



Wastewater Treatment Project

Treated for a cleaner future

CRD Wastewater Treatment Project

Quarterly Report

Reporting Period: October – December 2018

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1. Executive Summary

1.1. Introduction

This quarterly report covers the reporting period of October through December 2018, and outlines the progress made on the Wastewater Treatment Project over this time.

The Wastewater Treatment Project (the “Project”) 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 is being delivered through a number of contracts with a variety of contracting strategies.

Overall the Wastewater Treatment Project progressed as planned and the Project remains on schedule to meet the provincial and federal regulations for treatment of the Core Area’s wastewater by December 31, 2020. Over the reporting period some refinements were made to one of the conveyance components’ construction start and completion dates (see section 2.6 for details), but this refinement is not anticipated to impact the Project’s overall schedule, or the ability of the Project to meet the regulatory deadline of December 31, 2020. The Project schedule will continue to be optimized as the Project and planning progress.

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

The RTF Project Component is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing engineering and construction activities over the reporting period including excavation and backfilling.

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

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

- Clover Point Pump Station: Kenaidan Contracting Limited (“Kenaidan”, as the Design-Build Contractor) progressed planning, design and construction activities including: installation of scaffolding access tower; completion of mass concrete placement to underside of wet well base slabs; completion of concrete pours for the grade beams along existing pump station walls; and the east wall of the storm wet well was also completed.
- Macaulay Point Pump Station and Forcemain: Kenaidan Contracting Ltd. (“Kenaidan” as the Design-Build Contractor) progressed: planning, design and construction activities over the reporting period, including: installation of the dewatering system; installation of excavation slope protection; commenced installation of the tower crane including equipment delivery and concrete pour of the base; ongoing drilling and blasting, shoring the Western Communities trunk line along the eastern side of the site; and completing installation of the tower crane.

Progress on the design-bid-build Conveyance System contracts over the reporting period included:

- Clover Forcemain: Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued with preconstruction and construction activities including: submission of construction work plans and shop drawings; and permit applications to authorities having jurisdiction; site office and laydown area mobilization; utility locates, initial geotechnical and soil assessment survey; pre-construction archaeological test digs; and pre-pipe installation blasting activity.
- Residual Solids Conveyance Line (“RSCL”): The RSCL will be delivered through three contracts, with work progressing as follows:
 - Residual Solids Pipes (RSCL100): Don Mann (as the construction contractor) continued to finalize outstanding contractor work plans and commenced utility pre-locates;
 - Residual Solids Pumps (RSCL 200): Parsons (as the Design Consultant for the RSCL) continued to progress the final (100%) design deliverable and prepare the Request for Proposal (RFP), and in November and December, responded to RFP inquiries and issued addenda, as needed;
 - Saanich Infrastructure Improvements (RSCL 300): The Project Team will be arranging a detailed design kick-off meeting with Parsons (as the Design Consultant) and the District of Saanich in Q1 of 2019.
- Arbutus Attenuation Tank: KWL (as the Design Consultant for the Arbutus Attenuation Tank), continued to progress the final (100%) design deliverable and prepare for the issue of the invitation to tender, and in December, responded to tender inquiries and issued addenda, as needed.

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.

There were no changes were made to the dashboard’s KPI status over the reporting period.

Table 1- Executive Summary Dashboard

Key Performance Indicators		Project Overall	WWTP	RTF	Conveyance System	Comments
Safety	Deliver the Project safely with zero fatalities and a total recordable incident frequency (TRIF) of no more than 1*.					No recordable incidents; site inspections are ongoing.
Environment	Protect the environment by meeting all legislated environmental requirements and optimizing opportunities for resource recovery and greenhouse gas reduction					An environmental incident occurred in November, involving a scow loaded with dredged material. The incident did not result in the release of any hydrocarbons to the environment, or dredged material entering the water.
Regulatory Requirements	Deliver the Project such that the Core Area complies with provincial and federal wastewater regulations.					No regulatory issues.
Stakeholders	Continue to build and maintain positive relationships with First Nations, local governments, communities, and other stakeholders.					Engagement activities were ongoing in the reporting period. Significant efforts were made to provide accurate and timely information to stakeholders. Project Team representatives went door-to-door to speak with residents with homes in close proximity to the pump stations that will be constructed along the RSCL and Community Open House meetings were held in Saanich on November 27 and 28.
Schedule	Deliver the Project by December 31, 2020.					No schedule issues.
Cost	Deliver the Project within the Control Budget (\$765 million).					Project expenditures within Control Budget but cost pressures experienced on multiple Conveyance procurements as a result of inflation in the Vancouver Island construction market. Corrective action has been identified and is being implemented (see Section 2.7 for details), but further action is anticipated to be required to maintain the Control Budget.

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

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

2. Wastewater Treatment Project Progress

2.1. Safety

2.1.1. 2018 Safety Performance Review

Safety is the Project's highest priority and the Project Team takes a proactive partnering approach with each construction contractor to ensure the development and maintenance of a safety first culture. While each prime contractor is ultimately responsible for their safety program, the Project's safety and construction management team actively engages with each prime contractor to ensure their safety programs are sufficiently developed and implemented.

The activities listed below are some examples of the initiatives developed and implemented by the Project Management Office to ensure safety is maintained as the highest priority:

- key member and participant in HRP's senior management quarterly Safety Advisory Group (SAG) which meets to review all HRP site activities and safety performance;
- organises and chairs a monthly Prime Contractor Safety Meeting to review project site incidents and lessons learned so similar occurrences do not occur on other sites;
- preparation and distribution of safety notices to our prime contractors to bring extra awareness to particular incidents with corrective actions that have been implemented;
- frequent inspections of all Project sites with an increase in focus on those that are displaying patterns of safety issues; and
- safety quality assurance audits are performed on an ongoing basis at each of our Project sites to ensure compliance with the prime's safety program.

Measurement is an important part of any management process and forms the basis for continuous improvement. All safety incidents are recorded and root cause investigations are completed that identify corrective actions. Lessons learned from each incident are shared with all of the Project's prime contractors, in order to allow for the maximum learning and improvement.

The Project's safety program measures both the statistical results of our safety efforts as well as how proactive our prime contractors are at preventing accidents and incidents. Table 2 presents a comparison of safety performance between 2017 (in which construction started) and 2018. Activity levels and the number of active sites increased in 2018 and this trend will continue into 2019 as construction on the conveyance projects gets fully-underway (including on Clover Forcemain, the Residuals Solids Conveyance Line and the Arbutus Attenuation Tank). Industry experience shows that the frequency of safety incidents can be greater at the start of construction on a new site as the contractor is establishing work teams and routines. Knowing this our Project Team dedicate significant time and effort in ensuring our contractors' safety plans are appropriate and that adherence to those plans is maintained from day one.

2.1.2. Reporting Period (Q4 2018) Safety Performance Review

Site safety tours and weekly safety inspections were carried out by PMO construction and safety personnel over the reporting period at all active worksites: Clover Point Pump Station, Macaulay Point Pump Station, RTF, McLoughlin Point WWTP, Clover Forcemain and Residual Solids Conveyance Line.

Over the three month reporting period 12 safety-related incidents occurred: six report only incidents, five first aid incidents, and one high potential for harm incident.

Each of the prime contractors have investigated, identified the root cause(s) and have incorporated corrective actions to each of the incidents to ensure that the appropriate safety training has been provided and that safe work practices and procedures are in place and are being adhered to by all personnel on all sites. Each prime contractor's site management fully understand the importance of a comprehensive safety program and culture and are committed to ensuring that it is achieved and maintained.

On October 15, 2018 a near miss incident occurred at the Macaulay Point Pump Station site. While excavating to relocate a waterline, a temporary 120 volt power line was severed. The incident was a near miss as no injuries were reported. The temporary power cable was repaired and reburied with caution tape placed above the line.

Corrective actions with respect to the incident were taken as follows:

- procedures were updated to indicate that all temporary cables must be buried at least 18 inches deep with caution tape above and where a depth of less than 18 inches exists there will be warning signs and markers to identify the shallow depth of burial; and
- this incident and the installation of temporary power lines will be reviewed at all active construction sites.

On October 25, 2018 a high potential near miss incident occurred during a blast at the Macaulay Point Pump Station site. Blast holes were drilled into the rocks located at the northeast corner of site. Large blast mats were placed around these holes to prevent material from escaping the excavation. When the blast occurred, the mats used on the east side of the blast site shifted allowing some rock to escape. The escaped material struck the unoccupied home adjacent to the construction site causing minor damage to the siding and also cracked the windshield of a contractor's parked truck. No one was injured and no other damage was reported.

The incident was reportable under WorkSafeBC "Serious Incident Reporting" and a WorkSafeBC Officer was sent to the site to investigate and report. The results of the investigation identified three areas of concern. It was determined that: there was insufficient room at the blast location to release the energy created; the location and/or quantity of the blasting mats was insufficient to absorb the blast energy; and that the safety area around the blast was too small.

Corrective actions with respect to the incident were taken as follows:

- additional blast mats have been added to ensure a minimum overlap of four feet and cover eight feet from all blast holes;
- a minimum of two feet of space between drill holes will be targeted: if the minimum distance cannot be provided, the number of blast mats used will be doubled;
- prior to blasting, the blaster will review the blast design with the site supervisor, including the number of holes bored, relief slope, mat locations, and loads; and
- the blast safety area will be extended to 70 meters.
- this incident will be reviewed at all active construction sites.

On October 29, 2018 a first aid incident occurred at the McLoughlin Point WWTP site involving a rebar installer struck by his safety harness. The chain on his body belt hit him in the lip as rebar was hoisted into place. He received first aid treatment on site and returned to work.

The incident was reviewed at the next toolbox talk and all were reminded that when a body belt is being worn but is not in use its chains are to be secured to the connecting rings on the belt in order to prevent the chain from swinging uncontrolled.

On November 15, 2018 a near-miss utility strike incident occurred at the Clover Forcemain site. During a utility pre-locate, a non-energized 100 mm diameter polyvinyl chloride (“PVC”) sanitary service connection that was not identified during the pre-locates inspection survey was struck by a mini excavator.

Corrective actions with respect to the incident were taken as follows:

- a section of the 100 mm diameter of the pipe was repaired; and
- the PVC pipe was surveyed and noted on redline markups.

On November 28, 2018 a near-miss utility strike occurred during at the RTF site. An excavator operator was cleaning the bottom of the trench when a buried high density polyethylene (“HDPE”) pipe was contacted by the bucket of the machine.

Corrective actions with respect to the incident were taken as follows:

- tool-box talks and field level risk assessments were held to address hazards associated with the task, including possible buried utilities;
- The prime contractors’ permit process was revised: a separate permit is now required for each new excavation area and an underground drawing is also to be included as part of the permit; and
- all installed underground utilities are to be identified and marked prior to the start of an excavation.

On November 29, 2018 a near-miss incident occurred at the Macaulay Point Pump Station site. An excavator with a jackhammer attachment was breaking rocks when a small piece of rock broke loose and struck the operator-side windshield of another excavator that was working within close proximity. The rock caused a crack on the windshield of the excavator.

Corrective actions with respect to the incident were taken as follows:

- the damaged excavator was removed from the area and a control zone was established to keep other machinery and personnel out of the area until the jackhammering activity was completed; and
- the windshield in the excavator was replaced.

On December 4, 2018 a first aid incident occurred at the McLoughlin Point WWTP site as a worker was stepping off a ladder and tripped on a lower rung and fell onto outstretched hands, impacting their wrist. The worker was assessed by first aid and ice was applied to the affected area to prevent swelling. The worker returned to their duties on site.

Corrective actions with respect to the incident were taken as follows:

- the worker reviewed the company’s safe work practice “Working from Ladders”; and
- the incident was reviewed at the next toolbox talk reminding workers to maintain three-point contact on a ladder at all times.

On December 11, 2018 a report only incident occurred at the Residual Solids Conveyance Line site area near Joffre and Lampson Streets. An excavator operator was removing a road plate and while backing up did not notice a non-mountable concrete curb. The rear bucket of the excavator

contacted a tensioned steel cable leading from a utility pole (guy-wire). The guy-wire broke under the stress of the bucket.

Corrective actions with respect to the incident were taken as follows:

- the incident was reported to BC Hydro for repair; and
- site conditions now include a spotter being used while working in close proximity to any utility pole where the operator's line of vision may be limited.

On December 12, 2018 a report only incident causing vehicle damage occurred near the Clover Forcemain site. A site coordinator was driving a work vehicle and stopped at a pullout area on Dallas Road to speak with a surveyor. When leaving the pullout the driver reversed into a short traffic post (bollard) that he had failed to see before backing up.

Corrective actions with respect to the incident were taken as follows:

- the vehicle was sent out for repair;
- the driver was required to review Windley's company driving policy; and
- the incident was discussed at Windley's next safety meeting and a driving policy review for anyone that is required to drive a company vehicle. A 360° vehicle walk-around is required before getting in the driver's seat as per company policy and it is for all persons on site to follow.

On December 14, ²⁰¹⁸ a first aid incident occurred at the McLoughlin Point WWTP site. A worker was assisting with the removal of a wall panel when the panel kicked out and the worker's finger was pinched between the wall panel and a brace from an adjacent wall. A first aid attendant evaluated the worker, cleaned and bandaged the wound, and the worker returned to work.

Corrective actions with respect to the incident were taken as follows:

- tag-line protocol, proper hand placement and pinch points were discussed with all workers at the following tool-box talk.

