Wastewater Treatment Project

Treated for a cleaner future

CRD Wastewater Treatment Project

Monthly Report

Reporting Period: November 2018

Contents

1 Executive Summary

1.1 Introduction

This monthly report covers the reporting period of November 2018 and outlines the progress made on the Wastewater Treatment Project during this time.

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

Overall the Wastewater Treatment Project progressed as planned 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 McLoughlin Point WWTP) progressing in November: engineering of the WWTP; and construction at McLoughlin Point including continuing concrete pours for the process building base slabs and walls and tertiary building walls, and preparing for drilling the first section of the outfall.

The RTF Project Component is continuing with Hartland Resource Management Group ("HRMG" as the Design-Build-Finance-Operate-Maintain Contractor for the RTF) progressing design engineering and construction activities over the reporting period including: submission of various early works design submissions, Project plans and building permits; excavation activities; installation of high density polyethylene (HDPE) piping; and grading and compaction activities.

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, engineering, procurement, design and construction activities over the reporting period, including: development of the final (100%) design submission, securing purchase orders with key vendors; and completion of reinforced concrete base slab for the wet wells.
- 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 development of the final (100%) design, ongoing rock blasting, crushing, and removal; and commencing installation of the tower crane.

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

- Clover Forcemain: Windley Contracting Ltd. ("Windley" as the Construction Contractor) continued preconstruction activities including: submitting construction work plans and shop drawings for Project Team review; submitting permit applications to authorities having jurisdiction; continuing to perform utility pre-locates, initial geotechnical and soil assessment survey; and starting work on the utility relocates and rock blasting.
- Residual Solids Conveyance Line ("RSCL"): The RSCL is being delivered through three construction contracts, with work progressing as follows:
    - RSCL 100 Residual Solids Pipes: Don Mann Excavating Ltd. ("Don Mann" as the Construction Contractor for RSCL100) continued preconstruction activities including submitting construction work plans and shop drawings, and submitting permit applications to authorities having jurisdiction;
    - RSCL 200 Residual Solids Pump Stations: Parsons (as the Design Consultant for the RSCL) and the Project Team progressed the Request for Proposals procurement process through issuing addendum to pre-qualified proponents; and
    - RSCL 300 Saanich Infrastructure Improvements: the Project Team will be arranging a detailed design kick-off meeting with Parsons (as the Design Consultant) and the District of Saanich before year end.
- Arbutus Attenuation Tank: Kerr Wood Leidal Ltd. ("KWL" as the Design Consultant for the Arbutus Attenuation Tank), finalized the 100% design deliverable and the Project Team commenced the procurement process by issuing an Invitation to Tender.
- Remainder of Conveyance Component: the Project Team is undertaking preliminary engineering activities including scope review, in preparation to commence detailed design in Q1 2019.

1.2 Dashboard

Table 1 indicates the high level status of the Project and each Project Component with regards to the six Key Performance Indicators ("KPIs") that were defined within the Project Charter.

There were no changes made to the dashboard during 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 over the reporting period, 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

Safety information for the reporting period and cumulative for the Project from January 1, 2017 is summarized in Table 2.

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

Three near-miss safety incidents occurred during the month of November: a utility strike at the Clover Forcemain site, a utility strike at the RTF site and an incident at the Macaulay Point Pump Station site.

On November 15, 2018 a near-miss utility strike incident occurred at the Clover Forcemain site. During a utility pre-locate program, 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 incident 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.

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.

Table 2 – WTP Safety Information

	Reporting Period (November 2018)	Project Total to-Date (from January 1, 2017)
Person Hours		
PMO	3,762	82,861
Project Contractor	36,863	319,317
Total Person Hours	40,625	402,178
PMO	31	
Project Contractors (and Project Consultants) working on Project sites	207	
Total Number Of Employees	238	
Near Miss Reports	3	12
High Potential Near Miss Reports	0	3
Report Only	0	5
First Aid	0	6
Medical Aid	0	0
Medical Aid (Modified Duty)	0	1
Lost Time	0	0
Total Recordable Incidents	0	1
		Project Frequency (from January 1, 2017)
First Aid Frequency		2.9
Medical Aid Frequency		0.5
Lost Time Frequency		0
Total Recordable Incident Rate		0.5

2.2 Environment and Regulatory Management

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

2.2.1 Environment

Environmental work progressed as planned over the reporting period.

Key environmental management activities completed in 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 will form the majority of the application to be submitted to the BC Ministry of Environment and Climate Change Strategy for a Waste Discharge Authorization (Operational Certificate).

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, 16 and 17, 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 slightly exceeded (34 mg/L vs. guideline of 32 mg/L) 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. There are no short term or long term adverse effects from the incident.

HRP and Van Pile are undertaking a review of the incident to determine if there are any corrective actions to be taken as a result of the incident and/or lessons to be learnt.

2.2.2 Regulatory Management

In November, 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 November include:

- 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 the Esquimalt and Songhees Nations. A number of artifacts were recovered during the work.

The status of key Project permits are summarized in Table 3. The table is not a list of all required Project permits, but rather a summary of the status of key Project permits.

Table 3 has been updated since the Project's October Monthly Report as follows:

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

Table 3 - Key Permits Status

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

2.3 First Nations

First Nations communication and engagement was ongoing over the reporting period. Ongoing meetings with the Esquimalt and Songhees Liaisons continued.

In 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. A number of artifacts were recovered during the pre-construction digs. 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.

