



**REPORT TO CORE AREA WASTEWATER TREATMENT PROJECT BOARD  
MEETING OF THURSDAY, MARCH 5, 2020**

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**SUBJECT**      **Wastewater Treatment Project January 2020 Monthly Report**

**ISSUE**

To provide the Core Area Wastewater Treatment Project Board with the Wastewater Treatment Project January 2020 Monthly Report.

**BACKGROUND**

On May 25, 2016 the Regional Board of the CRD:

- i) Adopted by resolution the Core Area Wastewater Treatment Project Board Terms of Reference (Project Board Terms of Reference) for the purposes of establishing principles governing the Core Area Wastewater Treatment Project (the Wastewater Treatment Project or the WTP);
- ii) Established the Core Area Wastewater Treatment Project Board (Project Board) under Bylaw 4109 (the CRD Core Area Wastewater Treatment Board Bylaw No. 1, 2016) for the purposes of administering the Core Area Wastewater Treatment Project; and
- iii) Delegated certain of its powers, duties and functions to the Project Board under Bylaw 4110 (the CRD Core Area Wastewater Treatment Project Board Delegation Bylaw No. 1, 2016).

On September 14, 2016 the Regional Board of the CRD:

- i) Received the final report of the Project Board with respect to its recommendation for the CAWTP, dated September 7, 2016 (the Final Report); and
- ii) Approved the business case attached as Appendix 1 (the Business Case) to the Final Report.

**DISCUSSION**

The Core Area Wastewater Treatment Project Board (the Project Board) Terms of Reference requires, amongst other things: that the Project Board provide the CRD Board with monthly progress reports and a comprehensive quarterly report on the Project.

The Monthly report for the period of January 2020 is attached as Appendix A.

**RECOMMENDATION**

That the Core Area Wastewater Treatment Project Board approve the following resolution:

**RESOLVED that:**

The Staff Report, 'Wastewater Treatment Project January 2020 Monthly Report', be received for information and forwarded to the Core Area Liquid Waste Management Committee and CRD Board for information.



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Elizabeth Scott, Deputy Project Director  
Wastewater Treatment Project



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Dave Clancy, Project Director  
Wastewater Treatment Project  
Concurrence

Attachments: 1

Appendix A: Wastewater Treatment Project January 2020 Monthly Report

ES:er



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

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## CRD Wastewater Treatment Project

### Monthly Report

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Reporting Period: January 2020

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# 1 Executive Summary

## 1.1 Introduction

This Monthly report covers the reporting period of January 2020 and outlines the progress made on the Wastewater Treatment Project over this time.

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

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

The McLoughlin Point WWTP Project Component is continuing with Harbour Resource Partners (“HRP” as the Design-Build Contractor for the McLoughlin Point WWTP) progressing construction including: installation of tube settlers in Densadeg 1 and 2; installation of clarifier mechanism in densadeg 1; completion of plant drain tank piping and installation; completion of Moving Bed Bio Reactor (MBBR) #2 concrete; Biological Aerated Filter (BAF) scouring air distribution systems complete in all but 3 cells; progressing penthouse building envelopes; progression of BAF tie-in walls and channels in tertiary area; continuing upper disk filter walls; roofing membrane installed on level one of the Operations and Maintenance (O&M) building; completed raw influent line from Peters street to the wye, including testing; and external major electrical equipment commissioning commenced.

The RTF Project Component is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate Maintain contractor for the RTF) progressing construction activities including: erection of Water Storage Tank completed; drywall installation and finishing complete in Residuals Handling Building and Dryer Building; structural steel frame completed for Water Pump House; exterior of Dryer Building weathertight with cladding, glazing and flashings installed; installation of process mechanical piping between residuals solids tanks and Equalization Building; installation of exterior insulated metal cladding panels, flashing and gutters on Equalization Building and Water Pump House; and installation of mixing pumps in Digester Equipment Building; cored walls for installation of mechanical/process piping between digesters, Digested Solids Storage Tank (DSST) and Digester Equipment Building.

The Conveyance System is being delivered through eight construction contracts: two design-build contracts and five 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 construction activities over the reporting period including: installation of process pipe knife gate and check valves; completed installation checks of transformer, switch gear, neutral grounding resistor and motor control centres (MCC); and installation of flow, level and gas detection instrumentation.

- Macaulay Point Pump Station: Kenaidan Contracting Limited (“Kenaidan” as the Design-Build Contractor) progressed construction activities over the reporting period including: installation of bridge crane in the bin room; ongoing backfill around the exterior wall; installation of cross laminated timber roof and parapets; and installation of heating ventilation air conditioning (HVAC) and drain pipe in the screen room.

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 construction activities including: ongoing cycle track paving; road restoration; electrical lighting installation; installation of the Clover Point storm catch basin ongoing and progression of the Camas curb extension.
- Residual Solids Conveyance Line (“RSCL”): the RSCL is being delivered through two construction contracts, with work progressing as follows:
  - Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for the Residual Solids Pipes) continued construction activities including: installation of valve chambers; road restoration; and installation of approximately 1154 m of pipes.
  - Residual Solids Pump Stations: Knappett Projects Inc. (“Knappett” as the Construction Contractor for the Residual Solids Pump Stations) continued construction activities at all three pump stations including: forming and pouring of wet well walls at Pump Station 1; excavation and installation of flow meter manhole at Pump Station 2; installation of underground conduits in Pump Station 3; formation and pouring of concrete slab at the Marigold Pump Station.
- Arbutus Attenuation Tank (“AAT”): NAC Constructors Ltd. (as the Construction Contractor for the Arbutus Attenuation Tank) has continued construction activities with a focus on civil excavation and structural secant pile construction works. Ongoing activities also include maintaining the dewatering system; mobilisation of a second drill rig to site to assist in secant pile production rate; and steel splicing works for installation of deep piles.
- Trent Forcemain: The Project Team executed the construction contract with the tenderer selected in accordance with the Invitation to Tender: Jacob Bros. Construction Inc. The contractor started submitting construction management plans for the Project Team’s review.

## 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 made to the KPIs over the reporting period. The safety KPI for the Project and the conveyance system remains yellow. Over the reporting period no reportable safety incidents occurred and the total incident frequency decreased from 1.5 at the end of the last reporting period to 1.4. The Project Team continues to work with, and ensure that all of the prime contract partners maintain safety as their number one priority.





The cost KPI for the Project overall and the conveyance system remained red over the reporting period, and are expected to remain red for the duration of the Project, primarily as a result of inflation in the Vancouver Island construction market. Other factors that have contributed to budget pressures include: design development to incorporate stakeholder input; geotechnical considerations including removal and disposal of contaminated material; and schedule constraints associated with the requirement to provide wastewater treatment by the regulatory deadline of December 31, 2020.

Based on the value of the contracts awarded to-date and the refreshed cost estimate for the scope remaining to be procured, the Project Team has forecast the cost to complete to Project at \$775M, or \$10M over the Project’s control budget. The CRD Board has approved an increase in the Project’s budget by \$10M to \$775M.

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 occurred over the period. Site inspections are ongoing.
Environment	Protect the environment by meeting all legislated environmental requirements and optimizing opportunities for resource recovery and greenhouse gas reduction.					One environmental incident occurred over the period. A hose on an excavator working on the RSCL broke and a small amount of hydraulic fluid was released to the trench being excavated. Crews cleaned up the leak immediately and there was no adverse impact on the environment.
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 over the reporting period. Significant efforts were made to provide accurate and timely information to stakeholders.
Schedule	Deliver the Project by December 31, 2020.					No schedule issues.
Cost	Deliver the Project within the Control Budget (\$765 million).					Based on the value of the contracts awarded to-date and a refreshed cost estimate for the scope remaining to be procured, the Project Team has forecast the cost to complete the Project at \$775M, or \$10M over the Project's Control Budget. This is primarily as a result of inflation in the Vancouver Island construction market. Other factors that have contributed to budget pressures include: design development to incorporate stakeholder input; geotechnical considerations including removal and disposal of contaminated material; and schedule constraints associated with the requirement to provide wastewater treatment by the regulatory deadline of December 31, 2020. The CRD Board have approved an increase in the Project's budget by \$10M, to \$775M.

