, meet project team members, and ask questions about the project. Presentation boards were displayed in the room perimeter with Project Team members available to answer questions. The presentation boards were also posted to the Project website for any members of the public that were unable to attend one of the four community information open houses.

The four community information open houses were held in the municipalities of Saanich, Esquimalt and Victoria:

- November 15, 2017, 5 – 8 p.m.: St. Joseph the Worker Parish Hall, Saanich

- November 18, 2017, 10 a.m. – 1 p.m.: Prospect Lake Community Hall, Saanich
- November 22, 2017, 5 – 8 p.m.: Royal Canadian Legion, Esquimalt Branch
- November 27, 2017, 5 – 8 p.m.: Victoria Conference Centre

The community information open houses provided updates on the following project components: McLoughlin Point Wastewater Treatment Plant, cross-harbour undersea pipe, Clover Forcemain, Clover Point Pump Station, Macaulay Point Pump Station, Residual Solids Conveyance Line, and the Residuals Treatment Facility.

The community information open houses were attended by 214 residents. Meeting participants raised the following key themes and questions:

- construction schedule, potential impacts and mitigation;
- potential adverse effects on well water during construction and/or operation of the Residual Solids Conveyance Line;
- concerns about leaks from the Residual Solids Conveyance Line;
- blasting during construction of the Residual Solids Conveyance Line;
- earthquake and tsunami protections;
- potential odour during operation of the Residuals Treatment Facility;
- traffic impacts during construction;
- Clover Forcemain: geotechnical assessments and alignment;
- total costs of the project;
- information about the Niagara Street pipe pull;
- location of the small pump stations along the Residual Solids Conveyance Line route; and
- finished surface of the Centennial Trails portion of the Residual Solids Conveyance Line.

The open houses were publicized through a variety of communication methods, including:

- advertising in the Peninsula News, Saanich News, Victoria News, and the Times Colonist;
- social media through the CRD twitter feed;
- listed in Project Update #4, which was mailed to 58,800 residents in Victoria, Esquimalt and Saanich;
- posted on the Wastewater Treatment Project website; and
- emailed to stakeholders and residents who signed up for project updates.

In November, the Project Team held meetings with the following community groups and representatives, and municipality representatives:

- City of Victoria staff;
- four Community Information Open Houses: two in Saanich, one in Esquimalt and one in Victoria;
- District of Saanich Technical Working Group;
- Greater Victoria Harbour Authority;
- James Bay Neighbourhood Association (site tours of McLoughlin Point and Ogden Point);
- Township of Esquimalt Liaison Committee; and
- Township of Esquimalt Technical Working Group.

### **December Overview**

In December two Information Bulletins were posted to the project website as well as one information sheet:

- “Residuals Treatment Facility Preferred Proponent Selected” (Appendix H);
- “CRD Board Appoints New Chair of Core Area Wastewater Treatment Project Board”; (Appendix I); and
- an information sheet on the Residuals Treatment Facility (Appendix J).

Project Team members went door-to-door with HRP representatives on Niagara Street to engage with residents and discuss the harbour crossing pipe assembly and pull anticipated to occur in spring 2018, and to request information from residents about their needs and concerns which will help to inform final construction plans. The Project Team spoke with residents in 72 households and left letters for an additional 63 residences.

In December, the Project Team held meetings with the following community groups and representatives, and municipality representatives:

- City of Victoria Council;
- City of Victoria staff;
- Fairfield Gonzales Community Association Land Use Committee (CALUC);
- James Bay Neighbourhood Association; and
- Township of Esquimalt Liaison Committee.

*Table 4 - Public Inquiries October - December, 2017*

Inquiry Source	Contacts for October - December
Information phone line inquiries	35
Email inquiries responded to	23

Key themes of the public inquiries were as follows:

- construction and impacts of the Residuals Treatment Facility;
- route of the Residual Solids Conveyance Line;
- construction noise concerns;
- Clover Point Pump Station and Forcemain geotechnical inquiries;
- project costs;
- concerns about property damage;
- Dallas Road cycle path;
- Macaulay Point Pump Station timelines;
- impacts of construction to residents;
- Niagara Street pipe pull;
- requests for information meetings;
- employment, supplier and contractor interest; and
- requests to be added to email update list.

Questions and concerns raised by meeting participants at the community information open houses are listed in the November overview section above.

## 2.5. Resolutions from Other Governments

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

An update is provided on progress related to resolutions passed by other Governments in prior reporting periods.

## 2.6. Update on Progress on Previous Resolutions of the Core Area Liquid Waste Management Committee and City of Victoria related to Dallas Road Waterfront Geotechnical Monitoring

Resolutions were passed at the Core Area Liquid Waste Management Committee's (CALWMC) April 12th meeting and the City of Victoria's May 11th meeting related to Dallas Road Waterfront Geotechnical Monitoring. The resolutions and the Project Board's response to those resolutions are in italics.

*CALWMC April 12<sup>th</sup> resolution:*

*That the CRD Board request that the Core Area Wastewater Treatment Project Board:*

*4. Closely monitor geotechnical issues along the Dallas Road waterfront and advise the Core Area Liquid Waste Management Committee of any issues that arise and solutions.*

*City of Victoria's May 11<sup>th</sup> resolution:*

*Put in place risk mitigation measures to protect the Dallas Road Bluffs during construction including but not limited to:*

*a. Assembling an interdisciplinary team to study and address the protection of the bluffs.*

*b. As part of the detailed design of the conveyancing, include a plan for the preservation of the bluffs.*

*And that the Project Board report out to the public at one of their regular community meetings, to the JBNA and to Victoria City Council on the measures outlined.*

*Project Board's response / Project Team's plan (as captured in the Project's April – June 2017 Quarterly Report)*

*Geotechnical investigations and monitoring will take place along Dallas Road with an enhanced focus on the shoreline and bluffs prior to, during and after the construction of the Clover Point Forcemain and related pipework. The geotechnical investigations will include a series of test holes drilled along the pipe alignment to establish existing geological conditions and to collect samples for laboratory testing and use in establishing geotechnical design parameters for the pipe and bluff stability analysis. The geotechnical monitoring will include the installation of instruments near the bluffs and along the pipe alignment. Recordings from these instruments will be used to monitor conditions during the construction and post construction phase of the project.*

*The design process for the conveyance system from Ogden Point to Clover Point (the Clover Point Forcemain) has begun. It includes the development of an indicative design and a final design. Stantec, as the owner's engineer, will undertake the indicative design. Another qualified engineering firm (which we will call the 'Second Engineering Firm') will review the indicative design and prepare the final design. Both firms will have input into the undertaking of, and access to the outcome of, geotechnical investigations and monitoring outlined above.*

*Specifically, the Project Team will competitively-procure the Second Engineering Firm to review the indicative design and prepare the final design. This firm will have expertise in the fields of geotechnical, terrain analysis, environmental and civil engineering. The firm will be provided with the indicative design and the results of the geotechnical investigations undertaken to-date, and will be responsible for reviewing that work as part of developing the final design. They will also be responsible for fulfilling the duties of Engineer of Record as defined by the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). Professional members of the firm and their qualifications will be noted as part of their work.*

*As part of their scope of work, the Second Engineering Firm will prepare a plan to mitigate any impacts on the bluffs during construction. As noted, this plan will include post construction monitoring for 12 months following completion of construction.*

*Reports detailing the results of the geotechnical investigations and the indicative alignment will be complete in the fall of 2017. The Project Team will report on these to the public at one of their regular community information meetings, to the James Bay Neighbourhood Association and to Victoria City Council. Results will also be posted on the Project website.*

As of the end of December the Project Team has made the following progress on the plan outlined above:

Geotechnical investigations have been undertaken along Dallas Road with an enhanced focus on the shoreline and bluffs. The geotechnical investigations included:

- 24 boreholes drilled along the pipe alignment, with samples sent for laboratory testing;
- three slope inclinometers (one near Paddon Avenue, and two near Douglas Street); and
- one standpipe piezometer with two nested groundwater monitoring wells near Douglas Street.

The results of the geotechnical investigations were used to establish existing geological conditions and geotechnical design parameters for the pipe and bluff stability analysis.

In preparation for geotechnical monitoring during and after the construction of the Clover Point Forcemain, instruments have been installed near the bluffs and along the pipe alignment. Recordings from these instruments will be used to monitor conditions during the construction and post construction phase of the project.

The design process for the Clover Point Forcemain has been advanced. As laid out above, the design process includes the development of an indicative design by Stantec, as the owner's engineer, and a final design by a second engineering firm.

The Project Team has competitively-procured a design engineering team led by Kerr Wood Leidal to undertake the responsibilities of the second engineering firm: namely to review the indicative design, prepare the final design and be responsible

for fulfilling the duties of Engineer of Record as defined by the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC).

The Kerr Wood Leidal-led team is an interdisciplinary team with expertise in the fields of geotechnical, terrain analysis, environmental and civil engineering, as outlined in Table 5.