2.4 Stakeholder Engagement

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

The Project Team held two community information open houses in November in Saanich: on November 27, at St. Joseph the Worker Parish Hall, and on November 28, 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 A) 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 website;
- three newspaper ads: in the Saanich News on November 21, the Victoria News on November 21, (Appendix B) and the Times Colonist on November 24; and
- the interview of the Deputy Project Director on November 8 on CFAX 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.

Construction Communications

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

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

Signage (Appendix F) was erected at the construction laydown area located at Ogden Point to describe the overall work to be undertaken along the Clover Forcemain, including the construction work that will be completed, work hours and any traffic impacts to the public. Smaller signs will be posted along the route as work progresses. As well, signage noting the federal and provincial government funding for the Project was displayed at Ogden Point.

Information Bulletin

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 G)

Information Sheets

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

- Residuals Solids Conveyance Line information sheet (Appendix H) 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 I) was updated; and
- Construction Schedule (Appendix J) was updated as outlined in section 2.6.

Project Website

Throughout the month of November, the Project website, wastewaterproject.ca, was updated with information about the Project. Three construction notices, one information bulletin, and three information sheets were posted. As well, the photo gallery section was 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.

Community Meetings

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

- City of Victoria staff;
- 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 Residual Solids Conveyance Line.

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 - Project Inquiries – November 2018

Inquiry Source	Contacts for November
Information phone line inquiries	24
Email inquiries responded to	26

Key themes of the public inquiries were as follows:

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

2.5 Resolutions from Other Governments

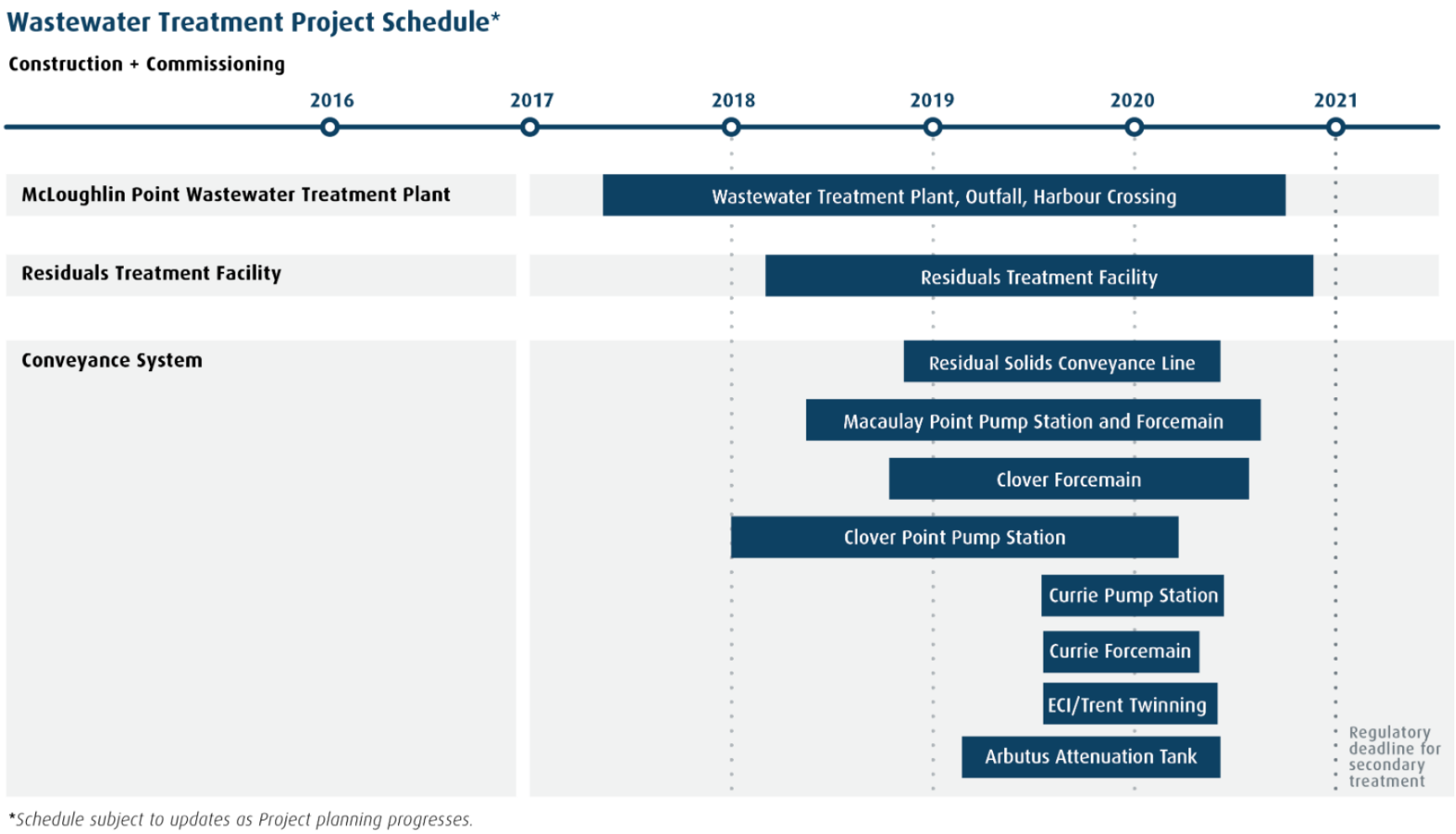
There were no resolutions related to the Project passed by other governments during the reporting period.

2.6 Schedule

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

Figure 1 shows the high-level Project schedule. This schedule has changed from that shown in the previous Monthly Project report as the Currie Pump Station start date has been moved from Q1 2019 to Q3 2019, to allow for the scope to be reviewed prior to detailed design commencing. 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 schedule remains subject to optimization as the Project and planning progresses.