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

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



## 2 Wastewater Treatment Project Progress

### 2.1 Safety

Safety information for the reporting period and cumulative for the Project from January 1, 2017 is summarized in Table 3.

Site safety tours and weekly safety inspections were carried out by Project Management Office (“PMO”) construction and safety personnel over the reporting period at all active worksites: McLoughlin Point WWTP, RTF, Macaulay Point Pump Station, Clover Point Pump Station, Clover Forcemain, Residual Solids Pipes, Residual Solids Pump Stations and Arbutus Attenuation Tank.

Over the reporting period 17 safety incidents occurred in total: comprising: 4 First-aid; 8 Report Only; and 5 Near Miss incidents, as summarized in Table 2.

*Table 2: Safety Incidents over the Reporting Period*

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
January 6, 2020	Residual Solids Pipes	Report Only	Excavator struck an overhead utility line while working during the night on Interurban Road.	Shaw was called and reinstalled the service.	Tool-box talk discussion to have a spotter when working in close proximity to overhead utilities.
January 15, 2020	RTF	Report Only	Malfunction of a Diesel Heater created a loud noise while a worker was in the immediate vicinity.	The Heater immediately shut down, and unit was removed from service.	Unit was removed from the site to be inspected Worker sent to medical aid for an assessment as an extra precaution.
January 16, 2020	McLoughlin Pt WWTP	First Aid	Worker struck hand while walking past rebar. Protective gloves were being worn.	Worker reported to First Aid. Minor injury addressed and returned to work.	Worker reminded to be more aware of surroundings that have potential hazards
January 17, 2020	McLoughlin Pt WWTP	First Aid	Worker slipped on a patch of ice, rolling ankle.	Worker reported to First Aid to report incident and have ankle assessed.	Workers ankle was iced and wrapped and worker was placed on modified duty  Workers reminded that weather conditions are poor and to use extreme caution when walking on slippery surfaces
January 17, 2020	Residual Solids Pipes	Near Miss	A driver ignored signal persons direction and drove in between delineators that were set up as a control zone around the worksite.	The vehicle stopped in close proximity to the construction trench. Signal person directed the vehicle back to the travel portion of the road.	Extra delineators and barriers were placed around the open trench  Additional lighting was installed to better illuminate the work area
January 17, 2020	McLoughlin Pt WWTP	Report Only	Worker injured hand while moving construction material.	Workers thumb was assessed at First Aid with no treatment provided and returned to work.	Tool-box talk on the use of proper techniques for lifting or passing of materials

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
January 19, 2020	RTF	Report Only	A Telehandler operator struck a light standard while trying to back up.	Operator did not have a valid ticket to operate mobile equipment.	Employee was restricted from using mobile equipment.  Tool-box talk with crew to review the site policy on equipment use and certifications required to operate equipment.
January 21, 2020	McLoughlin Pt WWTP	Near Miss	Workers were attempting to lower a pump base into place. Before lowering a test lift was performed and then the procedure began. Approximately 4 feet from the floor the base split and fell.	A reviewed of the lifting procedures and rigging indicated all was in order.	Tool-box talk to remind crews the importance of staying out of lifting areas.
January 22, 2020	Residual Solids Pipes	Report Only	Road plate shifted causing the pin securing it to pop up.	Road plate pins caused damage to vehicle tires.	Contractor immediately dispatched a crew to fix the road plate and re-secure the Contractor covered the cost of the drivers tires.
January 22, 2020	Residual Solids Pipes	Report Only	A vehicle ignored a TCP's stop sign almost hitting an oncoming vehicle.	Heavy rain and possible visual impairment from a light tower may have contributed to the incident.	Light tower was repositioned and a Safety meeting was held with TCP personnel to review procedures for traffic control.
January 23, 2020	Residual Solids Pipes	Near Miss	While pressure testing a length of pipe a cap dislodged.	There was nobody in the vicinity and no injuries. A restraining collar which held the cap had to be repaired.	The restraining collar was correctly used so a secondary brace will be added for any further testing in the event there is another failure.
January 23, 2020	Residual Solids Pipes	Near Miss	A dump truck pulled forward while box was raised almost striking a utility line.	The driver stopped in time and backed the truck up and lowered the dump box.	Tool-box talk held to discuss the use of spotters when working near any overhead utility lines.  Dump box on truck to be fully lowered before moving vehicle.
January 23, 2020	McLoughlin Pt WWTP	Report Only	Worker tripped on an uneven surface and landed on their left knee.	Worker reported to First Aid but no follow up required. Worker returned to their duties.	Tool-box talk held to discuss awareness of hazards in the area.
January 24, 2020	McLoughlin Pt WWTP	Report Only	A worker received an electrical shock when they grabbed the connection between two power cords.	Worker reported to First Aid but no follow up required. Worker returned to their duties.	Tool-box discussion on electrical hazards when working in wet conditions.
January 27, 2020	McLoughlin Pt WWTP	First Aid	A worker pinched their finger while moving a beam.	Worker taken to the clinic for an assessment and returned to work.	Tool-box talk about being aware of hands in the "bite" when moving materials.
January 27, 2020	Residual Solids Pipes	Near Miss	Steel plates used across a trench did not have sufficient overhang required to secure the plates.	Due to the heavy rain and traffic movement the soil beneath the plate sluffed into the excavation.	A crew working next to the site was dispatched to the location in order to remove the road plates and backfilling the excavation.

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
January 27, 2020	McLoughlin Pt WWTP	First Aid	A worker sustained a hand injury while trying to force close a cam lock fitting.	The worker reported to first aid. Injury was addressed and the worker returned to their duties.	Safety discussion with worker to review the actions that lead to the injury and reemphasized using the correct tool for the job.

Key safety activities conducted during January included:

- bi-weekly project update meetings with prime contractors: Kenaidan, Windley, Don Mann, HRP, Knappett and NAC;
- weekly project update meetings with prime contractor: HRMG;
- updated Office and First Aid Hazard Assessment for 2020;
- attended chartering session for Trent Forcemain;
- sent out safety notices for cold stress conditions;
- conduct quality safety assurance audit on Residuals Solids Pump Stations Prime Contractor;
- conducted New Worker Office Orientations for WTP staff;
- monthly incident Investigation reviews;
- reviewed site specific safety plans and high risk tasks such as Confined Space and Silica work;
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites;
- host Prime Contractor Safety Coordination Meeting focusing on resuming work in 2020 and expectations and goals for Primes; and
- review Prime Contractor document submissions for Trent Forcemain.

Table 3: WTP Safety Information

	Reporting Period (January 2020)	Project Totals
Person Hours		
PMO	3 638	131 126
Project Contractor	94 070	1 449 541
Total Person Hours	97 708	1 580 667
PMO	31	
Project Contractors (& Project Consultants) working on Project Sites	522	
Total Number of Employees	553	
Near Miss Reports	5	41
High Potential Near Miss Reports	0	5
Report Only	8	124
First Aid	4	38
Medical Aid	0	5
Medical Aid (Modified Duty)	0	2
Lost Time	0	4
Total Recordable Incidents	0	11
		Project Frequency (from January 1, 2017)
First Aid Frequency		4.8
Medical Aid Frequency		0.9
Lost time Frequency		0.5
Total Recordable Incident Frequency		1.4

## 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. The focus was on environmental monitoring of construction activities.

Key environmental management activities completed in January included:

- In response to heavy rain events, McElhanney Consulting Services (as the qualified environmental professional for Knappett, Don Mann and NAC Constructors Ltd. – being the Construction Contractor for the Residual Solids Pump Stations, the Residual Solids Pipes, and the Arbutus Attenuation Tank, respectively) completed environmental monitoring and inspections at numerous sites over the course of the reporting period. Generally improvements to environmental controls that were implemented in response to heavy December rains were effective, however McElhanney's inspections confirmed the importance of checking those controls often.

Over the reporting period there was one environmental incident:

- On January 28<sup>th</sup>, a minor environmental incident occurred when a hydraulic line on an excavator working on the Residual Solids Pipes broke, leaking approximately one litre of hydraulic fluid into the trench that was being excavated. Don Mann (the Construction Contractor for the Residual Solids Pipes) staff deployed sorbent pads into the trench to absorb fluid that had spilled into the trench. The sorbent pads were disposed of at an appropriately licenced facility. No adverse environmental effects resulted from the leak.