Table 5– Clover Forcemain Design Engineering Team Expertise

Company	Relevant Qualifications	Member	Role/Specialty	Years of Experience	Degrees
Kerr Wood Leidal	Extensive familiarity with the Dallas Road Bluffs, including preparation of a conservation plan for the bluffs that considered vegetation impacts, geotechnical assessments, climate change impacts and an archaeological overview.	Colin Kristiansen, P. Eng.	Project Manager	26	BASc, MBA
		Dave Murray, P.Eng.	Civil Engineering Specialist	28	BSCE, Dip. Civil
CH2M Hill	Expertise in seismic design of large diameter forcemains including specialists seismic design and resiliency for large diameter forcemains including ground improvements as well as trenchless technology.	Joe Broberg, P.Eng. <sup>(1)</sup>	Large Diameter Pressure Pipe	43	BSCE, MSCE, MBA
		Donald Anderson, P.E.	Seismic Specialist	43	BSCE, MSCE, PhD, D.GE
		Andrew Finney, P.Eng	Trenchless Technology	24	BSCE, MSCE
Thurber Engineering	Geotechnical specialists having extensive local experience that includes the Dallas Road Bluffs, with specialists in the field of slope stability and terrain hazard assessments.	Stephen Bean, P.Eng.	Geotechnical Specialist	31	BASc, M.Eng
Plan Dynamics Ltd.	Environmental specialists, having extensive local experience in terrestrial and aquatic habitat, species at risk, ecology, etc.	David Harper CPESC, MCIP, RPP	Environmental Specialist	43	B.A., M.A., Ph.D.
Millennia Research	Archaeological expertise with extensive experience in local archaeological assessments and impact studies.	D'Ann Owens, RPCA	Archaeology Specialist	23	BA (Hons)

<sup>(1)</sup> Joe Broberg is the Technical Leader for the Team.

<sup>(2)</sup> Millennia Research was retained directly by the Project Team to provide archaeological services for the Project. D'Ann Owens participated in the review of archaeological issues for the Clover Forcemain.

The Kerr Wood Leidal team have been provided with the indicative design and the results of the geotechnical investigations undertaken to-date, and have reviewed that work in preparation for developing the final design. Kerr Wood Leidal also reviewed

previous studies and technical reports, and have completed a geotechnical assessment. The assessment concluded that the Dallas Road alignment is suitable from a geotechnical perspective and that the forcemain can be constructed and operated without having an adverse environmental or geotechnical impact on the Dallas Road bluffs.

A report outlining the results of the geotechnical investigations to-date and the geotechnical assessment of the alignment was posted on the Project's website in November.

The Project Team reported on the results of the geotechnical assessment to the public at the November 27<sup>th</sup>, 2017 community information meeting and to Victoria City Council on December 14<sup>th</sup>, 2017, and will report to the James Bay Neighbourhood Association at a meeting on January 10<sup>th</sup>, 2018.

The Project Team remains committed to completing the following:

- Geotechnical monitoring will take place along Dallas Road with an enhanced focus on the shoreline and bluffs during and after the construction of the Clover Point Forcemain, including post construction monitoring for 12 months following completion of construction.
- As part of finalising the design, the Kerr Wood Leidal-led team will prepare a plan to mitigate any impacts that construction may have on the bluffs. Kerr Wood Leidal will monitor the construction contractor's adherence to that plan.

## 2.7. Schedule

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

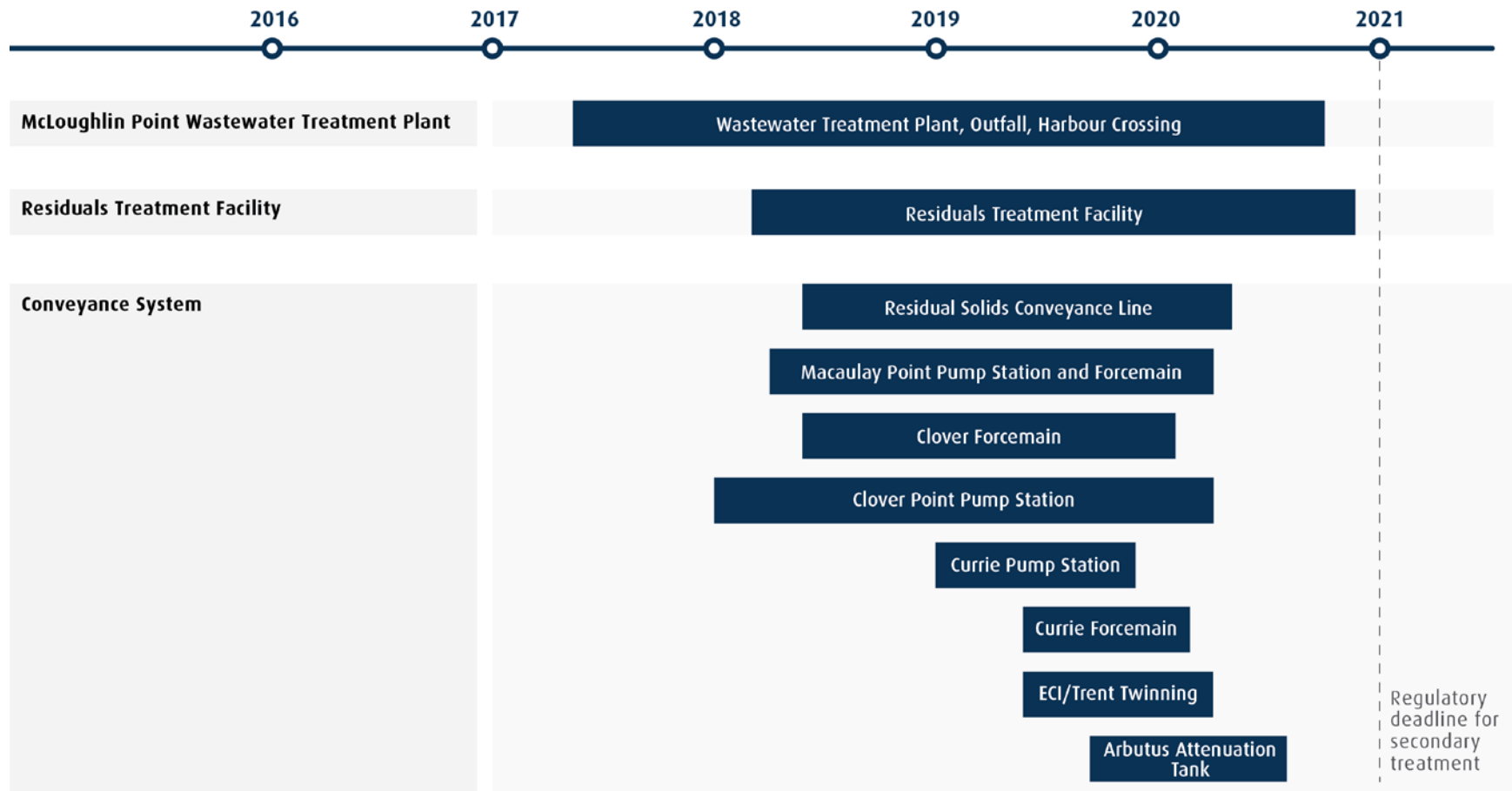
Figure 1 shows the high-level Project schedule. This schedule has not changed from the schedule shown in the last (Q3 2017) quarterly report. This schedule remains subject to optimization as the Project and planning progress.



Figure 1-High-Level Project Schedule

## Wastewater Treatment Project Schedule\*

Construction + Commissioning



\* Schedule subject to updates as project planning progresses.

## 2.8. 30 day and 60 day lookahead

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

### **Safety**

- the WTP Safety Manager will provide office safety orientations to any new Project Team staff;
- WTP Safety Manager and/or Construction Manager will conduct daily site inspections at all active Project work sites;
- WTP Safety Manager and a staff member selected at random (to ensure a fresh view) will conduct a monthly inspection of the WTP Project office;
- Project Team review of incident reports: these reviews will be ongoing for the duration of the Project. As incident reports are submitted by Project contractors they will be reviewed to ensure that measures are put in place to prevent a recurrence. Depending on the type of incident notices may be sent to other Project contractors to advise them of the incident and the preventative measures taken;
- participation in Joint Occupational Health and Safety Committee meeting; and
- participation in bi-weekly CRD safety meetings.

### **Environment and Regulatory Management**

- HRP to submit permit application to Transport Canada to allow the discharge of treated excavation water to Victoria Harbour. This was originally scheduled for December, but required the collection of additional data;
- Project Team to continue preparing application for MWR Registration, with submission to the Ministry of Environment anticipated in Q4, 2019;
- HRP to finalise and submit application for a Fisheries Act Authorization to Fisheries and Oceans Canada;
- receipt of provincial and municipal authorizations to allow construction at the Clover Point pump station; and
- HRP to continue preparing an updated Marine EIS for submission at the end of Q1 2018.

### **First Nations**

- First Nations cultural monitors will be in the field, supporting Millennia archeologists as they complete field work for the Project-wide Archaeological Impact Assessment;
- continue bi-weekly meetings with First Nations liaisons; and
- update the First Nations Consultation Log.

### **Stakeholder Engagement**

- presentation to the James Bay Neighbourhood Association and Fairfield Gonzales Community Association of the:
  - design proposal for the exterior of the Clover Point Pump Station and the Public Realm Improvements associated with the Clover Point Pump Station;
  - results of the geotechnical assessment of the Clover Forcemain;
  - alignment of the Clover Forcemain; and

- alignment and design of the cycle track (connecting Clover Point to Dock Street) associated with the Clover Forcemain;
- update “Community Questions” on the project website;
- planning for Niagara Street pipe assembly and pull;
- ongoing community liaison meetings; and
- planning for future Project Update content.

### **Cost Management and Forecast**

- assign WBS codes to the new contracts;
- prepare cost reports;
- prepare for financial year end;
- monitor schedule; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund).

### **Construction**

#### **Ogden Point**

- continue Horizontal Directional Drill (HDD) reaming passes for the Victoria Harbour Crossing; and
- commence lining of harbour crossing pipe in Maple Ridge BC.

#### **McLoughlin Point**

- continue rock blasting in outfall;
- continue blast rock crushing and stockpiling;
- continue detailed excavation for pipe trenches;
- continue form, install rebar and place concrete of tsunami walls;
- continue form, install rebar and shotcrete of planter walls;
- form and pour north tower crane pad; and
- remove remaining contaminated material stockpiles and install groundwater monitoring wells for delineation of vapour and groundwater contamination.