On December 19, 2018 a first aid incident occurred at the McLoughlin Point WWTP site. A worker was moving a sawhorse on-site, and as the worker stepped down from an access stair they rolled their ankle. A first aid attendant assessed the injury, applied ice to the area and then applied a tensor bandage. The worker returned to work afterwards.

Corrective actions with respect to the incident were taken as follows:

- a toolbox talk was held to discuss the importance of taking the time to conduct tasks safely and to ask for help if warranted.

On December 20, 2018 a first aid incident occurred at the McLoughlin Point WWTP site. Weather conditions were extremely windy. A worker was cleaning up the site when a foreign object blew under the worker's foam-rimmed safety glasses. A first aid attendant flushed the worker's eye to remove the object. The worker returned to work afterwards.

Corrective actions with respect to the incident were taken as follows:

- body positioning while working in inclement weather conditions was discussed with the worker.

Key safety activities conducted during October included:

- CRD contractor safety orientation for Parsons, Windley and Don Mann;

- reviewed document submissions from prime contractors;
- reviewed site specific safety plans and high risk tasks;
- blasting plan revision reviews for Macaulay Point Pump Station, Clover Point Pump Station and Clover Forcemain projects;
- traffic management, safe work plan and public mitigation plan review for Clover Forcemain;
- safe job procedure review for temporary bin room at Macaulay Point Pump Station;
- shift into winter driving course for CRD Project staff;
- performed the Great Shake Out/Annual Emergency drill;
- WTP Safety Manager and/or Construction Manager conducted monthly office/site inspections with prime contractors and CRD Corporate staff at all active sites;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- weekly project update meetings with HRP and HRMG;
- bi-weekly project update meetings with Kenaidan;
- incident reporting review with prime contractors at active work locations;
- prime contractor monthly safety meeting with CRD; and
- the WTP Safety Manager attended the British Columbia Construction Safety Association (BSCSA) Symposium on marijuana and the workplace.

Key safety activities conducted during November included:

- bi-weekly project update meetings with Kenaidan, Windley and Don Mann;
- weekly project update meetings with HRP and HRMG;
- enrolled WTP Safety Wardens in Emergency Response training for the office building;
- incident reporting review with prime contractors at active work locations;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- prime contractor monthly safety meeting with CRD;
- reviewed site specific safety plans and high risk tasks;
- WTP Safety Manager attended Blasting Incident Safety Meeting Review at Macaulay with CRD Construction Manager to ensure all identified corrective actions from the October high potential near miss incident were in place so blasting activities could resume;
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites;
- WTP Safety Manager attended Corporate CRD Committee Meeting;
- WTP Safety Manager attended Prime Contractor Safety Orientation for Clover Forcemain; and
- WTP Safety Manager attended Safety Training course for Injury Management.

Key safety activities conducted during December included:

- 2018 safety incidents overview;
- reviewed prime contractor incident investigation reports;
- communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- weekly project update meetings with HRP and HRMG;
- bi-weekly project update meetings with Kenaidan, Don Mann and Windley;
- emergency response annual training for WTP office wardens;

- PMO employees participated in the annual emergency response building evacuation test;
- office/site inspections with contractors and CRD Corporate at all active sites;
- prime contractor project safety meeting with all active Project safety representatives;
- reviewed site specific safety plans and high risk tasks;
- Safety Advisory Committee meeting with HRP;
- tower crane fall protection plan review for Macaulay Point Pump Station; and
- WTP Safety Manager and/or Construction Manager conducted regular site inspections at all active Project work sites.

Table 2 – WTP Safety Information

	2017	2018	Project Total (from January 1, 2017)
Person Hours			
PMO	32,875	52,504	85,379
Project Contractor	92,252	276,479	368,731
Total Person Hours	125,127	328,983	454,110
Near Miss Reports			
Near Miss Reports	3	9	12
High Potential Near Miss Reports	1	2	3
Report Only	0	7	7
First Aid	1	9	10
Medical Aid	0	0	0
Medical Aid (Modified Duty)	0	1	1
Lost Time	0	0	0
Total Recordable Incidents	0	1	1
Project Frequency (from January 1, 2017)			
First Aid Frequency	1.5	5.5	4.4
Medical Aid Frequency	0	0.6	0.4
Lost Time Frequency	0	0	0
Total Recordable Incident Rate	0	0.6	0.4

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 environmental and archaeological studies and reviewing contractors' and design consultants' environment-related submittals.

Key environmental management activities in October included:

- Parsons (as Design Consultant for the RSCL) prepared a BC Water Sustainability Act Section 11 Notification for in-stream work associated with RSCL construction, and a Request for Review for submission to Fisheries and Oceans Canada (DFO) for the Colquitz River crossing;
- HRMG (Design-Build-Finance-Operate-Maintain Contractor for the RTF) completed statistical analysis of their soil testing results at the RTF site and determined that soils at the RTF site are of commercial quality, and that the RTF site is not contaminated; and
- Millennia Research (the Project's Archaeological Advisor) planned archaeological excavations (archaeological data recovery) to be undertaken prior to the start of construction of the Clover Forcemain. The archaeological excavations are a condition of the Site Alteration Permit that the Project received from the Province, and began on October 30th.

Key environmental management activities completed in November included:

- Parsons (as Design Consultant for the RSCL) completed additional stream assessment work to support a BC Water Sustainability Act Section 11 Notification for in-stream work associated with RSCL construction; and
- HRMG (Design-Build-Finance-Operate-Maintain Contractor for the RTF) completed the first draft of a Technical Assessment of planned emissions from the RTF. The Technical Assessment forms the majority of the application to the Province for a Waste Discharge Authorization (Operational Certificate).

Key environmental management activities completed in December included:

- the CRD, District of Saanich, members of the Friends of Haro Woods and the UViC Child Care Services, and students from Arbutus Middle School replanted native plants from the footprint of the Arbutus Attenuation Tank in adjacent District of Saanich parkland. The students attended as part of their global action program; and
- the CRD, Stantec and HRP (Design-Build Contractor for the WWTP) completed an audit of environmental controls at the WWTP. The audit found no deficiencies and was a good opportunity to discuss best practices in erosion and sediment control.

An environmental incident occurred during the reporting period. On November 14, 2018, HRP's subcontractor Vancouver Pile Driving (Van Pile) towed a scow loaded with material dredged as part of the construction of the McLoughlin Point WWTP outfall to Bamberton in the Saanich Inlet. The scow was towed to Bamberton as the dredged material was previously identified as contaminated (from activities unrelated to the Project) and there is a suitable disposal site near Bamberton. The scow was tied up for the night and the tug that had been towing the scow left the

site. On the morning of November 15, 2018 workers at the site noticed that the starboard stern corner of the scow was listing heavily. The workers contacted Van Pile, who notified the Coast Guard and Provincial Emergency Management Program. The Coast Guard arrived on site that morning and deployed containment booms around the scow.

Van Pile initiated activities to right the scow, including removing some of the dredged material by crane and pumping out flooded compartments. By the morning of November 16, 2018 the scow was floating safely and crews offloaded the remaining dredged material. The Coast Guard returned that morning and removed the containment booms. Coast Guard and Transport Canada investigations determined that no hydrocarbons were released to the environment during the incident, and Van Pile determined that no dredged material entered the water.

HRP took water samples on November 15 and 16, 2018 to assess potential effects on water quality. They determined that inside of the containment boom the incident resulted in Provincial Water Quality standards for turbidity and total suspended solids being exceeded for a period of less than 24 hours. Outside of the containment boom there were no water quality guideline exceedances. The Coast Guard closed its file following removal of the containment boom, Transport Canada closed its file following the determination that no hydrocarbons had been released, and the Province determined that the incident was not reportable.

The Coast Guard closed its file following removal of the containment boom, Transport Canada closed its file following the determination that no hydrocarbons had been released, and the Province determined that the incident was not reportable. There are no short term or long term adverse effects from the incident.

HRP and Van Pile are investigating the incident to determine if there are any corrective actions to be taken or lessons to be learnt as a result of the incident. The results of the investigations are anticipated to be received in Q1 2019.

2.2.2. Regulatory Management

During the reporting period, the Project Team continued to monitor the advancement of construction-related regulatory approvals and supported or led the advancement of permit applications.

Key permitting activities for the reporting period involved supporting Parsons (as the Design Consultant for the RSCL) in the development of permit applications; engaging with municipal, provincial and federal governments in support of obtaining key permits (summarized in Table 3); continuing to advance the MWR Registration; supporting HRMG in the development of an Operational Certificate application; and planning for future permit applications.

In October, key regulatory activities included:

- HRP (Design-Build Contractor for the McLoughlin Point WWTP) received an Authorization under the Fisheries Act from DFO to construct the McLoughlin Point Outfall; and
- HRMG (Design-Build-Finance-Operate-Maintain Contractor for the RTF) submitted a draft Information Requirements Table (IRT) to the BC Ministry of Environment and Climate Change Strategy (ENV). The IRT serves as terms of reference for HRMG's application to ENV for an Operational Certificate for the RTF. The Operational Certificate will authorize the RTF to operate and produce Class A Biosolids.

In November, key regulatory activities included:

- Parsons (as Design Consultant for the RSCL) prepared a BC Water Sustainability Act Section 11 Notification for in-stream work associated with RSCL construction, and a Request for Review for submission to Fisheries and Oceans Canada (DFO) for the RSCL Colquitz River crossing. The PMO submitted both of these in early November and received the Water Sustainability Act authorization later in the month. The DFO authorization is still pending; and
- HRMG (Design-Build-Finance-Operate-Maintain Contractor for the RTF) submitted a draft Technical Assessment to the CRD for review. The Technical Assessment serves as the main deliverable of HRMG's application to the Ministry of Environment and Climate Change Strategy for an Operational Certificate for the RTF; and
- Millennia Research (the Project's Archaeological Advisor) completed archaeological excavations (archaeological data recovery) along the Clover Forcemain alignment. The archaeological excavations are a condition of the Site Alteration Permit that the Project received from the Province, and the work was supported by technicians from Esquimalt and Songhees Nations. A number of artifacts were recovered during the work.

In December, key regulatory activities included:

- the CRD submitted an application for a tree cutting permit for the Arbutus Attenuation Tank.

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 2018 Quarterly Report are bolded in Table 3 and are as follows:

- i) related to the McLoughlin Point Outfall:
 - changed the status of Fisheries and Oceans Canada (DFO) *Fisheries Act* Authorization to received;
 - changed the status of Transport Canada Facilities Alteration Permit to received; and
 - changed the status of Transport Canada Licence (works access) to received.
- ii) related to the Macaulay Point Pump Station:
 - deleted phased Building Permit, as the Township of Esquimalt confirmed that they would only issue one Building Permit, and would add additional information/activities to it, rather than issuing additional permits.
- iii) related to the ECI/Trent Twinning:
 - changed the anticipated receipt date for Notice from the Director to Construct under Section 40(b) of the MWR from Q4 2018 to Q2 2019, to reflect the anticipated start date of construction; and
 - removed the City of Victoria Licence (works access) as this permit is not anticipated to be required;
- iv) related to the Arbutus Attenuation Tank:
 - changed the status of Notice from the Director to Construct under Section 40(b) of the MWR to received;
- v) related to the Residuals Treatment Facility:
 - changed the status of District of Saanich Development and Building Permits to received.

Table 3- Key Permits Status

Permit / Licence	Anticipated Date	Status	Party Responsible for Obtaining Permit
<i>McLoughlin Point WWTP</i>			
Municipal Wastewater Regulation ("MWR") Registration	Q4 2019	On track	CRD
<i>McLoughlin Point Harbour Crossing</i>			
Transport Canada Lease	Following completion of construction	On track	HRP
<i>McLoughlin Point Outfall</i>			
Fisheries and Oceans Canada (DFO) Fisheries Act Authorization	Q4 2018	Received	HRP
Transport Canada Facility Alteration Permit	Q4 2018	Received	HRP
Transport Canada Licence (works access)	Q4 2018	Received	HRP
Transport Canada Lease	Following completion of construction	On track	HRP
<i>ECI/Trent Twinning</i>			
Notice from the Director to Construct under Section 40 (b) of the MWR	Q2 2019	On track	Design engineer
<i>Arbutus Attenuation Tank</i>			
Notice from the Director to Construct under Section 40 (b) of the MWR	Q4 2018	Received	Kerr Wood Leidal
District of Saanich Building Permit	Q1 2019	On track	Kerr Wood Leidal
<i>Residuals Treatment Facility</i>			
Operational Certificate	Prior to start of RTF operations	On track	HRMG
District of Saanich Development and Building Permits	Q4 2018	Received	HRMG

2.3. First Nations

First Nations communication and engagement was ongoing over the reporting period. The CRD First Nations Relations Division worked with the Project's Environmental, First Nations and Regulatory Manager to advance consultation and reporting in support of federal and provincial permit applications. Ongoing meetings with the Esquimalt and Songhees Liaisons continued.

In October and November Millennia (as the Project's Archaeological Advisor) completed archaeological pre-construction digs along the Clover Forcemain route with Windley (as the construction contractor for the Clover Forcemain) and members of the Esquimalt and Songhees Nations. The archaeological pre-construction digs are located in a registered archaeological site that encompasses a historical Lekwungen village. The excavations continued into November.

In November, the CRD and Esquimalt and Songhees Liaisons, along with spiritual elders prepared for the archaeological pre-construction digs by blessing a proposed ossuary that was built by CRD Regional Parks. The ossuary will provide temporary storage of ancestral remains should they be encountered during pre-construction digs or during construction. At the end of the Project, any ancestral remains will be reinterred at a location to be determined in consultation with Esquimalt and Songhees Nations.