## 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 January included:

- Stantec (as the archaeological consultant for the Trent Forcemain) added the Trent Forcemain scope to their *Heritage Conservation Act* Site Inspection Permit.
- The CRD submitted the technical memo prepared by Lorax Environmental Services (Lorax, the CRD's dispersion modelling consultant) that addressed a request for additional information from the BC Ministry of Environment and Climate Change Strategy (ENV).

The status of key Project permits are summarized in Table 4. The table is not a list of all required Project permits, but rather a summary of the status of key Project permits. There were no updates made to the table from that presented in the Project's Q4 2019 Quarterly Report.

**Table 4- Key Permits Status**

Permit/Licence	Anticipated Date	Status	Party Responsible for Obtaining Permitting
<b>McLoughlin Point WWTP</b>			
Municipal Wastewater Regulation ("MWR") Registration	Q1 2020	Submitted September 2019	CRD
<b>McLoughlin Point Harbour Crossing</b>			
Transport Canada Lease	Following completion of construction	On Track	HRP
<b>McLoughlin Point Outfall</b>			
Transport Canada Lease	Following completion of construction	On Track	HRP
<b>Residuals Treatment Facility</b>			
Operational Certificate	Prior to start of RTF operations	Submitted May 2019	HRMG

## 2.3 First Nations

First Nations communication and engagement was ongoing over the reporting period. Meetings with the Esquimalt and Songhees' liaisons continued, with a focus on the development of interpretive signage for installation at several locations and the procurement of Indigenous art for installation at Clover Point and Macaulay Point.

Millennia Research (as the Project's archaeological advisor) continued archaeological monitoring of excavations along the RSCL and Clover Forcemain routes with members of local First 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 period was to keep residents and stakeholders informed of Project plans, progress and construction information, and to receive and respond to questions and concerns raised by the community. A variety of communications tools and engagement activities were utilized to support the implementation of the plan, including stakeholder meetings, Project website updates and notifications of construction through notices and a public inquiry program, among other methods.

### **Construction Communications**

One information bulletin was issued to stakeholders in the reporting period:

- Final Contract Awarded for the Wastewater Treatment Project (January 9, 2020) (Appendix A)

### **Project Website**

Over the reporting period, the Project website, wastewaterproject.ca, was updated with information about the Project. One information bulletin was posted and the photo gallery section was updated with additional photos. Two alerts were added, and resolved once complete, to indicate overnight work along the intersections at Tillicum/Gorge and Interurban/Wilkinson roads. These alerts were also posted on the CRD's Twitter account. A map showing the progress of construction along the Residual Solids Conveyance Line (Appendix B) was updated.

The CRD's Twitter account was used to provide Project information to the public, including notifications about overnight construction along the RSCL route.

### **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;
- City of Victoria Technical Working Group;
- District of Saanich Technical Working Group; and
- Township of Esquimalt Liaison Committee.

### **Public Inquiries**

*Table 5 – Project Inquiries- January 2020*

Inquiry Source	Contacts for January
Information phone line inquiries	21
Email inquiries responded to	12

Key themes of the public inquiries were as follows:

- Questions regarding the timeline for final restoration along RSCL; and
- Interest in becoming a supplier or employee of the Project.

## 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

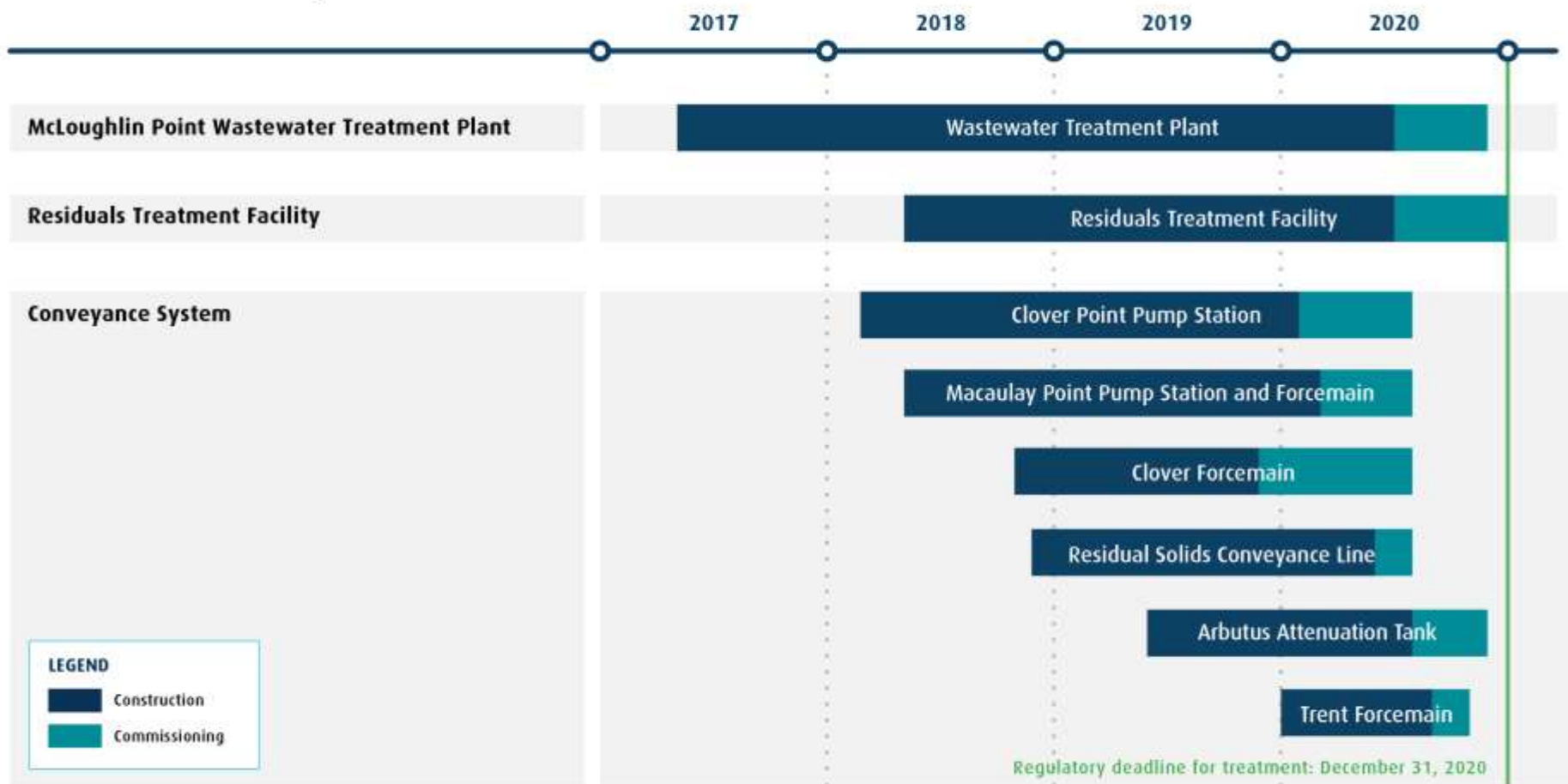
Overall the Project's scheduled activities progressed as planned during the period. All major and key interface milestones were on target to be completed as per the schedule. Progress over the reporting period is summarized in section 2.9.

Figure 1 shows the high-level Project schedule. This schedule has not changed from that shown in the Project's Q4 2019 Quarterly Report, and remains subject to optimization as the Project progresses.

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



Figure 1- High-Level Project Schedule

**Wastewater Treatment Project Schedule\*****Construction + Commissioning**

\*Schedule subject to updates as Project planning progresses.



### 2.6.1 30 day look ahead

Key activities and milestones for the next 30 days (February) are outlined below by function.

#### Safety

- complete Quality Safety Assurance Audit on Residuals Solids Pump Stations Contractor;
- attend CRD corporate occupational health and safety coordination committee meeting;
- attend weekly and bi-weekly prime contractor progress meetings;
- host Prime Contractor Safety Coordination Meeting with Project safety representatives;
- office/site inspections with contractors and CRD corporate at all active sites;
- review of any site specific safety plans or high risk tasks;
- send out any new Safety Notices or Incident Notifications to Prime Contractor;
- annual safety training with Colliers for Office Safety;
- review Trent Forcemain document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites; and
- incident reporting review with prime contractors at active work locations.