Figure 1-High-Level Project Schedule[1]



[1] The schedule remains subject to optimization.

2.6.1 30 and 60 day lookahead

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

Safety

- re-review of 2018 safety incidents;
- communication meeting with WTP Safety Manager and CRD Corporate Safety Manager;
- safety document review for Residual Solids Conveyance Line;
- Emergency Response annual Training for WTP Office Wardens;
- office/site inspections with contractors and CRD Corporate at all active sites;
- prime contractor progress meetings;
- prime contractor project safety meeting with Project safety representatives;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- Safety Advisory Committee meeting with HRP;
- Tower Crane Safe Work Plan review for Macaulay Point Pump Station; and
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites.

Environment and Regulatory Management

- CRD anticipates receiving a Notice from the Director to Construct under Section 40 (b) of the MWR to begin construction of the Arbutus Attenuation Tank; and
- CRD and District of Saanich staff to host school children from Arbutus Middle School at the Arbutus Attenuation tank site to transplant native plants.

First Nations

- ongoing consultation and engagement with the W̱SÁNEĆ Leadership Council.

Stakeholder Engagement

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

Cost Management and Forecast

- fiscal year end preparation.
- prepare cost reports; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).

Construction

McLoughlin Point

- continue to form and pour biological aerated filter (BAF) walls;
- continue to form and pour dirty back wash walls;
- continue to form and pour tertiary walls;
- continue surface runoff/groundwater treatment and discharge;
- continue with phase 2 structural piles;
- drilling and blasting of the marine outfall trench; and

- mobilize the micro tunnel boring machine.

Clover Point Pump Station

- form and pour walls 1 and 2 in the sanitary wet well;
- form and pour walls 10 and 11 in the storm wet well;
- pour pump room base slab; and
- weld reinforcing steel to the king piles.

Macaulay Point Pump Station

- continue drilling and blasting and removal of rock;
- excavate and install rebar for the vortex degritter;
- installation of the tower crane;
- place mud slab gridline a to b, 1 to 2; and
- prefabrication of form work.

Residuals Treatment Facility

- commence excavation for installation of oil grit separator/hydrodynamic separator.
- continue construction of access road;
- continue filling grading and compaction for foundations;
- crushing of aggregate and haul to stockpile;
- installation of HDPE residuals solid conveyance line within the RTF site;
- install communications and electrical conduits in the access road;
- install hydro poles; and
- prefabrication of formwork for the slab on grade foundations.

Clover Forcemain

- continue drilling and blasting for forcemain between Niagara and Montreal Streets;
- commence sewer relocation;
- continue receiving HDPE forcemain pipe; and
- clean site and install temporary paving for the holiday break.

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

- complete installation of casing pipe, phase #1.

Residual Solids Conveyance Line (RSCL100):

- continue contaminated soils investigations;
- install BC Hydro duct bank at Joffre Street and Lyall Street;
- rock profile scanning with ground penetrating radar at Grange Road; and
- utility pre-locates along RSCL alignment.

Engineering

McLoughlin Point WWTP:

- overall design submission: Issued for Construction (IFC);
- construction package 8 – Pig Receiver: 100% design submission; and
- training plan: draft submission.

Residuals Treatment Facility:

- overall design submission: continue development of 90% design for the RTF;
- early works package #4 (Pump House Foundations): final (100%) design submission;
- early works package #5 (Equalization Building Foundations): final (100%) design submission;
- early works package #6 (Operations Building Foundations): final (100%) design submission;
- early works package #7 (Residuals Handling Facility Foundations): final (100%) design submission; and
- early works package #8 (Drying Building Foundations): final (100%) design submission.

Clover Point Pump Station:

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

Macaulay Point Pump Station:

- overall design submission: updated 90% electrical and architectural submission; and
- overall design submission: continue development of final (100%) design submission.

Residuals Solids Conveyance Line:

- RSCL 200: Residual Solids Pumps: continue to finalize (100%) design deliverable.

Procurement

Residual Solids Conveyance Line:

- RSCL 200: Residual Solids Pumps: respond to inquiries and issue addenda, as needed.

Arbutus Attenuation Tank:

- Respond to inquiries and issue addenda, as needed.

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

Safety

- 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 safety meeting;
- review of any site specific safety plans or high risk tasks;
- review document submissions from prime contractors; and
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites.

Environment and Regulatory Management

CRD and Stantec to continue progressing the MWR Registration by collating information and planning for the submission to the Ministry of Environment and Climate Change Strategy.

First Nations

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

Stakeholder Engagement

- distribution of Project Update #6;
- ongoing community liaison meetings; and
- ongoing construction communications with stakeholders.

Cost Management and Forecast

- fiscal year end close;
- monitor schedule;
- prepare cost reports; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).

Construction

McLoughlin Point

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

Clover Point Pump Station

- form and pump room walls 03 and 07;
- form and pour sanitary wet well wall 09 and 13;
- 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 HDPE flange installation at Ogden Point;
- commence installation of HDPE forcemain at Ogden Point and Clover Point; and
- continue with utility relocations.

Residual Solids Conveyance Line (RSCL)

RSCL 100: Residual Solids Pipes:

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

Engineering

- McLoughlin WWTP: submit Construction Package 8 – Pig Receiver: final (IFC) design deliverable, and CMMS Plan: final;
- Clover Point Pump Station: continue overall final (100)% design deliverable;
- Macaulay Point Pump Station: submit overall final (100%) design deliverable
- Residuals Treatment Facility: submit overall 90% design;

Procurement

RSCL 200: Residual Solids Pumps:

- respond to inquiries and issue addenda, as needed; and
- receive proposals.