The Project Team and CRD continued ongoing consultation and engagement with the WSÁNEĆ Leadership Council. The focus of the consultation and engagement was the RTF and the RSCL, but also included discussions related to the CRD's government-to-government relationship with the WSÁNEĆ Nations.

Related to the Project's First Nations communication and engagement activities, at its October 10, 2018 meeting the CRD Board approved a set of recommendations from the Final Report of the Special Task Force on First Nations Relations. The recommendations capture the Task Force's view of optimal next steps to guide the CRD's path towards a more inclusive governance model for the region.

2.4. Stakeholder Engagement

The Project maintained its ongoing two-way Communications and Engagement Plan to provide Project information to stakeholders, communities and the public and to respond to public inquiries. The key focus of the communications and engagement activities over the reporting period was to keep residents and stakeholders informed of Project plans, progress and construction information, and to receive and respond to questions and concerns raised by the community. A variety of communications tools and engagement activities were utilized to support the implementation of the Plan, including stakeholder meetings, Project website updates, notifications of construction through notices, and a public inquiry program, among other methods.

October Overview

In the month of October, two construction notices were issued to stakeholders: Clover Point Pump Station: Blasting (October 2, 2018) (Appendix A); and Clover Forcemain: Archaeological Work (October 22, 2018) (Appendix B).

The Clover Point Pump Station: Blasting construction notice was hand delivered to 64 residences along Dallas Road in advance of blasting to advise residents of what to expect, and uploaded to

the Project website. The Clover Forcemain: Archaeological Work construction notice was mailed to 557 residents in James Bay and distributed to stakeholders. It was also added to the Project website as an alert and posted on the CRD Twitter feed on October 29, 2018 to notify the public about upcoming single lane alternating traffic on Dallas Road.

The public was also notified through the CRD Twitter feed on October 30, 2018 about the pruning of trees on Dallas Road, in preparation for construction of the Clover Forcemain.

The Project website, wastewaterproject.ca, was updated with information about the Project in October. The following items were posted:

- two construction notices;
- updated community questions section with new information regarding the Clover Forcemain; and
- a new page, "Dallas Road Construction", was created under current construction activities, to host ongoing updates, notices and alerts to maintain effective communication with the public as the Clover Forcemain is being constructed.

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

- Chair of the Liquid Waste Management Committee;
- City of Victoria staff;
- Greater Victoria Harbour Authority;
- Township of Esquimalt Liaison Committee; and
- University of Victoria.

November Overview

The Project Team held two community information open houses in November in Saanich: on November 27, 2018 at St. Joseph the Worker Parish Hall, and on November 28, 2018 at the Prospect Lake Community Hall. The purpose of the meetings was to provide members of the public with information about the upcoming construction of the Residual Solids Conveyance Line and Arbutus Attenuation Tank, and current construction of the Residuals Treatment Facility in Saanich. The format of the meetings was drop-in with information boards staffed by Project Team members who were available to answer questions. The drop-in format was used with the same information available at both meetings in order to provide flexibility for busy schedules. Over 114 residents attended the two meetings. The local community was notified about the open houses through:

- the mail delivery of an invitation (Appendix C) via Canada Post to 8,368 residents along the RSCL route;
- emailing the invitation to residents who signed up for Project updates;
- posting a notification on the CRD's twitter feed;
- posting the invitation to the Project's website;
- three newspaper ads: in the Saanich News on November 21 (Appendix D), the Victoria News on November 21, and the Times Colonist on November 24;
- the interview of the Deputy Project Director on November 8 on CFAV 1070.

The display boards featured at the events were posted to the Project's website on the day of the first open house and were also available as a printed package for participants to take home. The main themes participants were interested in included: the alignment of the RSCL; the locations of and need for the pump stations; the removal of trees, particularly along Grange Road; the end

use of the biosolids produced at the RTF; water well protection measures; traffic management; and the final resurfacing of roads.

In addition to the two community information open houses, Project Team representatives went door-to-door to speak with residents in close proximity to the pump stations that are to be constructed along the RSCL, in order to provide information and answer questions.

An Information Bulletin was issued announcing the award of the Residual Solids Conveyance Line contract (RSCL 100) to Don Mann Excavating Ltd:

- Residual Solids Conveyance Line Contract Awarded (November 7, 2018) (Appendix E)

Three construction notices and updates were issued to stakeholders in November:

- McLoughlin Point: Utility Work (November 8, 2018) (Appendix F);
- Clover Forcemain: Utility Relocates (November 9, 2018) (Appendix G); and
- Macaulay Point Pump Station: Blasting Notice Update (November 14, 2018) (Appendix H).

The following three information sheets were updated and posted to the website:

- Residuals Solids Conveyance Line information sheet (Appendix I) outlines upcoming construction activities and details about the pipes and three small pump stations that will connect the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill;
- Residuals Treatment Facility information sheet (Appendix J) was updated; and
- Construction Schedule (Appendix K) was updated as outlined in section 2.6.

Signage was erected at the construction laydown area located at Ogden Point to describe the overall work to be undertaken along the Clover Forcemain. This Construction Notice describes construction work that will be completed, work hours and any traffic impacts to the public. Smaller signs are available to post along the route as work progresses. As well, signage noting the federal and provincial government funding for the Project was displayed at Ogden Point.

- Construction of the Clover Forcemain (Appendix L)

Throughout the month of November, the Project website, wastewaterproject.ca, was updated with information about the Project, including the posting of the four construction notices and updates and three information sheets. The photo gallery was also updated with seven new images, including a rendering of the Dallas Road cycle path, photos of archaeology work on Dallas Road, and a cross-harbour photo of construction underway at the McLoughlin Point Wastewater Treatment Plant.

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

- City of Victoria staff;
- District of Saanich Technical Working Group;
- Greater Victoria Harbour Authority;
- Office of the Honourable Lana Popham;
- Township of Esquimalt Liaison Committee; and
- two community information open houses regarding the RSCL.

December Overview

In the month of December, two construction notices were issued to stakeholders: Macaulay Point Pump Station: Rock Hauling (December 13, 2018) (Appendix M); and Clover Forcemain: Excavation and Blasting (December 31, 2018) (Appendix N). Both notices were uploaded to the Project website. The Macaulay Point notice was also sent to residents at the Department of National Defence. The Clover Forcemain notification was hand delivered to 25 residences and businesses along Dallas Road.

An information sheet was posted to the Project website on December 13, 2018: Grange Road Update (Appendix O) describing the alignment shift on Grange Road. The information sheet was hand delivered to 380 residences located on Grange Road and side streets and emailed to residents and stakeholders who signed up for Project updates. The Deputy Project Director was interviewed by various media outlets, including CBC On the Island, CFAX, CTV, CHEK News and the Times Colonist and outlined this updated information. As well, a “Statement Regarding Grange Road” (Appendix P), with the information sheet attached, was issued to media on December 13, 2018 and posted in the Media Room on the CRD website and in the Wastewater Media Room on the Project website.

Throughout the month of December, the Project website, wastewaterproject.ca, was updated with information about the Project, including the posting of the two construction notices, one information sheet and a statement regarding Grange Road. The photo gallery was updated with nine new images, including an aerial view of the Macaulay Point Pump Station, photo of the pipes that will be installed in Dallas Road, snapshots of the Project Team and community groups salvaging native plants in Haro Woods in Saanich, and a photo of construction underway at the McLoughlin Point Wastewater Treatment Plant. The Community Questions section was updated with new information.

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

- BC Transit;
- District of Saanich Council;
- District of Saanich Mayor;
- District of Saanich Staff;
- District of Saanich Technical Working Group;
- Greater Victoria Harbour Authority; and
- Township of Esquimalt Liaison Committee.

As well, the Project provided a tour to the University of Victoria Engineering Students Society of the McLoughlin Point Wastewater Treatment Plant.

Public Inquiries

Public inquiry numbers from the Project email address and 24/7 information phone line (1-844-815-6132) are noted in Table 4.

Table 4 - Public Inquiries –October - December, 2018

Inquiry Source	Contacts for October - December
Information phone line inquiries	88
Email inquiries responded to	82

Key themes of the public inquiries were as follows:

October

- Construction impacts and mitigation efforts at Project sites (bright lights, dust on the road, truck route); and
- questions about public space improvements at Clover Point and on Dallas Road.

November

- concerns about tree removal on Grange Road;
- questions about construction impacts from work that is happening – noise, lights, traffic, cleaning roads, blasting;
- questions about RSCL alignment and timing of construction; and
- information about the open houses for the RSCL.

December

- concerns about tree removal on Grange Road;
- questions and concerns about blasting;
- inquiring about job opportunities;
- questions about RSCL alignment and timing of construction; and
- requesting to sign up for email updates.

2.5. Resolutions from Other Governments

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

2.6. Schedule

Overall the Project's scheduled activities progressed as planned over the reporting period. 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 changed from that shown in the Project's previous Quarterly Report as the Currie Pump Station start date has been changed from Q1 2019 to Q3 2019. This change in the start date of upgrades to the Currie Pump Station is not anticipated to impact the Project's overall schedule, or the ability of the Project to meet the regulatory deadline of December 31, 2020.

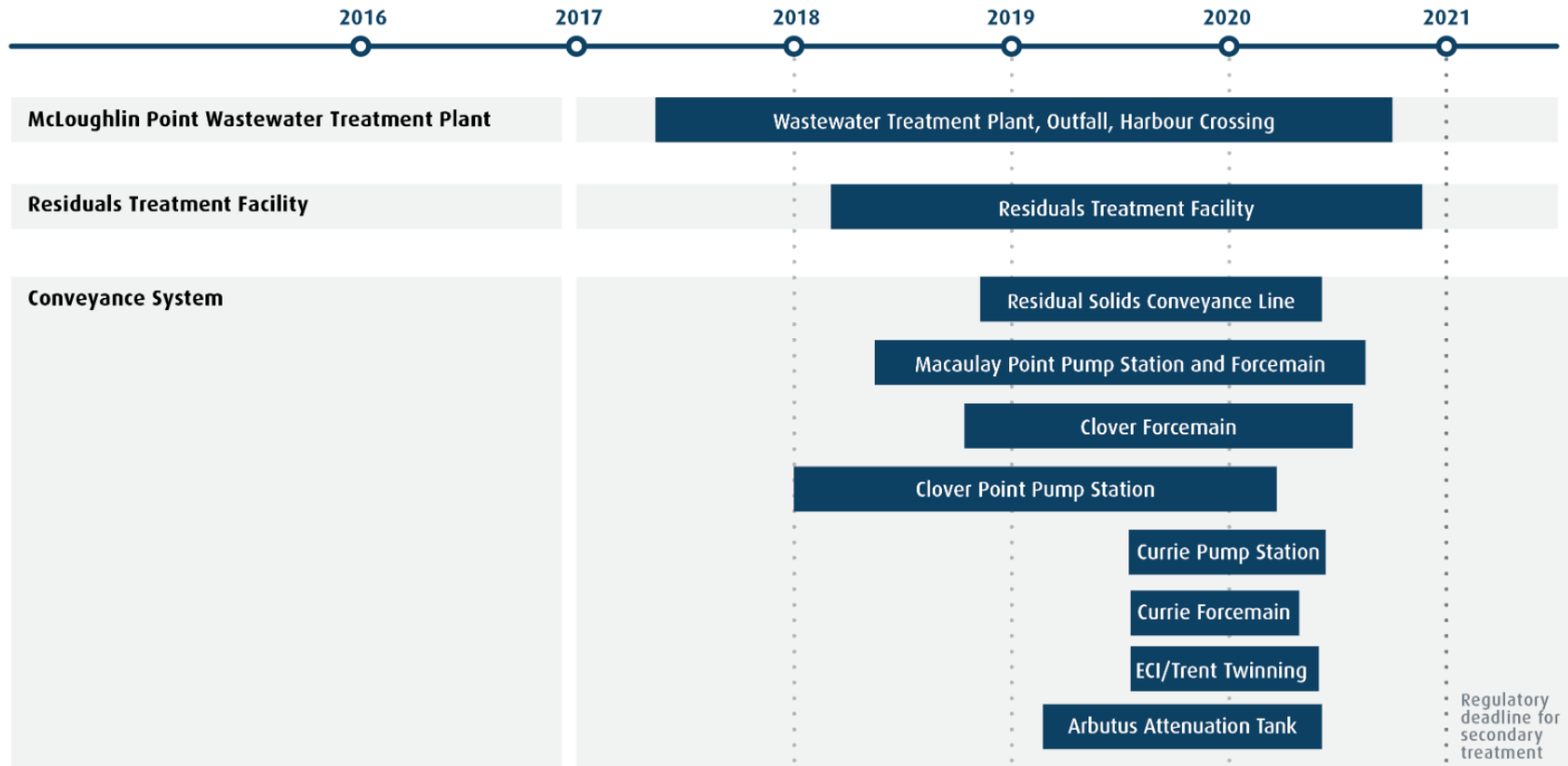
The Project remains on-schedule to meet the provincial and federal regulations for treatment of the Core Area's wastewater by December 31, 2020.

The schedule remains subject to optimization as the Project and planning progresses.

Figure 1-High-Level Project Schedule¹

Wastewater Treatment Project Schedule*

Construction + Commissioning



*Schedule subject to updates as Project planning progresses.

¹ The schedule remains subject to optimization.