#### Environment and Regulatory Management

- CRD, Stantec and HRP to meet with ENV to discuss ENV review of the Environmental Impact Studies that form the basis of the MWR Registration application.
- CRD and HRMG to meet with ENV for a tour of the RTF site and a presentation on the process for producing Class A biosolids.

#### First Nations

- continue advancing Indigenous art and signage development and procurement.

#### 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
- prepare for CRD 2019 Financial Statement Audit.

### **Construction**

#### McLoughlin Point

- complete and test raw influent line and plant bypass piping;
- complete external major electrical commissioning;
- substantially complete Densadeg piping systems;
- install primary odour control tanks;
- install pipe racks and cable tray racks;
- building envelope construction on fine screen and chemical pump room;
- continue Densadeg installation;
- commence plate settler tank cover installation;
- completion of moving bed bio reactor (MBBR) #2 concrete work;

- progress monoflor installation in BAF tanks 7, 12 and 9;
- continue BAF equipment installation;
- install pipe rack #3;
- continue cable tray and cable pulls in BAF gallery, main electrical room and blower room;
- penthouse insulation and drywall activities substantially complete;
- continue cladding installation on all penthouse structures;
- progress south BAF structural tie-in work;
- continue disk filter channel walls;
- continue lower level equipment layout and set activities;
- cinder block work substantially complete throughout building;
- glazing installation complete on level 1 and substantially complete level 2;
- HVAC and plumbing continue throughout the facility, begin closing walls and get into finishing activity;
- begin interior steel stud complete on main level, substantially complete on Level 2;
- target commencement of roofing membrane; and
- continue fire stopping where possible.

#### Clover Point Pump Station

- commence new public plaza;
- install interior finishes to washroom;
- install stone façade to exterior retaining walls; and
- commence operational testing of odour control, air handling unit, storm pumps and relocated existing screens.

#### Macaulay Point Pump Station

- paint mechanical room and washroom;
- install plumbing fixtures and washroom tiles;
- install HVAC, unit heaters and mechanical louvers and dampers;
- install jib crane in pump room;
- commence installation of diesel generator exhaust and diesel fuel tank;
- pull cable for permanent power feed and terminate to transformer;
- terminate cable in odour control, bin room, electrical room, pump room, and generator room; and
- commence installation of site paving and sidewalks.

#### Residuals Treatment Facility

- complete hydro testing and commence pneumatic testing and tank insulation at Digester 1;
- commence hydro testing at Digester 2;
- continue tank erection for Digester 3;
- continue mechanical and electrical installations and complete building envelope work at the Digester Building;
- complete piping and pump installation in the Digested Sludge Storage Tank;
- continue steel stud and cladding construction and commence roofing and building systems at Operations Building;
- continue electrical cabling and install stairs, rails and receiving hopper at Other Municipal Solids Receiving Facility;
- continue electrical cabling, process piping, HVAC, sprinklers, and drywall at the Residuals Handling Building;

- continue building systems, equipment and electrical installation and process piping at the Dryer Building;
- continue mechanical and electrical work at Equalization Building;
- complete installation of water pump and electrical at the Water Pump House; and
- continue equipment installation at Odour Control Area.

#### Clover Forcemain

- continue road/cycle track including paving Dock Street to Government Street and Douglas Street west to Douglas Street east;
- continue installing lamp standards on Dallas Road and cycle track; and
- perform road restoration Government Street to Douglas Street.

#### Residual Solids Pipes

- continue final pavement restoration along Interurban Road;
- commence pipe installation at Portage Road and Esson Road; and
- install pipes on Tillicum Road from Gorge Road to Tillicum Bridge.

#### Residual Solids Pump Stations

- commence pipe installation on Marigold Road;
- continue pipe installation on Interurban from Violet Avenue to Grange Road; and
- continue installation of supports and piping on Tillicum Bridge and Admirals Bridge.

#### Arbutus Attenuation Tank (AAT)

- complete drilling operation for secant piles;
- complete installation of plain and reinforced secant piles;
- commence installation of ring beam (formwork, rebar, pour concrete);
- commence installation of cross and diagonal strut beams; and
- commence excavation within tank footprint to base slab elevation.

#### Trent Forcemain

- contractor to mobilize to site;
- conduct pre-condition survey;
- continue to review contractor's construction management plans; and
- contractor to start with pot holing and relocation activities.

## 2.6.2 60 day look ahead

Key activities and milestones for the next 60 days (March) are outlined below by function.

### Safety

- attend CRD corporate occupational health and safety coordination committee meeting;
- host Prime Contractor Safety Coordination Meeting with Project safety representatives;
- attend weekly and bi-weekly prime contractor progress meetings;
- office/site inspections with contractors and CRD corporate at all active sites;
- prime contractor project safety meeting with Project safety representatives;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites;
- incident reporting review with prime contractors at active work locations; and
- conduct Quality Safety Assurance Audits on Arbutus Attenuation Tank Prime Contractor.

### Environment and Regulatory Management

- CRD, Stantec and HRP to meet again with ENV to discuss the Environmental Impact Studies that form the basis of the MWR Registration application.

### First Nations

- CRD to continue meeting with the First Nation Liaisons.

### Stakeholder Engagement

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

### Cost Management and Forecast

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

### Construction

#### McLoughlin Point

- demobilise the north tower crane;
- continue construction of remaining tsunami wall sections;
- install roofing, stairs, glazing and HVAC in primary odour control;
- install forced air ducting and dampers throughout;
- install cable and instrumentation and complete terminations to the MCC in secondary odour control;
- install SUEZ walkways and equipment and tank covers in Densadeg 2 & 3;
- install HVAC, plumbing and sprinklers in screen room, and north and south pump rooms;
- continue with process mechanical and process electrical installations throughout;
- install gravel and Biolite in BAF tanks;
- continue construction of concrete walls, curbs and roof top slab in Tertiary treatment area;
- continue with O&M building envelope and installation of electrical and mechanical; and
- continue with installation of fire stopping, insulation, and drywall boarding.

### Clover Point Pump Station

- install existing screens in West and East inlet channels;
- demolish existing pumps and check valves;
- form and pour new pipe supports;
- cut openings to sanitary wet well and grit separators;
- relocate existing slide gates;
- install backwash system;
- remove existing generator;
- install new diesel generator;
- install shower masonry in public washroom;
- install HVAC, insulation, roofing membrane and plumbing fixtures in public washroom; and
- install doors and hardware in new pump station.

### Macaulay Point Pump Station

- install incoming watermain;
- install primary electrical duct bank and pull cable;
- complete back fill of structure;
- install stairs and walkways in pump room;
- form, rebar and pour diversion chamber base slab and walls;
- continue installation of stained wood cladding;
- install doors and frames;
- install HVAC and plumbing fixtures; and
- reinstate asphalt roads and curbs on Anson and Bewdley streets.

### Residuals Treatment Facility

- complete pneumatic testing and continue tank insulation at Digester 1;
- complete hydro testing and pneumatic testing and commence tank insulation at Digester 2;
- complete tank erection and commence hydro testing at Digester 3;
- continue mechanical and electrical installations at the Digester Building;
- commence hydro testing at the Digested Sludge Storage Tank;
- commence hydro testing at the Water Storage Tank;
- complete steel stud, cladding and roofing and continue building systems at Operations Building;
- continue electrical cabling and install pumps and headers and receiving hopper at Other Municipal Solids Receiving Facility;
- continue electrical cabling, process piping, and building systems at the Residuals Handling Building;
- continue building systems, equipment and electrical installation and process piping at the Dryer Building;
- continue mechanical and electrical work at Equalization Building;
- continue process mechanical and electrical at the Water Pump House; and
- continue equipment installation at Odour Control Area.

### Clover Forcemain

- continue with Dallas Road reconstruction from St Lawrence Street to Montreal Street;
- continue road/cycle track construction from Dock Street to Olympia Avenue; and
- continue installation of road and cycle track lighting.

### Residual Solids Pipes

- continue road restoration and final paving as required;
- continue with pipe installation of Portage Road;
- commence installation of pipe in the MOTI highway crossing; and
- continue with the installation of valve chambers and valves and drains.