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

- commence construction of laydown area

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

- award design-build contract, and apply for Development Permit from Township of Esquimalt

### **Engineering**

- McLoughlin WWTP 50% Design Workshop;
- McLoughlin WWTP Construction Package 4 Underslab Piping 90% design submission;
- Residual Solids Conveyance Line 30% design submission;
- Clover Forcemain 50% design submission; and
- Clover Point Pump Station 50% design submission.

### **Procurement**

- execute design-build contract for Clover Point Pump Station;
- execute design-build contract for Macaulay Point Pump Station and Forcemain; and
- continue with Financial Close activities for the RTF.

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

**Safety**

- continuation of activities listed in next 30 days section; and
- review of Kenaidan's Macaulay Point and Hartland Resource Management Group's Hartland Traffic Control and Site Specific Safety Plans for site mobilization and Geotechnical Surveys.

**Environment and Regulatory Management**

- Project Team to continue preparing application deliverables (including HRP updates to the Marine Environmental Impact Study) for MWR Registration; and
- the Project team anticipates receipt of a Site Alteration Permit for Clover Point and a Site Alteration Permit for all other Project components for which there is a Registered Archaeological Site.

**First Nations**

- the Project Team, CRD, and Songhees and Esquimalt Liaisons anticipate finalising the archaeological protocol in Q1, 2018, associated with the handling of ancestral remains, should they be encountered during project activities; and
- ongoing consultation and engagement with the W̱SÁNEĆ Nations, especially with respect to the Residual Treatment Facility and Residual Solids Conveyance Line.

**Stakeholder Engagement**

- planning for Niagara Street information meeting for residents that will be affected by the Victoria Harbour Crossing pipe assembly and pull; presentation to the City of Victoria Council of the:
  - design proposal for the exterior of the Clover Point Pump Station and the Public Realm Improvements associated with the Clover Point Pump Station;
  - alignment of the Clover Forcemain;
  - alignment and design of the cycle track (connecting Clover Point to Dock Street) associated with the Clover Forcemain; and
  - feedback heard through community engagement, and how that feedback has been considered in the design;
- planning for future Project Update content;
- ongoing community liaison meetings; and
- website updates.

**Cost Management and Forecast**

- assign WBS codes to the new contracts;
- prepare cost reports;
- monitor schedule; and

- submit funding claims to Infrastructure Canada (under the Building Canada Fund).

## **Construction**

### **Ogden Point**

- continue Horizontal Directional Drill (HDD) reaming passes;
- complete lining of harbour crossing pipe in Maple Ridge BC;
- commence Niagara Street BC Hydro relocates and temporary power set up.

### **McLoughlin Point**

- continue installation of foundation piles;
- continue form, install rebar and place concrete of tsunami walls;
- continue form, install rebar and shotcrete of planter walls;
- commence stabilization of outfall walls;
- commence installation of foundation piles;
- curing of north tower crane pad and erection of north tower crane;
- commence construction of foundation for BAF area; and
- continue installation of groundwater monitoring wells for delineation of vapour and groundwater contamination, and collect/analyze data.

### **Clover Point Pump Station**

- complete construction of laydown area; and
- install temporary power to laydown area.

### **Macaulay Point Pump Station**

- commence work at site

## **Engineering**

- McLoughlin WWTP HRP Submittal of Construction Package 4 Underslab Piping 100% design submission;
- Residual Solids Conveyance Line 50% design submission; and
- 50% Design Workshops with City of Victoria staff and Lekwungen representatives for Clover Point Pump Station Public Realm Improvements, and Clover Forcemain Alignment and Cycle Track.

## **Procurement**

- achieve Financial Close for the RTF \; and issue RFP for design consultant services (ECI / Trent Twinning, Currie Forcemain and Currie Pump Station).

### 2.9. Cost Management and Forecast

The monthly cost report for December and the quarterly cost report are shown in Appendices K and L. The cost report summarizes Project expenditures and commitments by the three Project Components and the major cost centres common to the Project Components.

We have held constant the status of the cost key performance indicator as yellow, as a result of cost pressures identified in the Project's Q3 2017 Quarterly Report. In order to address these pressures the Project team in concert with Stantec are reviewing the scope and construction cost estimates for the remainder of the contracts and identifying opportunities where savings could be realized. With this corrective action our confidence level is still high that we will be able to deliver the project within the Control Budget.

#### 2.9.1. 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 \$33.7 million. The significant commitments made in the reporting period were:

- KWL - Arbutus Attenuation Tank design consultant services;
- KWL – Clover Point Forcemain design consultant services;
- HRP - contract change orders;
- BC Hydro – electrical site servicing;
- Kenaidan – Clover Point Pump Station Design-Build Contract;
- Parsons – Design Consultant Services for the Residual Solids Conveyance Line;
- KWL – Design Consultant Services for the Clover Forcemain;
- Jacob Bros – Hartland Earthworks; and
- Stantec – contract change orders.

#### 2.9.2. Expenses and invoicing

The Project expenditures for the reporting period were as expected. The main Project expenditures incurred over the reporting period were associated with: WWTP construction activities; conveyance systems and PMO-related costs.

The Project expenditures were within the budget allocations for each of the budget areas, with no variance to the planned budgets during the reporting period.

#### 2.9.3. Contingency

Contingency funds were drawn during the reporting period:

- A total of \$2.4M was drawn from the WWTP contingency over the reporting period for site remediation and disposal of contaminated soil, as well as geotechnical services; and
- A total of \$2.5M was drawn from the Conveyance contingency over the reporting period for the Clover Point Pump Station Design-Build Contract and the Honorarium fee for unsuccessful bidders.

The contingency draws are shown by Project Component in Table 6. The remaining contingency is anticipated to be sufficient to deliver the Project within the Control Budget.

Table 6 - Contingency and Program Reserve Draw-down Table

WTP Contingency and Program Reserve Draw	Draw Date	\$ Amount
<b>Total Contingency and Program Reserve Draw as at Sep. 30, 2017</b>		<b>\$1,467,698</b>
McLoughlin Point Site Remediation: Hydrocarbon Contaminated Material and Hazardous Waste	Oct -17	\$1,668,441
Geotechnical services for independent review of the design of the foundation system proposed for the McLoughlin Point	Oct -17	\$100,000
McLoughlin Point Site Remediation: excavation and disposal of contaminated soil (metals and chlorides) from the Ogden Point site	Nov-17	\$65,949
Supervening Events #2 (Contaminated Soil) - 2 <sup>nd</sup> payment	Dec-17	\$112,934
Supervening Event #6 (Chloride Impacted Soil) - 1 <sup>st</sup> payment	Dec-17	\$445,013
<b>WWTP Total Draw</b>		<b>\$2,392,338</b>
<b>RTF Total Draw</b>		<b>\$0</b>
Clover Point Pump Station Design-Build Contract - proposal price greater than budget on account of cost escalation due to inflationary pressures in the Victoria area construction market.	Oct-17	\$2,448,800
Clover Point Pump Station Design-Build Contract Honorarium fee for unsuccessful bidders	Oct-17	\$47,619
<b>Conveyance Total Draw</b>		<b>\$2,496,419</b>
<b>PMO Total Draw</b>		<b>\$0</b>
<b>BC Hydro Total Draw</b>		<b>0</b>
<b>WTP Program Reserve Draw</b>		<b>\$0</b>
<b>Total Contingency and Program Reserve Draw as at Dec 31, 2017</b>		<b>\$6,356,454</b>
<b>Total Contingency and Program Reserve Remaining</b>		<b>\$62,961,597</b>

### 2.9.3 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 Wastewater Treatment Plant;
- up to \$50 million through the Green Infrastructure Fund towards the conveyance system project; and

- up to \$41 million towards the Residuals Treatment Facility 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*

<b>Funding Source</b>	<b>Maximum Contribution</b>	<b>Funding Received in the Reporting Period</b>	<b>Funding Received to Date</b>
Government of Canada (Building Canada Fund)	\$120,000,000	-	-
Government of Canada (Green Infrastructure Fund)	\$50,000,000	-	-
Government of Canada (P3 Canada Fund)	\$41,000,000	-	-
Government of British Columbia	\$248,000,000	-	-
<b>TOTAL</b>	<b>\$459,000,000</b>	-	-



## 2.10. 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.

Risk level trends have generally remained unchanged from the previous reporting period, though some risks have been added as the level or risk management of those risks increased over the reporting period. There was an increase to the risk of Conveyance works contracts' amount being higher than budgeted due to high cost escalation (inflation), and the risk of the public directly contacting contractors at sites was added to reflect the potential impact of contact at worksites leaving both parties vulnerable to worksite hazards and potential injuries.