2.6.1. 30 day and 60 day lookahead

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

Safety

- prime contractor annual safety orientations for CRD WTP team;
- monthly communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- monthly office/site inspections with contractors and CRD Corporate at all active sites;
- prime contractor monthly safety meeting;
- attend CRD Corporate OHS Coordination Committee meeting;
- review any site specific safety plans or high risk tasks;
- review document submissions from prime contractors;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites;
- confined space entry safe work plan review for McLoughlin WWTP site;
- on-site reviews of prime contractor safety documentation;
- attend weekly project update meetings with HRP and HRMG;
- attend bi-weekly project update meetings with Kenaidan, Windley and Don Mann; and
- incident reporting review with prime contractors at active work locations.

Environment and Regulatory Management

- Millennia (as the Project's Archaeological Advisor) to continue archaeological monitoring of excavations in registered archaeological sites and areas of high archaeological potential; and
- KWL to begin the development of a system-wide study to comprehensively update the CRD core area sanitary sewer computer model, so as to allow the CRD to make informed decisions regarding capital investments required to meet future demands. This model will also allow the Project Team to make an assessment of the utility value of the Conveyance components of the Project that are yet to be procured, based on updated parameters.

First Nations

- CRD and Songhees and Esquimalt Liaisons to continue bi-weekly meetings; and
- Project Team to continue consultation and engagement with the WSÁNEĆ Leadership Council.

Stakeholder Engagement

- distribution of construction notices on Dallas Road prior to Clover Forcemain installation;
- distribution of construction notice on Peters Street in Esquimalt for utility work by HRP planned in February
- ongoing community liaison meetings; and
- ongoing construction communications with stakeholders.

Cost Management and Forecast

- monitor schedule;
- prepare cost reports;
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund); and
- Ernst and Young begin independent project review.

Construction

McLoughlin Point WWTP

- backfill dirty back wash north and south, and clean water tank north;
- continue phase 2 structural piles;
- continue surface runoff/groundwater treatment and discharge;
- complete tsunami wall (north end);
- continue tertiary concrete wall pours;
- continue to form and pour biological aerated filter (BAF) walls and columns;
- continue to form and pour dirty back wash suspended slab level 1;
- continue to form and pour odour control slab 1;
- form and pour sludge tank and dirty backwash walls;
- continue to install under slab piping;
- complete preparation of marine outfall trench; and
- set up micro tunnel boring machine (MTBM) and commence tunneling of marine outfall.

Clover Point Pump Station

- form and pour pump room walls 03 and 07;
- form and pour sanitary wet well wall 9;
- form and pour storm wet well wall 11;
- form and pour wet well channel slab; and
- form and pour wet well/pump room common wall 08.

Macaulay Point Pump Station

- complete blast rock removal;
- conduct utility pre-locates at force main alignment;
- form and pour base slab gridline A to D, 1 to 2; and
- install vortex degritter reinforcing steel.

Residuals Treatment Facility

- drill and install rock anchors along shear line;
- form and pour concrete foundation for other municipal solids receiving building;
- form and pour foundation for digester 1;
- form and pour foundation for dryer building;
- installation of underground ductile iron and high density polyethylene pipe;
- install storm water systems and water lines; and
- pour concrete duct bank, pull cable and terminate to temporary transformer.

Clover Forcemain

- commence installation of high density polyethylene (HDPE) forcemain in area 1 and area 7;
- continue with sewer relocation;
- drill and blast or hydraulically hammer rock; and
- continue storm relocation.

Residual Solids Conveyance Line (RSCL)

- complete hydro vaults and duct bank at Joffre Street and Lyall Street;
- continue with utility locates and verification of RSCL alignment;
- install BC Hydro duct bank on Lyall Street; and
- set up offices and laydown areas.

Engineering

McLoughlin Point WWTP

- submit Construction Package 8 – Pig Receiver: final (IFC) design deliverable;

Clover Point Pump Station

- progress completion of overall final (100%) design deliverable;

Macaulay Point Pump Station

- progress overall final (100%) design deliverable;
- implement comments and progress early works 2 substructure design final design submission (100%) – revision 1.

Residuals Treatment Facility

- resubmit final design deliverable for early works package #8 dryer building.

East Coast Interceptor, Trent Siphon and Currie Pump Station and Forcemain

- KWL to refresh cost estimate.

Procurement

- Residual Solids Pumps (RSCL 200): conclude RFP evaluation.
- Arbutus Attenuation Tank: respond to tender inquiries and issue addenda as needed, receive tenders and commence evaluation.

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

Safety

- CRD prime contractor safety quality assurance audits;
- review document submissions from prime contractors;
- monthly prime contractor project safety meeting with all active Project safety representatives;
- review any site specific safety plans or high risk tasks;

- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project worksites;
- site tours at all active sites; and
- monthly office/site inspections with contractors and CRD Corporate at all active sites.

Environment and Regulatory Management

- HRMG to continue preparing the application for an Operational Certificate for the Residuals Treatment Facility; and
- KWL will continue the development of a system-wide study to comprehensively update the CRD core area sanitary sewer computer model, so as to allow the CRD to make informed decisions regarding capital investments required to meet future demands. This model will also allow the Project Team to make an assessment of the utility value of the Conveyance components of the Project that are yet to be procured, based on updated parameters.

First Nations

- ongoing consultation and engagement with the WSÁNEĆ Leadership Council; and
- CRD with the support of Songhees and Esquimalt Liaisons to begin planning of Indigenous themed public art and signage.

Stakeholder Engagement

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

Cost Management and Forecast

- prepare cost reports;
- monitor schedule;
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund); and
- Ernst and Young continue independent project review.

Construction

McLoughlin Point

- continue surface runoff/groundwater treatment and discharge;
- continue tertiary concrete wall pours;
- continue to form and pour biological aerated filters (BAF) walls and columns;
- continue to form and pour dirty back wash and sludge tank walls and suspended slabs;
- continue to form and pour odour control slabs and walls;
- begin construction of primary area base slabs;
- continue to install under slab piping;
- begin construction of influent and solids piping;
- construct levelling pads and form, rebar and pour footings for O&M building;
- continue drilling of outfall marine trench; and
- begin construction of off-site utilities on Peters Street.

Clover Point Pump Station

- form and pour sanitary wet well walls 13; and
- form and pour pump room walls 3, 5 and 7.

Macaulay Point Pump Station

- commence utility locates and verification along force main alignment;
- form and pour external wall 1; and
- build forms and install rebar for base slab at gridline A to B and 2 to 3.

Residuals Treatment Facility

- build access road to rough grade;
- prep slab on grade for residuals handling and admin building;
- commence installation of underground electrical conduits and grounding loop;
- pour digester #1 concrete slab;
- form, rebar and pour digester #2 concrete slab and digest building slab; and
- form, rebar and pour starter ring slab residual solids handling tanks and residual effluent holding tank.

Clover Forcemain

- continue with utility relocations on Dallas Road;
- install high density polyethylene (HDPE) forcemain in area 1 and area 7;
- continue to drill and blast or hydraulically hammer rock; and
- perform archaeological screening of excavated soil.

Residual Solids Conveyance Line (RSCL)

- commence installation of residual solids conveyance lines and leachate return line;
- identify existing utilities using ground penetrating radar; and
- verify and record existing utilities location.

Engineering

McLoughlin Point WWTP

- finalize overall design submission report issued for construction (IFC); and
- resubmit training plan.

Residuals Treatment Facility

- review of overall 90% design.

Clover Point Pump Station:

- resubmit final (100%) design for the Clover Point Pump Station.

Macaulay Point Pump Station and Forcemain:

- resubmit early works 2 final design submission (100%).

Residual Solids Conveyance Line (RSCL)

- Residual Solids Pumps (RSCL 200): complete issue for construction (IFC) design.

Arbutus Attenuation Tank

- complete issue for Construction (IFC) design deliverable.

ProcurementResidual Solids Conveyance Line:

- Residual Solids Pumps (RSCL200): conclude request for proposal (RFP) evaluation.

Arbutus Attenuation Tank:

- conclude evaluation.

2.7. Cost Management and Forecast

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

Project expenditures are within the Control Budget but cost pressures continue to be significant on the conveyance components of the Project. In July and August the Project Team received proposals for the Clover Forcemain and the Residual Solids Conveyance Line, respectively. The Project Team held competitive procurements for each of these components of the Project and was successful in engaging qualified experienced contractors that submitted proposals under competitive conditions. However, the proposal prices received were greater than estimated as a result of cost escalation due to inflationary pressures in the Victoria area construction market and material supply.

The Project Team awarded the Clover Forcemain and Residual Solids Pipes (RSCL100) contract in September and October, respectively, and has now procured (and secured pricing) for all components of the Project that are critical to meeting provincial and federal regulations for tertiary treatment of the core area's wastewater, other than the Residual Solids Pump Stations (RSCL200) contract which is under active procurement and is anticipated to be awarded in the first quarter of 2019. The Project has contingency in-place to manage risks such as escalation, but to offset the escalation the Project Team continues to look for cost saving measures. In order to address the cost pressures on the Conveyance component of the Project the Project Team has implemented value engineering and is reviewing the scope of work for the remainder of the contracts.

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

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

- Ernst and Young will undertake an independent project review of key cost drivers and indicators, and report their findings directly to the Project Board.

2.7.1. Commitments

Commitments were made over the reporting period in furtherance of delivering the Project. The commitments made during the reporting period resulted in an increase in committed costs of \$33.7M. The significant commitments made in the reporting period were:

- award of the Residual Solids Conveyance Line construction contract; and
- construction contract change orders.

2.7.2. 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 and PMO-related costs.

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

2.7.3. Contingency and Program Reserves

Contingency draws over the reporting period are itemized in Table 5 and outlined herein.

A total of \$13.6M was drawn from Program Reserve, RTF and Conveyance contingency in October, draws were associated with the following:

- a contingency draw was made for a development servicing agreement with the District of Saanich, related to water system improvements that the Project has committed to make to improve the level of service to the Hartland Landfill site and other properties in the area, consistent with: the Project's goal of delivering a solution that adds value to the surrounding community and enhances the livability of neighborhoods; and the District of Saanich Water System Master Plan; and
- a program reserve draw was made for the award of the Residual Solids Pipes (RSCL100) construction contract. As outlined in Section 2.7 the Project Team ran a competitive procurement for this contract but proposal prices received were greater than estimated, primarily as a result of cost escalation. Specifically, there has been greater than anticipated escalation in labour supply, as well as cost increases due to the impact of tariffs on steel prices and escalation in the cost of specific materials (HDPE pipe).

A total of \$1.97M was drawn from the WWTP contingency in November, draws were made for the following purposes:

- design and construction of the pump at the WWTP to allow one less pump station to be required along the RSCL;
- changes to HRP's scope of work to accommodate BC Hydro's final design for the duct bank installation along Peters Street between Patricia Way and Lyall Street;
- the final operations and maintenance (O&M) building design, incorporating changes to the Project Agreement in order to address items required by CRD.
- the estimated cost to provide potable water during commissioning of the plant;

- site remediation and disposal of hydro carbon contaminated soil;
- mitigation of the migration of contamination to DND lands; and
- excavation and disposal of contaminated soil (chlorides) at the McLoughlin Point site.

A total of \$262k was drawn from the Conveyance contingency over the month of November, draws were made for the following purposes:

- Kenaidan to undertake a condition assessment of the influent pipe at Macaulay Pump Station and Forcemain, in order to confirm if the condition is sufficient to allow for the current construction plan;
- removal and disposal of unanticipated buried fill material consisting of concrete, asphalt and rebar within the Clover Point Pump Station excavation; and
- the extended use of the GVHA as the Clover Forcemain laydown area.

A total of \$883k was drawn from the WWTP and Conveyance contingency in December, draws were made for the following purposes:

- site remediation and disposal of hydro carbon contaminated soil;
- to assess a value engineering opportunity to reduce the Clover Forcemain diameter.

The remaining contingency and program reserve is anticipated to be sufficient to deliver the Project within the Control Budget.

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

Table 5 - Contingency and Program Reserve Draw-down Table

WTP Contingency and Program Reserve Draws and Reallocations	Draw Date	\$ Amount
Contingency and Program Reserve (in Control Budget)		\$ 69,318,051
Contingency and Program Reserve Draws to September 30, 2018		\$ (13,160,177)
Contingency and Program Reserve balance as at September 30, 2018		\$ 56,157,874
Design and construction of the pump at the WWTP to allow one less pump station to be required along the RSCL	Nov-18	\$ (1,351,570)
BC Hydro - Peters Street Electricity Utility Design Change	Nov-18	\$ (373,412)
O&M Building Changes	Nov-18	\$ (85,767)
Potable water for flushing and testing	Nov-18	\$ (100,000)
Supervening Events #2 - McLoughlin Point Contaminated Site Remediation	Nov-18	\$ (36,496)
DND Land Remediation	Nov-18	\$ (3,402)
Supervening Event #6 - Chloride Impacted Soil Phase 2	Nov-18	\$ (20,496)
Supervening Events #2 (remainder), #4 and #6 (remainder) - McLoughlin Point Contaminated Site Remediation	Dec-18	\$ (292,082)
WWTP Total Draw		\$ (2,263,225)
District of Saanich Development Servicing Agreement	Oct-18	\$ (56,475)
RTF Total Draw		\$ (56,475)
Residual Solids Conveyance Line contract award	Oct-18	\$ (1,700,000)
Macaulay Pump Station & Forcemain: Influent Pipe Video Inspection	Nov-18	\$ (61,253)
GVHA site costs for use as Clover Forcemain laydown area	Nov-18	\$ (180,092)
Clover Point Pump Station: disposal of unanticipated burial fill material during excavation	Nov-18	\$ (20,583)
Revised Hydraulic Calculation, Modelling of Forcemain	Dec-18	\$ (590,956)
Conveyance Total Draw		\$ (2,552,884)
PMO Total Draw		\$ -
BC Hydro Total Draw		\$ -
Residual Solids Conveyance Line contract award	Oct-18	\$ (11,823,397)
WTP Program Reserve Draw		\$ (11,823,397)
Contingency and Program Reserve draws in the reporting period (Oct-Dec)		\$ (16,695,981)
Total Contingency and Program Reserve draws to December 31, 2018		\$ (29,856,158)
Contingency and Program Reserve balance as at December 31, 2018		\$ 39,461,893

2.7.4. Project Funding

The federal and provincial governments are assisting the Capital Regional District in funding the Project.