### Residual Solids Pump Stations

- complete pipe installation on Interurban Road between Grange Road and Marigold Road;
- install leachate connection chamber electrical and test;
- complete pipe installation at Marigold Road crossing at Violet Ave;
- Complete pipe tie at the north side of the Colquitz Creek;
- install odour control unit, HVAC, instrumentation and fencing at pump station 3;
- install concrete equipment pads, odour control unit, kiosk, generator, surge tank and fencing at pump station 2;
- install process mechanical, underground electrical, yard piping, submersible sewage pump at pump station 1;
- back fill Marigold control valve chamber and grade site; and
- install kiosk and complete site electrical at Marigold control valve chamber.

### Arbutus Attenuation Tank (AAT)

- complete installation of cross and diagonal strut beams;
- continue installation of ring beam (formwork, rebar, pour concrete, testing);
- complete excavation within tank footprint to base slab elevation;
- commence subgrade prep and mud-mat installation;
- prep for and initiate excavation for valve chamber; and
- preparation for rock anchor installation.

### Trent Forcemain

- commence sanitary sewer;
- watermain and storm sewer relocations on Memorial Crescent; and
- commence sanitary sewer and watermain relocations on Fairfield Road.

## 2.7 Cost Management and Forecast

The monthly cost report for January is shown in Appendix C. The cost report summarizes Project expenditures and commitments by Project Components and the major cost centres common to the Project Components.

The Project Team has been reporting budget pressures through its monthly reports to the Project Board (and CRD Board) since September 2017, and these pressures steadily increased as each conveyance contract was awarded. The Project Team forecasts that the Project can be completed at a total cost of \$775M, or \$10M (1.3%) over the Project's control budget. In May 2019 the Project Board sought and received the CRD Board's approval to increase the Project's budget by \$10M to \$775M, and on August 14, 2019, the associated amendment to the 2019-2023 Financial Plan was approved.

### 2.7.1 Commitments

Commitments were made over the reporting period in furtherance of delivering the Project. The net commitments made during the reporting period resulted in an increase in committed costs of \$0.59 million. The significant commitments made in the reporting period were the approval of provisional items in contracts and 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 project management office-related costs.

### 2.7.3 Contingency and Program Reserves

Contingency draws totalling \$0.28 million were made over the reporting period, as summarised in Table 6. The draws to-date and remaining contingency and program reserve balances are summarized in Table 6.

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

WTP Contingency and Program Reserve Draws and Reallocations	Draw Date	\$ Amount
<b>Contingency and Program Reserve (in Control Budget)</b>		<b>\$ 69,318,051</b>
Contingency and Program Reserve Draws to December 31, 2019		\$ (62,610,777)
Contingency and Program Reserve addition (May 2019)		\$ 10,000,000
<b>Contingency and Program Reserve balance as at December 31, 2019</b>		<b>\$ 16,707,274</b>
BC Hydro credits applied to Seaterra costs	Jan-20	\$ 4,000
Telemetry upgrades to SCADA	Jan-20	\$ (6,420)
Remediation of Contaminated Soils on DND Lands	Jan-20	\$ (230,923)
Remediation of WWTP Site	Jan-20	\$ (45,740)
<b>WWTP Total Draw</b>		<b>\$ (279,083)</b>
BC Hydro credits applied to Seaterra costs	Jan-20	\$ 1,208
<b>RTF Total Increase</b>		<b>\$ 1,208</b>
BC Hydro credits applied to Seaterra costs	Jan-20	\$ 1,331
<b>Conveyance Total Increase</b>		<b>\$ 1,331</b>
<b>PMO Total Draw</b>		<b>\$ -</b>
<b>BC Hydro Total Draw</b>		<b>\$ -</b>
<b>WTP Program Reserve Draw</b>		<b>\$ -</b>
Contingency and Program Reserve credits in the reporting period		\$ 6,540
Contingency and Program Reserve draws in the reporting period		\$ (283,083)
<b>Contingency and Program Reserve balance as at January 31, 2020</b>		<b>\$ 16,430,732</b>



## 2.7.4 Project Funding

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

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

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

The Project Team has applied to the Federation of Canadian Municipalities (FCM) for additional funding and has executed a grant agreement for the contribution of up to \$346,900 towards the delineation of the contamination and remediation and risk assessment for the McLoughlin Point Wastewater Treatment Plant.

The status of funding claims is summarised in Table 7. Note that the timing for the provision of 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 the majority of the funding from the Government of British Columbia cannot be claimed until relevant Project components are substantially complete, which is scheduled to occur in 2020.

*Table 7- Project Funding Status*

Funding Source	Maximum Contribution	Funding Received in the Reporting Period	Funding Received to Date
Government of Canada (Building Canada Fund)	\$120M	\$5.9M	\$98.0M
Government of Canada (Green Infrastructure Fund)	\$50M	-	\$35.9M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	\$62.0M
Federation of Canadian Municipalities	\$346K	-	-
<b>TOTAL</b>	<b>\$459.3M</b>	<b>\$5.9M</b>	<b>\$195.9M</b>

## 2.8 Key Risks and issues

The Project Team actively identified and managed Project risks over the reporting period. Table 8 summarizes the highest-level risks that were actively managed over the reporting period, as well as the mitigation steps identified and/or undertaken over the reporting period.

There were no changes to the active risks summary from that presented in the Project's Q4 2019 Quarterly Report.



Table 8- Project Active Risks Summary

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level	Trend in risk level from previous reporting period
<b>Project</b>				
Misalignment between First Nations' interests and the implementation of the Project.	The assessed risk level reflects the Project Team's priority of establishing strong and effective relationships with First Nations interfacing with, or interested in, the Project.	First Nations engagement activities remained ongoing over the reporting period (see section 2.3 for further details).	M	No change
Divergent interests between multiple parties and governance bodies whose co-operation is required to successfully deliver the Project.	The assessed risk level reflects the Project Team's priority of establishing strong and effective relationships with municipal, provincial and federal government departments.	The Project Team continued engagement with municipal, provincial and federal government departments throughout the reporting period.	L	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).	L	No change
Lack of integration between Project Components.	Planning challenges and system integration between the McLoughlin point 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. Commissioning and control plans are under development	L	No change
Senior government funds issue delayed.	The assessed risk level reflects the Project Team's priority of ensuring Project funding commitments are honoured.	Responsibility for meeting funding commitments has been assigned and is being monitored.	L	No change

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level	Trend in risk level from previous reporting period
Downstream works delays.	Delay from conveyance projects delay delivery of wastewater to WWTP.	Schedule has sufficient time allowance to ensure conveyance elements complete prior to requirement. Contractor agreements will include terms that require the contractor to recover schedule delays and/or allow for CRD acceleration.	M	No change
Upstream works delays.	Delay of the delivery of residual solids to the RTF.	Contract with HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) includes terms that require the contractor to recover schedule delays and/or allow for CRD acceleration. Liquidated damages for late delivery in HRP contract.	L	No change
Municipal Wastewater Regulation (MWR) Registration is not achieved or is delayed.	A delay to achieving MWR Registration of the wastewater treatment system would mean that the CRD could not discharge treated effluent, and therefore would not be able to commission the WWTP or RTF.	The Project Team (with HRP and Stantec representatives) have been meeting regularly with Ministry of Environment representatives since September 2017 to review the MWR Registration application requirements and the Project's schedule, in order to mitigate the risk of an incomplete application and/or schedule delays in the registration. The MWR Registration application was submitted to the Ministry of Environment in September 2019. The Project Team, MOE 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 and coverage of communications in contractor orientations.	M	No change
Change in law.	A change in law impacts the scope, cost or schedule of the Project.	Keep apprised of proposed modifications to relevant regulations so as to do the following as appropriate: submit comments on proposed modifications; and/or consider including anticipated modifications in contracts.	M	No change

Risk Event	Description of Risk Event	Risk mitigation activities undertaken or planned in the reporting period	Assessed risk level	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
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.	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	No change
<b>McLoughlin Point Wastewater Treatment Plant</b>				
Unexpected contaminated soil conditions during excavation.	Site has more contaminated soils than initial assessment.	CRD and HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) are working collaboratively to minimize the costs associated with remediating the McLoughlin Point site while ensuring that contaminated materials are removed and disposed of in accordance with all applicable legislation.	L	No Change
<b>Conveyance</b>				

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

## 2.9 Status (Engineering, Procurement and Construction)

### 2.9.1 Wastewater Treatment Plant (McLoughlin Point WWTP)

The McLoughlin Point WWTP Project Component is continuing with Harbour Resource Partners (“HRP” as the Design-Build Contractor for the McLoughlin Point WWTP) progressing construction including: installation of tube settlers in Densadeg 1 and 2; installation of clarifier mechanism in densadeg 1; completion of plant drain tank piping and installation; completion of Moving Bed Bio Reactor (MBBR) #2 concrete; Biological Aerated Filter (BAF) scouring air distribution systems complete in all but 3 cells; progressing penthouse building envelopes; progression of BAF tie-in walls and channels in tertiary area; continuing upper disk filter walls; roofing membrane installed on level one of the Operations and Maintenance (O&M) building; completed raw influent line from Peters street to the wye, including testing; and external major electrical equipment commissioning commenced.