<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>				
First Nations engagement	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 on-going over the reporting period with four community information open houses held in Saanich, Esquimalt and Victoria.	M	No change
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

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
Downstream works delays	Delays from WWTP projects delay solids influent to RTF	Contract with HRP 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 to risk level, management increased this period
Upstream works delays	RTF not constructed and operating within contractual time frame. This will impact the commissioning / in-service of McLoughlin WWTP.	Schedule allowance to ensure conveyance elements complete prior to requirement. Contract with Project Co will include terms that require the contractor to recover schedule delays and/or allow for CRD acceleration. Investigate interim dewatering and disposal alternative to mitigate the costs of having and disposing of liquid sludge from the WWTP.	M	No change to risk level, management increased this period
Provincial or Federal government/agency permit requirements not met	Project Component required Provincial or Federal permit conditions are not met by Project contractors resulting in delays or work stoppage.	The Project Team maintain a centralized permit compliance register to monitor and manage Project permit condition compliance by Project contractors. Meetings held with Federal and Provincial agencies to fully understand and meet requirements in a timely fashion.	M	No change

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	Risk added this period
McLoughlin Point Wastewater Treatment Plant				
Unexpected contaminated soil conditions during excavation	Site has more contaminated soils than initial assessment.	CRD and HRP 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 to risk level, management increased this period
Conveyance				
Unexpected geotechnical conditions results in higher procurement and/or construction costs	Geotechnical conditions result in redesign and/or higher construction cost than budgeted.	Ensure adequate investigations to manage the risk of unexpected geotechnical conditions: comprehensive geotechnical investigations have been undertaken for the Clover Forcemain, Macaulay Point Pump Station and Forcemain, and Residual Solids Conveyance Line. This geotechnical information has been provided to procurement participants.	M	No change to risk level, management increased this period

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
Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted	Cost of conveyance contracts higher than estimated and budgeted	Conveyance contracts will be competitively-procured. The Project team in concert with Stantec are reviewing the scope and construction cost estimates for the contracts that haven't yet been awarded in order to identify opportunities where savings could be realized to offset escalation.	H	Risk level and management increased this 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 the design process. The Project team in concert with Stantec are reviewing the scope in order to identify opportunities where savings could be realized to offset any increases during design development.	H	No change to risk level, management increased this period

## 2.11. Status (Engineering, Procurement and Construction)

### 2.11.1. WWTP

The WWTP continued in the construction phase during the reporting period. The construction progressed in-line with the schedule, with HRP furthering design and completing the removal of the majority of the contaminated materials excavated. The remaining contaminated material is expected to be removed in January 2018. Construction of the planter and tsunami walls (Figures 2 and 3) continued as did blasting in the outfall area, and crushing and stockpiling of the blast rock. BC Hydro also completed the installation of the new power poles and stringing of the new power lines on Victoria View Road (Figure 4)

In October, the primary site activities at McLoughlin Point were the delineation, excavation and removal of contaminated material in conjunction with blasting, excavation, crushing and stockpiling of the crushed aggregate. Construction of a truck turnaround (Figure 5) and widening of Victoria View Road for the BC Hydro Right of Way (Figure 6) were also completed in October.

At McLoughlin Point in November, HRP set up HDD operations in preparation for the completion of the pilot hole drilling. Construction of the tsunami and planter walls (Figure 7) commenced and blasting, excavation, crushing and stockpiling of crushed aggregates continued. Delineation, excavation and removal of contaminated material continued along with slope stabilization of the completed detailed excavations. The HDD pilot hole was completed in mid-November (Figure 8) and the first reaming pass commenced using a 34" diameter reaming bit.

In December, HRP continued the 34" reaming pass of the harbour crossing from McLoughlin Point. Construction of the tsunami and planter walls continued, along with ongoing blasting, excavation, crushing and stockpiling of crushed aggregates. Excavation of contaminated soil was completed, with the exception of a few stockpiles, and delineation of the extent of vapour and groundwater contamination continued.

Photographs of construction progress at McLoughlin Point are shown in Figures 2 – 8.



Figure 2 - Tsunami wall footing formed with epoxy coated rebar



Figure 3 – Planter wall vertical board forms



Figure 4 – New BC Hydro power poles and lines on Victoria View Road



Figure 5 – Construction of truck turnaround on Victoria View Road





Figure 6 – Road widening & BC Hydro Right of Way on Victoria View Road



Figure 7 – Planter wall board forms with rebar installed



*Figure 8 – November 14, 2017 Pilot drill breakthrough at McLoughlin Point*

### 2.11.2. RTF

The RTF Project Component was in the procurement phase throughout the reporting period and progressed as planned.

In October the District of Saanich council approved expanding the Water Service Area Boundary to match the municipal boundary and include the extent of the Hartland Landfill Site at 280 Willis Point Road. Previously the District of Saanich's water service boundary divided the Hartland Landfill site, with only the southern half of the property within the designated service area. The expansion will allow water service to be provided to the Residuals Treatment Facility.

The evaluation of technical submissions from the three shortlisted proponents was completed in October 2017, and financial submissions were received and evaluated in November 2017.

In December Hartland Resource Management Group were selected as the preferred proponent to design, build, partially finance, operate and maintain the Residuals Treatment Facility. The contract is expected to be awarded in February 2018.

### 2.11.3. Conveyance System

The Conveyance System Project Component was in the engineering and procurement phase throughout the reporting period and progressed as planned.

The procurement of the two design-build Conveyance System contracts progressed over the reporting period, and the five design-bid-build Conveyance System contracts were in the engineering phase, with the majority of the work focused on the contracts summarised in the following sub-sections.

#### 2.11.3.1. Clover Point Pump Station

Kenaidan Contracting Ltd. was selected as the preferred proponent for the Clover Point Pump Station, and a Letter of Intent was issued to allow the design to be progressed (the contract is expected to be awarded in January 2018). In November Kenaidan and the Project Team held a 30% design workshop with City of Victoria staff and Lekwungen representatives for the Clover Point Pump Station public realm improvements. In December Kenaidan and the Project Team presented the 30% design for the Clover Point Pump Station public realm improvements to the City of Victoria Council. Based upon feedback received at the Council Meeting, Kenaidan is refining elements of their design associated with the Public Realm Improvements.

#### 2.11.3.1. Macaulay Point Pump Station and Forcemain

Proposals were received and evaluated. The contract is expected to be awarded in January, 2018.

#### 2.11.3.2. Clover Forcemain

Kerr Wood Leidal reviewed the Clover Forcemain indicative design and the results of the geotechnical investigations undertaken to-date, as well as previous studies and technical reports, and completed a geotechnical assessment.

A report outlining the results of the geotechnical investigations to-date and the geotechnical assessment of the alignment was posted on the Project website in November. The report noted that the KWL team (as Design Consultant for the Clover Forcemain) concluded that with refinement of the indicative design, the Dallas road alignment is suitable for construction of the Clover Forcemain from a geotechnical perspective and that the forcemain can be constructed and operated without an adverse environmental or geotechnical impact on the Dallas Road Bluffs and James Bay Seawall.

A 30% Design Workshop was held with KWL, City of Victoria staff and Lekwungen representatives, to present the Design Proposals for the Clover Forcemain alignment and the Cycle Track alignment along Dallas Road.

On November 2, 2017 a 30% design workshop was held with City of Victoria staff to review and refine the forcemain and cycle path alignments. The corridor for the Clover Forcemain along Dallas Road was presented to the public at a community information open house in November in Victoria. Further details will be presented at two community meetings in January 2018.

In December KWL and the Project Team presented the 30% design for the Clover Forcemain alignment and the Cycle Track alignment along Dallas Road to the City of Victoria Council. Based upon feedback received at the Council meeting, KWL is exploring options to adjust the cycle path alignment to mitigate impacts to parking on Dallas Road, along the seawall at the east end of the cycle path.

During December, additional geotechnical investigations were completed to allow refinement of the alignment during detailed design. The Project Team also received technical information from the Greater Victoria Harbour Authority to coordinate possible construction on their property at Ogden Point.

### 2.11.3.3. Residual Solids Conveyance Line

In October, proposals were received and reviewed for design consultant (including “Engineer of Record”) services. Following evaluation of the RFP proposals, Parsons was selected as the successful proponent to provide design consulting services for the Residual Solids Conveyance Line.

In November the indicative design was reviewed in a workshop with CRD, Stantec (Owner’s Engineer) and Parsons (Design Consultant for the Residual Solids Conveyance Line). The alignment of the Residual Solids Conveyance Line was confirmed: while the route is close to final, it is still subject to input from communities and feedback received during the November community information meetings will be considered, along with other technical and financial considerations, in finalizing the design.

In November the alignment was presented to the public at a series of community information open houses in Saanich, Esquimalt and Victoria, and the Project Team and Parsons considered feedback received.

During November meetings were also held with the Ministry of Transportation and Infrastructure (MOTI) regarding the possibility of MOTI installing a section of the Residual Solids Conveyance Line during the construction of the McKenzie Interchange project (currently underway). This would mitigate interference between MOTI and CRD contractors working in close proximity, and also minimize the possibility of CRD duplicating work (i.e. roadway reconstruction). MOTI was receptive to the idea of having their contractor perform a limited amount of work, subject to an agreement that CRD shall reimburse MOTI for all related costs. During December, Parsons accelerated their detail design for work in the vicinity of the McKenzie Interchange project, to enable this plan.

#### 2.11.3.4. Arbutus Attenuation Tank

Kerr Wood Leidal (KWL) continued to finalize the drawings and specifications for the Arbutus Attenuation Tank, and provide tender and construction period services, as the Engineer of Record).

In October, the Project Team met with the Vancouver Island Health Authority (VIHA) to discuss the utilization of VIHA property across the street from the site of the Arbutus Attenuation Tank. At the request of VIHA KWL and the Project Team are assessing the viability of using an area next to the site of the Arbutus Attenuation Tank for contractor laydown, rather than the VIHA property on the other side of Arbutus Road.

KWL is also preparing a proposal, at the District of Saanich's request, to extend the Arbutus Road frontage improvements (new sidewalk, cycle path and storm drainage) beyond the CRD property line west to the corner of Arbutus Road and Finnerty Road. The District of Saanich has requested that this design and construction work be included in the Arbutus Attenuation Tank scope, with the understanding that the improvements would be beyond those agreed and therefore the associated costs would be borne by the District of Saanich.

## Appendix A: Blasting Schedule- week commencing December 18, 2017



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

**Construction Notice**

**December 18, 2017**

### McLoughlin Point: Blasting Schedule

Site preparation for the McLoughlin Point Wastewater Treatment Plant is underway. The contractor, Harbour Resource Partners, will conduct controlled blasting and excavation as a part of this work.