The Government of British Columbia will provide up to \$248 million towards the three components of the project, while the Government of Canada is contributing:

- up to \$120 million through the Building Canada Fund – Major Infrastructure Component towards the McLoughlin Point 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 6. Note that the timing for the provision of the Government of British Columbia and Government of Canada's funding differs by funding source. The Project Team will submit claims to the funding partners in accordance with the relevant funding agreements. In accordance with the funding agreements, funding from the P3 Canada Fund and Government of British Columbia cannot be claimed until the relevant Project components are substantially complete, which is scheduled to occur in 2020.

Table 6 – Grant Funding Status

Funding Source	Maximum Contribution	Funding Received in the Reporting Period	Funding Received to Date
Government of Canada (Building Canada Fund)	\$120M	\$9.8M	\$40.4M
Government of Canada (Green Infrastructure Fund)	\$50M	\$1.2M	\$10.6M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
TOTAL	\$459M	\$11.0	\$51.0M

2.8. Key Risks and Issues

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

Table 7 summarizes the highest-level risks that were actively managed over the reporting period, as well as the mitigation steps identified and/or undertaken over the reporting period.

Risk level trends have remained unchanged from the Project's Q3 2018 Quarterly Report, but a row has been added to capture the risk of a disagreement between the Project Team and a contractor regarding the performance of their contractual obligations.



Table 6- Project Active Risks Summary

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Project				
Misalignment between First Nations' interests and the implementation of the Project.	The assessed risk level reflects the Project Team's priority of establishing strong and effective relationships with First Nations interfacing with, or interested in, the Project.	First Nations engagement activities remained ongoing over the reporting period (see section 2.3 for further details).	M	No change
Divergent interests between multiple parties and governance bodies whose co-operation is required to successfully deliver the Project.	The assessed risk level reflects the Project Team's priority of establishing strong and effective relationships with municipal, provincial and federal government departments.	The Project Team continued engagement with municipal, provincial and federal government departments throughout the reporting period.	M	No change
Misalignment between Project objectives/scope and stakeholder expectations.	The assessed risk level reflects the Project Team's priority of establishing strong and effective community stakeholder engagement.	Community engagement activities were ongoing over the reporting period (see section 2.4 for further details).	M	No change
Lack of integration between Project Components.	Planning challenges and system integration between the WWTP, RTF and Conveyance System components of the Project results in schedule delays and/or additional Project costs.	Physical and schedule interfaces are clearly delineated in all construction contracts along with the requirement for commissioning and control plans. The Project Team is using a single Owner's engineer (Stantec) to develop the indicative design for all critical project components with significant interfaces.	M	No change



Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Senior government funds issue delayed.	The assessed risk level reflects the Project Team’s priority of ensuring Project funding commitments are honoured.	Responsibility for meeting funding commitments have been assigned and are being monitored.	M	No change
Downstream works delays.	Delay from conveyance projects delay delivery of wastewater to WWTP.	Schedule has sufficient time allowance to ensure conveyance elements complete prior to requirement. Contractor agreements will include terms that require the contractor to recover schedule delays and/or allow for CRD acceleration.	M	No change
Downstream works delays.	Delay in the commissioning of the WWTP delays the commissioning of the conveyance system or the delivery of residual solids to the RTF.	Contract with HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) includes terms that require the contractor to recover schedule delays and/or allow for CRD acceleration. Liquidated damages for late delivery in HRP contract.	M	No change
Disagreement on contractual obligations of the construction contractors.	There is a disagreement between the Project Team and a contractor regarding the performance of their contractual obligations.	Over the reporting period HRP submitted a claim related to design changes required to meet seismic conditions at the McLoughlin Point site. The Project Team takes a proactive management approach to the resolution of any changes, claims and disputes that arise, working expeditiously to achieve resolution with the goal of minimizing any impacts to budget and schedule while ensuring adherence to the terms of the construction contracts.	M	Risk added this report



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
Municipal Wastewater Regulation (MWR) Registration is not achieved or is delayed	A delay to achieving Municipal Wastewater Regulation Registration of the wastewater treatment system would mean that the CRD could not discharge treated effluent, and therefore would not be able to commission the Wastewater Treatment Plant or Residuals Treatment Facility.	The Project Team maintain a centralized The Project Team (with Harbour Resource Partners and Stantec representatives) have been meeting regularly with Ministry of Environment representatives since September 2017 to review the Municipal Wastewater Regulation Registration application requirements and the Project’s schedule, in order to mitigate the risk of an incomplete application and/or schedule delays in the registration. A workplan and schedule have been developed and the Project Team, Ministry of Environment and relevant contractors will continue to meet regularly to track progress and discuss issues.	M	No change
Public directly contacting contractors at sites.	Direct contact between the public and contractors could expose both parties to worksite hazards and potential injuries.	Communications and engagement plan, contractor orientation.	M	No change
Change in Law.	A change in law impacts the scope, cost or schedule of the Project.	Keep apprised of proposed modifications to relevant regulations so as to do the following as appropriate: submit comments on proposed modifications; consider including anticipated modifications in contracts. Monitor announcements re: tariffs and consider expediting purchase of affected imports.	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
Labour - Availability and/or cost escalation.	There is insufficient labour available to construct the Project, and/or there is significant labour cost.	The Project Team will, through the use of competitive selection processes for all construction contracts, ensure that all Project Contractors have appropriate experience and therefore understand labour risk.	M	No change
McLoughlin Point Wastewater Treatment Plant				
Unexpected contaminated soil conditions during excavation.	Site has more contaminated soils than initial assessment.	CRD and HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) are working collaboratively to minimize the costs associated with remediating the McLoughlin Point site while ensuring that contaminated materials are removed and disposed of in accordance with all applicable legislation.	H	No change
Conveyance				
Unexpected geotechnical conditions results in higher procurement and/or construction costs.	Geotechnical conditions result in redesign and/or higher construction cost than budgeted.	Ensure adequate investigations to manage the risk of unexpected geotechnical conditions: comprehensive geotechnical investigations have been undertaken for the Clover Forcemain, Macaulay Point Pump Station and Forcemain, and RSCL. This geotechnical information has been provided to procurement participants. Geotechnical investigations are to be undertaken for ECI and Currie Forcemain.	M	No change



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
Cost of conveyance contracts higher than estimated and budgeted.	Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted.	Conveyance contracts will be competitively-procured. The Project Team is reviewing the scope and construction cost estimates for the contracts that haven't yet been awarded in order to identify opportunities where savings could be realized to offset escalation.	H	No change
Engineering design development results in increases to the estimated construction cost.	Conveyance contract amounts higher than budget due to design development (through indicative and detailed design phases).	Reconfirm construction cost estimates at each stage of the design process. The Project Team is reviewing the scope in order to identify opportunities where savings could be realized to offset any increases during design development. Application of Value Engineering during design development and associated updated costs estimates at discrete design points.	H	No change

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

2.9. Status (Engineering, Procurement and Construction)

2.9.1. WWTP

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

Engineering

HRP progressed planning and design activities during the reporting period, including addressing most of the 100% design submittal comments, submitting the overall design as issued for construction (IFC), submittal of construction package 8 (100% IFC) – Pig Receiving Station, submittal of responses to CRD comments on the Computerized Maintenance Management System (CMMS) Plan, and submission of the training plan.

Construction

Key construction activities in progress or completed by HRP during the reporting period were as follows:

October:

- placed concrete in biological aerated filter (BAF) slabs S2, S3 and S4;
- erected biological aerated filter (BAF) wall forms including mechanical and electrical penetrations;
- formed and poured tertiary walls;
- placed concrete in dirty backwash slabs 1 and 2;
- installed anchors to rock areas; and
- continued surface runoff/groundwater treatment and discharge.

November:

- 7 of 35 biological aerated filter (BAF) walls were poured;
- continued surface runoff/groundwater treatment and discharge;
- dirty backwash and sludge storage tank slabs were poured;
- exterior walls of the tertiary building were poured to the second level;
- odour control piles were extended;
- phase 2 piling started at the east Densadeg;
- remaining major biological aerated filter (BAF) slabs was poured;
- slab work in the clean water tank commenced; and
- three interior tertiary walls were poured.

December:

- marine drilling and blasting completed;
- poured biological aerated filter (BAF) walls;
- poured tertiary walls;
- poured dirty back wash walls;
- poured clean water tank suspended slab;
- continued pouring biological aerated filter (BAF) gallery columns;

- continued pouring east Densadeg piles; and
- mobilized the micro tunnel boring machine.

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



Figure 2 – McLoughlin Point Wastewater Treatment Plant: scaffold erection in biological aerated filter (BAF) gallery for suspended slab formwork.



Figure 3 - McLoughlin Point Wastewater Treatment Plant: influent pipe placement in west Densadeg.



Figure 4 - McLoughlin Point Wastewater Treatment Plant: boom placement around outfall trenching barge.



Figure 5 - McLoughlin Point Wastewater Treatment Plant: installing jump deck for wall TB-3-W1 formwork.



Figure 6 - McLoughlin Point Wastewater Treatment Plant: looking west showing completed columns and walls.



Figure 7 - McLoughlin Point Wastewater Treatment Plant: forming and rebar installation for column foundations at operations and maintenance (O&M) building.



Figure 8 - McLoughlin Point Wastewater Treatment Plant: Biological aerated filter (BAF) pipe gallery looking north.

2.9.2. RTF

The RTF Project Component continued scheduled activities with HRMG (as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing: design engineering activities and construction activities over the reporting period including excavation and backfilling.

Engineering

HRMG progressed planning and design activities during the reporting period as follows:

- submitted early works package #2: 100% design for the digester foundations;
- submitted early works package #3: 100% design for the municipal solids receiving facility foundations;
- submitted early works package #4, 5, 6, 7 and 8: 100% design for various building foundations;
- submitted issued for construction (IFC) for site access road;
- submitted supplemental 60% design submittal;
- continued work on the overall 90% design submittal;
- prepared and submitted various project plans and submittals;
- progressed with vendor selection;
- submitted building permit applications for the Digester Building, Other Municipal Solids Receiving Building, the Water Pump House, the Equalization Building and Operations Building with the District of Saanich;
- held kick-off meeting and regular progress meetings with independent certifier;
- worked with District of Saanich and the Ministry of Environment on permitting requirements
- worked with BC Hydro to confirm power requirements to the site; and
- worked with the Ministry of Environment on permitting requirements.

Construction

Key construction activities in progress or completed by HRMG during the reporting period were as follows:

October:

- continued excavation of previously placed fill material in location of centrifuge and dryer buildings as well as below residual solids tanks, effluent tank and pump building, water tower and pump station;
- excavated blasted rock material from location of digester #2;
- stripped bedrock and cleaned for inspection prior to starting backfill with processed material;
- backfilled to top of subgrade (top of 75mm minus) in location of digester #2;
- backfilled water tower, pump station, residual solids tanks, effluent tank area to top of subgrade;
- backfilled below dryer building and centrifuge building until processed 75mm minus fill material ran out;
- cleared and grubbed east side of access in preparation for blasting for utility installation and widening;
- excavated utility trench up main access road;
- blasted bedrock in utility trench on main access road; and

- assembled utility poles for above-ground portion of hydro service.

November:

- base gravels placed, graded and compacted beneath digester #1;
- delivery of HDPE piping for the RSCL pipes within the RTF site;
- installation of RSCL pipes on main access road within the RTF site;
- hydro pole erection and pole infrastructure installation;
- processing 75mm minus crushed aggregate;
- filling, grading and compaction activities; and
- scaling of the south side of digester #2 rock shear wall.

December:

- excavated material/scaling south shear wall in preparation for rock bolting;
- installed stormwater treatment system;
- installed storm drain infrastructure;
- completed installation of above ground portion of hydro infrastructure 4 poles, grounding and related appurtenances;
- installed light bases and Hydro/communication vaults on main access road;
- installed Hydro ducting and communications ducting on main access road;
- final grading and compaction of base gravels under Digester #1 slab;
- completed crushing activities and demobilized crushing plant;
- filled to subgrade in vicinity of other municipal solids receiving facility, centrifuge building and dryer building; and
- drilled south shear wall behind digester #2 for rock bolting.

Photographs of construction progress over December at the RTF are shown in Figures 9-10.



Figure 9 – Residuals Treatment Facility: installation of PVC drain main.



Figure 10 – Residuals Treatment Facility: Testing of rock anchors on south side of digester #2.

2.9.3. Conveyance System

The Conveyance System Project Component progressed as planned over the reporting period.

Pre-construction and construction activities for the two design-build Conveyance System contracts progressed over the reporting period. As of the end of the reporting period, two of the six design-bid-build Conveyance System contracts were in construction, two were in procurement, and two were in the engineering phase, with the majority of work through the reporting period focused on the contracts summarised in the sub-sections below.