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

- Primary treatment area:
  - completion of primary area roof parapets and curbs;
  - completion of miscellaneous equipment pads;
  - ongoing masonry in chemical pump room;
  - fine screen and chemical room steel stud underway;
  - installed tube settlers in Densadeg1 (DD1);
  - commenced installation of tube settler in Densadeg2 (DD2);
  - installed reactors for DD1 and DD2;
  - commenced installation of clarifier mechanism on DD1;
  - sludge lines underway for all Densadegs and plate settlers;
  - completion of tank piping and equipment installation; and
  - completion of storage and plant drain tank piping and equipment installation.
- Secondary treatment area:
  - completed MBBR #2 concrete;
  - progressed MBBR #1 concrete work;
  - progression of south biological aerated filter (BAF) / Tertiary tie-in slab complete, upper channels;
  - installation of 16 inch pipe is nearing completion;
  - completion of BAF scouring air distribution systems in all cells except 12, 9 and 7;
  - electricians continue to progress where possible in the BAF gallery;
  - all blowers set on final housekeeping pads;
  - ongoing installation of Cable tray and supports in all three penthouse structures;
  - progression of penthouse building envelopes;
  - progress on pipe rack 10 and 11; and
  - setup for BAF nozzle and lateral air testing.
- Tertiary treatment area:
  - progression of BAF tie-in walls and channels;
  - upper disk filter walls continue;
  - installation of level one pumps and mechanical piping nearing completion;
  - continued progress of level two pump pads; and
  - initial HVAC and electrical work is in progress.

- O&M building:
  - progressed cinder block wall;
  - continued progress of HVAC and plumbing throughout the building;
  - progressing electrical work throughout the building;
  - ongoing glazing installation on the first and second levels;
  - roofing membrane installation is complete on the level one roof; and
  - steel stud well underway on level 2.
- Off-Site Utilities:
  - completed raw influent line from Peters street to the wye, including test;
  - installed water line to the main plant site from Peters street;
  - installation of pig receiving piping;
  - continued raw influent piping; and
  - commenced commissioning of external major electrical equipment.

Photographs of construction progress over the month of January at McLoughlin Point are shown in Figures 2-6.



*Figure 2– McLoughlin Point Wastewater Treatment Plant- Delivery of primary odour control tanks.*



*Figure 3– McLoughlin Point Wastewater Treatment Plant- Installing aluminium cladding.*



*Figure 4– McLoughlin Point Wastewater Treatment Plant- Pumps and piping in the pump room.*





*Figure 5– McLoughlin Point Wastewater Treatment Plant- Setting of Densadeg reactor tank.*



*Figure 6– McLoughlin Point Wastewater Treatment Plant- Installing scraper cone in Densadeg 3 clarifier.*

## 2.9.2 Residuals Treatment Facility

The RTF Project Component is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate Maintain contractor for the RTF) progressing construction activities including: erection of Water Storage Tank completed; drywall installation and finishing complete in Residuals Handling Building and Dryer Building; structural steel frame completed for Water Pump House; exterior of Dryer Building weathertight with cladding, glazing and flashings installed; installation of process mechanical piping between residuals solids tanks and Equalization Building; installation of exterior insulated metal cladding panels, flashing and gutters on Equalization Building and Water Pump House; and installation of mixing pumps in Digester Equipment Building; cored walls for installation of mechanical/process piping between digesters, Digested Solids Storage Tank (DSST) and Digester Equipment Building.

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

- completed erection of Water Storage Tank;
- erected structural steel frame work of the Operations Building;
- installed interior steel stud walls and supporting members installed for installation of exterior insulated metal cladding panels;
- completed installation and finishing of drywall in Residuals Handling Building and Dryer Building;
- electrical equipment and controls installed in Residuals Handling electrical room, cables and wiring being pulled throughout building;
- structural steel frame completed for Water Pump House;
- ongoing installation of mechanical/process piping in Digester Equipment Building;
- Digester #1 sealed up and filled for hydrostatic testing;
- Installation of mechanical/process piping in Dryer Building;
- exterior of Dryer Building weathertight, cladding, glazing and flashings installed;
- completed product storage silo on south side of Dryer Building;
- placed concrete for housekeeping pads in Odour Control Building and Residuals Handling Building boiler room;
- installed exterior insulated metal cladding panels, flashing and gutters on Equalization Building and Water Pump House;
- formed up and placed concrete for Propane Storage Tank foundation slab;
- installed motor control centre/ electrical controls in Dryer Building electrical room;
- installed interior process piping and mixing nozzles in DSST;
- commenced erection of Digester #3 bolted steel tank;
- installed process mechanical piping between Residuals Solids Tanks and Equalization Building;
- installed mixing pumps in Digester Equipment Building, cored walls for installation of mechanical/process piping between digesters, DSST and Digester Equipment Building; and
- slope stabilization work ongoing on south slope/upper Hartland access road.

Photographs of construction progress over the month of January at the Residuals Treatment Facility are shown in Figures 7-10.





*Figure 7– Residuals Treatment Facility- Residuals Handling building electrical room motor control centres.*



*Figure 8– Residuals Treatment Facility- Digester 3 construction in progress.*



*Figure 9– Residuals Treatment Facility- Digested Sludge Storage Tank process pipe and mix nozzles.*



*Figure 10– Residuals Treatment Facility - Dryer Building 5<sup>th</sup> floor mechanical.*

## 2.9.3 Conveyance System

### 2.9.3.1 Clover Point Pump Station

Kenaidan Contracting Limited (“Kenaidan” as the Design-Build Contractor) progressed construction activities over the reporting period including: installation of process pipe knife gate and check valves; ongoing forcemain work; completed installation checks of transformer, switch gear, neutral grounding resistor and motor control centers (MCC); and installation of flow, level and gas detection instrumentation.

Key construction activities in progress or completed by Kenaidan in January include:

- installation of process pipe knife gate and check valves;
- ongoing installation of cable tray and cable;
- ongoing cable loop checks;
- completion of transformer, switch gear, Neutral Grounding Resistor and MCC installation checks;
- ongoing south retaining wall structure work;
- ongoing high density polyethylene forcemain work;
- continued existing inlet channel and bypass pumping work;
- installation of HVAC ducting in pump and screening rooms; and
- installation of flow, level and gas detection instrumentation is being installed.

Photographs of construction progress over the month of January at Clover Point are shown in Figures 11-14.



*Figure 11–Clover Point Pump Station- Over the upper and lower pump rooms.*





*Figure 12–Clover Point Pump Station- Inside the electrical room.*



*Figure 13–Clover Point Pump Station- Forcemain blind flange is installed and pigging station pipe bedding is being placed.*



*Figure 14- Clover Pump Station - South retaining wall concrete pour.*

### 2.9.3.2 Macaulay Point Pump Station and Forcemain

Kenaidan Contracting Limited (“Kenaidan” as the Design-Build Contractor) progressed construction activities over the reporting period including: installation of bridge crane in the bin room; ongoing backfill around the exterior wall; installation of cross laminated timber roof and parapets; and installation of HVAC and drain pipe in the screen room.

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

- installation of cable trays in the screen room and genset room;
- installation of bridge crane in the bin room;
- ongoing backfill around exterior wall;
- installation of screen room and Vortex grating;
- installation of Cross Laminated Timber roof and parapets;
- barrier wall and pump room hatch curb have been poured;
- slide gate installation has commenced in the screen room; and
- installation of HVAC and drain pipe in the screen room.