#### Blasting Schedule for the week of December 18\*:

Monday, December 18	4-6 blasts per day
Tuesday, December 19	4-6 blasts per day
Wednesday, December 20	4-6 blasts per day
Thursday, December 21	4-6 blasts per day
Friday, December 22	4-6 blasts per day

\*Blasting Schedule is subject to change.

#### Blasting Procedure

- Each blast will last less than 60 seconds.
- All blasts will be covered with 5,000 pound blast mats. Blasting signs will be posted on the site boundary, and 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

**Blasting Hours:** Monday to Friday, 8:00 a.m. to 4:30 p.m.

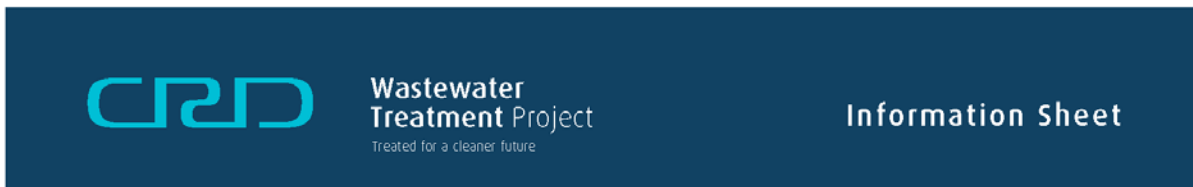
#### About the Wastewater Treatment Project

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. The Wastewater Treatment Project will be built so we comply with federal regulations by the end of 2020, and is being funded by the Government of Canada, the Government of British Columbia and the CRD.

Harbour Resource Partners is the contractor selected by the CRD to build the McLoughlin Point Wastewater Treatment Plant, cross-harbour undersea pipe, and marine outfall for treated wastewater at McLoughlin Point.

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.

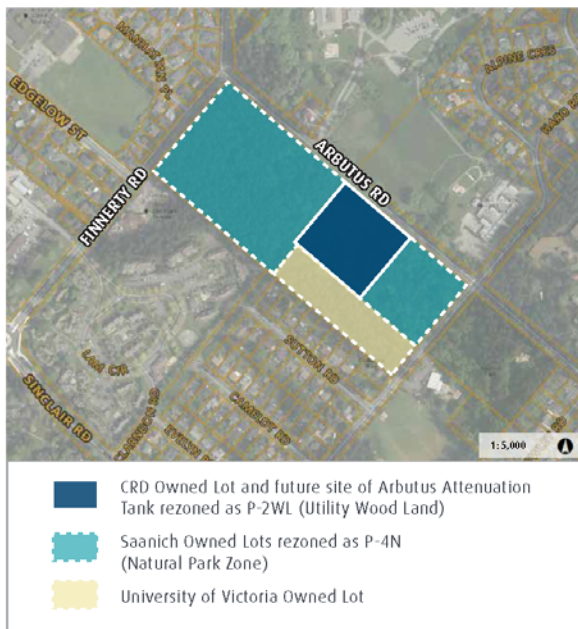
## Appendix B: Arbutus Attenuation Tank – Saanich Information Sheet



### Arbutus Attenuation Tank - Saanich

The Arbutus Attenuation Tank is part of the Wastewater Treatment Project. It will be a buried underground concrete tank that will temporarily store wastewater flows during high volume storm events, to reduce the number of sewer overflows. The tank is one of several wastewater conveyance system upgrades that are part of the Wastewater Treatment Project to deliver tertiary wastewater treatment to residents in the Capital Regional District (CRD)'s core area municipalities.

#### HARO WOODS AND PROPERTY LOCATION



#### PROJECT DESCRIPTION

The Arbutus Attenuation Tank will be located on Arbutus Road, across the street from Queen Alexandra Hospital, in Saanich.

- In July 2013, Saanich Council approved the rezoning and subdivision of two properties on Arbutus Road. This enabled a land exchange agreement with the CRD, which allows the Arbutus Attenuation Tank to be installed on lands that are already partially cleared and have been previously disturbed during the construction of existing sewers.
- The land exchange secured the long-term preservation of the vast majority of Haro Woods as a nature park, adding 2.8 hectares of land to Saanich's park inventory.
- As part of the construction of Arbutus Attenuation Tank, there will be road frontage improvements including bike lanes, sidewalks, and stormwater management.
- Once construction is complete the site will be planted with vegetation considering the local woodland setting.



**CONSTRUCTION**

- Construction of the tank is expected to begin in 2019 and will take approximately one year to complete.
- The Wastewater Treatment Project Team will engage with the surrounding communities before and during construction to ensure that the community is fully informed on the progress of the construction and has advance notice of construction activity. Communication tools include: a project information phone line, email, social media, website, community updates, construction notices, traffic media updates, advisories where appropriate, and community information meetings.

**WHAT IS THE ARBUTUS ATTENUATION TANK?**

- The Arbutus Attenuation Tank will temporarily store wastewater flows caused by inflow and infiltration (of rainwater and groundwater) during high volume storms.
- The 5,000m<sup>3</sup> tank will be empty except during high volume storm events.
- High volume storm events usually occur in the winter. During these events, excess wet weather flows will be diverted into the Arbutus Attenuation Tank.
- The temporary storage of wastewater will mitigate overflows and reduce impacts along the coastline.
- Once the high storm flow has passed, the tank will empty back into the existing sewer system, through the East Coast Interceptor (ECI) trunk sewer system, which directs wastewater to the Clover Point Pump Station and then to the McLoughlin Point Wastewater Treatment Plant.
- Once the tank is emptied, an automatic cleaning system will be activated to clean the floors, walls and columns of the tank.
- CRD staff will inspect the tank after each use to ensure it is cleaned and that all wastewater has drained back into the sewer system.
- The tank will be kept under negative air pressure to draw air within the tank directly into an activated carbon absorber system that will contain and suppress potential odours. This system has been implemented successfully at the Marigold Attenuation Tank.

**About the Wastewater Treatment Project**

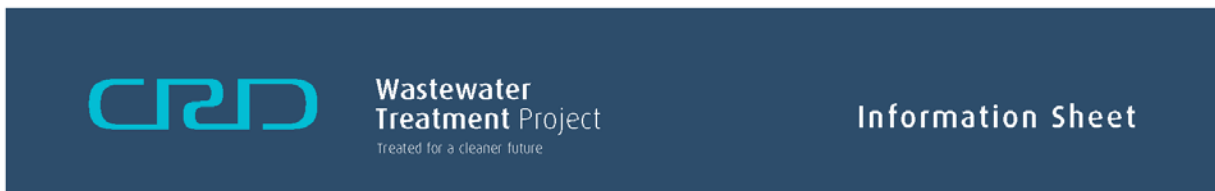
The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees First Nations. The Wastewater Treatment Project will be built so we comply with federal regulations by the end of 2020, and is being funded by the Government of Canada, the Government of British Columbia and the CRD.

**For More Information**

**Website:** [wastewaterproject.ca](http://wastewaterproject.ca)  
**Email:** [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca)  
**Project Information Line:** 1.844.815.6132

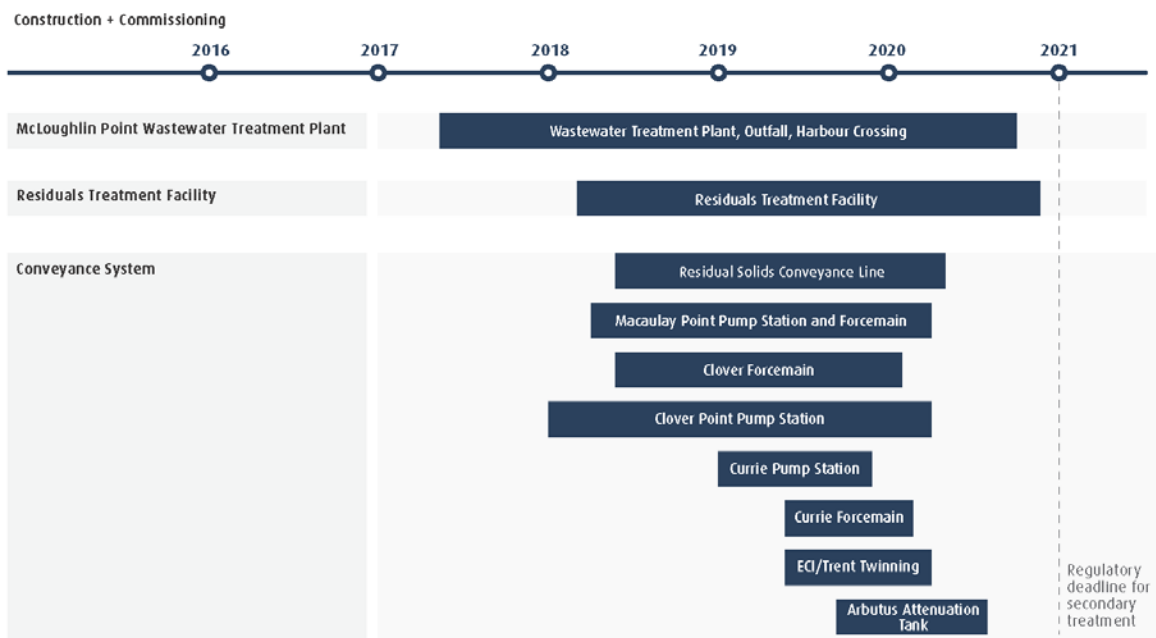


**Appendix C: Construction Schedule Information Sheet October 2017**



**Wastewater Treatment Project Schedule\***

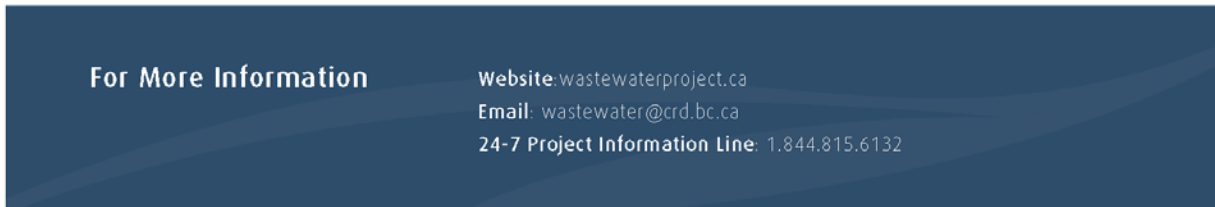
The Wastewater Treatment Project will be constructed through nine separate contracts, and construction will be staged to the end of 2020. Communications and engagement activities will take place in advance of project construction beginning in each area.