2.9.3.1. Clover Point Pump Station

The Clover Point Pump Station continued with design and construction activities during the reporting period.

Engineering

Kenaidan progressed planning and design activities during the reporting period, including addressing outstanding comments for City of Victoria public realm improvements, progressing the overall final (100%) design submittal, securing purchase orders and shop drawings with key vendors, and development of a preliminary commissioning plan.

Construction

Key construction activities in progress or completed by Kenaidan were as follows:

October:

- blasted and removed rock at wet well area;
- installed scaffolding access tower;
- final grading of excavation; and
- placed mass concrete levelling pads.

November:

- commenced wet well wall forms;
- commenced removing waterproofing from the existing pump station exterior;
- commenced welding dowels to caisson wall king pile beams;
- completed mass concrete to underside of wet well base slabs;
- commenced work on pump room slab forms and rebar;
- completed pump room mud slab;
- completed pump room slab waterproof membrane; and
- completed both sanitary and storm wet well base slabs.

December

- completed pump room base slab pour;
- completed grade beams along existing pump station walls;
- completed east storm wet well wall W-10;
- formed and installed rebar in section of pump room wall W-8; and
- commenced forming of north storm wet well wall W-9.

Photographs of construction progress at the Clover Point Pump Station over the reporting period are shown in Figures 11-13.



Figure 11 – Clover Point Pump Station: Wall W08 with block out for surge relief drain.

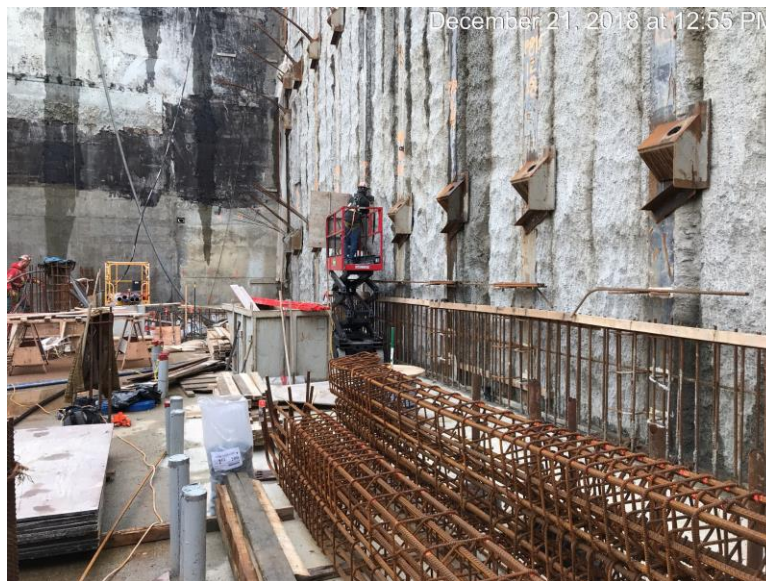


Figure 12 – Clover Point Pump Station: First row of caisson wall anchors being cut off.

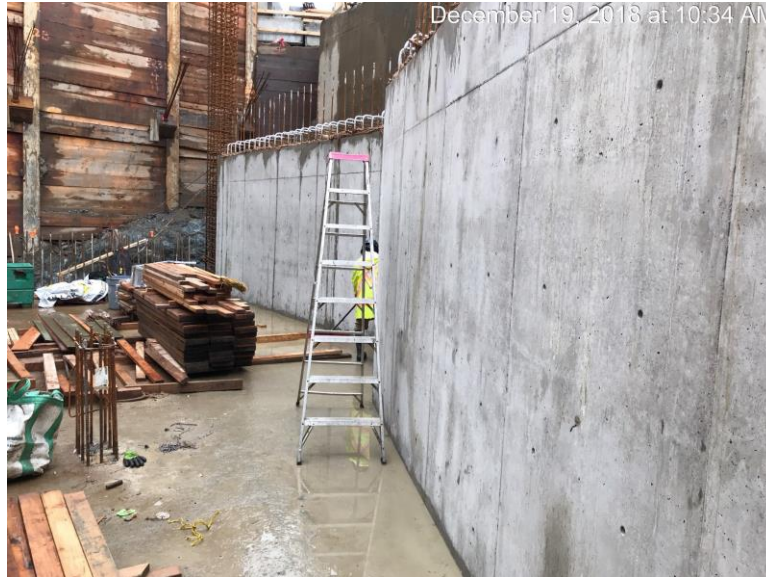


Figure 13 – Clover Point Pump Station: Wall W-10 stripped.

2.9.3.1. Macaulay Point Pump Station and Forcemain

The Macaulay Point Pump Station and Forcemain continued with planning, design and construction activities during the reporting period.

Engineering

Kenaidan progressed planning and design activities during the reporting period, including addressing outstanding comments for early works package 1: temporary works, demolition and excavation final (100%) design submittal, and early works package 2: sub structural, structural, geotechnical and hydraulics final design submission (100%), submitting the 90% supplemental electrical and architectural design submission, and progressing the overall final (100%) design submittal.

Construction

Key construction activities in progress or completed by Kenaidan were as follows:

October:

- the new temporary conveyor was installed in the existing bin room to re-direct screenings to the new temporary bin room;
- stripping of overburden to bedrock in the footprint of the new pump station;
- drilling and blasting and processing of the blast rock;
- the dewatering system was installed; and
- excavation slope protection has been installed.

November:

- commenced installation of the tower crane including equipment delivery and concrete pour of the base;
- commenced pre-fabrication of wall formwork; and
- ongoing drilling, blasting, rock removal, and crushing.

December:

- continue drilling and blasting;
- continued rock removal and crushing of blast rock;
- Western communities trunk line secured along the eastern side of the site;
- completed installation of the tower crane; and
- prefabrication of form work for walls and the vortex degritter is ongoing.

Photographs of construction progress at the Macaulay Point Pump Station in December are shown in Figures 14 -16.

December 28, 2018 at 1:34 PM



Figure 14 – Macaulay Point Pump Station: Western Grater drilling rock in the south east corner of the site.



Figure 15 – Macaulay Point Pump Station: Western Grater spraying shotcrete in front of the temporary entrance to the existing facility.



Figure 16 – Macaulay Point Pump Station: looking south at the support of the Western Communities Trunk.

2.9.3.2. Clover Forcemain (CFM)

Windley (as the Construction Contractor for the Clover Forcemain) commenced preconstruction and construction activities including: submission of construction work plans and shop drawings for Project Team review; submission of permit applications to authorities having jurisdiction; site office and laydown area mobilization; utility locates, initial geotechnical and soil assessment survey; pre-construction archaeological test digs and pre-pipe installation blasting activity.

Construction

Key construction activities in progress or completed by Windley were as follows:

October:

- site office and laydown area mobilization;
- utility locates on Dallas Road;
- initial survey layout of forcemain;
- initial geotechnical assessment survey;
- pre-construction archaeological test digs; and
- tree removal.

November:

- commenced archaeological soil removal and screening between Niagara Street and Montreal Street.
- commenced blasting rock for forcemain installation between Niagara Street and Montreal Street;
- existing sewer relocation;
- received delivery of HDPE forcemain pipe in their Nanaimo yard;
- soils testing along the forcemain alignment; and
- utility crossing confirmation.

December:

- installed temporary paving for the holiday break;
- commenced sewer relocation;
- drilled and blasted for forcemain installation between Niagara Street and Montreal Street; and
- received HDPE forcemain pipe.



Figure 17 – Clover Forcemain: Dallas Road – Blast mats being placed in preparation for a blast



Figure 18 – Clover Forcemain: Dallas Road – trench shoring cage



Figure 19 – Clover Forcemain: Dallas Road – Sanitary relocates between Oswego and San Jose.

2.9.3.3. Residual Solids Conveyance Line (RSCL)

The RSCL continued to progress planning and preconstruction activities over the reporting period.

- RSCL 100 Residual Solids Pipes: Don Mann (as the construction contractor) continued pre-construction activities, including work plans, shop drawings, and permits; continued contaminated soils investigations; installed BC Hydro vaults and duct bank at Joffre Street; installed BC Hydro vaults at Lyall Street; scanned rock profile with ground penetrating radar at Grange Road; and conducted utility pre-locates along the RSCL alignment.
- RSCL 200 Residual Solids Pump Stations: Parsons (as the Design Consultant) progressed planning, design, and procurement activities during the reporting period, including the preparation of the 90% and final (100%) design submission, and procurement (including issuing the Request for Proposal, and addressing inquiries and issuing addenda, as needed)
- RSCL 300 Saanich Infrastructure Improvements: the Project Team will be arranging a detailed design kick-off meeting with Parsons (as the Design Consultant) and the District of Saanich in Q1 2019.

2.9.3.4. Arbutus Attenuation Tank

KWL (as the Design Consultant for the Arbutus Attenuation Tank), finalized the 100% design deliverable. The Project Team issued the Invitation to Tender in November and responded to Issue for Tender inquiries in December.

2.9.3.5. Remainder of Conveyance Component

The Project Team is undertaking preliminary engineering activities including scope review, in preparation to commence detailed design in Q1 2019.

Appendix A – Blasting Notice – Clover Point Pump Station – October 2, 2018**Wastewater
Treatment Project**
Treated for a cleaner future**Construction Notice****October 2, 2018****Clover Point Pump Station: Blasting**

As part of excavation for the Clover Point Pump Station, the contractor, Kenaidan Contracting Ltd, will conduct controlled blasting to remove localized rock on site. This short series of blasting is anticipated to take place over the next two weeks.

What to Expect

- It is anticipated there will be two days when blasting will occur with 2-4 blasts per day.
- Noise associated with these activities will also include drilling and removal of rock.

Work Hours

- Blasting will occur between 8:00 a.m. to 4:30 p.m.
- Regular work hours are Monday to Friday 7:00 a.m. to 7:00 p.m. and Saturday from 10:00 a.m. to 7:00 p.m.

Blasting Procedure

- Each blast will last less than 60 seconds
- 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
- All blasts will be covered with 5,000 pound blast mats.

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, please visit wastewaterproject.ca.

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

Appendix B – Clover Forcemain: Archaeological Work – October 22, 2018**Wastewater
Treatment Project**
Treated for a cleaner future**Construction Notice**

October 22, 2018

Clover Forcemain: Archaeological Work

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

The contractor, Windley Contracting Ltd., has begun site preparation with the mobilization of their site trailers and laydown area at Ogden Point. Beginning the week of October 29, Windley, and the Project Archaeologist Millennia Research, will be conducting archaeological work on Dallas Road between Niagara Street and Montreal Street. This work is anticipated to take two weeks.

What to Expect

- Excavation of test holes to conduct archaeological investigations. Test holes will be backfilled as Millennia completes their assessment.
- Noise associated with this work includes excavation machinery and truck back-up beepers and will not exceed the City of Victoria's noise bylaws.
- One tree in front of Whitehall Rowing will be removed as it is located directly in the forcemain alignment.

Work Hours

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

Traffic Impacts

- There will be single lane alternating traffic during work hours with road plates installed overnight to allow two-way traffic.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.
- There may be parking impacts on Dallas Road.

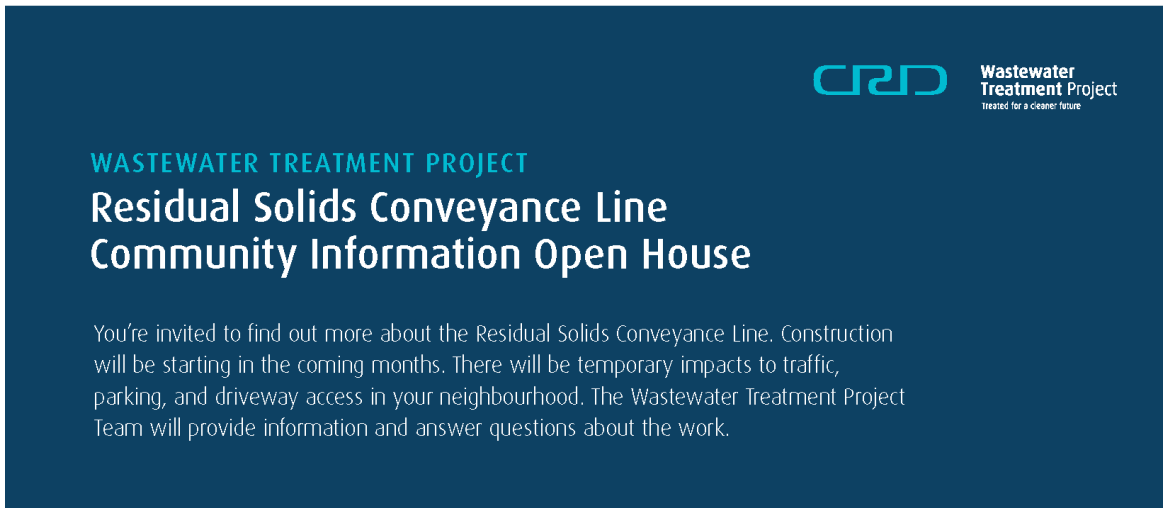
About the Wastewater Treatment Project

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

For more information, please visit wastewaterproject.ca.

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

Appendix C – Community Open House Invitation – Mail Delivery



WASTEWATER TREATMENT PROJECT
Residual Solids Conveyance Line
Community Information Open House

You're invited to find out more about the Residual Solids Conveyance Line. Construction will be starting in the coming months. There will be temporary impacts to traffic, parking, and driveway access in your neighbourhood. The Wastewater Treatment Project Team will provide information and answer questions about the work.