Arbutus Attenuation Tank:

- respond to inquiries issue addenda as needed; and
- receive tenders.

2.7 Cost Management and Forecast

The monthly cost report for November is attached as Appendix I. 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 Conveyance Line 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 contract which is under active procurement and 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.

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 $5.5M, primarily associated with construction contract change orders.

2.7.2 Expenses and invoicing

The Project expenditures for the reporting period were as expected and were within the budget allocations for each of the budget areas. The main Project expenditures incurred over the reporting period were associated with construction activities and PMO-related costs.

2.7.3 Contingency and Program Reserves

Contingency draws over the reporting period are itemized in Table 5 and outlined herein. In total $2.2M of contingency and program reserve draws were made over the reporting period.

A total of $1.97M was drawn from the WWTP contingency over the reporting period, with draws 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.
- a draw was made for the estimated cost of the District to provide potable water during commissioning of the plant;
- site remediation and disposal of 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 reporting period, with draws made for the following purposes:

- Kenaidan to undertake a condition assessment of the influent pipe at Macaulay Point Pump Station;
- the extended use of the GVHA site for use as the Clover Forcemain laydown area;
- removal and disposal of unanticipated buried fill material consisting of concrete, asphalt and rebar within the Clover Point Pump Station excavation.

The remaining contingency and program reserve is anticipated to be sufficient 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 Oct 31, 2018		$ (26,740,049)
Contingency and Program Reserve balance as at Oct 31, 2018		**$ 42,578,002**
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 Event #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)
WWTP Total Draw		$ (1,971,143)
RTF Total Draw		$ -
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)
Conveyance Total Draw		$ (261,928)
PMO Total Draw		$ -
BC Hydro Total Draw		$ -
WTP Program Reserve Draw		$ -
Contingency and Program Reserve draws in the reporting period (Nov)		**$ (2,233,071)**
Total Contingency and Program Reserve draws to November 30, 2018		**$ (28,973,120)**
Contingency and Program Reserve balance as at November 30, 2018		**$ 40,344,931**

2.7.4 Project Funding

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

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

- up to $120 million through the Building Canada Fund – Major Infrastructure Component towards the McLoughlin Point WWTP;
- up to $50 million through the Green Infrastructure Fund towards the conveyance system project; and
- up to $41 million towards the RTF through the P3 Canada Fund.

The status of funding claims is summarised in Table 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.

There were no changes to the active risks summary during the reporting period.

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

Table 7- 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 of the delivery of residual solids to the RTF.	Contract with HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) includes terms that require the contractor to recover schedule delays and/or allow for CRD acceleration. Liquidated damages for late delivery in HRP contract.	M	No change
Municipal Wastewater Regulation (MWR) Registration is not achieved or is delayed.	A delay to achieving MWR Registration of the wastewater treatment system would mean that the CRD could not discharge treated effluent, and therefore would not be able to commission the WWTP or RTF.	The Project Team (with HRP and Stantec representatives) have been meeting regularly with Ministry of Environment representatives since September 2017 to review the MWR Registration application requirements and the Project's schedule, in order to mitigate the risk of an incomplete application and/or schedule delays in the registration. A workplan and schedule have been developed and the Project Team, MOE and relevant contractors will continue to meet regularly to track progress and discuss issues.	M	No change

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level (based on likelihood and potential impact)	Trend in risk level from previous reporting period
Public directly contacting contractors at sites.	Direct contact between the public and contractors could expose both parties to worksite hazards and potential injuries.	Communications and engagement plan, contractor orientation.	M	No change
Change in Law.	A change in law impacts the scope, cost or schedule of the Project.	Keep apprised of proposed modifications to relevant regulations so as to do the following as appropriate: submit comments on proposed modifications; consider including anticipated modifications in contracts.	M	No change
Labour - Availability and/or cost escalation.	There is insufficient labour available to construct the Project, and/or there is significant labour cost.	The Project Team will, through the use of competitive selection processes for all construction contracts, ensure that all Project Contractors have appropriate experience and therefore understand labour risk.	M	No change
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

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

2.9 Status (Engineering, Procurement and Construction)

2.9.1 Wastewater Treatment Plant (WWTP)

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

Engineering

HRP progressed planning and design activities in November, including submitting the overall design as Issued For Construction (IFC), submittal of Construction Package 8 (90%) – Pig Receiving Station, and submittal of responses to CRD comments on the Computerized Maintenance Management System (CMMS) Plan.

Construction

McLoughlin Point

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

- 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.

Figure 2 – McLoughlin Point Wastewater Treatment Plant: installing rebar couplers in biological aerated filter (BAF) wall 19.

Figure 3 - McLoughlin Point Wastewater Treatment Plant: erecting scaffolding for suspended slabs.