\* Schedule subject to updates as project planning progresses.

**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. The Wastewater Treatment Project will be built so we comply with federal regulations by the end of 2020, and is being funded by the Government of Canada, the Government of British Columbia and the CRD.



## Appendix D: Residual Solids Conveyance Line Information Sheet



**Wastewater  
Treatment Project**  
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Information Sheet

### Residual Solids Conveyance Line

The Residual Solids Conveyance Line is part of the Wastewater Treatment Project. It includes two pipes along with four or five small pump stations. The two pipes will connect the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill and will be installed in a common trench where possible. Though the design is not complete it is anticipated that a common trench will be used along the majority of the route.

The first pipe will be approximately 250mm (10 inches) in diameter and 18.5km long, and will transport residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility for treatment. The second pipe will be approximately 350mm (14 inches) in diameter and 11.5km long, and will return the liquid removed from the residual solids 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.

#### Background

In 2014, alignment options were developed based on technical, environmental, social and economic considerations. The options were evaluated by the CRD, with input from the District of Saanich, Township of Esquimalt and City of Victoria, a preferred alignment was selected.

The evaluation of the alignment has since been reviewed and validated by the Wastewater Treatment Project team in consultation with the municipalities.

Favourable considerations for the route include:

- shortest of all alignments
- power available at pump station locations
- good maintenance access
- no impact on wildlife habitat
- lowest capital, operating and maintenance costs

The Wastewater Treatment Project team is working with the municipalities of Saanich, Esquimalt, and Victoria to ensure technical issues related to the alignment are addressed and, where possible, to coordinate municipal works with construction of the Residual Solids Conveyance Line.

It is anticipated that the design will be finalized in spring 2018. The construction schedule will begin in summer 2018, and is expected to take approximately two years to complete.

#### Public Information Open Houses

The Project Team will hold four community information open houses in November to share the alignment for the Residual Solids Conveyance Line and the anticipated location of pump stations.

While the route is close to final, it is still subject to input from communities and feedback we receive during the November meetings will be considered, along with other technical and financial considerations, in finalizing the design.

**For details on the community information open houses please visit: [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. The Wastewater Treatment Project will be built so we comply with federal regulations by the end of 2020, and is being funded by the Government of Canada, the Government of British Columbia and the CRD.



# Wastewater Treatment Project

Treated for a cleaner future

## Information Sheet



### 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 E: Construction Notice Clover Forcemain & Pump Station



Wastewater  
Treatment Project  
Treated for a cleaner future

Construction Notice

November 27, 2017

### Clover Forcemain: Geotechnical Work

The Wastewater Treatment Project (WTP) includes construction of a pipe which will transport wastewater from the expanded 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 WTP is conducting further geotechnical investigations to inform the final design and alignment of the Clover Forcemain. A truck mounted drilling rig will be used to create approximately four boreholes located at the following locations along Dallas Road: between Douglas Street and Paddon Ave; at Cook Street; and the James Bay seawall. There will be some noise associated with the drilling work. Preparation work will begin on November 30. Drilling of the four boreholes is anticipated to take four days during the week of December 4, followed by two days of seismic testing the week of December 11.

Construction of Clover Forcemain is anticipated to begin in spring 2018. A key focus of the Project will be to ensure people have as much information as possible in advance so they can plan for construction activities. More information will be available in spring 2018, including traffic management and construction plans.

#### Hours of work

- Weekdays from 8 a.m. to 5 p.m.

#### Traffic Impacts

- Traffic control areas will be delineated by cones and signs and controlled by flaggers.
- Some of the boreholes will require temporary parking stall closures along Dallas Road.
- Traffic control will be provided for utility locates, drilling and seismic testing.

#### Background

The alignment of the Clover Forcemain was developed in collaboration with City of Victoria planning staff and considered protection of the bluffs, location of mature trees, sensitive vegetation, potential erosion, and traffic impacts. Geotechnical investigations have confirmed the Dallas Road alignment and further geotechnical assessment is required to finalize the alignment within the Dallas Road right-of-way.

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.



## Clover Point Pump Station: Geotechnical Work

The Clover Point Pump Station will be upgraded and expanded as part of the Wastewater Treatment Project. Construction of the Clover Point Pump Station expansion will begin in early 2018 and take approximately two years to complete.

The CRD recently selected Kenaidan Contracting Ltd, through a competitive selection process, to construct the Clover Point Pump Station expansion.

The contractor will conduct a geotechnical investigation to inform the design of the Clover Point Pump Station which will include drilling boreholes at the pump station. This work is anticipated to begin the week of December 4<sup>th</sup> and will take approximately three days to complete, depending on the weather. A truck mounted drilling rig will be used to create approximately three boreholes located near the upper parking lot of Clover Point. There will be some noise associated with the drilling work which will comply with the City of Victoria construction bylaws. The estimated duration for drilling each borehole is approximately 2-3 hours.

### Hours of work

- Weekdays from 7 a.m. to 5 p.m.

### Traffic Impacts

- There will be no impact to traffic flow on Dallas Road
- The Clover Point upper parking lot will be closed to vehicles during this time.
- Temporary signage will be installed to advise drivers, pedestrians and cyclists of changes to traffic patterns and parking.

### Background

The Clover Point Pump Station was built in the 1970s and is owned and operated by the CRD. The current pump station pumps wastewater directly into the ocean. The expanded pump station will pump wastewater to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment and provide bypass pumping to the existing Clover Point outfall during storm events.

The Clover Point Pump Station expansion will be below the grade of the adjacent section of Dallas Road. Similar materials to those on the current pump station will be used to blend the expanded facility with the existing facility and surrounding area. As part of the pump station expansion, the existing split rock wall facing the waterfront will be extended to enable access to the pump station and maintain the seaside walkway. The pump station will be designed with state-of-the-art odour control systems; the current level of odour from the pump station will not be exceeded and there will be no discernible odour in the community. Noise from the expanded pump station will not exceed the current level of noise from the existing pump station. The scope of work also includes a number of public realm improvements, such as public washrooms, pedestrian and bicycle paths, bicycle facilities, a public plaza, street furniture and road intersection improvements.

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: Information Bulletin November 22, 2017



### Information Bulletin

For Immediate Release

November 22, 2017

#### Clover Point Pump Station Contractor Selected

**Victoria, BC**– The contractor for the Clover Point Pump Station has been selected and is Kenaidan Contracting Ltd. The Clover Point Pump Station expansion and upgrade is being constructed as part of the Wastewater Treatment Project, and is a \$25 million contract to design, build and expand the current pump station.

Kenaidan Contracting Ltd (Kenaidan) was selected by the Capital Regional District (CRD) through a competitive selection process. Kenaidan has more than 30 years of experience building, modernizing, and expanding waterworks facilities within Southern Ontario and British Columbia.

Construction on the Clover Point Pump Station is anticipated to begin in early 2018 and will be complete in mid-2020. The contractor is expected to begin some pre-construction activities, such as geotechnical and topographical investigations in December 2017, and it is anticipated the contractor will be preparing the laydown area and mobilizing site trailers in early 2018.

The Clover Point Pump Station was built in the 1970s and is owned and operated by the CRD. The current pump station pumps wastewater directly into the ocean. The expanded pump station will pump wastewater to the McLoughlin Point Wastewater Treatment Plant for tertiary treatment during normal flows and provide bypass pumping to the existing Clover Point outfall during storm events.

The Clover Point Pump Station expansion will be primarily underground and below the grade of the adjacent section of Dallas Road. The expanded facility will be constructed out of materials that will allow it to blend with the existing facility and surrounding area. It will also include upgraded odour and noise control features, such that there is no discernible odour or noise to residents. The scope of work also includes a number of public realm improvements, such as public washrooms, pedestrian and bicycle paths, bicycle facilities, a public plaza, street furniture and road intersection improvements.

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

### **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. The Project will be built so we comply with federal regulations by the end of 2020, and consists of the McLoughlin Point Wastewater Treatment Plant, the Residuals Treatment Facility at Hartland Landfill, and the conveyance system that will carry wastewater from across the core area to the McLoughlin Point Wastewater Treatment Plant, and residual solids to the Residuals Treatment Facility.

-30-

### **For media inquiries, please contact:**

Andy Orr, Senior Manager  
CRD Corporate Communications  
Tel: 250.360.3229  
Cell: 250.216.5492

## Appendix G: Project Update #4, November 2017



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

**Project Update #4**  
November 2017

### 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. The Project will be built so we comply with federal regulations by the end of 2020, and is being funded by the Government of Canada, the Government of British Columbia and the CRD.