OPEN HOUSE DATES

Tuesday, November 27, 2018
5:00 p.m. to 7:00 p.m.
St. Joseph the Worker Parish Hall
753 Burnside Road West

Wednesday, November 28, 2018
5:00 p.m. to 7:00 p.m.
Prospect Lake Community Hall
5358 Sparton Road

FOR MORE INFORMATION ABOUT THE WASTEWATER TREATMENT PROJECT

Visit wastewaterproject.ca
E-mail wastewater@crd.bc.ca
Call **1.844.815.6132**

Join our mailing list to receive construction updates: email wastewater@crd.bc.ca or call 1.844.815.6132 to sign up.

OPEN HOUSE FORMAT

The Wastewater Treatment Project Team will provide information about the construction of the Residual Solids Conveyance Line and current construction on the Residuals Treatment Facility. The format will be drop-in on two nights to provide flexibility for busy schedules. Come by anytime during either meeting to review Project information, find out about upcoming construction activities and timing, meet Project Team members, and ask questions about the Project.

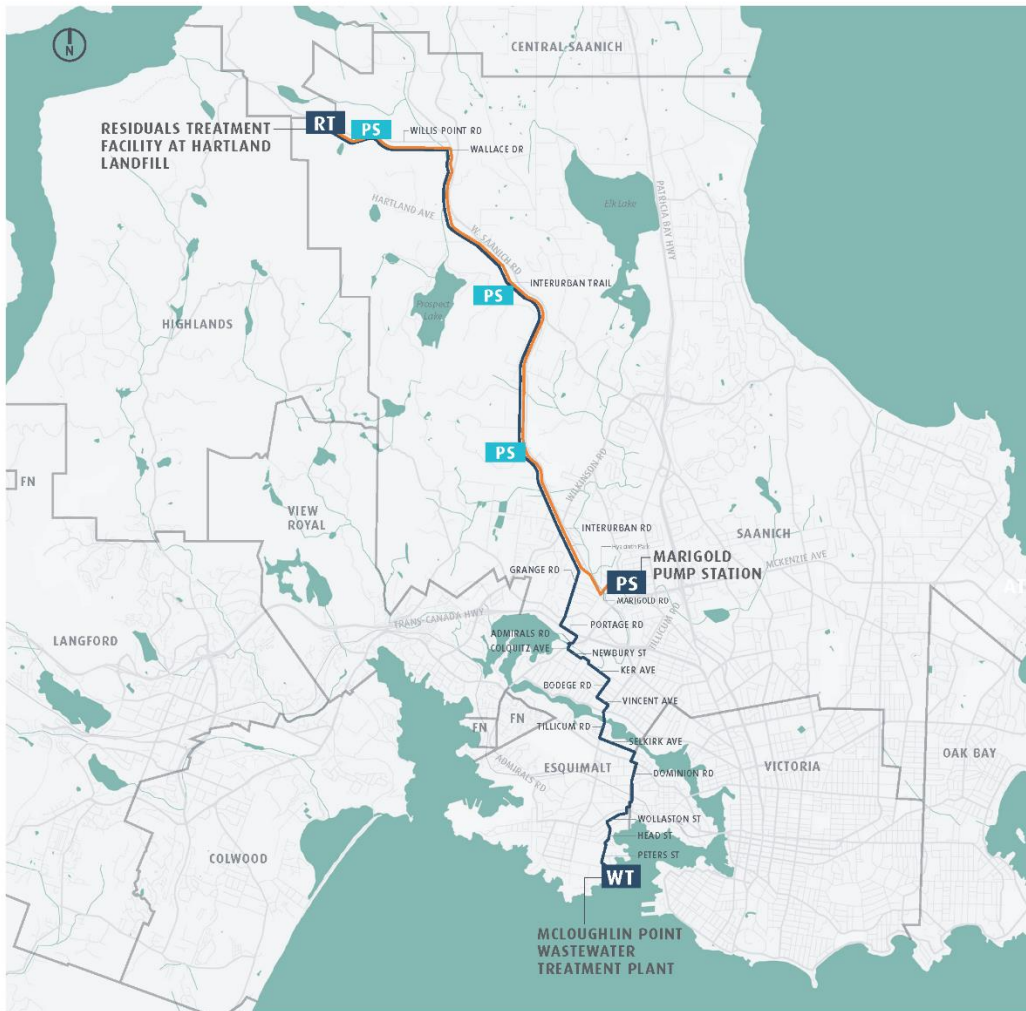
RESIDUAL SOLIDS CONVEYANCE LINE

The Residual Solids Conveyance Line is part of the Wastewater Treatment Project. It includes two pipes and three small pump stations connecting the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill.

The first pipe will be 250mm (10 inches) in diameter and 19.3km 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 300mm (12 inches) in diameter and 12.4km long and will return the liquid removed from the residual solids during the treatment process at the Residuals Treatment Facility to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

TIMING

Pre-construction activities will begin in November and construction of the pipe is anticipated to begin in January. The work will take approximately 18 months to complete. To minimize impacts to all road users, the pipe will be installed in segments.



SYSTEM OVERVIEW

WASTEWATER FACILITIES

- WT** TREATMENT PLANT
- PS** PUMP STATION
- PS** SMALL PUMP STATION


SEWER ALIGNMENT

- RESIDUAL SOLIDS CONVEYANCE LINE
- RETURN LINE

For More Information

Website: wastewaterproject.ca
 Email: wastewater@crd.bc.ca
 24-7 Project Information Line: 1.844.815.6132

Appendix D – Open House Invitation – Newspaper Ads



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

Residual Solids Conveyance Line

COMMUNITY INFORMATION DROP-IN OPEN HOUSE

You're invited to find out more about the next phase of construction for the Wastewater Treatment Project. The Residual Solids Conveyance Line includes two pipes and three pump stations that will connect the McLoughlin Point Wastewater Treatment Plant with the Residuals Treatment Facility at Hartland Landfill. This work is anticipated to begin this winter and take approximately 18 months to complete. Construction will take place in Saanich, Esquimalt and Victoria. The Wastewater Treatment Project Team will provide information and answer questions about the work.

OPEN HOUSE DATES

Tuesday, November 27, 2018 5:00 p.m. – 7:00 p.m.	Wednesday, November 28, 2018 5:00 p.m. – 7:00 p.m.
St. Joseph the Work Parish Hall 753 Burnside Road West	Prospect Lake Community Hall 5358 Sparton Road

FOR MORE INFORMATION VISIT WASTEWATERPROJECT.CA

Appendix E – Residual Solids Conveyance Line Contract Awarded (November 7, 2018)



**Wastewater
Treatment Project**

Information Bulletin

For Immediate Release
November 7, 2018

Residual Solids Conveyance Line Contract Awarded

Victoria, BC – The Capital Regional District (CRD) has awarded a \$29-million contract to Don Mann Excavating Ltd. to construct the Residual Solids Conveyance Line (RSCL). As part of the Wastewater Treatment Project, the Residual Solids Conveyance Line will convey residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill where they will be treated and processed into Class A biosolids.

Don Mann Excavating is a Victoria-based civil contracting company with over 70 years' experience specializing in excavation, road building, and installation of underground utilities.

Construction of the RSCL will begin this winter and will take approximately 18 months to complete. The RSCL will be installed in segments within existing road rights of way. It will be constructed in accordance with a traffic management plan to minimize impacts to vehicle traffic, cyclists and pedestrians, including measures to minimize work hours at the major intersections the route crosses to accommodate commuter traffic.

The RSCL includes two pipes and three small pump stations. The first pipe will be 250mm (10 inches) in diameter and 19.3km long connecting the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility. The second pipe will be 300mm (12 inches) in diameter and 12.4km long and will return the liquid removed from the residual solids during the treatment process at the Residuals Treatment Facility to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system. The alignment was developed based on technical, environmental, social and economic considerations and included input from the municipalities of Saanich, Esquimalt and Victoria.

As part of constructing the RSCL, infrastructure improvements will be made at certain points along the route including new curbs, sidewalks and watermain upgrades.

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

A map showing the route of the RSCL is available online, please visit:

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

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.

For more information, please visit: wastewaterproject.ca

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For media inquiries, please contact:

Andy Orr, Senior Manager

CRD Corporate Communications

Tel: 250.360.3229

Cell: 250.216.5492



Appendix F – McLoughlin Point: Utility Work (November 8, 2018)**Wastewater
Treatment Project**
Treated for a cleaner future**Construction Notice****November 8, 2018****McLoughlin Point: Utility Work**

As part of work for the Wastewater Treatment Project, Don Mann Excavating Ltd. will be doing some utility work in the 500 block of Joffre Street, 1000-1100 block of Lyall Street and 400 block of Lampson Street from mid-November 2018 to mid-January 2019.

What to Expect

- Utility work will consist of verifying the location of existing utilities, road cutting, excavation, electrical duct and manhole installation, concrete deliveries and trench paving.
- The work zone will move daily and will be kept as small as possible, backfilling the trench as work progresses.
- There will be no impact to utility services.
- Noise associated with this work includes excavation machinery and truck back-up beepers and will not exceed the Township of Esquimalt's noise bylaws.

Work Hours

- Monday to Friday 7:30 a.m. to 5:00 p.m.

Traffic Impacts

- There will be single lane alternating traffic during work hours with road plates installed overnight to allow two-way traffic.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.
- Interruptions to driveway access during work hours will be minimized as much as possible. Residents will be informed in advance.

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, please visit wastewaterproject.ca.

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

Appendix G – Clover Forcemain: Utility Relocates (November 9, 2018)



Wastewater
Treatment Project
Treated for a cleaner future

Construction Notice

November 9, 2018

Clover Forcemain: Utility Relocates

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

The contractor, Windley Contracting Ltd., will be conducting sewer relocation from Montreal to Boyd streets starting November 13 until January 2019. This work is being completed prior to forcemain installation.

What to Expect

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

Work Hours

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

Traffic Impacts

- There will be single lane alternating traffic during work hours with road plates installed overnight to allow two-way traffic.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.
- There may be parking impacts on Dallas Road.

About the Wastewater Treatment Project

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

For more information, please visit wastewaterproject.ca.

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

Appendix H – Macaulay Point Pump Station: Blasting Notice Update (November 14, 2018)

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

November 14, 2018

Macaulay Point: Blasting Schedule

As part of site preparation for the Macaulay Point Pump Station, the contractor, Kenaidan Contracting Ltd, has been conducting controlled blasting and excavation.

The blasting schedule has been revised and is anticipated to be completed in December. The updated blasting schedule is Monday to Saturday between 8:00 a.m. and 4:30 p.m. It is anticipated there will be 2-4 blasts per day.

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

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, please visit wastewaterproject.ca.

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

Appendix I – Residuals Solids Conveyance Line



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

Information Sheet

Residual Solids Conveyance Line

The Residual Solids Conveyance Line is part of the Wastewater Treatment Project. It includes two pipes and three small pump stations connecting the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill.

Pipe installation is anticipated to begin in January. Don Mann Excavating Ltd. has been selected to complete this work and construction is anticipated to take 18 months and be complete spring 2020.

The first pipe will be 250mm (10 inches) in diameter and 19.3km 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 300mm (12 inches) in diameter and 12.4km long and will return the liquid removed from the residual solids during the treatment process at the Residuals Treatment Facility to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

The pipe will be installed in segments within existing road rights of way. It will be constructed in accordance with a traffic management plan to minimize impacts to vehicle traffic, cyclists and pedestrians, including measures to minimize work hours at busy intersections the route crosses to accommodate commuter traffic. There will be single lane alternating traffic with signage and flaggers directing traffic as required. Any temporary impacts to driveway access and parking during work hours will be coordinated in advance.

The alignment was developed with the District of Saanich, Township of Esquimalt and City of Victoria based on technical, environmental, social, and economic considerations. Infrastructure improvements will be made at certain points along the route including new curbs, gutters and sidewalks.

PUMP STATIONS

Three pump stations will be built along the route of the Residual Solids Conveyance Line to pump the residual solids due to the distance and elevation change. The pump stations are located within road rights of way. The locations of the pump stations were determined based on the grade of the route and flow rates.

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

The pump stations will be automated and owned and operated by the CRD.



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



Artist rendering of the pump station to be located on Interurban Road Trail near West Saanich Road and Observatory Road.



Artist rendering of the pump station to be located at Interurban Road and Courtland Avenue.

For More Information

Website: wastewaterproject.ca
Email: wastewater@crd.bc.ca
24-7 Project Information Line: 1.844.815.6132

Appendix J – Residuals Treatment Facility



**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 use.

The Residuals Treatment Facility will be located within the footprint of the Hartland Landfill 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.



*Artist rendering
of Residuals
Treatment Facility*

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; and
- distance from residential neighbours.

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.



Construction began in spring 2018 and will take approximately 2.5 years to complete.

Hartland Resource Management Group are responsible for designing, building and partially financing the construction of the Residuals Treatment Facility, and will also operate and maintain the facility for 20 years. The facility will have the capacity to treat more than 14,000 dry tonnes of residuals per year.

As construction is within the CRD’s Hartland Landfill site, construction impacts to residents are not anticipated to be significant. Truck traffic will be within the capacity of the existing road network.

The contractor is 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.

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

A robust operations and maintenance plan will be followed at the Residuals Treatment Facility.

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 ultimate use of these biosolids will be determined by a separate procurement process but could be an alternate fuel source.