Photographs of construction progress over the month of January at Macaulay Point are shown in Figures 15-16.



*Figure 15–Macaulay Point Pump Station- CLT framing for architectural siding.*



*Figure 16-Macaulay Point Pump Station- Backfilling in the North West quadrant.*

### 2.9.3.3 Clover Forcemain (CFM)

Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued construction activities including: ongoing cycle track paving; road restoration; electrical lighting installation; installation of the Clover Point storm catch basin ongoing and progression of the Camas curb extension.

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

- ongoing cycle track/road restoration between Government and Lewis Streets;
- progressed electrical lighting installation from Montreal Street to Lewis Street;
- progressed installation of Montreal Street bump out curbing and sidewalk;
- ongoing installation of Clover Point storm catch basin; and
- progressed Camas curb extension.

Photographs of construction progress over the month of January on the Clover Forcemain are shown in Figures 17-20.



*Figure 17–Clover Forcemain- Curb completed near South Turner Street.*





*Figure 18–Clover Forcemain- Road restoration work near Holland Park.*



*Figure 19–Clover Forcemain– Cycle track base preparation at Holland Park.*



*Figure 20–Clover Forcemain- Curb bump out and new sidewalk at Montreal Street.*

### 2.9.3.4 Residual Solids Conveyance Line

The RSCL is being delivered through two construction contracts:

- Residual Solids Pipes; and
- Residual Solids Pump Stations

Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for the Residual Solids Pipes) continued construction activities over the reporting period, including: installation of valve chambers; road restoration; and installation of approximately 1154 m of pipes at the following locations:

- segment #1 Tillicum Road from Gosper Crescent to Tillicum Bridge and Vincent Ave to Tillicum Bridge; and
- segment #2 Interurban Road from Meadowview Place to Wilkinson Road and Roy Road to Wilkinson Road.

Photographs of construction progress over the month of January on the Residual Solids Pipes are shown in Figures 21-24.



*Figure 21–Residual Solids Pipes- Patching a pot hole on Tillicum Road.*





*Figure 22–Residual Solids Pipes- Compaction of asphalt on Interurban Road.*



*Figure 23–Residual Solids Pipes – Pipe Tie in at Interurban Road just south of Wilkinson Road.*



*Figure 24-Residual Solids Pipes - Compaction being completed on prep work for temporary paving on Interurban Road.*

Residual Solids Pump Stations: Knappett Projects Inc. (“Knappett” as the Construction Contractor for the Residual Solids Pump Stations) continued construction activities at all three pump stations including: forming and pouring of wet well walls at Pump Station 1; installation of underground conduits in Pump Station 3; formation and pouring of concrete slab at the Marigold Pump Station.

Key construction activities in progress or completed by Knappett in January includes:

- Pump Station 1: wet well walls were formed and poured; and the formwork was removed after adequate cure time;
- Pump Station 2: excavation and installation of flow meter manhole; and commenced leak testing of the wet well;
- Pump Station 3: the underground conduits were installed. Work on the spools throughout the chambers continued;
- 118 m pipe installed on Interurban Road;
- Marigold Pump Station concrete slab was formed and poured; and
- Hartland Reservoir site was prepped for the underground spools and work started on formwork for the slab.

Photographs of construction progress over the month of January on the Residual Solids Pump Stations are shown in Figures 25-27.



*Figure 25–Residual Solids Pump Stations– Hartland Water System Improvements – Installation of formwork for the reservoir slab.*





*Figure 26 –Residual Solids Pump Stations - Pump Station 1- Wet well concrete pour in progress.*



*Figure 27–Residual Solids Pump Stations – Installing formwork and reinforcing steel for Marigold pump station valve chamber.*



### 2.9.3.5 Arbutus Attenuation Tank

NAC Constructors Ltd. (as the Construction Contractor for the Arbutus Attenuation Tank) continued construction activities with a focus on civil excavation and structural secant pile construction works. Ongoing activities also include maintaining the dewatering system; mobilisation of a second drill rig to site to assist in secant pile production rate; and steel splicing works for installation of deep piles.

Key construction activities in progress or completed by NAC Constructors Ltd. in January include:

- continued drilling operation and installation of plain and reinforced secant piles;
- mobilization of second drill rig to site to assist in secant pile production rate;
- steel splicing works for installation of deep piles (>17m depth); and
- ongoing site dewatering work.

Photographs of construction progress over the month of January at the Arbutus Attenuation Tank are shown in Figures 28-29.



*Figure 28–Arbutus Attenuation Tank- Concrete pour for Secant Pile.*



*Figure 29– Arbutus Attenuation Tank –Ongoing piling w/ two drill rigs.*

#### 2.9.3.6 Trent Forcemain

Trent Forcemain: The Project Team executed the construction contract with the tenderer selected in accordance with the Invitation to Tender: Jacob Bros. Construction Inc. The contractor started submitting construction management plans for the Project Team's review.

## **Appendix A– Final Contract Awarded for the Wastewater Treatment Project (January 9, 2020)**



## Information Bulletin

For Immediate Release

January 9, 2020

### **Final Contract Awarded for the Wastewater Treatment Project**

**Victoria, BC**– The Capital Regional District (CRD) has awarded a \$6.8-million contract to Jacob Bros Construction to construct the Trent Forcemain. This is the final major construction contract for the Wastewater Treatment Project.

Jacob Bros was selected by the CRD through a competitive selection process. Jacob Bros is a multi-discipline general contractor that focuses on heavy civil and building construction. They are based in Surrey, B.C. with a satellite office in Victoria.

Construction for the Trent Forcemain is anticipated to begin early in 2020 and take approximately 10 months to complete. This 1.9km pipe will be installed as part of the Wastewater Treatment Project's conveyance system. It will run from the intersection of Chandler Avenue and St Charles Street connecting to the Clover Point Pump Station. This addition to the eastern branch of the CRD's core area conveyance system will increase the capacity of the system and reduce wet weather overflows.

The Wastewater Treatment Project remains on schedule to treat wastewater from the core area by December 31, 2020 with a budget of \$775 million.

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

### ***About the Wastewater Treatment Project***

*The Wastewater Treatment Project will provide tertiary treatment for wastewater from the core area municipalities of Victoria, Esquimalt, Saanich, Oak Bay, View Royal, Langford and Colwood, and the Esquimalt and Songhees Nations. The Project will be built so we comply with federal regulations by the end of 2020, and consists of the McLoughlin Point Wastewater Treatment Plant, the Residuals Treatment Facility at Hartland Landfill, and the conveyance system that will carry wastewater from across the core area to the McLoughlin Point Wastewater Treatment Plant, and residual solids to the Residuals Treatment Facility. For more information, visit [www.wastewaterproject.ca](http://www.wastewaterproject.ca).*