### Upcoming Community Information Open Houses in November

Construction is underway on the McLoughlin Point Wastewater Treatment Plant and cross-harbour undersea pipe. Construction of the following project components will begin in 2018:

- Clover Forcemain
- Clover Point Pump Station
- Macaulay Point Pump Station
- Residual Solids Conveyance Line
- Residuals Treatment Facility

The Wastewater Treatment Project team will hold a series of open houses in November in Saanich, Esquimalt and Victoria to provide an update on these project components. The open houses are a drop-in format to provide flexibility for busy schedules. Come by any time during the meeting times to review updated project information, find out about upcoming construction activities and timing in your area, meet project team members, and ask questions about the project.

#### SAANICH

**Wednesday, November 15, 5 – 8 p.m.**  
St. Joseph the Worker Parish Hall  
753 Burnside Road West

**Saturday, November 18, 10 a.m. – 1 p.m.**  
Prospect Lake Community Hall  
5358 Sparton Road

#### ESQUIMALT

**Wednesday, November 22, 5 – 8 p.m.**  
Royal Canadian Legion, Esquimalt Branch  
622 Admirals Road

#### VICTORIA

**Monday, November 27, 5 – 8 p.m.**  
Victoria Conference Centre  
720 Douglas Street

#### WILLIS POINT

Meeting details are being confirmed; please check [wastewaterproject.ca](http://wastewaterproject.ca) for updates.



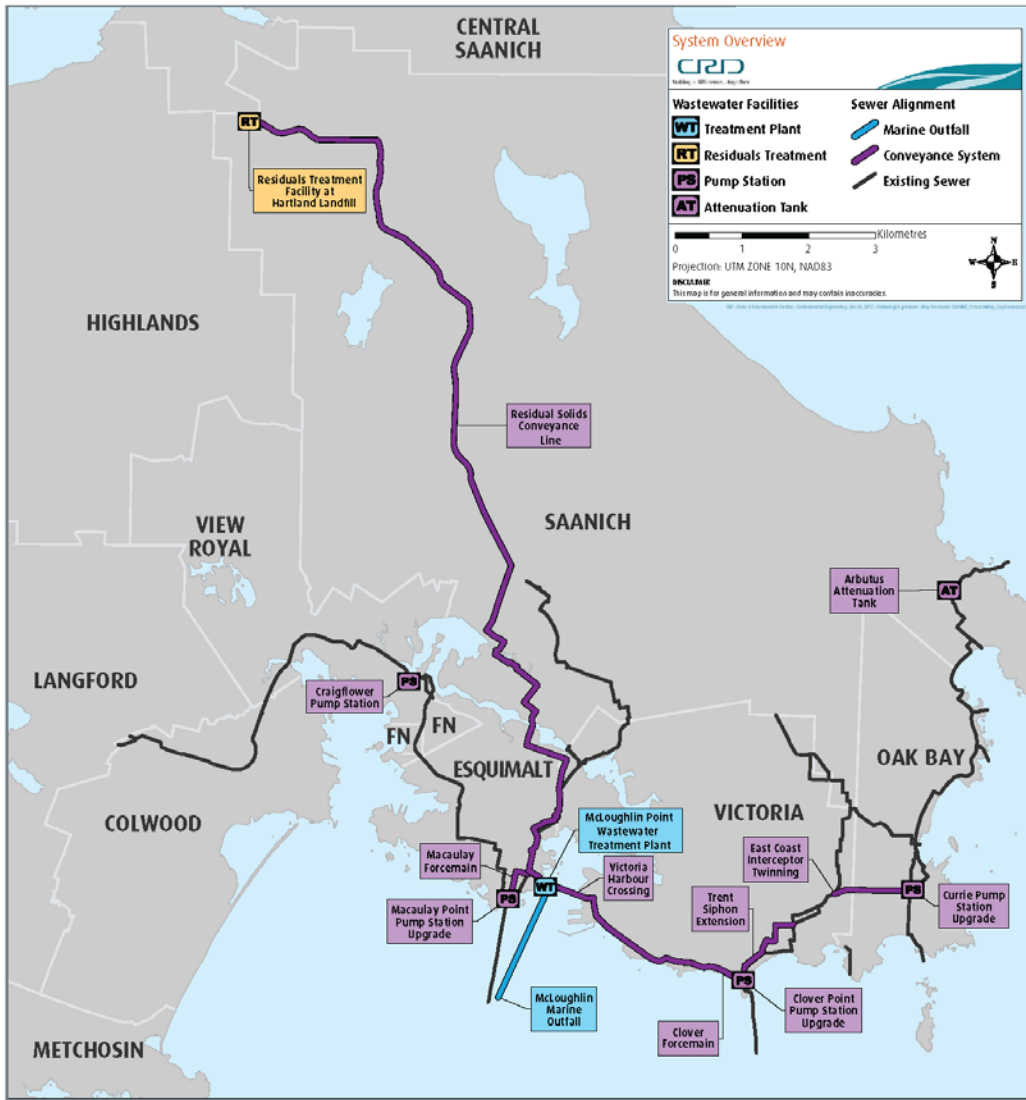
Artist rendering of the McLoughlin Point Wastewater Treatment Plant





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

**Project Update #4**  
November 2017



Map of Wastewater Treatment Project components



*Excavation at McLoughlin Point is underway as crews prepare the site for the construction of the new McLoughlin Point Wastewater Treatment Plant.*

## Talking about Treatment

The Wastewater Treatment Project includes three main elements, which in combination will provide tertiary treatment to the core area's wastewater.

### **McLOUGHLIN POINT WASTEWATER TREATMENT PLANT**

Located at McLoughlin Point, the wastewater treatment plant will provide tertiary treatment to the core area's wastewater.

### **RESIDUALS TREATMENT FACILITY**

Residual solids from the wastewater treatment plant will be piped to Hartland Landfill, where they will be turned into what are known as Class A biosolids, a high quality by-product treated such that it is safe for further use.

### **CONVEYANCE SYSTEM**

The conveyance system refers to the "pumps and pipes" of the Wastewater Treatment Project. This system will carry wastewater from across the core area to the treatment plant, and carry residual solids from the wastewater treatment plant to the Residuals Treatment Facility.

## Residual Solids Conveyance Line

The Residual Solids Conveyance Line (RSCL) is one of the components of the Wastewater Treatment Project. It includes two pipes and four or five pumping stations. The first pipe will transport residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility. The second pipe will return the liquid removed from the residual solids to the wastewater treatment plant for further treatment.

It is anticipated that the design for the RSCL will be finalized in spring 2018, and construction will begin in summer 2018. For information on the RSCL, including a map, please visit [wastewaterproject.ca](http://wastewaterproject.ca).

## What is a forcemain?

A forcemain is a pipe through which liquids (water or wastewater) are moved under pressure.

## Are there other types of pipes?

Gravity lines are used where the elevation allows gravity alone to transport the water or wastewater.

## What is a pump station?

Pump stations are used to move wastewater from a lower to a higher elevation. Wastewater is fed into and held in a wet well inside the pump station. When it reaches a certain level, the pump lifts the wastewater through a pipe system, then it travels through a forcemain.



## What is the difference between the Wastewater Treatment Project and the Integrated Resource Management (IRM) Planning Process?

The Wastewater Treatment Project includes a Residuals Treatment Facility, which will produce Class A biosolids. The beneficial reuse of those biosolids will be determined by an entirely separate planning process which is being run by the Integrated Resource Management Advisory Committee of the CRD Board. This IRM process is still in the planning stage and the CRD is committed to engaging with the Province, First Nations and the public as more information becomes available. In contrast, the Wastewater Treatment Project is now in the implementation stage as it must be completed by December 31, 2020 to meet provincial and federal regulations for the treatment of the core area's wastewater.



### 3 WAYS TO KEEP INFORMED ABOUT THE WASTEWATER TREATMENT PROJECT

#### **PROJECT WEBSITE** [wastewaterproject.ca](http://wastewaterproject.ca).

It is regularly updated with new information, including construction bulletins, media releases, and reports. A "Community Questions" section on the website provides answers to commonly-asked project questions and is frequently updated.

#### **24-7 PROJECT INFORMATION LINE**

**1.844.815.6132**

Residents can call to receive information or report a concern.

#### **EMAIL ADDRESS** [wastewater@crd.bc.ca](mailto:wastewater@crd.bc.ca).

Submit inquiries or let us know you are interested in being on a distribution list to receive construction notices.

## Wastewater Treatment Project Community Engagement Summary

OCTOBER 2016 – SEPTEMBER 2017

**46**

meetings with municipalities (Mayors, Councils, and staff)

**23**

meetings with community associations and community events

**289**

responses to email inquiries

**24**

meetings with funding agencies (federal government, P3 Canada, Infrastructure Canada, provincial government)

**15**

meetings with stakeholders (such as the Department of National Defence, Tourism Victoria and Greater Victoria Harbour Authority)

**74**

responses to phone inquiries

### 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 H: Media Release December 12, 2017



**Wastewater  
Treatment Project**

### Media Release

For Immediate Release

December 12, 2017

#### Residuals Treatment Facility Preferred Proponent Selected

**Victoria, BC**-- Hartland Resource Management Group has been selected as the preferred proponent to design, build, partially finance, operate and maintain the Residuals Treatment Facility over a 20-year term for the Wastewater Treatment Project.

Residual solids from the McLoughlin Point Wastewater Treatment Plant will be piped to the Residuals Treatment Facility at Hartland Landfill, where they will be treated and turned into what are known as Class A biosolids. These biosolids are a high quality by-product safe for beneficial reuse.

Hartland Resource Management Group was selected by the Capital Regional District through a competitive selection process and is a consortium of experienced firms including:

- Bird Construction Inc.;
- Maple Reinders PPP Ltd.; and
- Synagro Capital.