Water quality is regularly monitored by the CRD as part of the environmental monitoring program for the Hartland Landfill, both on-site and near the property line, in addition to 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 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

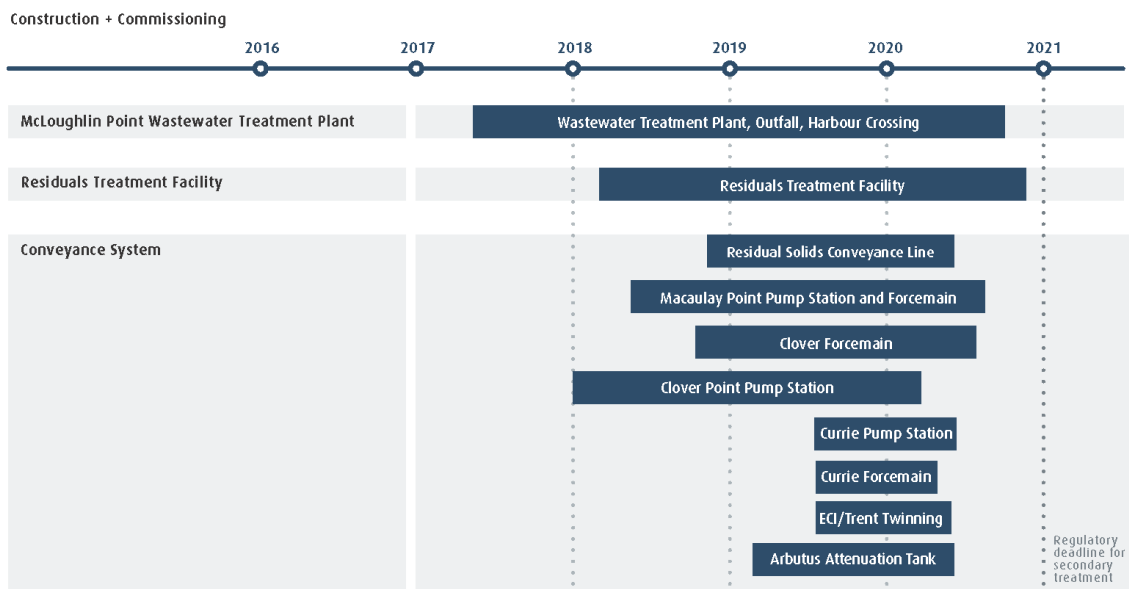
Website: wastewaterproject.ca
Email: wastewater@crd.bc.ca
24-7 Project Information Line: 1.844.815.6132

Appendix K – Construction Schedule

Information Sheet

Wastewater Treatment Project Schedule*

The Wastewater Treatment Project will be constructed through nine separate elements, 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 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

Email: wastewater@crd.bc.ca

24-7 Project Information Line: 1.844.815.6132

Appendix L – Construction of the Clover Forcemain



Construction of the Clover Forcemain

The Wastewater Treatment Project includes construction of a pipe which will transport wastewater from the upgraded Clover Point Pump Station to the McLoughlin Point Wastewater Treatment Plant. This pipe, the Clover Forcemain, will run along Dallas Road from Clover Point to Ogden Point, where it will connect to the cross-harbour undersea pipe, which was completed in April 2018.

Work to be Completed

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

Work Hours

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

Traffic Impacts

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

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

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

About the Wastewater Treatment Project

The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees Nations by the end of 2020. The Wastewater Treatment Project is being funded by the Government of Canada, the Government of British Columbia and the Capital Regional District.

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

Appendix M – Macaulay Point Pump Station: Rock Hauling – December 13, 2018

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

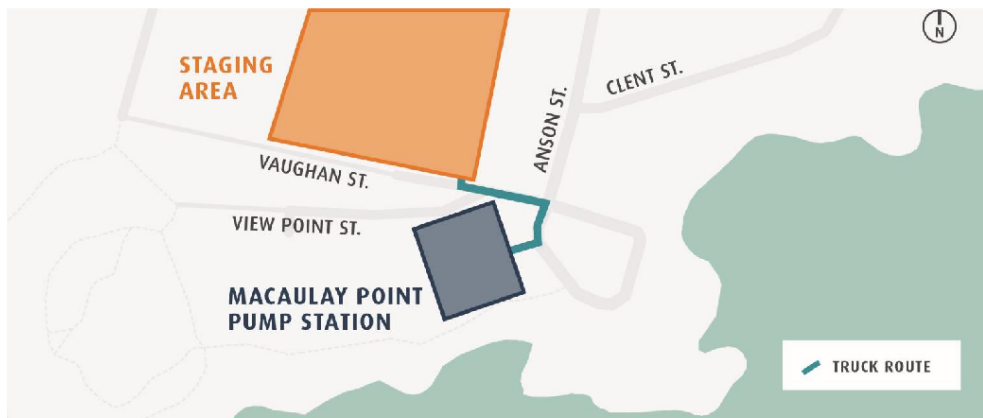
Construction Notice

December 13, 2018

Macaulay Point Pump Station: Rock Hauling

As part of site preparation for the Macaulay Point Pump Station, the contractor, Kenaidan Contracting Ltd, has been conducting controlled blasting and excavation. Blasting is anticipated to be completed in December. Removal of the blasted rock will continue for approximately one month after blasting is complete.

Due to the layout of the excavation site, the remaining rock will be hauled out of the southeast corner of the excavation, north onto Anson Crescent to Vaughn Street and onto the blasted rock stockpile within the staging area. This hauling route is anticipated to begin December 21 and last for approximately one month.



Work Hours

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

About the Wastewater Treatment Project

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

For more information, please visit wastewaterproject.ca

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

Appendix N – Clover Forcemain: Excavation and Blasting – December 31, 2018



December 31, 2018

Clover Forcemain: Excavation and Blasting

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

As part of construction for the Clover Forcemain, the contractor, Windley Contracting Ltd., is conducting controlled blasting and excavation. A trench is being excavated to lay the pipe in, and blasting will occur when rock is encountered in the trench. Blasting is anticipated to take place between Montreal and Dock streets beginning January 2, 2019 until approximately mid-January. It is expected that there will be 4-5 blasts per day; the number of blasts required will depend upon the rock encountered.

Blasting Procedure

- Each blast will last less than 60 seconds.
- All blasts will be completely covered with blasting mats.
- Blasting signs and personnel will be posted at access points on the construction site boundary to prevent entry into the blast area.
- Warning signals will be used as follows:
 - 12 short whistles at one second intervals followed by a two minute pause
 - Blast will be detonated
 - One long whistle signals all is clear
- Each blast is monitored.

Work Hours

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

Traffic Impacts

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

About the Wastewater Treatment Project

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

For more information, please visit wastewaterproject.ca.

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

Appendix O – Information Sheet – Grange Road Update

Grange Road Update

The Wastewater Treatment Project has responded to residents’ concerns about the potential loss of trees and has found a way to construct the Residual Solids Conveyance Line (RSCL) that doesn’t require the removal of any trees on Grange Road. The pipe will now be installed along the west side of the street.

The Project Team has worked with a professional arborist to adjust the route and the arborist will be on site during construction to evaluate the existing tree health and any impacts to roots as a result of construction.

CONSTRUCTION INFORMATION

Work on Grange Road is anticipated to begin early in the new year. The original alignment (on the east side of Grange Road) was selected to allow the pipe to be laid within an existing rock trench.

To preserve trees we have shifted the alignment to the west side of the street, and rock will therefore need to be cleared by blasting or mechanical machinery. The Project Team will work to minimize construction impacts and maintain two-way traffic wherever possible; however, sections of Grange Road may need to be closed for portions of construction. Notice of any required road closures will be provided to residents in advance. Work hours may be longer for this section to reduce the duration of construction impacts.



Grange Road

BACKGROUND

The alignment of the RSCL was developed in 2014 based on technical, environmental, social and economic considerations and included input from Saanich, Esquimalt and Victoria. Grange Road was identified as part of the route for a number of reasons:

- it’s the shortest route from the McKenzie Interchange to Interurban;
- it avoids busy commuter routes;
- the pipe can be installed in the municipal right of way; and
- it’s the lowest cost.

The Project Team works with each municipality on the location of where to install the pipes within the road right of way. The Project Team will continue to coordinate with the District of Saanich as construction progresses.

The District of Saanich will be undertaking a separate consultation with residents to seek input on improvements to the sidewalk.

ABOUT THE PROJECT

The Wastewater Treatment Project is being built to provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees Nations to meet federal and provincial regulations by December 31, 2020.



Residual Solids Conveyance Line

The Residual Solids Conveyance Line is part of the Wastewater Treatment Project. It includes two pipes and three small pump stations connecting the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill.

Pipe installation is anticipated to begin in January. Don Mann Excavating Ltd. has been selected to complete this work and construction is anticipated to take 18 months and be complete spring 2020.

The first pipe will be 250mm (10 inches) in diameter and 19.3km 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 300mm (12 inches) in diameter and 12.4km long and will return the liquid removed from the residual solids during the treatment process at the Residuals Treatment Facility to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

The pipe will be installed in segments within existing road rights of way. It will be constructed in accordance with a traffic management plan to minimize impacts to vehicle traffic, cyclists and pedestrians, including measures to minimize work hours at busy intersections the route crosses to accommodate commuter traffic. There will be single lane alternating traffic with signage and flaggers directing traffic as required. Any temporary impacts to driveway access and parking during work hours will be coordinated in advance.



SYSTEM OVERVIEW

WASTEWATER FACILITIES		SEWER ALIGNMENT	
WT	TREATMENT PLANT		RESIDUAL SOLIDS CONVEYANCE LINE
PS	PUMP STATION		RETURN LINE
PS	SMALL PUMP STATION		

For More Information

Website: wastewaterproject.ca
 Email: wastewater@crd.bc.ca
 24-7 Project Information Line: 1.844.815.6132

Appendix P – Statement Regarding Grange Road – December 13, 2018



Information Bulletin

For Immediate Release
December 13, 2018

Statement Regarding Grange Road

Victoria, BC - “I’m pleased to say that the Wastewater Treatment Project has responded to residents’ concerns about the loss of trees and has found a way to construct the Residual Solids Conveyance Line that doesn’t require the removal of any trees on Grange Road. The pipe will now be installed on the west side of the street. We want to thank the community for sharing their concerns and for their patience during construction.” Elizabeth Scott, Deputy Project Director, Wastewater Treatment Project.

An information sheet with more information about Grange Road is available [here](#).

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.

For more information, please visit: wastewaterproject.ca

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For media inquiries, please contact:

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





Appendix Q – Asset Management Cost Report

ASSET MANAGEMENT COST REPORT as at December 31, 2018														
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
			Expended to November 30, 2018	Expended over reporting period (December 2018)	Expended to December 31, 2018	Expended to December 31, 2018 as a % of Budget	Remaining (Unexpended) Budget at December 31, 2018	Total Commitment at December 31, 2018	Unexpended Commitment at December 31, 2018	Uncommitted Budget at December 31, 2018	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Budget
McLoughlin Point Wastewater Treatment Plant ^A	378.0	369.0	167.4	8.5	175.9	48%	193.0	343.6	167.7	25.2	193.0	369.0	-	0%
Residuals Treatment Facility ^A	195.0	166.0	16.1	0.3	16.4	10%	149.6	150.5	134.1	15.5	149.6	166.0	-	0%
Conveyance System ^A	192.0	230.0	49.5	8.1	57.6	25%	172.4	171.7	114.1	58.3	172.4	230.0	-	0%
Total Costs	765.0	765.0	233.0	16.9	249.9	33%	515.0	665.8	415.9	99.0	515.0	765.0	-	0%

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



Appendix R– Quarterly Cost Report

WTP QUARTERLY COST REPORT															
as at December 31, 2018															
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE		
			Expended to September 30, 2018	Expended over reporting period (Q4 2018 Sept - Dec)	Expended to December 31, 2018	Expended to December 31, 2018 as a % of Budget	Remaining (Unexpended) Budget at December 31, 2018	Total Commitment at December 31, 2018	Unexpended Commitment at December 31, 2018	Uncommitted Budget at December 31, 2018	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Budget	
McLoughlin Point Wastewater Treatment Plant ¹	316.6	318.8	138.5	21.1	159.6	50%	159.2	311.8	152.2	7.0	159.2	318.8	-	0%	
Residuals Treatment Facility ¹	147.1	135.9	8.2	0.1	8.3	6%	127.6	135.1	126.8	0.7	127.6	135.9	-	0%	
Conveyance System ¹	141.2	184.2	29.3	12.9	42.2	23%	142.0	146.7	104.5	37.5	142.0	184.2	-	0%	
Project Management Office															
Project Management Office ("PMO")	71.1	75.6	31.9	3.8	35.7	47%	39.8	63.9	28.2	11.7	39.8	75.6	-	0%	
Common Costs															
BC Hydro	11.6	2.9	1.0	0.5	1.5	52%	1.4	1.8	0.3	1.1	1.4	2.9	-	0%	
Third Party Commitments	8.1	8.1	2.5	0.1	2.6	32%	5.5	6.5	3.9	1.5	5.5	8.1	-	0%	
Program Reserve and contingencies	69.3	39.5	-	-	-	0%	39.5	-	-	39.5	39.5	39.5	-	0%	
Total Costs	765.0	765.0	211.4	38.5	249.9	33%	515.0	665.8	415.9	99.0	515.0	765.0	-	0%	

¹ - Excluding PMO, Common Costs and
^{*} Values presented in \$millions, results in minor rounding differences
^{**} Cost report presents approved expenditures