**For media inquiries, please contact:**

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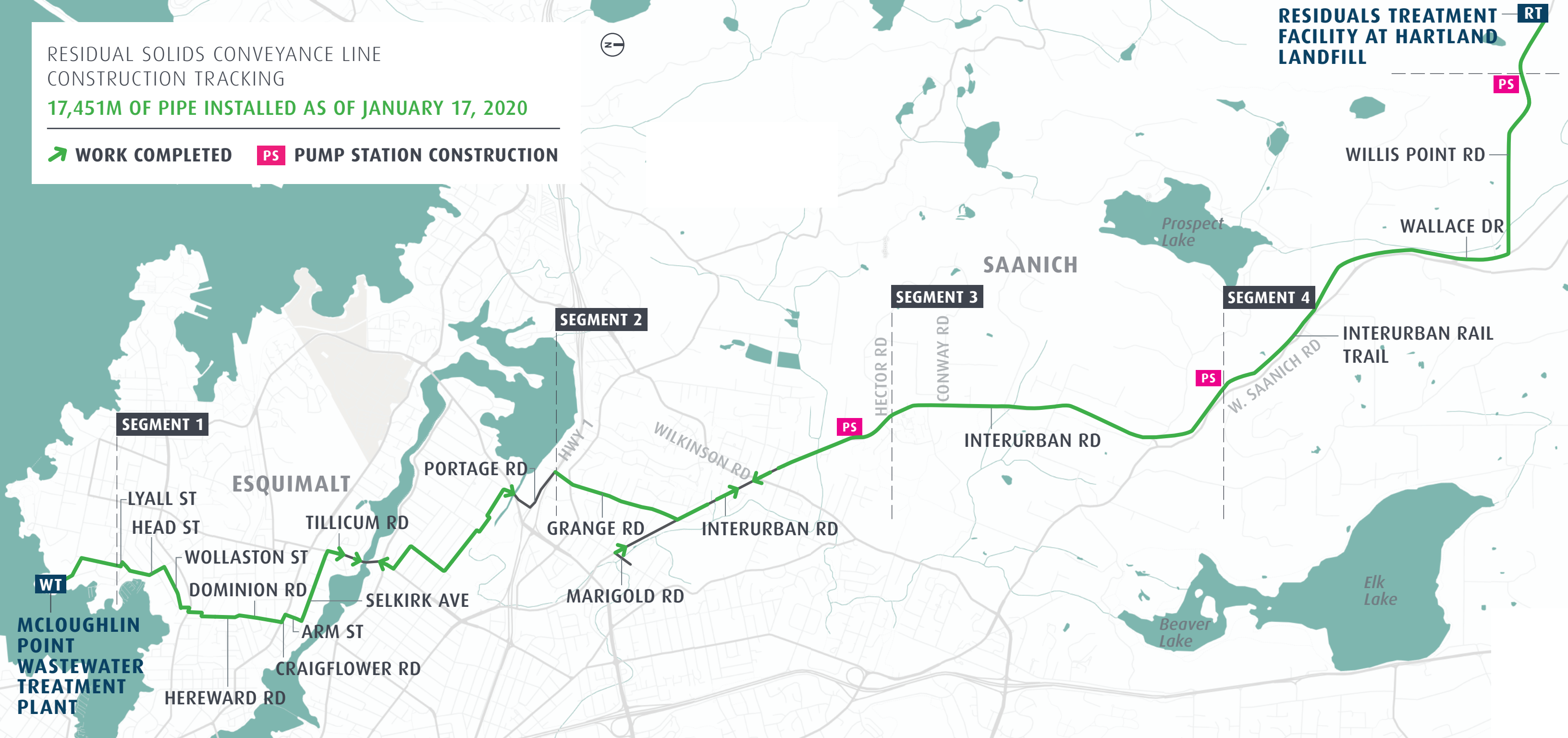
## **Appendix B– Residual Solids Conveyance Line Map (January 17, 2020)**



RESIDUAL SOLIDS CONVEYANCE LINE  
CONSTRUCTION TRACKING

17,451M OF PIPE INSTALLED AS OF JANUARY 17, 2020

➔ WORK COMPLETED   **PS** PUMP STATION CONSTRUCTION



## **Appendix C– Monthly Cost Report (January)**

MONTHLY COST REPORT as at January 31, 2020														
Description	BUDGET		COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
	Control Budget	Allocated Budget	Expended to December 31, 2019	Expended over reporting period (January 2020)	Expended to January 31, 2020	Expended to January 31, 2020 as a % of Allocated Budget	Remaining (Unexpended) Allocated Budget at January 31, 2020	Total Commitmtment at January 31, 2020	Unexpended Commitment at January 31, 2020	Uncommitted Allocated Budget at January 31, 2020	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Allocated Budget
McLoughlin Point Wastewater Treatment Plant	331.4	328.1	267.6	4.8	272.4	83%	55.7	320.0	47.6	8.1	55.7	328.1	-	0%
Construction	306.7	319.9	266.9	4.9	271.8	85%	48.1	319.4	47.6	0.5	48.1	319.9	-	0%
Contingency	14.9	1.3	-	-	-	0%	1.3	-	-	1.3	1.3	1.3	-	0%
Financing	9.8	6.9	0.7	(0.1)	0.7	9%	6.2	0.7	-	6.2	6.2	6.9	-	0%
Residuals Treatment Facility	159.4	139.7	9.3	0.6	9.8	7%	129.9	138.7	128.9	1.0	129.9	139.7	-	0%
Construction	145.4	138.7	9.2	0.6	9.8	7%	128.9	138.7	128.9	0.0	128.9	138.7	-	0%
Contingency	12.3	0.2	-	-	-	0%	0.2	-	-	0.2	0.2	0.2	-	0%
Financing	1.7	0.8	0.0	-	0.0	4%	0.8	0.0	-	0.8	0.8	0.8	-	0%
Conveyance System	158.1	216.0	134.4	5.6	140.0	65%	75.9	194.2	54.1	21.8	75.9	216.0	-	0%
Macaulay Point Pump Station	25.4	30.8	21.2	1.6	22.8	74%	8.0	30.7	7.9	0.1	8.0	30.8	-	0%
Macaulay Forcemain	5.6	7.4	6.3	0.1	6.4	86%	1.1	7.4	1.1	-	1.1	7.4	-	0%
Craigflower Pump Station	12.5	12.4	12.4	0.0	12.4	100%	0.0	12.4	0.0	0.0	0.0	12.4	-	0%
Clover Point Pump Station	23.7	27.4	24.0	-	24.0	88%	3.4	27.2	3.2	0.2	3.4	27.4	-	0%
Currie Pump Station^	2.8	0.1	0.1	-	0.1	100%	-	0.1	-	-	-	0.1	-	0%
Arbutus Attenuation Tank	14.2	24.6	9.7	0.5	10.2	42%	14.3	23.1	12.8	1.5	14.3	24.6	-	0%
Clover Forcemain	14.6	32.5	26.8	0.2	27.0	83%	5.4	32.2	5.1	0.3	5.4	32.5	-	0%
Currie Forcemain^	3.3	0.2	0.2	-	0.2	100%	-	0.2	-	-	-	0.2	-	0%
Trent Forcemain	9.5	11.3	0.2	-	0.2	2%	11.1	7.9	7.6	3.4	11.1	11.3	-	0%
Residual Solids Conveyance Line	19.1	35.8	27.2	2.1	29.4	82%	6.4	35.7	6.4	0.1	6.4	35.8	-	0%
Residual Solids Pump Stations & Bridge Crossings	4.6	18.6	5.5	1.1	6.7	36%	11.9	16.5	9.9	2.0	11.9	18.6	-	0%
Residual Solids Conveyance Line – Highway Crossing	-	0.5	0.3	-	0.3	60%	0.2	0.5	0.2	0.1	0.2	0.5	-	0%
Contingency	16.8	10.4	-	-	-	0%	10.4	-	-	10.4	10.4	10.4	-	0%
Financing	5.8	4.1	0.4	(0.1)	0.3	8%	3.7	0.3	-	3.7	3.7	4.1	-	0%
Project Management Office ("PMO")	75.9	77.9	50.6	0.5	51.1	66%	26.8	67.8	16.7	10.1	26.8	77.9	-	0%
Professional Services	29.2	41.9	29.2	0.0	29.3	70%	12.7	35.9	6.7	6.0	12.7	41.9	-	0%
Project Board, Project Team & CRD Allocations	34.7	27.9	17.1	0.4	17.5	63%	10.4	27.1	9.6	0.8	10.4	27.9	-	0%
PMO Support	4.8	3.5	2.1	0.0	2.1	60%	1.4	2.6	0.5	0.9	1.4	3.5	-	0%
PMO start-up costs	2.3	2.2	2.3	(0.1)	2.2	100%	-	2.2	-	-	-	2.2	-	0%
Contingency	4.8	2.3	-	-	-	0%	2.3	-	-	2.3	2.3	2.3	-	0%
BC Hydro	12.9	4.3	2.0	-	2.0	47%	2.3	2.0	0.0	2.3	2.3	4.3	-	0%
Third Party Commitments	8.1	8.1	3.4	0.1	3.5	43%	4.6	6.8	3.4	1.3	4.6	8.1	-	0%
Program Reserves	19.2	0.9	-	-	-	0%	0.9	-	-	0.9	0.9	0.9	-	0%
Core Area Wastewater Treatment Project	765.0	775.0	467.3	11.6	478.9	62%	296.0	729.6	250.7	45.3	296.0	775.0	-	0%

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

\*\* Cost report presents approved expenditures

^ Component no longer required, and would not provide any value therefore removed from Project Scope; Costs include Seaterra initiation, planning and design