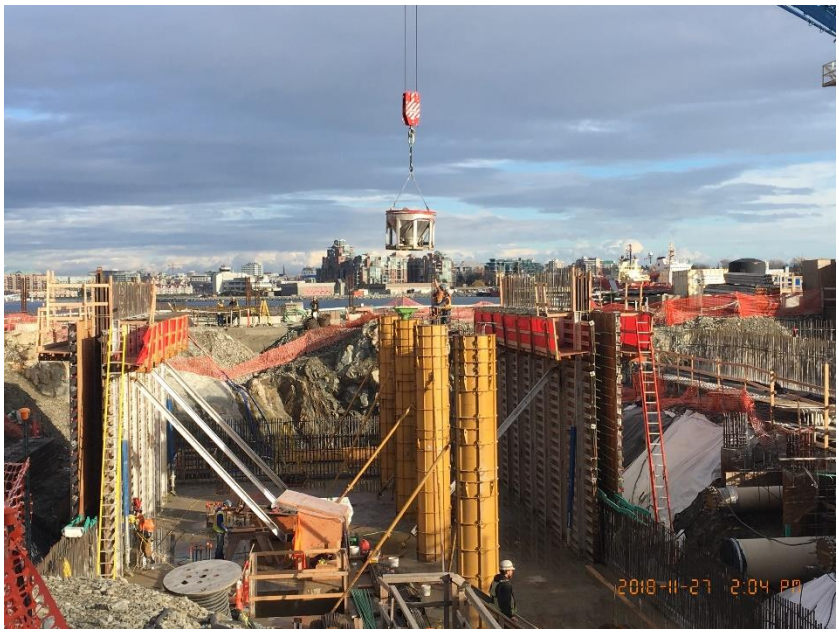


Figure 4 – McLoughlin Point Wastewater Treatment Plant: placing concrete in dirty backwash columns.

Figure 5 – McLoughlin Point Wastewater Treatment Plant: standing column steel in biological aerated filter (BAF) gallery.

Figure 6 – McLoughlin Point Wastewater Treatment Plant: backfilling and compacting in the Odour Control excavation.

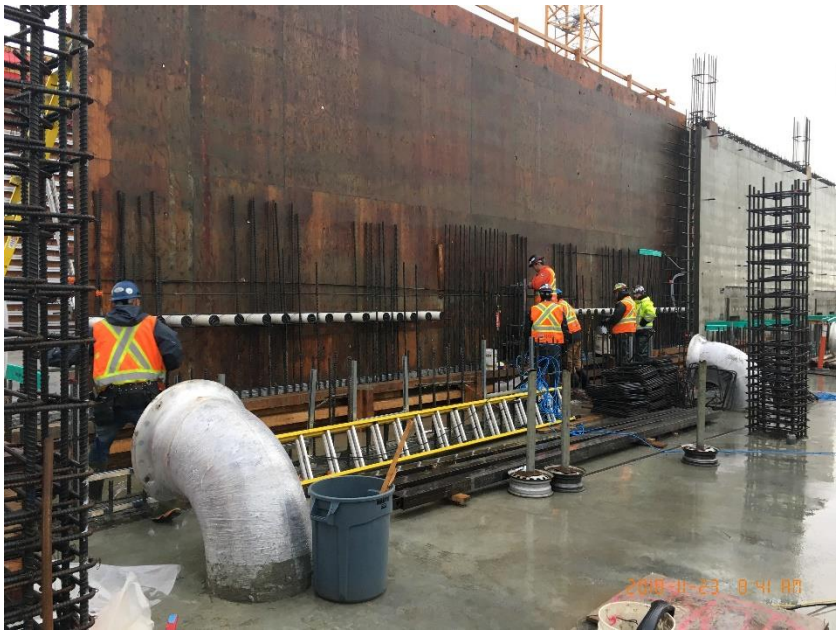


Figure 7 – McLoughlin Point Wastewater Treatment Plant: installing mechanical penetration in biological aerated filter (BAF) wall 19.

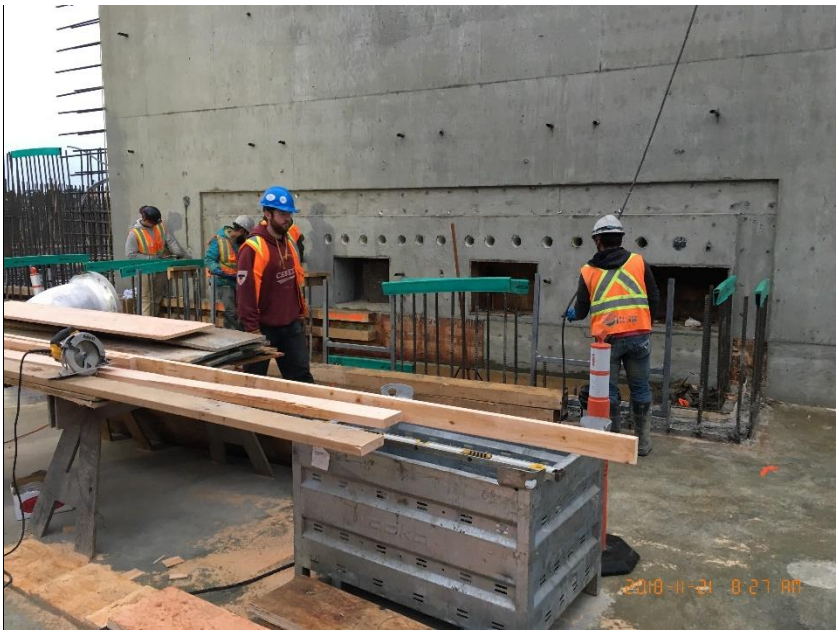


Figure 8 – McLoughlin Point Wastewater Treatment Plant: stripping biological aerated filter (BAF) wall 19.

2.9.2 Residuals Treatment Facility (RTF)

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

Engineering

HRMG progressed planning and design activities in November, including:

- early works package #4, 5, 6, 7 and 8: final (100%) design for various building foundations;
- submitted the supplemental 60% design submittal;
- continued work on overall 90% design submittal;
- held first progress meeting with Independent Certifier;
- progressed with vendor selection;
- submitted building permit applications to the District of Saanich;
- worked with BC Hydro to confirm power requirements to the site; and
- worked with the Ministry of Environment on permitting requirements.