Located within the footprint of the Hartland Landfill in Saanich, the facility site was selected in 2013, after an assessment of potential locations that included technical, environmental, social and economic considerations.

The Residuals Treatment Facility will use an anaerobic digestion process followed by a dryer process to produce a dried Class A biosolid. The dryer will be fueled by biogas generated during the digestion process. The dried product will look similar to a dark ash and will be suitable for several beneficial reuses, including as an alternative energy source. The ultimate use of these biosolids will be determined by a separate planning process which is being considered by the Integrated Resource Management (IRM) Advisory Committee of the CRD Board. The CRD will continue to engage with the Province, First Nations and the public throughout the IRM planning process, and will produce a definitive plan for the beneficial reuse of biosolids by June 30, 2019.

The Residuals Treatment Facility contract will be performance-based, with payment tied to the quantity of residual solids treated. All treatment processing tanks will be covered and odour control systems will

collaboratively with First Nations and all levels of government to enable sustainable growth, foster community well-being, and develop cost-effective infrastructure while continuing to provide core services to residents throughout the region. Visit us online at [www.crd.bc.ca](http://www.crd.bc.ca)

-30-

For media inquiries, please contact:

Andy Orr, Senior Manager

CRD Corporate Communications

Tel: 250.360.3229

Cell: 250.216.5492

## Appendix I: Media Release December 15, 2017



Wastewater  
Treatment Project

### Media Release

For Immediate Release

December 15, 2017

#### CRD Board Appoints New Chair of Core Area Wastewater Treatment Project Board

Victoria, BC– The Capital Regional District (CRD) Board has appointed Don Fairbairn as Chair of the Core Area Wastewater Treatment Project Board. Don Fairbairn previously served as Project Board Vice-Chair.

Don Fairbairn has over 35 years of infrastructure development and finance experience and has held leadership positions in transportation, electricity generation, pipelines, water treatment development and implementation. He has board-level governance experience in public, non-profit and private sector organizations.

Jane Bird resigned as a Member and Chair of the Project Board effective November 16, 2017. The CRD Board would like to thank Jane Bird for her contributions to the Core Area Wastewater Treatment Project during her role as Project Board Chair. She made significant contributions to the Project to implement its development and early stage of construction, providing the foundation to continue advancing the Project to meet its completion date.

The Core Area Wastewater Treatment Project Board was established in May 2016 to review wastewater issues in the CRD and oversee all work connected with the design, procurement, construction, commissioning and financing of the Project.

#### 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. The Project will be built to comply with federal regulations by the end of 2020, and consists of the McLoughlin Point Wastewater Treatment Plant, the Residuals Treatment Facility at Hartland Landfill, and the conveyance system that will carry wastewater from across the core area to the McLoughlin Point Wastewater Treatment Plant, and residual solids to the Residuals Treatment Facility.

## Appendix J: Information Sheet December 2017



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

Information Sheet

### Residuals Treatment Facility

The Residuals Treatment Facility is being built as part of the Wastewater Treatment Project. It will process residual solids produced by the McLoughlin Point Wastewater Treatment Plant into Class A biosolids, the highest quality product suitable for beneficial reuse.

The Residuals Treatment Facility will be located within the footprint of the Hartland Landfill and will be completely enclosed and all treatment processes will be completed within closed containers.

Odour control systems will ensure there is no discernible odour in the community from the facility. Noise from the facility will be minimal and will comply with District of Saanich bylaws.

#### Hartland Landfill Site

The Hartland Landfill site was selected for the facility in 2013 after an assessment of potential sites that included technical, environmental, social and economic considerations.

Key benefits of the Hartland Landfill location include:

- locating the Residuals Treatment Facility next to the existing, active landfill and within the footprint of the landfill allows for future integration between the region's solid waste and liquid waste management plans
- the land is owned by the CRD
- the land is not part of the Agricultural Land Reserve, park or ecological land reserve
- distance from residential neighbours



*Residuals Treatment Facility site within the Hartland Landfill*

The Hartland Landfill site was reconfirmed through the Wastewater Treatment Project Board's review in 2016 and approved as part of the Wastewater Treatment Project by the CRD Board in 2016.



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

**Construction is anticipated to begin in spring 2018 and will take approximately 2.5 years to complete.**

Hartland Resource Management Group has been selected as the preferred proponent to design, build, partially finance, operate and maintain the Residuals Treatment Facility over a 20-year term for the Wastewater Treatment Project. The facility will have the capacity to treat more than 14,000 dry tonnes of residuals per year.

A community engagement plan will ensure the surrounding community have advance notice of construction activity. As construction is confined to the Hartland Landfill, construction impacts to residents are not anticipated to be significant. Truck traffic is expected to be within the capacity of the existing road network.

The contractor will be responsible for addressing community impacts, including noise mitigation and dust control, air quality and odour mitigation, traffic management and public access, and safety within and around the construction site.

**More information will be available in advance of construction, including traffic management plans.**

**Operation and monitoring features of the Residuals Treatment Facility and Hartland Landfill site.**

There will be a robust operations and maintenance plan in place at the Residuals Treatment Facility.

The Residuals Treatment Facility will use anaerobic digestion process followed by a dryer process to produce a dried Class A biosolid. The dryer will be fueled by biogas generated during the digestion process.

The ultimate use of these biosolids will be determined by the Integrated Resource Management Advisory Committee of the CRD Board who will continue to engage with the Province, First Nations and the public throughout the planning process, and will contribute to a definitive plan by June 30, 2019.

Water quality is regularly monitored by the CRD as part of the environmental monitoring program for the Hartland Landfill, both on-site and near property line, in addition to an annual sampling of residential wells in close proximity to Hartland.

A stringent containment and spill planning and response plan will also be prepared specifically for the Residuals Treatment Facility that will meet federal and provincial requirements for environmental protection and operator protection.

**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. The Wastewater Treatment Project will be built so we comply with federal regulations by the end of 2020, and is being funded by the Government of Canada, the Government of British Columbia and the CRD.

**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 K: Quarterly Cost Report

WTP QUARTERLY COST REPORT as at December 31, 2017															
Project Component	COST EXPENDED							COMMITMENTS			FORECAST		VARIANCE		
	Control Budget	Allocated Budget	Expended to September 30, 2017	Expended over reporting period (Q4 2017 Sept. - Dec.)	Expended to December 31, 2017	Expended to December 31, 2017 as a % of Budget	Remaining (Unexpended) Budget at December 31, 2017	Total Commitment at December 31, 2017	Unexpended Commitment at December 31, 2017	Uncommitted Budget at December 31, 2017	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Budget	
McLoughlin Point Wastewater Treatment Plant <sup>1</sup>	316.6	319.3	51.4	17.4	68.8	22%	250.5	309.2	240.4	10.1	250.5	319.3	-	0%	
Residuals Treatment Facility <sup>1</sup>	147.1	147.1	7.2	0.2	7.4	5%	139.7	7.6	0.2	139.6	139.7	147.1	-	0%	
Conveyance System <sup>1</sup>	141.2	144.3	20.3	0.4	20.7	14%	123.6	46.1	25.4	98.2	123.6	144.3	-	0%	
<b>Project Management Office</b>															
Project Management Office ("PMO")	71.1	73.6	13.9	5.2	19.1	26%	54.5	50.0	31.0	23.6	54.5	73.6	-	0%	
<b>Common Costs</b>															
BC Hydro	11.6	9.6	0.5	0.1	0.6	6%	8.9	2.5	1.8	7.1	8.9	9.6	-	0%	
Third Party Commitments	8.1	8.1	1.7	0.1	1.8	22%	6.3	6.1	4.3	2.1	6.3	8.1	-	0%	
Program Reserve and contingencies	69.3	63.0	-	-	-	0%	63.0	-	-	63.0	63.0	63.0	-	0%	
<b>Total Costs</b>	<b>765.0</b>	<b>765.0</b>	<b>95.0</b>	<b>23.4</b>	<b>118.4</b>	<b>15%</b>	<b>646.5</b>	<b>421.5</b>	<b>303.1</b>	<b>343.7</b>	<b>646.5</b>	<b>765.0</b>	<b>-</b>	<b>0%</b>	

1 - Excluding PMO, Common Costs and

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

\*\* Cost report presents approved expenditures

Appendix L: Monthly Cost Report

ASSET MANAGEMENT COST REPORT as at December 31, 2017															
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE		
			Expended to November 30, 2017	Expended over reporting period (December 2017)	Expended to December 31, 2017	Expended to December 31, 2017 as a % of Budget	Remaining (Unexpended) Budget at December 31, 2017	Total Commitment at December 31, 2017	Unexpended Commitment at December 31, 2017	Uncommitted Budget at December 31, 2017	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Budget	
1.4	39.6	299.9	377.6	-	0%	McLoughlin Point Wastewater Treatment Plant <sup>A</sup>	378.0	377.6	71.4	6.2	77.6	21%	299.9	338.0	260
1.9	176.7	182.6	194.9	-	0%	Residuals Treatment Facility <sup>A</sup>	195.0	194.9	12.0	0.3	12.3	6%	182.6	18.2	5
1.8	127.4	164.0	192.5	-	0%	Conveyance System <sup>A</sup>	192.0	192.5	27.6	0.9	28.5	15%	164.0	65.3	36
<b>1.1</b>	<b>343.7</b>	<b>646.5</b>	<b>765.0</b>	<b>-</b>	<b>0%</b>	<b>Total Costs</b>	<b>765.0</b>	<b>765.0</b>	<b>111.0</b>	<b>7.4</b>	<b>118.4</b>	<b>15%</b>	<b>646.5</b>	<b>421.5</b>	<b>303</b>

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