Construction

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

- 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.

Figure 9 – Residuals Treatment Facility: fusion bonding of the Residual Solids Conveyance Line in progress.

Figure 10 – Residuals Treatment Facility: preparation of bedding for Residual Solids Conveyance Line.

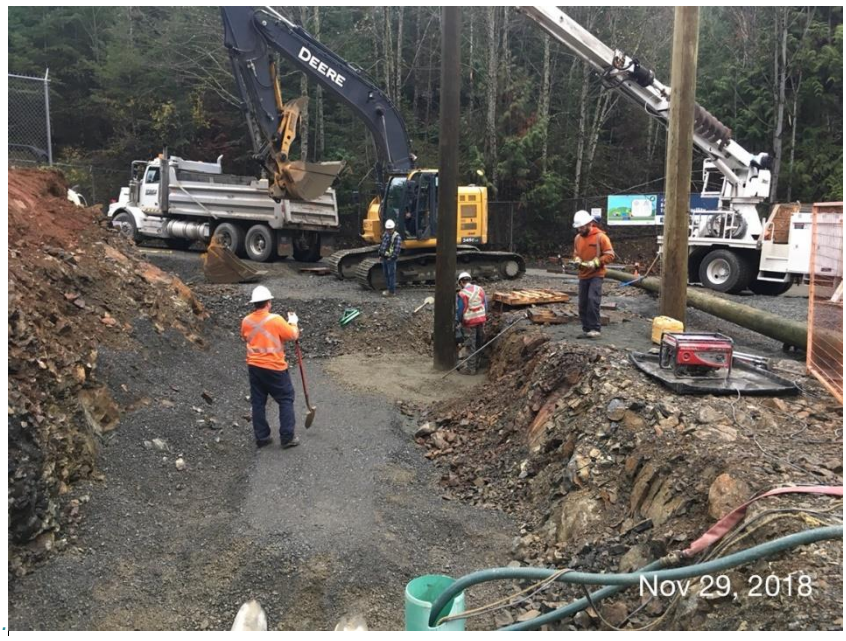


Figure 11 – Residuals Treatment Facility: erection of utility poles on main access road.

Figure 12 – Residuals Treatment Facility: components of Stormceptor STC3000 being delivered to site.

2.9.3 Conveyance System

2.9.3.1 Clover Point Pump Station

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

Engineering

Kenaidan completed the following engineering activities:

- early works package: submitted civil/structural final (100%) design package (rev 3); and
- overall design package: continued development of final (100%) design submission.

Construction

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

- 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.

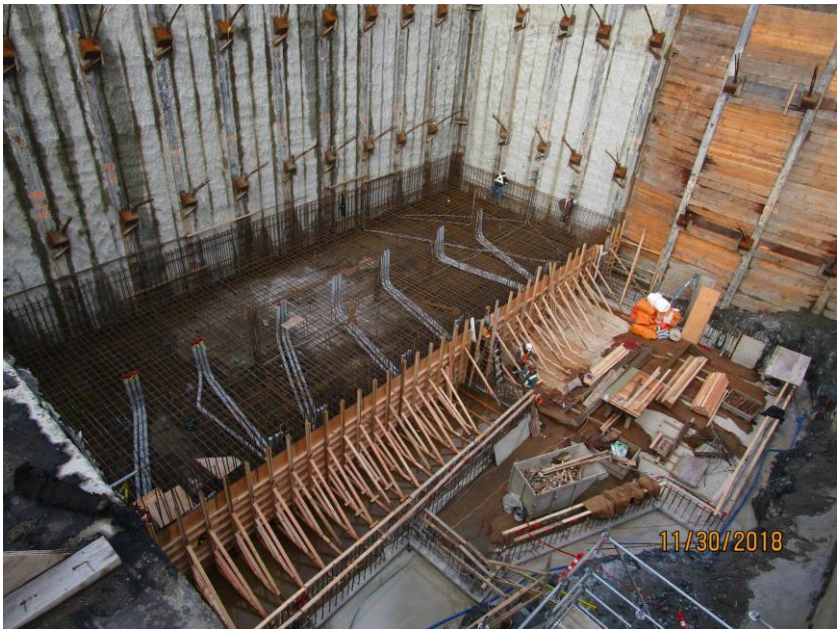


Figure 13 – Clover Point Pump Station: Pump Room slab formwork, rebar and electrical conduit installation complete.

Figure 14 – Clover Point Pump Station: placing and finishing concrete at sanitary and storm wet well slabs.

Figure 15 – Clover Point Pump Station: sanitary and storm wet well slabs complete.

Figure 16 – Clover Point Pump Station: placing mud slab in the storm wet well area.

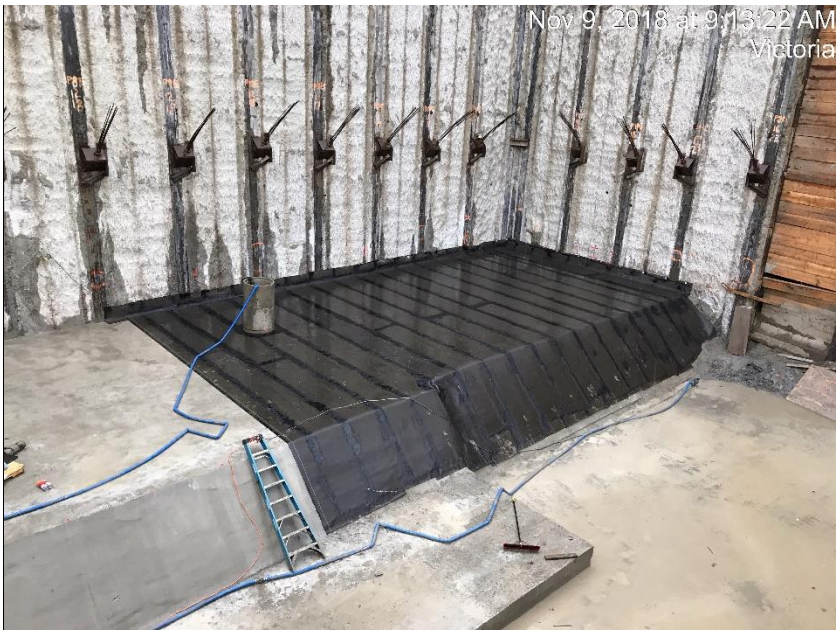


Figure 17 – Clover Point Pump Station: installation of waterproofing membrane on pump room mud slab.

2.9.3.2 Macaulay Point Pump Station and Forcemain

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

Engineering

Kenaidan completed the following engineering activities:

- early works package 1: temporary works, demolition and excavation issued for construction (IFC) package finalized;
- early works package 2: substructure structural design, geotechnical design, CFD modelling and station hydraulics IFC package resubmitted for CRD review; and
- overall design: continued development of final (100%) design submission in preparation of submission in 2019.

Construction

Photographs of construction progress at Macaulay Point Pump Station and Forcemain are shown in Figures 18 to 20. Key construction activities in progress or completed by Kenaidan in November were as follows:

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

Figure 18 – Macaulay Point Pump Station: pre-fabrication of wall formwork.

Figure 19 – Macaulay Point Pump Station: tower crane base poured and crane erection commenced.

Figure 20 – Macaulay Point Pump Station: crushing of blast rock.

2.9.3.3 Clover Forcemain (CFM)

Windley (as the Construction Contractor for the Clover Forcemain) continued preconstruction activities including: submission of construction work plans and shop drawings for Project Team review; submission of permit applications to authorities having jurisdiction; continuing to perform utility locates, initial geotechnical and soil assessment survey; and started work on the utility relocates and rock blasting.

Construction

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

- commenced archaeological soil removal and screening from Niagara to Montreal Streets;
- commenced blasting rock for forcemain installation from Niagara to Montreal Streets;
- continued with utility relocations;
- received delivery of HDPE forcemain pipe in their Nanaimo yard;
- soils testing along the forcemain alignment; and
- utility crossing confirmation.

Figure 21 – Clover Forcemain: storage of HDPE forcemain pipe received.

Figure 22 – Clover Forcemain: Dallas Road at Dock Street, trench backfill and compaction east of installed sanitary manhole B.

Figure 23 – Clover Forcemain: Dallas Road at San Jose Avenue, utility pre-locates.

2.9.3.4 Residuals Solids Conveyance Line (RSCL)

- RSCL 100 Residual Solids Pipes: Don Mann (as the Construction Contractor) continued preconstruction activities including submission of construction work plans and shop drawings for Project Team review, and submission of permit applications to authorities having jurisdiction.
- RSCL 200 Residual Solids Pump Stations: Parsons (as the Design Consultant) and the Project Team progressed the Request for Proposals procurement process through the issue of addenda to the pre-qualified contractors.

2.9.3.5 Arbutus Attenuation Tank

KWL (as the Design Consultant for the Arbutus Attenuation Tank), finalized the 100% design deliverable and the Project Team issued the Invitation to Tender.

2.9.3.6 Remainder of Conveyance Component

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

Appendix A – Community Information Open House Invitation

Wastewater Treatment Project
Treated for a cleaner future

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

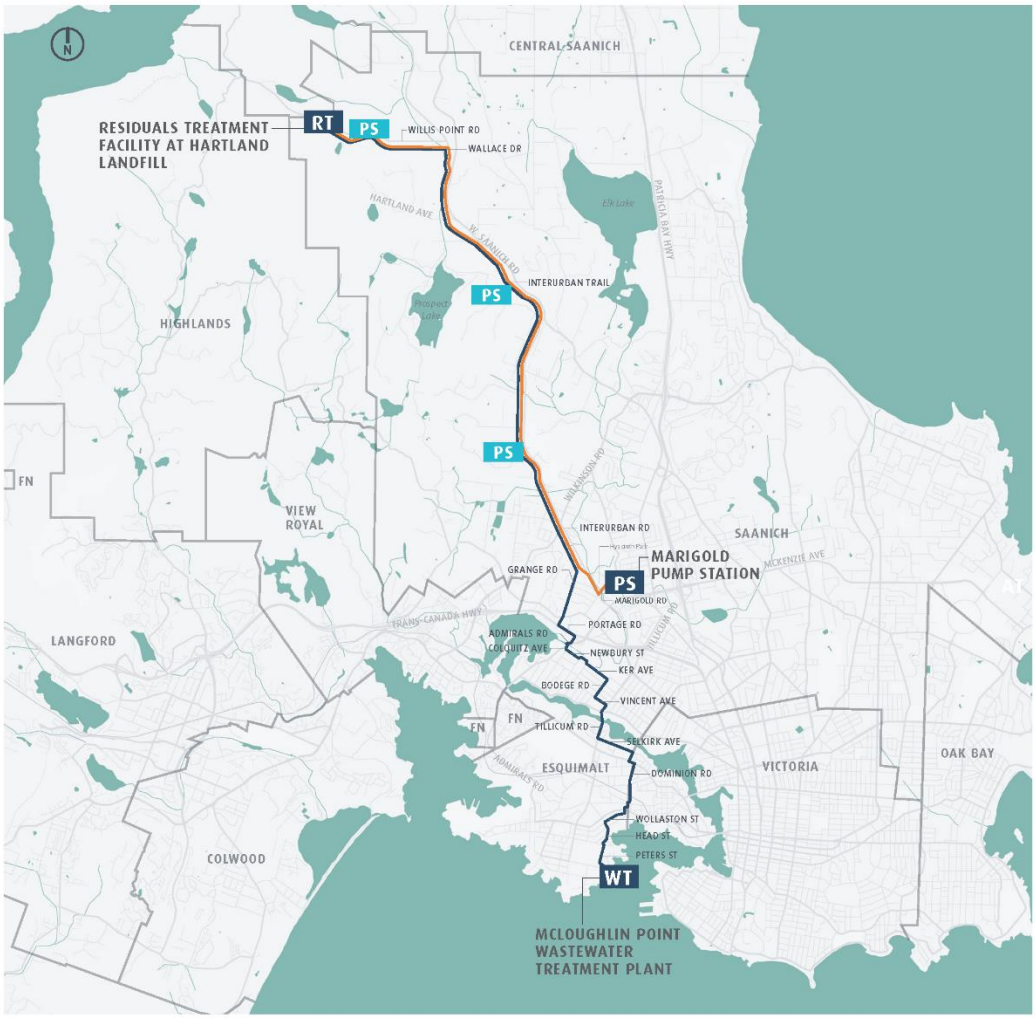
The Residual Solids Conveyance Line is part of the Wastewater Treatment Project. It includes two pipes and three small pump stations connecting the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill.

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.

CRD WASTEWATER TREATMENT PROJECT | NOVEMBER 2018



For More Information

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

Appendix B – Community Information Open House Newspaper Ad

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.
St. Joseph the Work Parish Hall
753 Burnside Road West

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

FOR MORE INFORMATION VISIT WASTEWATERPROJECT.CA

Appendix C – 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 D – 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 E – 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 F – Construction of the Clover Forcemain

Wastewater Treatment Project
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Construction Notice

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 G – 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 H – 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
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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 I – 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.

Wastewater Treatment Project
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Wastewater Treatment Project
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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 J – Construction Schedule

Wastewater Treatment Project
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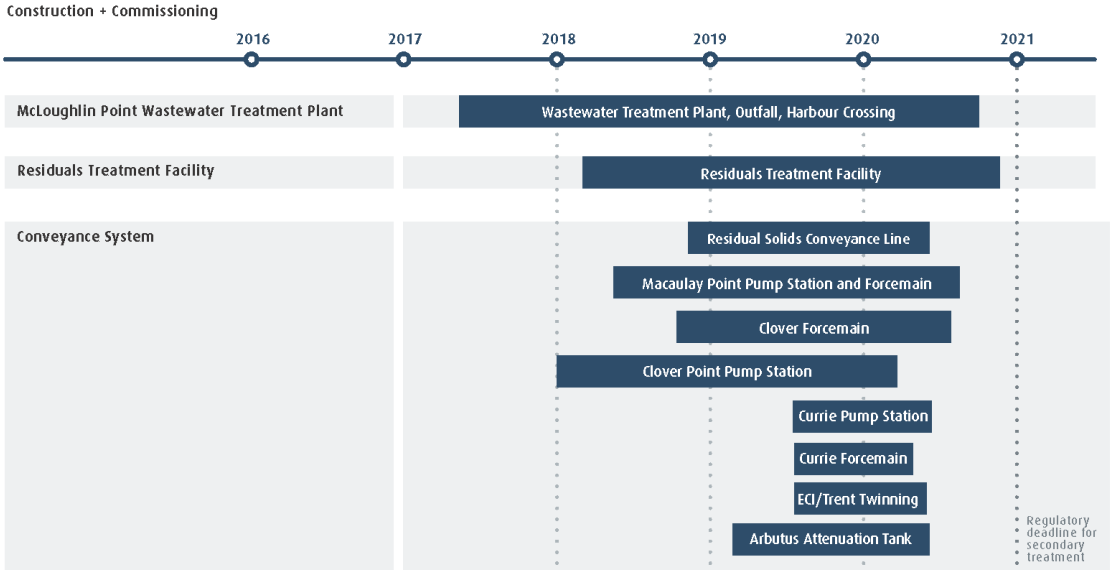
Information Sheet

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

Wastewater Treatment Project
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Appendix K – Monthly November Cost Report

ASSET MANAGEMENT COST REPORT
as at November 30, 2018

Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
			Expended to October 31, 2018	Expended over reporting period (November 2018)	Expended to November 30, 2018	Expended to November 30, 2018 as a % of Budget	Remaining (Unexpended) Budget at November 30, 2018	Total Committment at November 30, 2018	Unexpended Commitment at November 30, 2018	Uncommitted Budget at November 30, 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	371.9	161.3	6.1	167.4	45%	204.4	343.1	175.6	28.7	204.4	371.9	-	0%
Residuals Treatment Facility [A]	195.0	166.9	15.8	0.3	16.1	10%	150.8	150.4	134.3	16.5	150.8	166.9	-	0%
Conveyance System [A]	192.0	226.2	44.6	4.9	49.5	22%	176.7	170.8	121.3	55.4	176.7	226.2	-	0%
Total Costs	**765.0**	**765.0**	**221.7**	**11.3**	**233.0**	**30%**	**531.9**	**664.3**	**431.2**	**100.6**	**531.9**	**765.0**	**-**	**0%**

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